

Service and Repair Manual

GoLift Portable 450



Amico

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Introduction

This manual provides detailed instructions on the service of Amico GoLift Portable 450. Since the introduction of ceiling mounted patient lifts, the frequency of installations has rapidly increased. This is due to greater awareness of the risks associated with manual patient transfer and repositioning, which has led to the enforcement of more strict lifting regulations.

Amico Mobility strives to consistently provide exemplary service, design, and installation to all of its customers. In an ever more competitive market, it is important to standardize installation techniques, thus ensuring that the highest standards of quality and safety are met.

The methods described in this manual are intended for use by employees of Amico Mobility Solutions Corporation or its authorized agents.

SYMBOLS USED IN THIS MANUAL

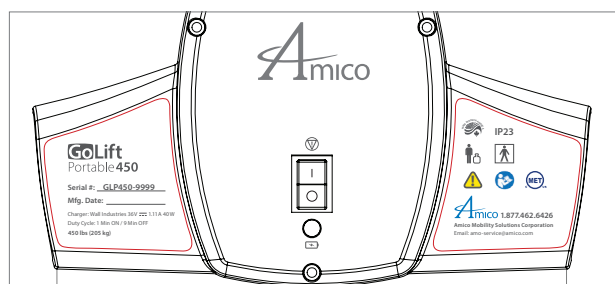
Symbol	Reference	Title
	ISO 7000-0434A	Caution risk of danger
	MET	Certified by MET
	IEC 60417-5840	Type BF Applied Part
	CE	Certification of Conformity
	ISO 7010-M002	Refer to instruction manual/booklet
	Amico Mobility	Emergency Lowering
	Amico Mobility	Emergency Stop

 **WARNING:** This symbol is intended to alert the user of hazard or unsafe practices, which could result in serious bodily harm.

MARKINGS

The GoLift Portable450 is designed to comply with the following Standards:

Standard(s)	CAN/CSA-C22.2 No. 60601-1:08 Medical Electrical Equipment - Part 1: General requirements for basic safety and essential performance. ISO10535:2006 Hoists for the transfer of disables persons - Requirements and Test Methods. CAN/CSA-C22.2 60601-1-11:2-15 home use environments.
Product	Amico GoLift Portable
Brand Name	GoLift
Models	450 lbs



EC REP

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Germany

Safety Instructions



WARNING: READ THESE INSTRUCTIONS CAREFULLY OR SERIOUS INJURY MAY OCCUR

- The Amico GoLift Portable must be installed only by personnel authorized by Amico Mobility Solutions Corporation.
- Do not use this equipment prior to understanding the contents of this manual.
- Contents of this manual are subject to change without prior notice to users. Keep for future reference.
- Never place the Amico GoLift Portable, track/PLP and sling(s) in control of a person who has not been properly trained in the use and care of this equipment.
- The Amico GoLift Portable and associated Track/PLP and sling(s) are for transferring patients only. Never use the GoLift Portable for any other purpose.
- Amico Mobility's Warranty is void if unauthorized personnel perform service on the Amico GoLift Portable system.
- In facilities where more than one caregiver is responsible for using the Amico GoLift Portable and associated track and slings, it is important that all caregivers be trained in the proper use of this equipment. A training program should be established by the facility to familiarize new caregivers with this equipment.
- Do not expose the Amico GoLift Portable directly to water. Warranty does not cover any misuse or abuse of the Amico GoLift Portable.
- The Amico GoLift Portable should be inspected and maintained on a regular basis to keep it operating safely and correctly. Refer to page 18 of this manual.
- Any accessories used with the Amico GoLift Portable including the track/PLP and sling(s) should be checked to ensure that they are in good working order. Check for signs of wear or fraying prior to use. Report any unusual wear or damage immediately.
- Amico Mobility will not be responsible for any damage caused by misuse, neglect or purposeful destruction of the lift and its associated components. Do not attempt to modify/alter the Amico GoLift Portable.
- Do not in any circumstance exceed the maximum allowable load of this lift. Refer to the "Technical Specifications" section of this manual and/or the labels on the lift.
- The installation of the lift, track and sling are certified to a maximum load. Do not exceed the maximum rated load of any of the components.
- There is a risk of explosion if the lift is used in the presence of flammable anesthetics.
- The Amico GoLift Portable should be decommissioned/disposed of after the recommended service life in accordance with local law regulations.
- If the battery case cracks and the contents of the battery contact your skin or clothing, rinse immediately with warm water.
- If the contents of the battery contact your eyes, rinse immediately with plenty of water and seek medical attention.



