Liftomatic Material Handling, Inc.
700 Dartmouth Lane
Buffalo Grove, IL 60089

Phone 847 325-2930
Fax 847 325-2959
Toll Free 800 837-6540

OPERATING & MAINTENANCE INFORMATION FOR THE LIFTOMATIC LOM "4/6/8" SERIES DRUM HANDLING ATTACHMENT

Operating Instructions

To operate the Liftomatic LOM '4/6/8' unit(s), simply slide the forks of the lift-truck into the fork pockets of the attachment. (If the operator is using a carriage mounted unit, remove the forks of the lift-truck, and slide the unit into place on the carriage—be sure to lock the unit on the carriage properly with the lower carriage hook assembly and bolts). For hoist operated units, connect lifting tackle to all four eyelets on the '4/6/8' drum unit, and connect properly to the overhead hoist-lifting hook. Liftomatic recommends using the safety lock spring-loaded hoist-lifting hook to eliminate any lifting tackle movement. For all fork-mounted units (model L4F, S6F, L8FCB, etc.), the safety chain(s) should be attached to the lift-truck prior to using the equipment. If units are equipped with Liftomatic's exclusive Quick-Claw® safety restraint system, slide your forks into the fork pockets and pick the unit off the ground to secure the attachment to the lift-truck. Contact Liftomatic at PH: 800-837-6540 should you experience any difficulties connecting your drum handler to the lifting device.

Engaging the Drums: To operate the LOM '4/6/8' series, raise the unit slightly off the ground (one or two inches) and approach a load of drums. With the forklift and drum handler centered directly behind four drums, lift the LOM '4/6/8' up so the cone (or "nose" portion) of the attachment is higher than the drums (**for fork-mount units, be sure the forks of the fork-lift are parallel with the top of the drums—this will simplify the clamping process). Center the cone(s) of the unit directly over the diamond shaped opening between the four drums, and slowly lower the unit. Allow the unit to COMPLETELY SETTLE down into the center of the drums, then slowly lift the unit straight up (do NOT tilt the carriage back). Approximately six to eight inches of lift will engage all four, six, or eight drums, and allow the operator to transport them wherever necessary. (**Note, keep the load of drums as low to the ground as possible during transport. Liftomatic recommends transporting loads no higher than six inches off the ground). Should less than the desired number of drums be picked up, lower the unit until all drums are again on the ground, and repeat the steps mentioned above. **Note that drums will need to be approximately the same height to lift all simultaneously.

Disengaging the Drums: As the drums arrive at their new destination, the operator should slowly lower the drums to the ground, and once again allow the unit to COMPLETELY SETTLE all the way down into the center of the drums. Once the unit settles, the gearing system inside the unit will automatically release the drums by drawing the jaws back into their 'resting' position within the jaw housings. The operator can then lift the unit up and completely out of the group of

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drums. **Operators will need to be sure they have lifted the unit cone completely out of the drums prior to moving the unit (and forklift) to its next destination.

Although it is recommended that the drums be relatively well aligned for the Liftomatic '4/6/8' equipment to engage properly--a three-inch separation is acceptable, and simple manipulation can generally reposition drums that are separated too far for regular pick up. Should this condition arise, simply allow the cone of the unit to settle into the drums, and before raising the unit, gently push the drums together by moving the forklift forward. Lift up again as mentioned in the "engaging drums" section.

When handling removable lid drums, pre-position the locking ring "bolt" or lever lock handle away from the diamond shape opening between the drums. This will offer a clear path and clamping area for each of the LOM '4' jaw housings, as well as eliminate any potential damage to the locking ring, bolt, or lever lock system.

Maintenance Instructions

1. On a daily basis, each operator should check the Liftomatic LOM '4/6/8' attachment to verify all fasteners (cotter pins, snap rings, hair pin clips, etc.) are in place. Also, a spot check to be sure the unit does not have any missing or broken parts (pins, springs, bolts, etc.) should be performed. This can be done by spending a minute or two to visually check each clamp, inspecting the jaws, as well as moving each jaw housing, and the entire "cone" back and forth to be sure that all parts move properly and spring back into resting position without difficulty. Liftomatic also recommends engaging four, six, or eight drums of water (or non-hazardous material) with the unit several times to test it prior to beginning each shift.

2. Liftomatic attachments are completely mechanical, and require LUBRICATION ON A WEEKLY BASIS. Standard WD-40 or light grade oil are recommended. Spray down each of the four head assemblies, specifically the jaws, links, and connecting pins inside the four jaw housings (P/N 4043). Light grade oil should also be drizzled through the oil hole cover (#6185 on the parts list) to lubricate the ratchet/pawl gearing system.

