



LiftPlus®

Owner's Manual

Important Startup Instructions

1. Read the Owners Manual thoroughly before first use.
2. Charge the LiftPlus for six hours before using it for the first time. If the LiftPlus battery completely discharges, recharging will take 72 hours. See page 5 for battery and charging information.
3. The lead screw requires regular lubrication for proper working condition. See page 13 for maintenance schedule.

Serial #: _____

Date of Purchase: _____

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Warranty

Magliner products have a one (1) year warranty unless otherwise specified from the date of purchase against defects in workmanship or material. Any part or component, except items covered by warranties of other manufacturers, returned to the factory or service center freight prepaid by the owner, found upon examination by Magline, Inc. to be defective or the result of improper workmanship by the factory will be repaired or replaced without charge and returned to the owner freight prepaid by Magline, Inc.

Alterations of Magliner products void any warranty or liability on the part of Magline, Inc.

Magline, Inc. does not guarantee product capacity if alterations are made.

Thank you for purchasing the Magliner LiftPlus®! If you have any questions regarding your new Magliner product please call our customer service department at 1-800-MAGLINE (624-5463) or (989) 512-1000. Please read this manual thoroughly to become familiar with the safe operation and maintenance of your new LiftPlus system.

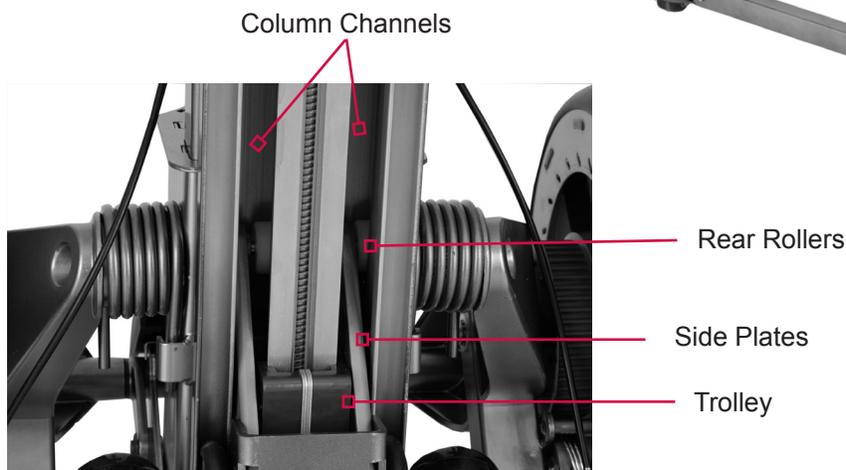
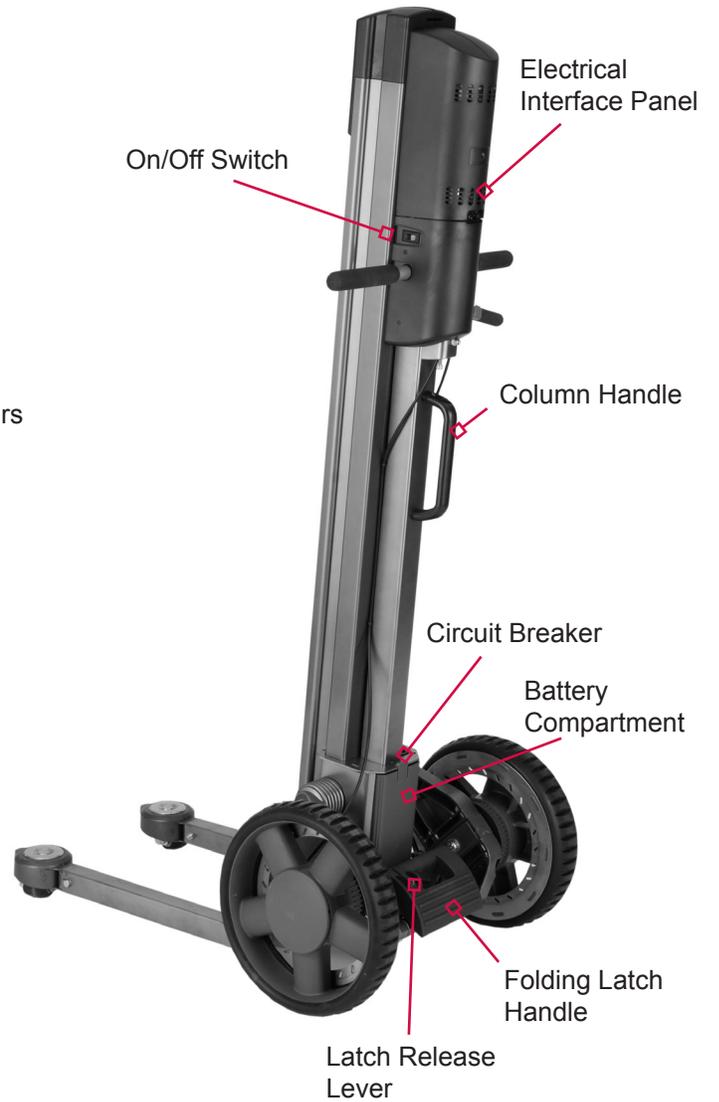
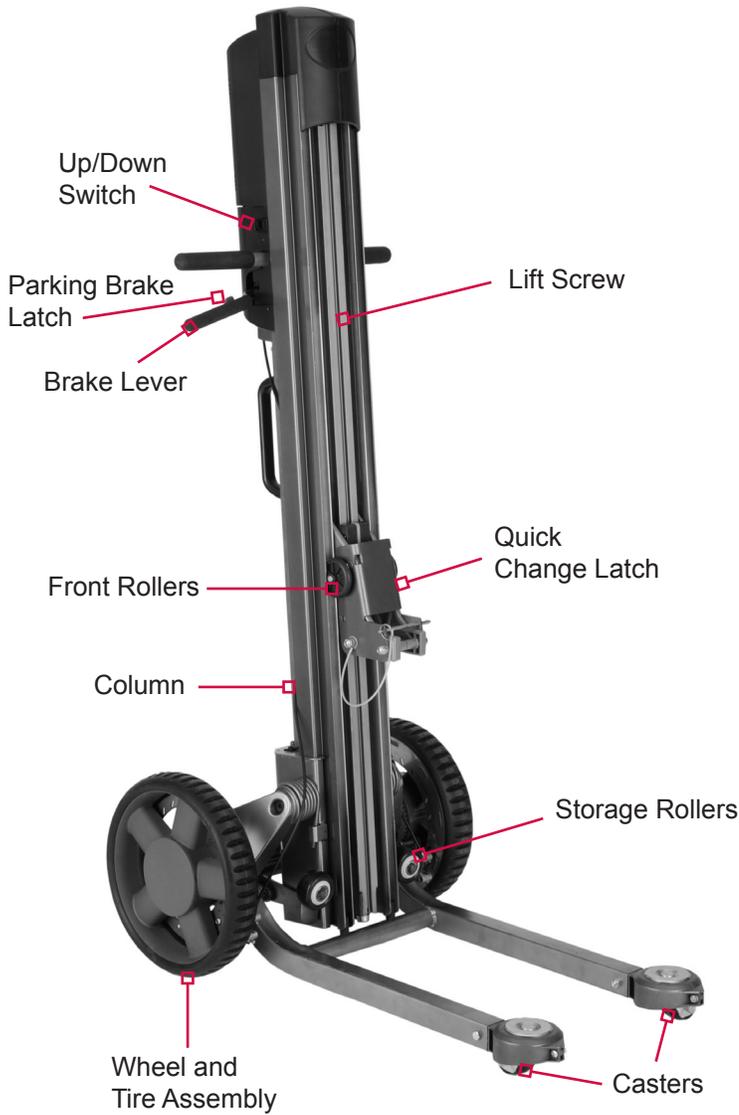
General Safety Instructions