WARNING: There are no known contraindications associated with the use of the Amico GoLift Portable and its accessories, provided they are used per our recommendations and guidelines.

However, for any independent uses of the Amico GoLift Portable, it is extremely important that the patient is able to receive assistance, during the transfer in the event of an equipment failure. This assistance can be provided in the form of; a nearby qualified caregiver, a phone or other communication device.

Technical Specifications

Maximum Lifting Speed:

No load:	1.7 inches/second
150 lbs/68 kg:	1.3 inches/second
450 lbs/204 kg:	1.0 inch/second

Unit Weight:

6 lbs

Safe Working Load (SWL):

450 lbs

Dimensions (see diagram):

Length:	19.4" (49.27 cm)
Height:	5.2" (13.20 cm)
Depth of Lift:	3.7" (9.398 cm)
Strap Length:	74" (187.96 cm)

Number of Lifts per Charge (Duty: 10/90):

78 with 150 lbs (25% of strap at midrange)
46 with 450 lbs (25% of strap at midrange)
Charging time: 2-4 Hours

Lift Case:

Flame retardant ABS
IP23 Lift - protected from fingers and water spray up to 60 degrees from vertical

Batteries:

High Capacity, Long Lasting NiMH
1 x 24V (1.6Ah)

Battery Charger:

Input: 100-240VAC
Output: 36VDC, 40 Watt, 1.0A

Hand Control:

IPX4 Hand Control - protects from splashing water, no matter the direction

Safety:

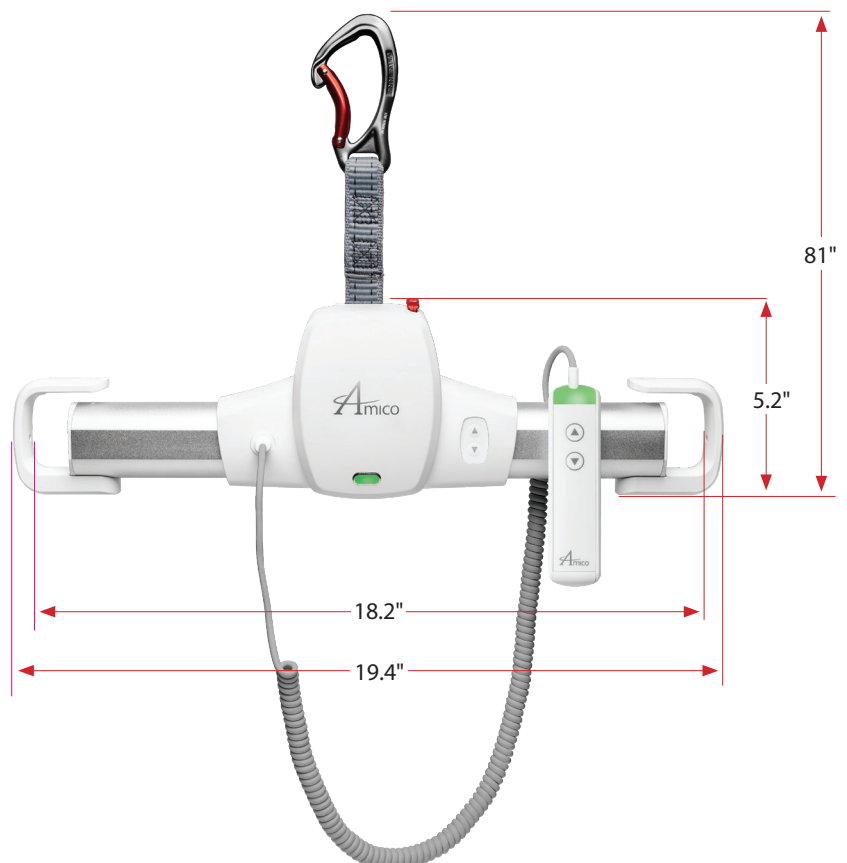
Emergency Stop
Emergency Lowering Device: Independent Circuit
Manual Lowering
Upper Limit Detection
Lower Limit Detection
Slack Tape Sensor
Free Fall Brake (Over Speed Governor)
Low Battery and Dead Battery Alarms
Soft Start and Stop
Overload Protection

