MORTECH MANUFACTURING

Component Data

M677 HAND CRANK CADAVER LIFT

Mortech™ Manufacturing Inc.
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(626) 334-1471 www.mortechmfg.com

WARNING

Untrained operators can cause injury or be injured. Permit only trained personnel to operate the equipment.

Improper use of the equipment can cause injury. Use the equipment only for the purpose described in this manual.

Improper maintenance can cause injury. Maintain the equipment only as described in this manual.

Improper parts and service can cause injury. Use only prescribed approved parts and service.

Modifying the equipment can cause injury and damage. Use the equipment only as designed by Mortech.

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.

OPERATING SKILLS AND TRAINING

SKILLS

Operators using the equipment needs

❑ 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

❑ Be trained on the use of the equipment.

❑ Read the manual

❑ 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 UNIT

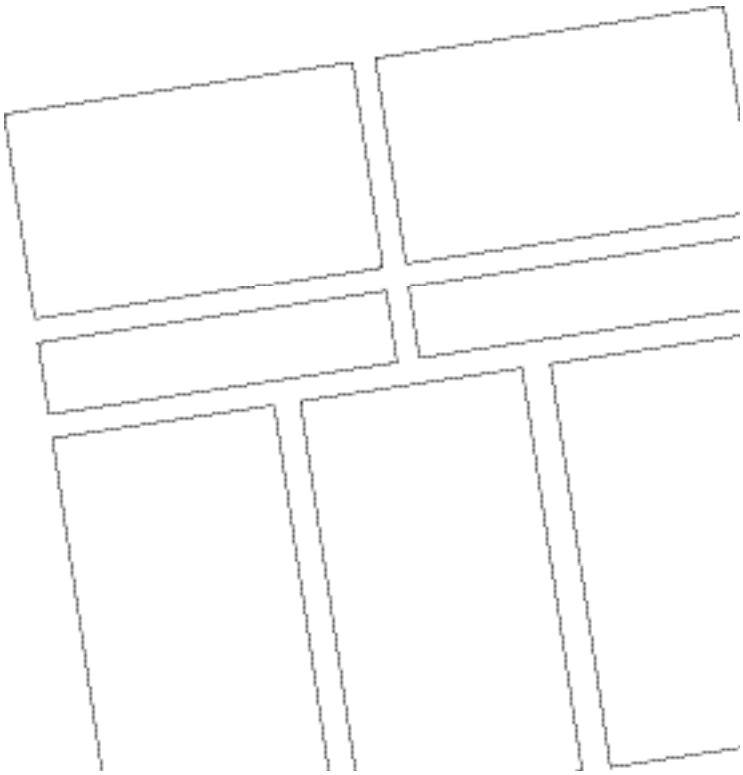
Personnel working with this unit needs to read this manual. Assemble of the unit following instructions, and perform any pre-service checks to confirm the units operates properly.

INSPECTING THE UNIT BEFORE USE

- Are all components present?
- Do the moving parts operate smoothly?
- Is unit draining properly?
- Are plumbing features operating properly?
- Are all nuts, bolts, and pins secured in place?
  If unit has an issue contact customer relations.

GENERAL GUIDELINE

Follow standard service procedures when working with the unit.



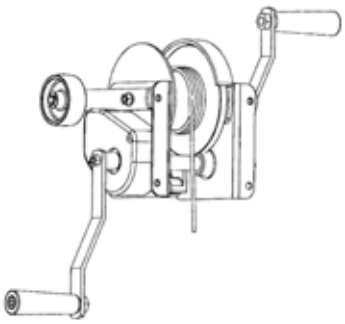
IMPORTANT
Read and understand this instruction manual prior to operating or performing maintenance on this lift!

OPERATOR SAFETY INSTRUCTIONS

Inspect the Equipment

Prior to each use of the unit, check all moving parts and wire rope to ensure that they are in proper operating condition.

If a unit has visible damage or does not transfer up and down smoothly during pre-operation, do not use the unit.



Wire rope (cable) must have a minimum of four complete wraps around the winch drum.