- Inspect before each use for damaged and loose fasteners/connections.
- Inspect the unit for cracks, wear or damage. Replace damaged components immediately.
- Keep hands and feet away from all moving parts.
- Never stand or sit on the work bench.
- Do not use this product to lift or to transport people.
- Never use as a step ladder.
- Never use on a moving vehicle.
- Never operate when any of the housing components have been removed.
- Keep all loose items away from the lift screw, as they may become entangled during use.
- Never use or store in wet environments or get any of the unit wet. The unit may be used indoors or outside, but always use caution to keep the unit from getting wet; dry as soon as possible.
- Never exceed 350 lbs. capacity. Damage to the lift and personal injury could result.
- Never raise or lower the work bench unless the unit is unfolded and the folding latch is locked.
- Use extreme care when raising or lowering in close proximity to other objects. Hands and other items may get pinched or injured as the moving attachment passes non-moving objects.
- Never place a load's center of gravity over the vise or work bench nose; always keep the load center of gravity centered on the work bench.
- Never tilt the unit back with a raised load.
- Always check that the brakes are working correctly before operating with a load.
- Never walk away from the unit when the folding latch is in an unlocked position.
- Always keep the power switch off when the unit is folded.
- Never go over a curb or any other multi-level transition with a raised load.
- Do not operate when the battery charger is plugged in.
- Never attempt to open the battery. If the battery is cracked or leaking, do not recharge it - it must be replaced.
- Always use a Magliner battery charger to charge your battery.