Approvals:

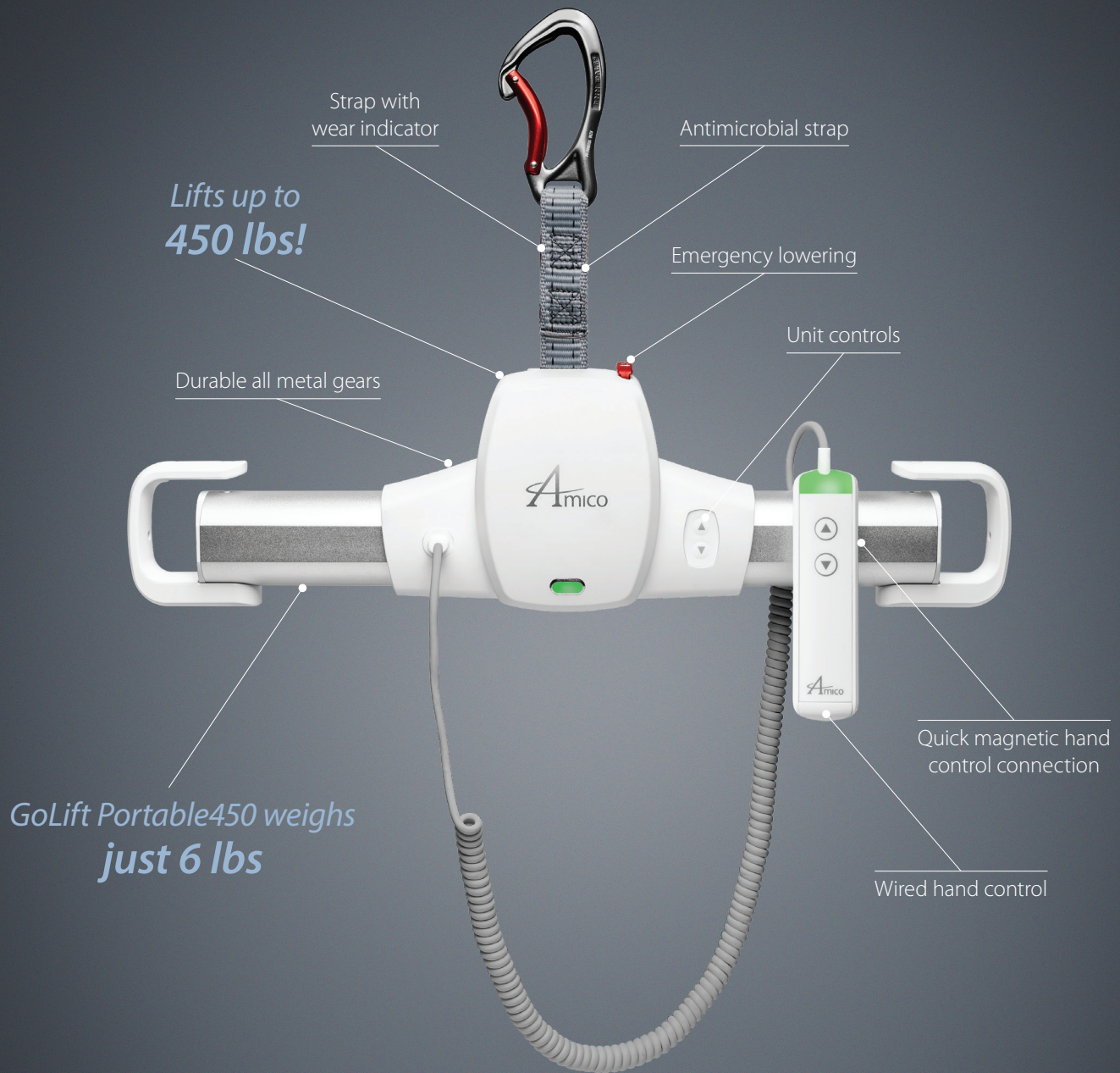
CAN/CSA-C22.2 No 60601-1:08
CAN/CSA-Z10535.1:15

Expected Service Life:

22,500 cycles or 10 years.
It is recommended that the lift be replaced after this time.
The expected life of slings, batteries fuses, straps and cord is dependent upon proper maintenance.