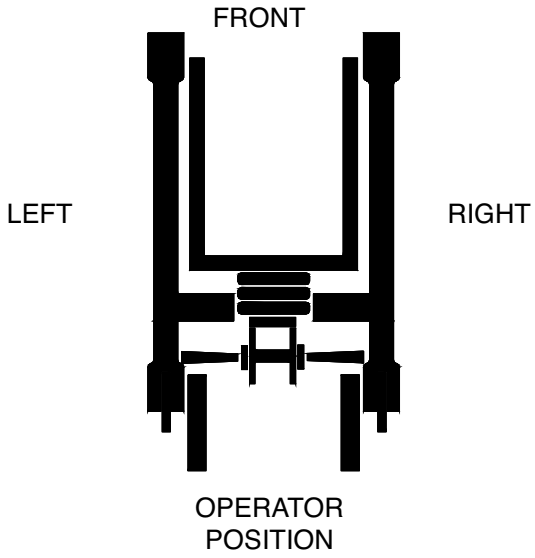
If cable is kinked, worn, frayed, damaged, or has anything on it that would obstruct its rotation around the pulley wheels, **do not use the unit!**

Use only factory replacement parts. Anything else will severely compromise the quality and safety designed into this lift.

Each unit should have a complete set of decals and a legible Operators Manual. Contact distributor if any of these items are missing.

Avoid horseplay around equipment, and keep by-standers at a safe distance. Do not allow children to operate this unit and always keep them out of work areas.

Operate from the proper position. Keep your balance and proper footing at all times.



WARNING
NEVER ALLOW ANYONE TO STAND UNDER AN ELEVATED LOAD.

WARNING
KEEP HANDS AWAY FROM ALL MOVING PARTS WHILE OPERATING UNIT.

WARNING
No riders are allowed on this lift. This is not a personnel lift.

WARNING
DO NOT EXCEED RATED CAPACITY.

OPERATOR SAFETY INSTRUCTIONS (cont'd)

Do not misuse the unit. Perform only the functions for which the unit is designed. Never attempt to operate the equipment at more than the recommended capacity.

Never use units in tandem to lift a load which exceeds the capacity of a single lift.

Secure load to prevent it from shifting on forks, and tie down loads before lifting.

Lock caster brakes when leaving unit unattended.

Keep load at lowest possible position at all times.

Work Area Hazards

Never operate during high wind conditions. Lifting bulky loads during high winds can result in the lift tipping over and the possibility of operator injury.

Operate only on level surfaces. Use the unit on smooth and level surfaces to avoid unit tipping over and the possibility of operator injury.

Always watch for and avoid overhead wires and obstructions when using the unit or moving unit to and from the job site.

Keep work area clean. Always keep work area clear of clutter for unobstructed movement of the unit. Never leave elevated load unattended.

Do not use unit to support ladders, for climbing, hoisting or people moving.

Do not use unit outside in thunder, lightning, or severe weather.

When a unit has an elevated load, it can be transported on the unit's 5" casters only. Do not operate from an unstable platform such as the bed of a truck.

OPERATING PROCEDURE

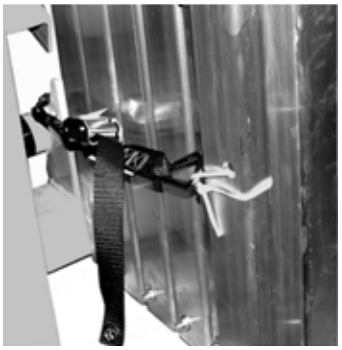
Remove the lift from the shipping pallet by cutting the bands and rocking the lift back on the 10" transportation wheels. Carefully roll the lift back off of the pallet onto a smooth, level surface. Place the lift back into it's upright stored position.

The lift has been shipped with the Mast Hold Down Strap engaged. The purpose of the Mast Hold Down, is to keep the mast sections from extending during transportation. To use your lift, disconnect the Safety Latch and remove the plastic tie wrap,
attached to the carriage.

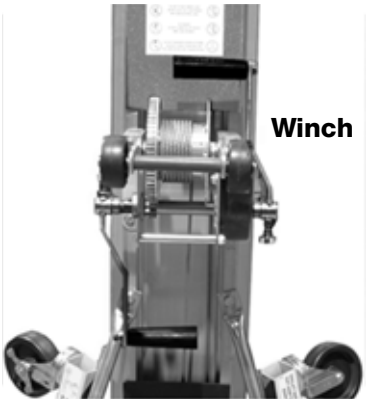
Unpacking the Lift

The winch handles have been placed in the stored position.