Startup Instructions

1. Read the Owners Manual thoroughly before first use.
2. Charge the LiftPlus for six hours before using it for the first time. If the LiftPlus battery completely discharges, recharging will take 72 hours. See page 5 for battery and charging information.
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LiftPlus Unit



Battery

The LiftPlus® must be charged for six hours before using it the first time. If the LiftPlus battery completely discharges, recharging will take 72 hours. When not in use, it is recommended to keep the LiftPlus plugged in to maintain a maximum charge.

General Battery Warnings

- Do not connect accessories to the battery; this will cause premature battery failure.
- Unauthorized modification could create a hazardous condition and result in serious injury.
- Batteries contain sulfuric acid, which can burn eyes, skin, clothes, etc. Use caution! Always wear gloves when working with batteries. If contact occurs, flush immediately with water and get medical attention. Protect surfaces from battery damage by placing batteries on rubber or plastic surfaces.
- To prevent electrical shock, do not touch non-insulated parts of the charger output connectors, battery connectors or battery terminals. Do not use connectors that are cracked, corroded, or do not make adequate electrical contact. Use of damaged or defective connectors could result in fire or electrical shock.
- Keep sparks, flame and smoking materials away from batteries.
- Batteries can supply a large amount of current. Do not wear jewelry or watches when working on the batteries as an accidental shorting could occur and cause severe burning.

Battery Life

The LiftPlus is powered by one 12V battery.* The lift motor draws current from the battery based on the amount of effort required to lift the load. A fully-charged battery will power 125 - 150 lift cycles with a median load; however, extreme temperature ranges and extreme loads can have an effect on the amount of power available during one charging cycle.

General Charging Warnings

- Use only the Magliner 15V charger designated for use with LiftPlus. Charge using a grounded 120V electrical outlet.
- Do not operate the unit when the battery charger is plugged in.
- Do not expose charger to rain or snow.
- To prevent risk of fire, use the charger only in a dry, well ventilated room without flammable fluids or explosive gases.
- Make sure the cord is located such that it will not be a trip hazard or otherwise subject to damage or stress.
- Do not operate a charger with a damaged cord or plug – replace immediately.
- To reduce risk of electrical shock, unplug the charging unit from the AC power supply source before attempting any maintenance or cleaning.
- Always use battery chargers supplied by Magline, Inc. Other battery charging units could cause damage to your batteries or personal injury.
- To avoid damage to battery charger connectors and cords, disconnect by grasping the plug body and pulling it straight out of the outlet or receptacle. DO NOT pull on the cord. DO NOT twist, rock, or pull the connector sideways.
- The metal tip on the end of the plug may be hot when it is first unplugged.

*Battery has a warranty of six (6) months

Using the LiftPlus

NOTE: The LiftPlus must be unfolded and the folding latch locked before the quick change latch is lifted or lowered. Failure to do so can damage the unit.

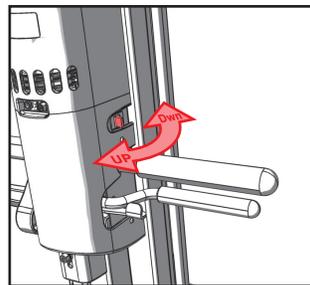
Loading the LiftPlus

1. Do not exceed the load capacity of 350 lbs. (120 lbs. on high-speed models).
2. Set the parking brake before loading (see page 10).
3. Be sure the load center of gravity is located as close as possible to the center or rear of the attachment.



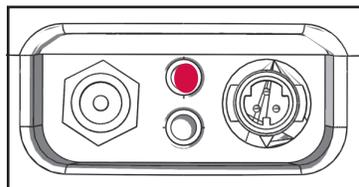
Lift/Lower Operation

1. Move the power switch to the On position.
2. To lift the load, pull the lift actuation switch toward the back of the unit.
3. To lower the load, press the lift actuation switch toward the front of the unit.



Lift Overload

1. The overload protection circuit prevents lifting motion when it senses an excessive load. When the circuit is triggered, a red light illuminates on the back of the LiftPlus.
2. To reset the overload circuit, lower the platform all the way to the bottom. The red light will turn off when lifting function has been restored.



Circuit Breaker

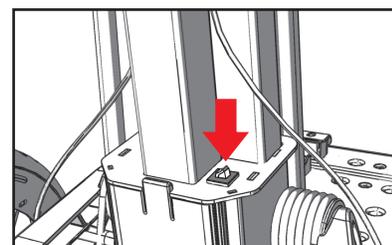
1. When the circuit breaker trips, the button will pop-up and show a white face.
2. Reset the circuit breaker by pressing the button down until you hear a click. It will not reset for the first few seconds after tripping.
3. If the circuit breaker trips repeatedly, contact Magline.