   To ensure that inner components do not collect large amounts of dirt, dust, or chemical particles, the clamping heads should be removed at least once a quarter (more often in heavy dust/dirt environments), and soaked/scrubbed in a non-acidic based cleaning solution. After cleaning, the unit should be thoroughly lubricated per above directions.

3. All LOM '4/6/8' units (which come standard with spring loaded arm entering guides, and unit "cones") should be inspected prior to each shift to ensure all springs are in place and have adequate tension. If any or all of the springs are weak, missing, etc. the unit should be taken out of service, and the parts should be replaced immediately.

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4. On a quarterly rotating basis, Liftomatic drum handling attachments should be taken out of service for thorough analysis. This will entail removing each of the jaw clamps (Part Number 4043) and the block/pawl/spider assemblies (#4041 & #4042 on enclosed parts list) from the frame, and completely disassembling each. All parts should be inspected for cracks, breaks, elongating holes, pin and spring wear, as well as missing parts. Any "questionable" parts (as it relates to their integrity) should be replaced as soon as possible.

Liftomatic drum handling attachments do require periodic preventative maintenance. The above schedule should be followed as indicated for the equipment to perform at its fullest potential. A preventative maintenance program will allow your Liftomatic drum handling attachment(s) to lead a long and productive life, ensuring high levels of safety and productivity in all of your daily drum handling routines. Should the using locations of Liftomatic's equipment not have the time or manpower to service the "Parrot-Beak®" products on a regular basis, please contact Liftomatic about enrolling in our "*Service-Plus*™" program where we handle all the maintenance for you. We welcome your call and look forward to keeping your "***Parrot-Beak***®" drum handling equipment in top-notch condition. PH: 800-837-6540 FX: 847-325-2959. Or visit us on the web: www.liftomatic.com

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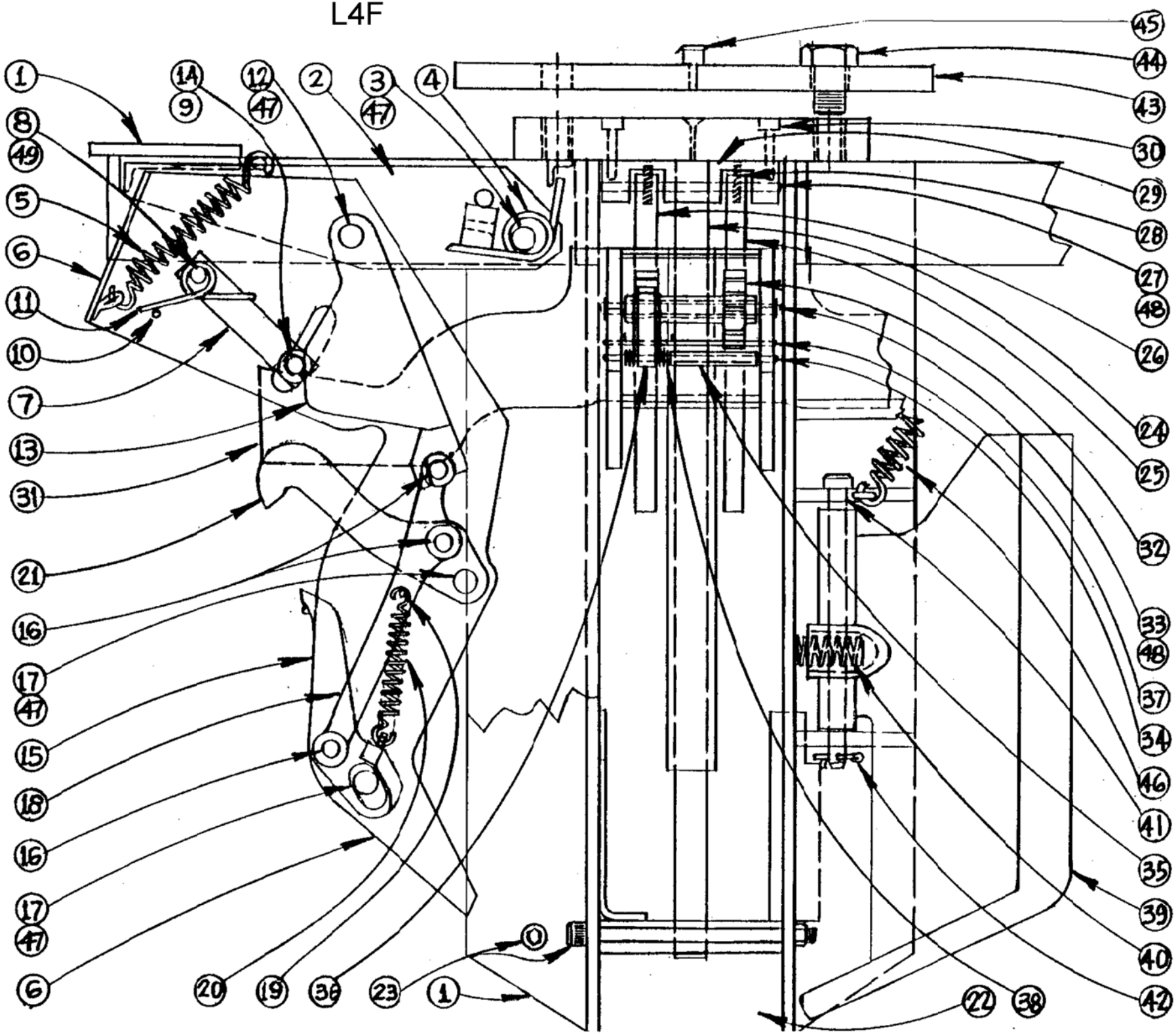
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DISASSEMBLY PROCEDURE FOR LIFTOMATIC SERIES "4" "6" & "8" DRUM HANDLERS