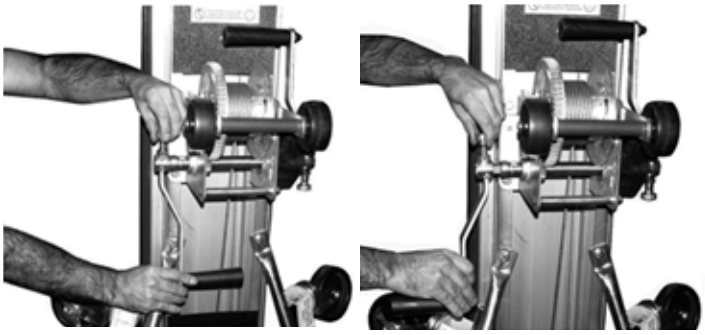
To place the winch handles in the operating position, pull up on the locking pin and slide the handle off of the winch shaft. Rotate the handle assembly around so that the black plastic grip is facing away from the winch. While pulling up on the locking pin, slide the handle back on to the winch shaft. Repeat this procedure for the other handle.



Mast Hold Down Strap



Winch



Winch handle placed in operating position

OPERATING PROCEDURE (cont'd)

When properly installed, the winch handles should be mounted 180° degrees apart, as shown in the picture. Do not attempt to raise or lower a load with the handles mounted in any other manner.

WARNING
Do not extend load centers beyond fork ends by modifying the lift. Lift may become unstable.

Reversing the Forks

Disengage 4 spring-loaded pins. Rotate fork assembly 180 degrees. Engage 4 spring-loaded pins.

Reverse step #4 to return the forks to their normal position.

Lifting and Lowering Loads

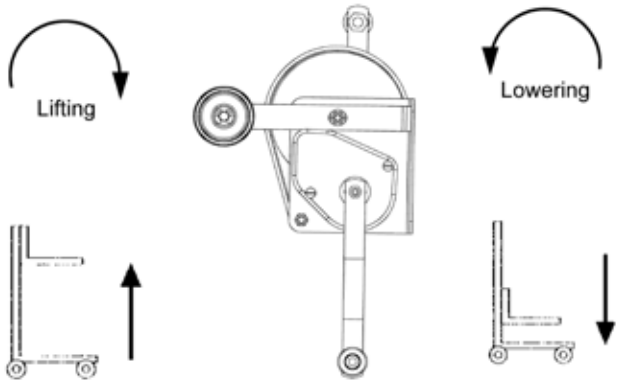
Use the winch to crank forks up or down into the desired position. Then crank winch handles up about 1/4 turn to set the safety brake.

Any unstable load must be balanced and secured to the forks prior to lifting.

Turn winch crank clockwise to elevate the load, while watching for overhead obstructions.

CAUTION
Make sure the floor surface is level.

After load is removed from the forks, lower masts by turning winch crank counter clockwise.



Lock caster brakes when leaving unit unattended.

Using the Stabilizer Legs

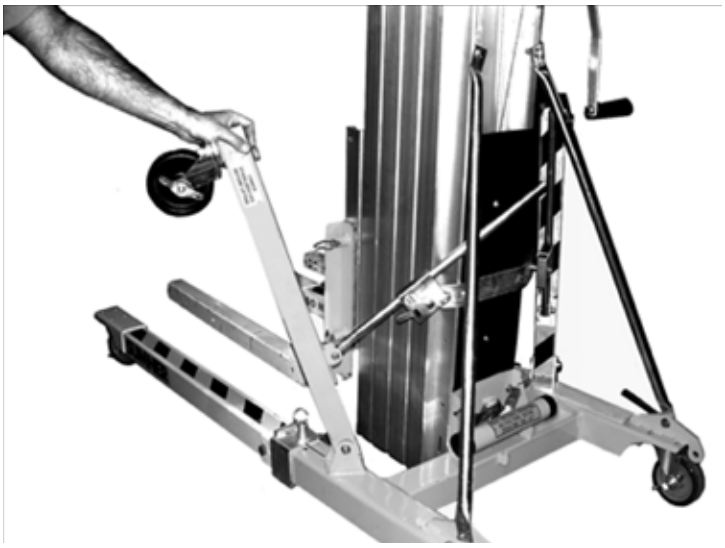
WARNING
No riders allowed on this unit. This is not a personnel lift and never should be used for hoisting or moving people.

Use of the stabilizer legs is recommended for all lifts with loads weighing 400 pounds or more extended to heights greater than 12 feet, or for any large, bulky loads.

WARNING
Never operate lift during high wind conditions.