Normal



Tripped



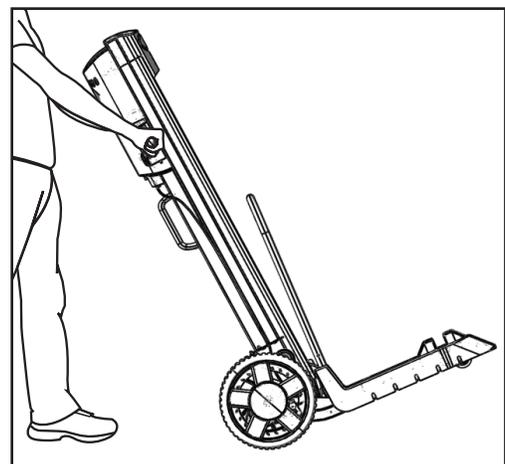
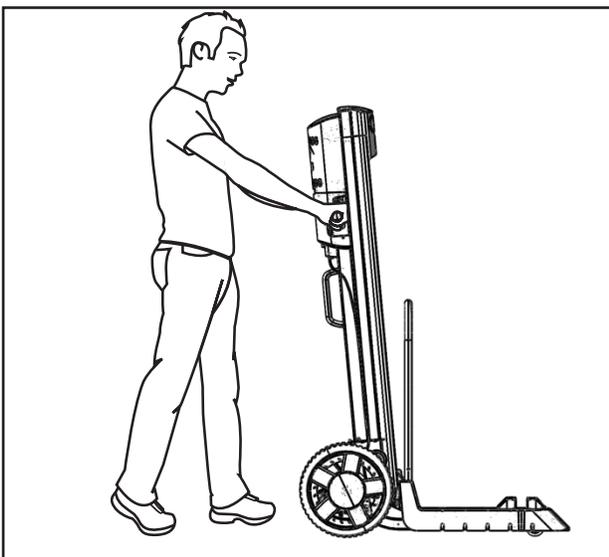
Changing Attachments

1. Lift or lower the quick change latch to comfortable height.
2. Pull the detent pin out of the quick change latch (located at the bottom front of the latch).
3. Angle the attachment slightly upward from center. Position the lift attachment notches at the top of the quick change latch. Carefully push the attachment down and toward the quick change latch so that the attachment is flush with the front of the latch.
4. Push the detent pin so that it contains both faces of the attachment inside both faces of the quick change latch. Push through fully so that the pin does not back out on its own.
5. Reverse these steps to remove the attachment from the quick change latch.



Moving with the LiftPlus

1. Always stay behind the unit when moving it. Use both hands on the handlebars.
2. Never turn the unit quickly - this can cause the load to slide off the lift attachment.
3. To use the unit in two-wheel mode, apply the brake and gently pull back on the handlebars. When you are ready to proceed, release the brake. **NOTE:** Never initiate two-wheel mode with a raised load!



Folding the Unit

NOTE: Never walk away from the unit when the folding latch is in an unlocked position. Never store the unit with the power switch left “on.” If the lift actuation switch is accidentally pressed while the unit is folded, it can damage the unit.

Folding the Unit

1. Remove any load and the lift attachment from the unit.
2. Make sure that the bottom of the quick change latch is at least 12” above the ground.
3. Turn off the unit.
4. Set and lock the brakes.
5. Grasp the folding latch handle and rotate it slightly forward to remove some tension on the red latch. Press the red latch release lever up with your thumb.
6. Allow the folding latch handle to spring upwards.
7. Pull up on the folding latch handle with one hand and grasp the column handle with the other hand to guide the column down. The column will slowly fall into the folded position.
8. Push the column as far down as possible.
9. Push down on the folding latch handle until the folding latch reaches the bottom of its travel.
10. Rotate the folding latch handle downward into its locked position. There will be a loud click as the latch release lever engages. **Ensure the folding latch handle is properly locked before moving, operating or loading. When properly locked, the folding latch handle cannot be lifted without releasing the red latch release lever.**
11. Tug the folding latch handle towards you to be sure that it is properly locked (see next page for photos).



Folding Latch Handle

Latch Release Lever



Unfolding the Unit

NOTE: A folded unit can be stood up on end for storage, but before you unfold it, you must lay it flat on the ground.

Unfolding the Unit

1. Set and lock the brakes.
2. Grasp the folding latch handle and rotate it slightly forward to remove some tension on the red latch. Press the red latch release lever up with your thumb.
3. Allow the folding latch handle to rotate toward you and then pull it slightly outward.
4. Squat down beside the unit and grasp the column handle.
5. Pull up on the column handle and rotate the column as far back as possible.
6. Push down on the folding latch handle until the folding latch reaches the bottom of its travel.
7. Rotate the folding latch handle downward into its locked position. There will be a loud click as the latch release lever engages. **Ensure the folding latch handle is properly locked before moving, operating or loading. When properly locked, the folding latch handle cannot be lifted without releasing the red latch release lever.**
8. To ensure the unit is locked, pull upward on the folding latch handle (it should not move). Push forward on the column handle; the column should not rotate forward at all.