Initial Preparations: To facilitate this procedure, the following prerequisites need to be followed prior to any disassembly.

1. Using a lift truck (or overhead hoist should the client be using a crane/boom mounted unit), position the attachment at eye level (approximately five feet off the ground).

2. Using Liftomatic's indexing tool, actuate the jaw mechanisms so that the unit is in the "jaws out" or "engaged" position.**

   **Each pair of jaws (P/N #7009 & #7012) have two positions, a resting position where they lay inside of the jaw housings (P/N #2122) making no contact with the drums, and the "engaged position" where the jaws lay outside of the jaw housing (upper and lower jaws touching at the tips).

I. Removing the Head Frame (or "Cone") Assembly [Complete part #4040]

A. Unhook the four lateral centering springs (p/n #6024) at the lower end where the spring attaches to the cone.
B. With the '4/6/8' drum unit still on the forklift, lower it to rest on the floor or appropriate work area, etc.
C. Loosen and remove the four top-plate bolts (p/n #6111), as well as the top plate.
D. Raise the forks (or hoist) back up to separate the fork/crane-mounted carrier from the cone portion. The cone should remain resting on the floor, or bench.

II. Removing the Four Clamping Mechanisms [Assembly part #4043]

A. Release tension off the cantilever spring (p/n #6040) by inserting a 5/16" rod into the available hole provided on the spring tensioning block. Use a 5/8" open-end wrench to help release the block and rod once the spring tension is removed.
B. Disengage fastener from pin (p/n #16035-1) on one side and tap pin out. **Note that the jaws must be in the "engaged" or "out" position to facilitate this step.
C. Once the pin from step 'B' is removed, the #6040 spring will fall out of the unit, and the housing can be taken out of the head frame. Follow this step for all four of the clamping mechanisms (p/n 4043).

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III. Disassembly of a Complete Clamping Mechanism (Part Number #4043)

**Note that tension will remain between the jaw housing, and large cantilever (p/n 2116). The spring that tensions both components should be removed (p/n 6042) prior to complete disassembly of this part.

A. Four pins (p/n 14038-1, 14039-1, and two #16033-1) hold the inner "guts" of this assembly together. To completely disassemble, remove one end of the retaining rings (or cotter pins) and gently tap out the pin(s). Isolation of particular problems is a quick way to troubleshoot through the unit, but Liftomatic recommends inspection of each pin and part prior to reassembling.

IV. Removing the Spider Assembly [Part Number #4042]

A. Note that this step in the disassembly procedure is accomplished most efficiently by turning the unit upside down with the pointed end of the "cone" facing upwards. It is more stable, thus making it easier to work on.
B. By hand (grab at two opposite ends of the spider arms) and actuate the spider gearing system by gently pulling upward on the spider. Repeat several times to familiarize yourself with the engaging and disengaging system of the spider. The spider will "click" when properly in the "engaged" and "resting" positions.

C. Remove the spacer block fasteners (part number #6112 bolt/nut) with a socket or adjustable wrench. There will be eight bolts/nuts on the long frame units (L4F or L8FCB) and four bolts on the short frame units (S4F or S6F-CB).
D. Slide out the spacer block(s). Note that the blocks are made to fit tight, thus a hammer may be needed to tap them out. Use of a rubber end hammer or mallet is strongly recommended to avoid damaging the blocks.
E. With the spacer block(s) removed, pull up on the arms of the spider as in step "B" above. The spider will release without the spacer block in place, and can be taken completely out of the unit.