Stabilizer legs

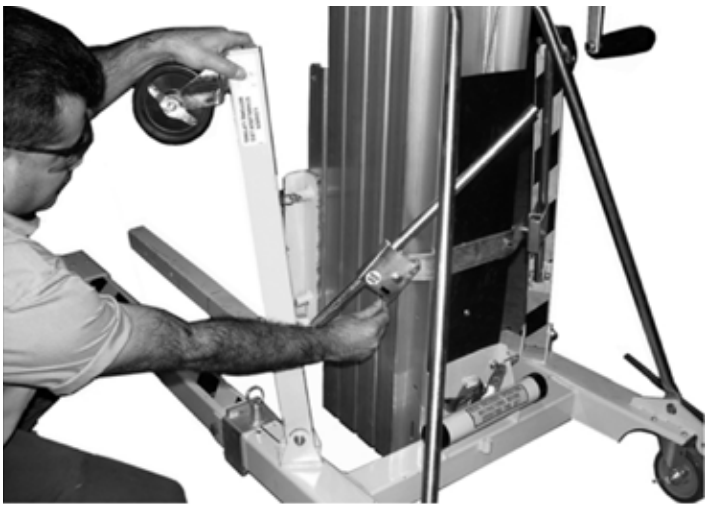
Position the lift on a level surface and pull the stabilizer legs down until the caster on each leg is snugly on the floor.



Fold the leg until it forms a 90 degree angle with the base

While holding the leg in the 90 degree position, slide the Leg Lock back towards the leg until the spring loaded plunger pin engages into position.

To replace the leg in the stowed position, press the locking mechanism release lever and fold the leg up. Continuous pressure on the lever is required while the leg is being folded.



Folding the Base Legs

Lower the carriage all the way down and engage the Mast Hold Down Strap.

CAUTION

Do not drop the unit. Lower the unit by bending your legs, not your back!

Tilt the unit over onto the winch wheels. Pull out on ring, to disengaged the spring loaded plunger pin. While holding onto the leg, slide the Leg Lock, down towards the outrigger mount.

CAUTION

Never move a lift in the upright storage position, or in the operating position unless the spring loaded plunger pins are fully engaged on both Leg Locks.

Storing the Forks

Using two hands, pull the lower 2 spring-loaded rings located above the fork arms and simultaneously rotate the fork outward.

Again, using two hands, pull the upper 2 springloaded rings located at the top of the fork assembly and remove the forks from the carriage.

While pulling out on the upper 2 spring-loaded rings, reposition the upper 2 spring loaded pins so that they align with the top two holes in the carriage and release the rings.

Once the pins are locked in the holes, the carriage can be rotated up into the travel/storage position.

Lift may be stored in the upright, compact position.

CAUTION
Once the forks are rotated up they must be secured to prevent them from falling back.

CAUTION
Carriage must be secured with Mast Hold Down. See Mast Hold Down Strap section on this page.

Mast Hold Down Strap

Securing the Carriage:

Lower the carriage all the way down. With the forks in place, engage the Mast Hold Down Strap onto one of the Safety Latch Loops on the side of the Fork Assembly.

Pull on strap to tighten Hold Down. To remove Hold Down, press lever on cam buckle and slacken Hold Down strap. Remove Hold Down from Safety Latch Loop on side of fork.

Operating Your Lift:

When operating the lift, the Mast Hold Down can be attached to the opposite side of the base upright and tucked behind the Operators Manual Tube for out-of-the-way storage.

Resetting Safety Latch:

In the event that you accidentally crank on the winch before disengaging the Mast Hold Down, the spring latch may deform. A spare spring latch is located in the Operators Manual tube to allow a quick return to operation.

OPTIONS

Safety Brakes:

The Safety Brake will automatically engage when the unit is horizontal, preventing disassembly of the mast sections. When this occurs, the masts will extend, but not retract. A special tool, which can be found in the Operator's Manual tube, is required to release the brakes. If the tool is lost or damaged, one can be made simply from a piece of 1/8 to 1/4 inch diameter steel rod 9 inches long with both ends bent into an "L" shape 1-1/4 inches long.

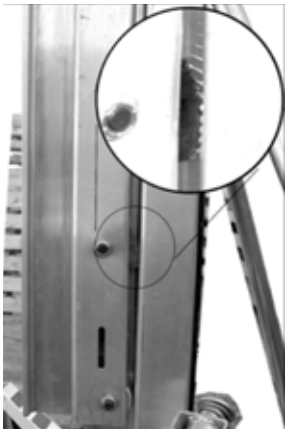
To release the brake, lay the lift back onto the winch wheels and place the tool into brake access slot located on the left side of the lift, and through the hole in the counterweight.

Pull the tool down and the brake will release.

It may be necessary to push the locked mast (or Carriage) up slightly while pulling down on the tool. Once the brake is released, maintain pressure on the tool and slide the mast sections apart.

Repeat this procedure for each mast section.

When the brake is engaged, it will be possible to see the Brake Cam acting on the adjacent mast section. Once the brake is released, it will rotate around into its normal position and will not be visible.