Be sure that the folding latch is completely locked before moving away from the unit.



Locked Properly



Not Locked Properly



Not Locked Properly

Brakes

Brake Operation

1. To engage the brakes, squeeze the brake lever toward the handlebar.
2. To lock the brakes, squeeze the brake lever toward the handlebar and press the red parking brake latch forward with your thumb.
3. To disengage the brakes, squeeze the brake lever to release the red latch.

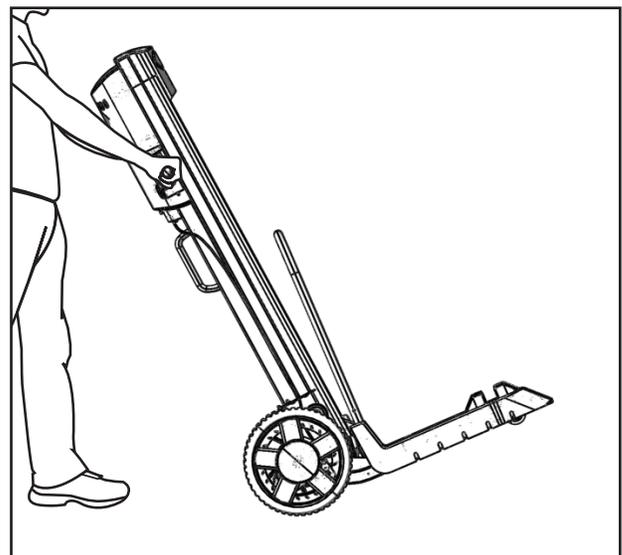
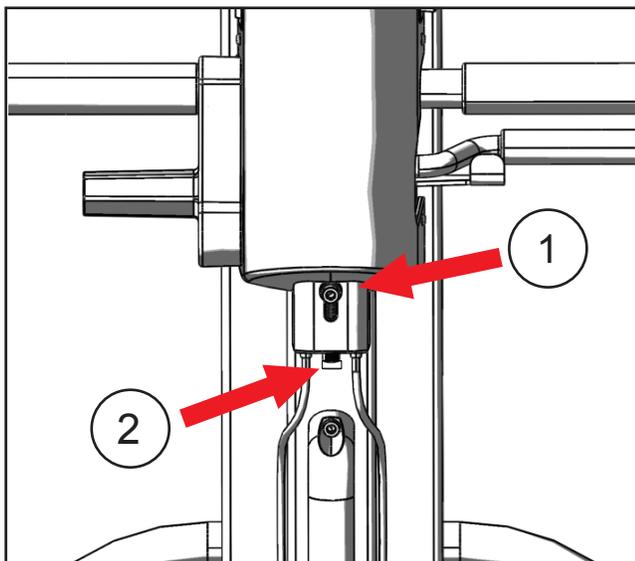
Adjusting the Brakes

The brakes are adjusted at the factory, but should still be checked before every use. If the braking power is insufficient, the brakes should be adjusted. Perform the adjustment on a dry, non-slippery surface.

There are two forms of adjustment. One adjusts the brake cable tension and the other adjusts the set of brake calipers. Adjusting the brake cable tension is usually sufficient. If you are unable to achieve sufficient braking force by tightening the cable or if one wheel brakes more effectively than the other, you may need to adjust the brake caliper.