V. Removing the Ratchet-Cam (Part Number #7010)

A. Release tension off the cam stop pawl spring (p/n 6038) by removing the tensioning pin (p/n 14041). Without tension, pin #14035 can also be removed easily.
B. Remove fasteners and pin (p/n 14034-1) by carefully tapping it out. Note this pin uses teflon bushings and or fittings that should be preserved for reuse unless spare fittings are on hand.

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**Trouble shooting these components should entail a visual inspection of the ratchet cam's "teeth," the retaining slot on the cam stop pawl (#7011), and #6038 spring. These are integral parts of the entire ratcheting system and should be checked carefully and on a regular basis.

VI. Removing the Block-Pawl and Guide Shaft Assembly (Part Number 4041)

A. Unfasten the four socket head cap screws (p/n #6105). Once these four screws are removed, the entire block-pawl assembly will slide out of the frame. **Note that the spider assembly will need to be removed prior to removing this assembly.
B. Only one pin (p/n 14034-1) holds all the block/pawl components together. By removing the cotter pin (or snap ring) from this pin, all of the individual parts can be removed. **Note this hole and pin also utilize a teflon bushing or fitting. Use care when removing this pin, and or be sure to have additional bushings on hand. Further, each pawl (#7013 and #7014) has a small spring located underneath it's lower side (p/n #6036). This spring should be checked for tension and replaced regularly.

For additional assistance or troubleshooting techniques, please contact Liftomatic at PH: 800-837-6540. FX: 847-325-2959. E-Mail to: **info@liftomatic.com** or visit us on the web: **www.liftomatic.com.**

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POINTERS FOR PROPER MAINTENANCE AND OPERATION OF LIFTOMATIC "*Parrot-Beak*®" ATTACHMENTS

Similar to any mechanical piece of equipment, Liftomatic drum handling attachments will require periodic maintenance. The following "pointers" should be followed on a regular basis (as indicated) for the equipment to perform at its fullest potential.

** On a daily basis, each operator should check his/her drum-handling device to be sure all fasteners (cotter pins, snap rings, hair pin clips, etc.) are in place. Also, a spot check should be made to be sure the unit is not missing any other pins or springs, or if any of the components have broken. This can be accomplished by rotating each head in all directions, and depressing the jaws downward to see that all parts move properly and spring back into resting position without difficulty. All LOM '4/6/8' units should be checked visually (previous points), and tested on four, six, or eight drums of water (or non-hazardous material). Gently lift and lower the unit in and out of the test drums to verify the jaws engage and disengage smoothly.

** All LOM '4/6/8' units (which come standard with spring loaded arm entering guides, and unit "cones") should be inspected prior to each shift to ensure all springs are in place and have adequate tension. If any or all of the springs are weak, missing, etc. the unit should be taken out of service, and the parts should be replaced immediately.

** Liftomatic attachments are completely mechanical, and require LUBRICATION ON A WEEKLY BASIS. Standard WD-40 or light grade oil is recommended. Simply spray down the entire jaw assemblies, specifically the jaws, links, and connecting pins inside the four jaw housings (p/n #4043). Additional lubrication should be done in high volume or heavy usage areas. Further, a light grade oil should be poured into the oil hole cover (#6185 on parts list) and allowed to drizzle through the ratchet/pawl gearing system of the unit.

** To ensure that inner components do not get "gunked up" with dirt, dust, chemical particles, etc., the jaw housings, and pawl/block/spider assemblies should be removed at least once a quarter (more often in heavy dust/dirt environments), and soaked/scrubbed in a non-acidic based cleaning solution. After cleaning, the unit should be thoroughly lubricated.

** On a quarterly rotating basis, Liftomatic drum handling attachments should be taken out of service and thoroughly inspected for part wear/breakage. This will entail removing the jaw housings and assemblies from the frame, and complete disassembly. Each individual part should be inspected for welding cracks or breaks, missing or broken parts, elongating holes (in the links, housings, framework, etc.), as well as pin and/or spring wear. Liftomatic can provide this service to your facilities should you wish to enroll in our "***Service Plus***™" maintenance program.

Should these items be followed on a regular basis, your Liftomatic drum handling attachments should lead a long and productive lifetime. Please consult your nearest Liftomatic office and account manager for further assistance (PH: 800-837-6540) or email: **info@liftomatic.com**.