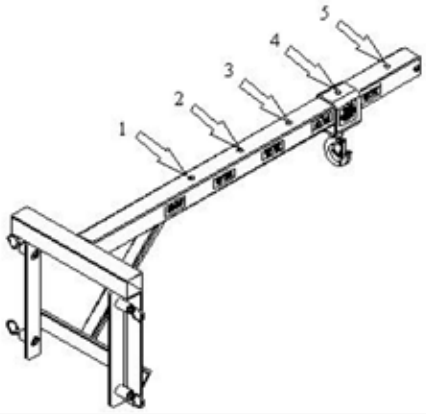


Fork Extensions:

To use fork extension, press plunger on each fork arm and slide extensions out of tube until plungers lock into position.

Reverse this step to reinsert the extensions.

Boom:



Boom Capacity Chart					
Station	1	2	3	4	5
Lbs.	650	525	425	300	200
Kg.	300	240	195	140	90

To use Boom, pull spring-loaded ring and slide hook housing to desired station. Release spring-loaded ring, making sure that the plunger engages into the locating hole.

WARNING
Do not use Boom if plunger is not engaged in the locating hole.

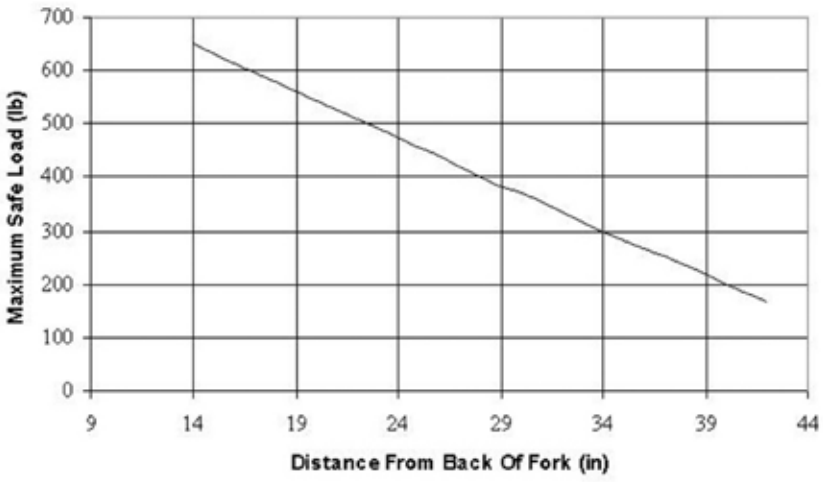
WARNING
Never exceed the rated capacity at any station. Doing so may cause the lift to become unstable.

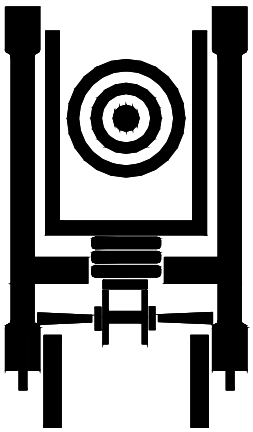
SPECIFICATIONS

Dimensions	**2112**		**2118**		**2124**	
Height - stowed	84”	213.4 cm	84”	213.4 cm	84”	213.4 cm
Length - stowed	34”	86.4 cm	34”	86.4 cm	34”	86.4 cm
Height - operating	84”	213.4 cm	84”	213.4 cm	84”	213.4 cm
Length - operating	62”	157.5 cm	73”	185.4 cm	73”	185.4 cm
Base width	31.25”	79.4 cm	31.25”	79.4 cm	31.25”	79.4 cm
Width w/stabilizer legs	74”	188.0 cm	74”	188.0 cm	74”	188.0 cm
Ground clearance	2.5”	6.4 cm	2.5”	6.4 cm	2.5”	6.4 cm
Load height (minimum)	6”	15.2 cm	6”	15.2 cm	6”	15.2 cm
Maximum height (forks down)	11’1”	3.4 m	16’6”	5.0 m	21’11”	6.7 m
Maximum height (forks reversed)	13’1”	4.0 m	18’6”	5.6 m	23’11”	7.3 m
Weight						
Net weight	255 lbs.	115.9 kg	327 lbs.	148.6 kg	372 lbs.	169.1 kg
Load Capacity						
Load capacity, 14” load center	650 lbs.	300 kg	650 lbs.	300 kg	650 lbs.	300 kg
Load capacity w/fork extensions	200 lbs.	90 kg	200 lbs.	90 kg	200 lbs.	90 kg
Fork Specifications						
Standard fork width	21.5”	54.6 cm	21.5”	54.6 cm	21.5”	54.6 cm
Standard fork length	28”	71.1 cm	28”	71.1 cm	28”	71.1 cm
Fork length w/extensions	42”	106.7 cm	42”	106.7 cm	42”	106.7 cm
Fork weight	32 lbs.	14.5 kg	32 lbs.	14.5 kg	32 lbs.	14.5 kg
Fork weight w/extensions	38 lbs.	17.3 kg	38 lbs.	17.3 kg	38 lbs.	17.3 kg