Adjusting the Brake Cable Tension

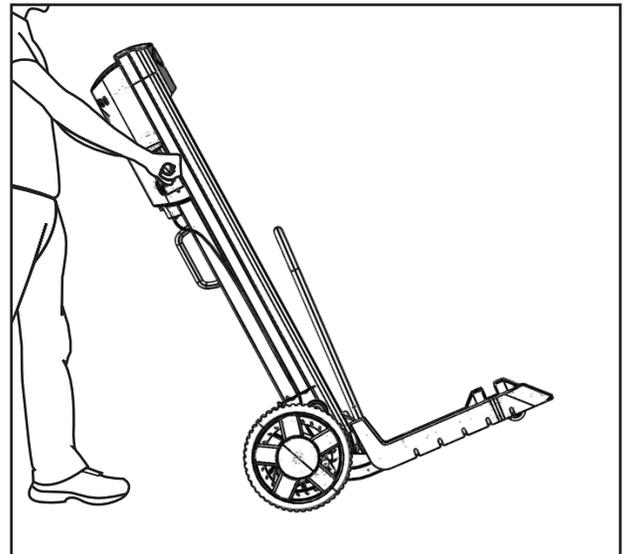
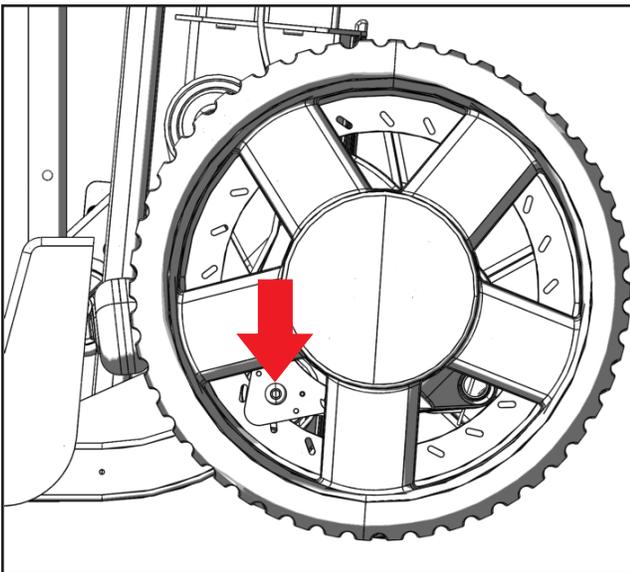
1. Loosen the screw (1) that locks the brake cable mount using a 3/16" Allen wrench.
2. Adjust the tension in the cables by turning the brake adjustment screw (2) that protrudes from the bottom of the brake cable mount using a 3/16" Allen wrench.
3. After adjusting the brake adjustment screw, retighten the locking screw.
4. To test the tension, squeeze the brake lever tightly, tilt the unit back about 35°, and push the unit forward along the ground. The combined action should make the wheels skid on the ground.
5. If the wheels spin, the brakes are not adjusted correctly. If the cable is too tight, it may engage the brakes when you are not pulling on the brake lever.



Adjusting the Brake Calipers

The brake calipers can be adjusted using a 3/16" hex screwdriver. The brake caliper screws are accessed between the wheel spokes on either side.

1. Adjust the brake cable mount to its highest position as described in the preceding section (Adjusting the Brake Cable Tension).
2. Turn the brake caliper screw clockwise as far as it will go without excessive force.
3. Back both screws off one half turn in the opposite direction.
4. To test the caliper adjustment, push the unit around while not engaging the brakes. If you feel that either brake is dragging too much, try backing out the screw another 1/8 of a turn at a time until the unit rolls freely. **Note:** It is normal for the brakes to rub slightly, but they should not drag enough to interfere with easy rolling of the unit.
5. Perform the full brake cable tension adjustment as described in the previous section.

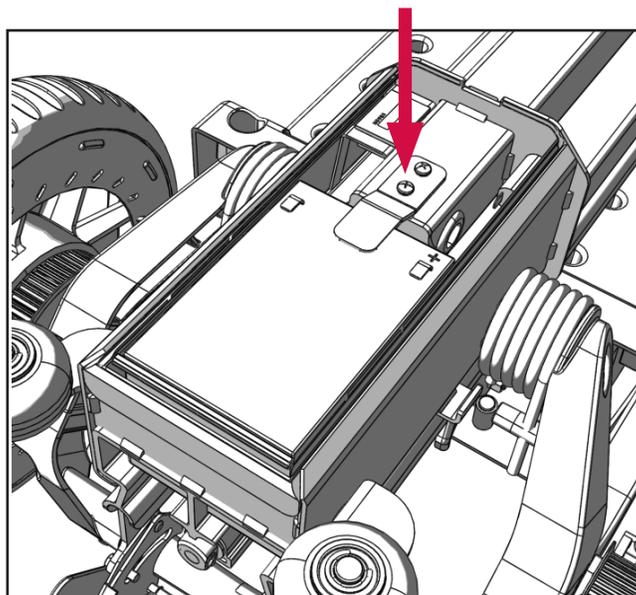


Replacing the Battery

If the unit appears sluggish even after charging or if the battery does not hold its charge for very long, the battery may need to be replaced. Use only Magliner replacement parts. The battery has a warranty of six (6) months.

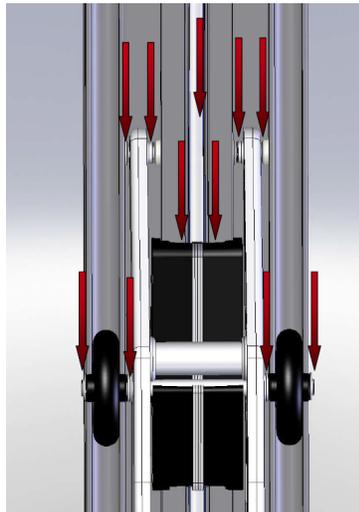
Caution: Never attempt to open the battery. If the battery is cracked or leaking, do not recharge it; the battery must be replaced.