LOAD CAPACITY CHART

2100 Series Lift





OPERATOR POSITION
AND LOAD POSITIONING

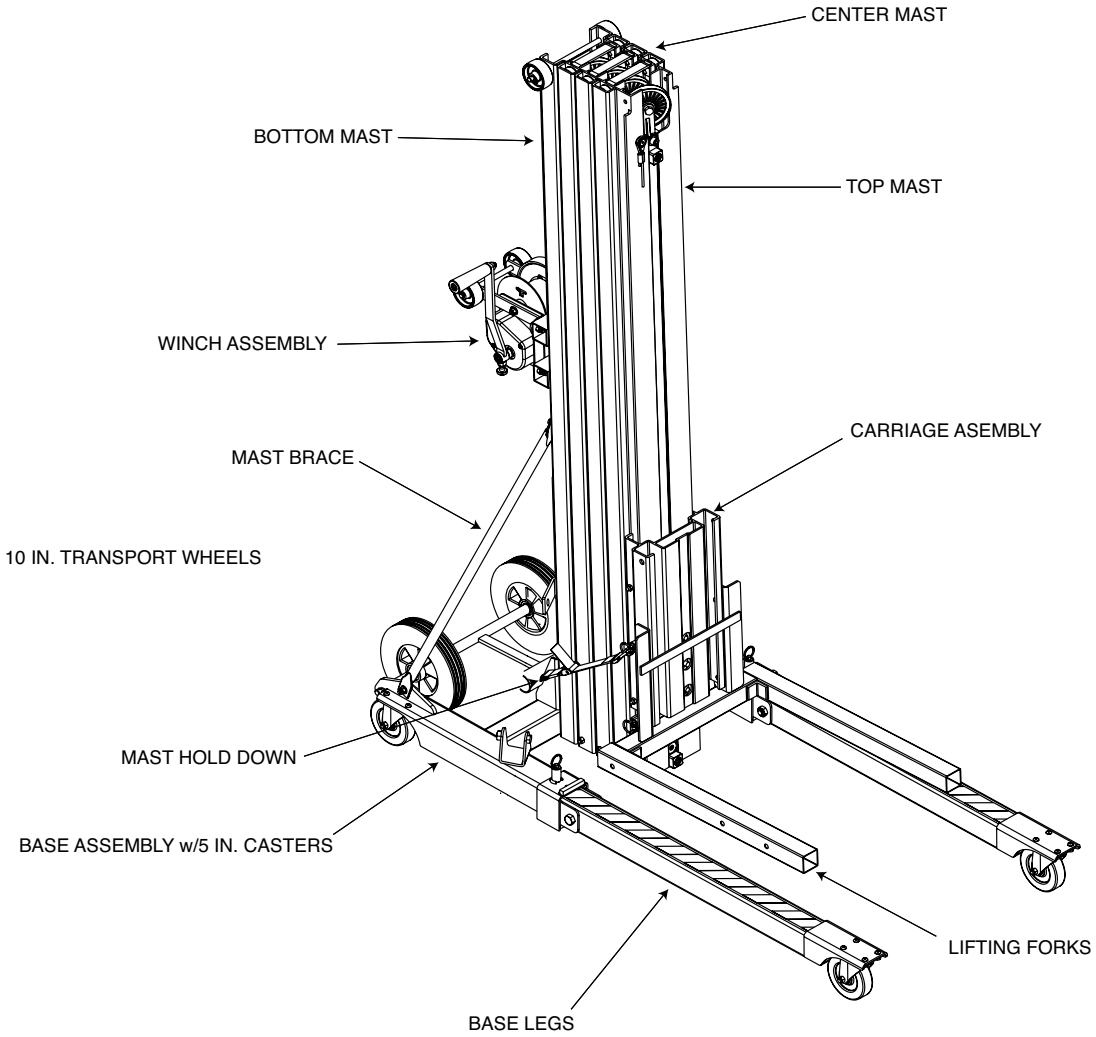
WARNING

The center of gravity of the load should always be centered between the fork arms and as far back towards the lift as possible.

WARNING

The center of gravity of the load should never extend past 22 in. on standard forks and 36 in. on extended forks.

LIFT DIAGRAM



MAINTENANCE INSTRUCTIONS

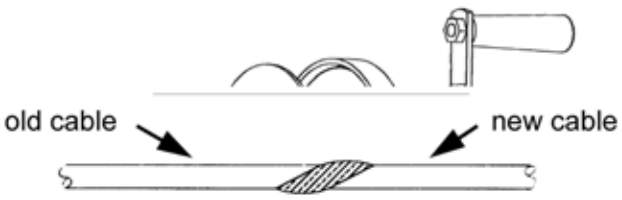
Before each use:
1. Inspect the cable for kinks and frays. If kinked or more than 3 wire strands are broken (small wires) do not use the lift until the cable has been replaced.
2. Make certain winch operates freely and cable is not tangled on the winch drum.
3. Check forks, legs, and base for bends.
4. Make sure caster wheels move freely.
5. Check stabilizer legs by lowering them into normal operating position to check locking mechanism and raising them to check for smooth transfer.

Recommended Inspection Every 6 Months:

1. Inspect cable for frays and kinks (see point 1 above)
2. Make certain winch works freely and that there are no loose or damaged parts.
3. Brake Inspections: Manually raise and support each movable mast section and carriage a minimum of 6" above their lowest position. Use a wooden block with a rope attached to the bottom end to quickly pull on rope to remove wooden block support from mast sections being tested. Brakes should engage before mast section reaches bottom stop. Use winch to crank up mast sections to release the safety brakes.

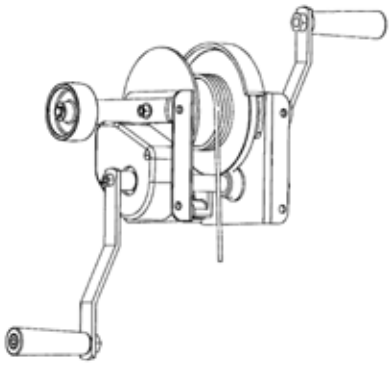
Winch Maintenance:
1. Refer to the winch assembly drawings in this Operators Manual.
2. Be sure that both winch covers are on the winch.
3. Check ratchet dog and brake ratchet for wear. If any wear is visible, replace the part. If not, lubricate the holes in both parts with a light oil.
4. Inspect gear teeth for wear. If there is no sign of visible wear, brush teeth with 50-wt. Motor oil.
5. For proper brake adjustment see "Troubleshooting" section on page 14.

Replacing the Cable:
1. Lower the carriage to engage the safety latch.
2. Remove the large gear cover from the winch.
3. Unbolt the cable from the top of the top mast.
4. Cut the looped end off the old cable assembly, using cable cutters or a cutting torch.
5. Fusion weld the plain end of the new cable to the cut end of the cable. Note: The fused joint must be straight and smooth or it will not pass through the pulley assemblies inside the unit.
6. Use the winch to pull the old cable from the winch side while feeding the new cable through the carriage until the apart approximately 2" from the weld on the new cable and fuse the end of the new cable to prevent unraveling.



Trim all loose strands before pulling cable through unit. Make sure that welded area is not too bulky to pass between the rope guards and pulley wheels.

7. Bolt the new cable (looped end) to the top of the top mast.
8. Unwind the cable from the load drum, loosen the set screw and remove the cable.
9. Thread the plain end of the cable through the drum into the roper keeper and tighten the set screw.
Note: The cable must be fed from the bottom of the winch between the winch and the mast sections, over the drum and into the slot on the wide plate.



10. Wind the slack cable tightly and evenly across the load drum.
11. Replace the winch covers.

General Maintenance:
1. Check both winch handles for wear or bends.
2. Inspect 3" roller wheels mounted on the winch and top mast for damage and smooth rotation.
3. Examine all bolts and nuts to be sure they are tight.
4. Legs, forks, braces and base should be dent free and damage free.
5. Check pulley covers for damage (indentations) which can restrict the rotation of the pulleys.
6. Make sure load line is seated in all pulleys and that pulley rotates without obstruction.

7. Check stabilizer legs by lowering them into normal operating position to check locking mechanism and raising them to check for smooth transfer.
8. Check all roller wheels for free rotation.
9. Inspect masts and carriage hold-down device
10. Raise mast sections to inspect for free, smooth sliding action. Make sure wire slideways are free of dust and oxidation and spray a light coat of silicone lubrication in slideways.
11. Make sure caster wheels and 10" transport wheels rotate freely and are undamaged.
12. Inspect leg latch mechanism and apply light grease to spring loaded plunger.
13. Check to be sure that all three mast covers are attached to the lift.
14. Check the safety brake operation.