1. Disconnect from the charging port.
2. Turn the power switch to "Off."
3. Fold the unit.
4. Remove the battery cover by gently pulling the latch tab outward and sliding the cover down.
5. Carefully slide the connectors off of the red and black terminals.
6. Using a Phillips screwdriver, remove the battery bracket.
7. Inspect the Battery for cracks, leakage, or corrosion. If you find cracks, leakage or corrosion on the battery:
 - a. Contact Customer Service toll free at (800) 624-5463. Do not operate the unit until repairs are made.
 - b. Do not let the leakage get onto your skin. Wear acid-resistant gloves and chemical goggles.
 - c. If leakage gets onto the skin, flush immediately with water and mild soap. If irritation develops, seek medical attention. If the leakage gets into the eyes, flush with clean water for 15 minutes and seek immediate medical attention.
8. Remove the battery.
9. Clean any dirt or debris from the battery compartment.
10. Place the replacement battery into the battery compartment.
11. Replace the battery bracket and screws.
12. Slide the red and black wire connectors onto the matching battery terminals. If the connectors do not fit securely on the battery terminals, contact Customer Service toll free at (800) 624-5463.
13. Reinstall the battery cover.



Maintenance

Area	Inspection Frequency	Procedure/Normal Condition
Outside Surfaces	Daily	Keep clean and dry. Replace any cracked or missing covers.
Fasteners	Daily	Tighten any loose hardware.
Battery Charging	Daily	Green charging light should turn on when charging.
Rear Wheels	Daily	Inspect wheels and tires for wear and cracks.
Front Casters	Daily	Inspect for wear; clean dirt and debris.
Rolling Function	Daily	Unit should roll easily in all directions: forward/backward and left/right.
Brake Lever	Daily	Brake lever should move freely up and down; lock lever should hold brake lever in locked (squeezed) position.
Brake Tension	Daily	Braking power should be sufficient; if not, adjust as necessary (see Brakes section). To test - squeeze the brake lever tightly, tilt the unit back about 35° and try to push the unit. Wheels should not spin when holding the brakes tightly. It is normal for brakes to rub slightly, but it should not be enough to interfere with easy rolling of the unit.
Trolley	Daily	Inspect for wear or damage. Trolley should move up and down smoothly within the lift assembly.
Lift Screw	Daily	Inspect before each use; keep free of dirt and debris. Lifting and lowering motions should be smooth.
Attachments/ Accessories	Daily	Inspect for wear and damage; replace as needed.
Folding Linkage Assembly	Weekly	The unit should fold and unfold smoothly. Locking latch should fully lock into place; see section Unfolding the Unit for photos.
Battery Connections	Weekly	Tighten any loose connections to the battery terminals. Check for any cracked or damaged wires; replace parts as needed.
Lift Screw Lubrication	Weekly for first month; Monthly after first month.	Lubricate with a plastic-safe multi-purpose precision lubricant such as CRC Industrial Technical Grade 3-36. <ol style="list-style-type: none"> 1. Place absorbent towel underneath the unit. 2. Spray length of lift screw, the center trolley surface, and front and rear plastic wheel shafts (see next page for diagram). It does not need to be soaked, just enough so it spreads on the surfaces. 3. Lift and lower unloaded attachment for 5 full cycles to distribute lubricant.



Troubleshooting Guide

Problem	Solution(s)
The lift does not respond, and does not make any noise when the lift switch is activated.	<ol style="list-style-type: none"> 1. Is the power switch turned on? 2. Has the circuit breaker tripped? 3. Check the battery connections. 4. Recharge the battery. 5. Replace the battery.
The lift struggles to raise objects and works very slowly.	<ol style="list-style-type: none"> 1. Check for dirt or other obstruction around the lift screw. 2. Recharge the battery. 3. Replace the battery.
The lift will not rise for more than a second, but it will lower.	<ol style="list-style-type: none"> 1. If the red light is on, you may have exceeded the weight limit. Try less weight. 2. Lower the lift all the way to the bottom and the red light should go out, resetting the protection circuit. 3. Check for dirt or other foreign materials in the lift mechanisms and for interference of the lifting attachment with other objects. If the lift is obstructed, this may activate the overload protection circuit. To reset the circuit, repeat Step 2.
The unit is very difficult to roll.	<ol style="list-style-type: none"> 1. Check that the parking brake is not engaged. 2. Lift the lifting attachment and inspect the front casters for obstructions. 3. Inspect the brake pads and brake rotors for obstructions. 4. Adjust the brake calipers. Details on page 11.
The brakes do not work at all or work adequately.	<ol style="list-style-type: none"> 1. Adjust the brake cable tension. Details on page 10. 2. Adjust the brake calipers. Details on page 11.
The unit will not charge.	<ol style="list-style-type: none"> 1. Check to make sure the charger is fully plugged into the outlet and the charging port of the unit. 2. Check that the circuit breaker is not tripped. 3. Check that the battery is connected.

LiftPlus Labels

! WARNING

Read the Operator's Manual and all labels before use.