WARNING
Replace all worn or damaged parts only with Sumner parts.

WARNING
Modifying the lift in any way can cause injury or death!

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Masts not rising in succession	Overloading Check to make sure that the load does not exceed the 650 lb/300 kilo load limit	Remove excess weight
	Load may not be centered properly on the forks	Check load capacity chart and reposition load
	Mast roller not rotating. Inspect tracks for debris, grease, or any foreign obstruction	Clean mast sections with a degreaser or brake cleaner and lubricate with a silicon lubricant
	Cable pulley wheel not rotating	If there is any damage to the pulley wheel, or if the wheel doesn't rotate smoothly, change wheel. If the rope guard shows any damage, replace it
	Inspect cable for damage	If cable is kinked, worn or frayed, replace cable
	Mast roller tracks are clean and mast roller wheels are not rotating	If wheels and mounting hardware are not damaged, clean wheels and lubricate shoulder bolt. If the wheels do not rotate freely, replace roller wheel assembly.
	Inspect mast sections for damage	Replace damaged mast section
	Mast sections will not release or transfer down	Check the safety brake. The brake will not release unless the unit is vertical.
If none of these solutions seem to fix the problem...		Call distributor's Customer Service Department

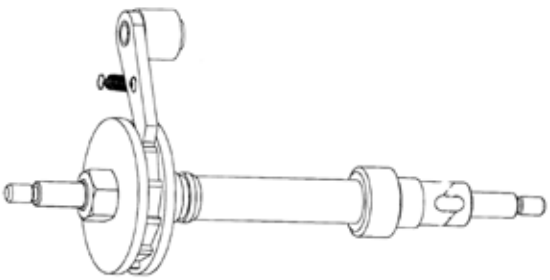
NOTE: Mast sections may rise out of succession when load is near maximum capacity. If this occurs, the masts will correct themselves during continued use or when the load is removed from the forks. Movement of the mast sections will not affect the position of the forks. The carriage must elevate to the top of the top mast section before any mast sections begin to rise, and it should lower last.

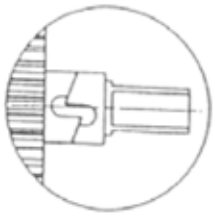
TROUBLESHOOTING

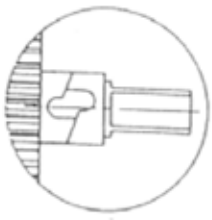
PROBLEM	CAUSE	SOLUTION
Load is easing down slowly	The brake on the winch or ratchet dog are not installed correctly	When load is in position, crank winch handles forward a half turn towards the lift to set the brake.
You have serviced the winch and now the brake does not at all.	The brake ratchet or ratchet dog are not work installed correctly	Check the winch drawing in this manual and correct the installation problem.
The winch is hard to crank down.	The brake is over-engaged	See Illustration and instructions below.
	The brake will not disengage	See Illustration and instructions below.
	The idler gear is displaced	Make sure that the idler rotates freely and the teeth on the idler gear are now worn.
Safety Brake will not release	Unit may not be in the vertical position.	Place unit in vertical position and wind mast sections up to full extension.
Unit is vertical and brakes will not release	Mast section or carriage is too close to mast stop and does not have enough clearance between mast stops for brakes to release	Use release hook to manually disengage safety brakes.
Units is being serviced or unit is not in vertical position	Brakes will engage if unit is horizontal or tilted off center	Use release hook to disengage brakes.
If none of these solutions seem to fix the problem...		Call Distributor's Customer Service Department

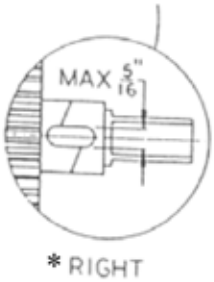
NOTE: For proper adjustments on the 2100 Lift winch, the pinion and drive shaft must be in the positions shown when the lock nut is tightened against the O.D. brake disc to 15 ft. lbs.

*Correct alignment is only visible when load is applied to lift.









MAINTENANCE INSTRUCTIONS

MAINTENANCE SCHEDULE

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 AND CLEANING COMPONENTS AND 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.

MAINTENANCE RECORD

Date		By

TRAINING RECORD

Date		By

WARRANTY

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

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 will receive the manufacturer's warranty.

PARTS AND SERVICE
Customer relations and product support are important aspects of Mortech Manufacturing.
For assistance with this or any of our fine products please contact us below:
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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.

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