Do not exceed rated weight capacity - 350 lbs standard speed or 120 lbs high speed

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! WARNING

Ensure the folding latch handle is properly locked before moving, operating or loading. When properly locked, the folding latch handle cannot be lifted without releasing the red latch release lever.

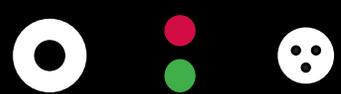


ON OFF

UP DOWN

MAGLINER®
LiftPlus®
U.S. Patent No. 7,712,582
Serial No. 12345

Over Weight



DC Input 15V-1.0A **Charging** **Remote Control**

Work Bench Label

! WARNING

Falling Hazard. Do not stand on lift platform. Do not exceed rated weight capacity - 350 lbs. Do not operate with platform extended. Tipping Hazard. Keep load centered.




Arbor, Boom & Chain Label

Adjustable Boom and Chain (530288)



Arbor (530239)



Chain Location		Max. Weight at Chain Location (lbs.)
A	B	
1	350	120
2	350	95
3	350	65
4	325	50
5	220	30
6	120	20

Pin Location

Use Column A for max. weight at hole locations when arbor is used alone.

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Pail Lift Label

Bottom pail must be seated flush against front of Pail Lift before lifting




MAGLINER

Accessories	Part Number
Work bench (includes platform, vice clamps, vice handle and back bar)	536020
Quick change adapter (for use with 536020 work bench only)	536026
Arbor - 24" long x 1.66" diameter	536039
Adjustable boom with chain/hook assembly (requires arbor attachment)	536088
Bent Forks - 21" wide x 18" long, 3.5" height from floor	536044
Straight Forks - 18.5" wide x 18.5" long, 5" height from floor	536053
Straight Forks - 21" wide x 18" long, 5" height from floor	536060
Straight Forks - 20" wide x 32" long, 5" height from floor	536048
Anti-slip rubber kit for forks	536086
V-Tray (requires 18.5" wide x 18.5" long forks)	536054
Steel Pallet - 24" wide x 24" long (requires either 21" wide fork attachment)	536025
Steel Pallet - 34" wide x 34" long (requires the 20" wide fork attachment)	536033
Steel Pallet with sides - 21.5" wide x 19" long (requires the 21" wide straight fork attachment)	536103
Pail Lifter - accommodates three 5-gallon pails	536093
Tethered remote control	534200
External battery charger	63027
Tote bag	534500
Parts	Part Number
Axle, front roller	22145
Front roller	531708
Axle, rear roller	22146
Rear roller	531709
Battery - 12V-15.0 Ah	61017
Battery cover	533501
Brake cable assembly - 14" chassis	532134
Brake caliper assembly	532100
Button, molded black	80813
Caster shell - LH	532503
Caster shell - RH	532504
Caster, assembly with plate only	532500
Caster, complete assembly in shell	530000
Charger assembly, 12V with U.S. blade plug	63030
Circuit breaker - 15A, 32VDC, 250 VAC (includes power supply wiring harness)	534415
Electrical board	63025

Parts	Part Number
Limit switch (used for upper and lower)	62067
Lock washer for circuit breaker	80799
Motor assembly - high speed (includes motor, mounting bracket, solenoid, brake, Pulley #1, Pulley #2-3 and timing belt) - 120 lbs. capacity	534101
Motor assembly - standard speed (includes motor, mounting bracket, solenoid, brake, Pulley #1, Pulley #2-3 and timing belt) - 350 lbs. capacity	534100
Motor cover	533505
Nut, trolley drive	531705
Pulley assembly #1 (top gear)	534106
Pulley assembly #2-3 (intermediate)	534107
Pulley assembly #4 (lower)	531117
Switch - On/Off (includes wiring harness)	534410
Switch - Up/Down (includes wiring harness)	534416
Timing belt - 5mm pitch x 15mm W x 60 grooves	534118
Top cover assembly	533502
Trolley assembly	531700
Wiring harness for lower limit switch	534402
Wiring harness for upper limit switch - 48" models	534401
Wiring harness for upper limit switch - 60" models	534405
Wiring harness for upper limit switch - 72" models	534406
Wiring harness for negative power (ground)	534413
Wiring harness for positive power	534414
Wiring harness extension for positive motor lead - 60" models	534417
Wiring harness extension for negative motor lead - 60" models	534418
Wiring harness extension for positive motor lead - 72" models	534419
Wiring harness extension for negative motor lead - 72" models	534420
Wiring harness - adapter for motor solenoid - 48" models	534421
Wiring harness - adapter for motor solenoid - 60" models	534422
Wiring harness - adapter for motor solenoid - 72" models	534423
Wiring harness/connector assembly for remote control input	534409
Wiring harness/connector assembly for power jack (charger input)	534408
Wiring harness for green charging light	534411
Wiring harness for red overload light	534412
Wheel and tire assembly	532310
Work bench vise	536018