Anatomy of the **GoLift** Portable450

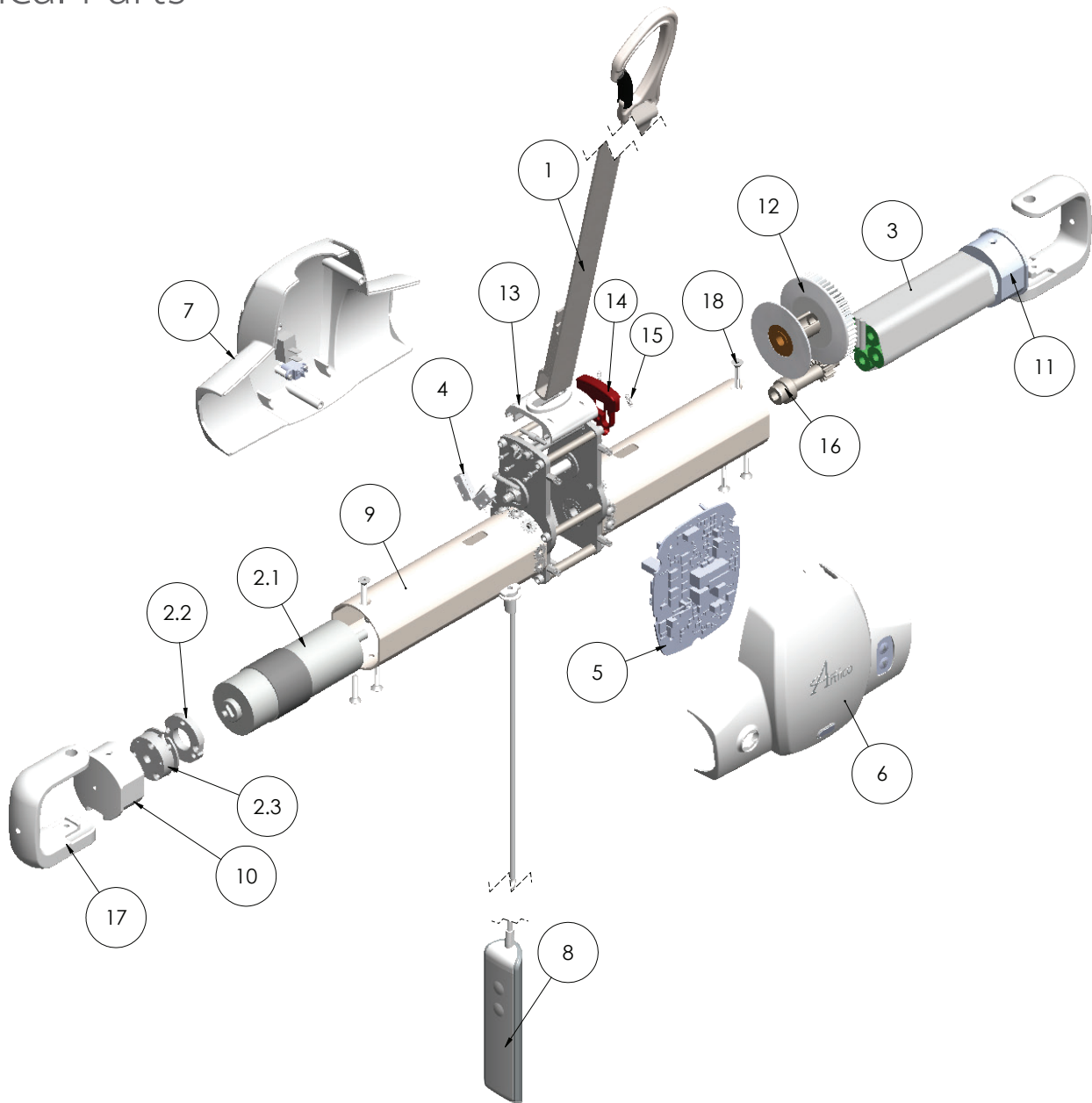


Back of the GoLift Portable450

Emergency stop



Critical Parts



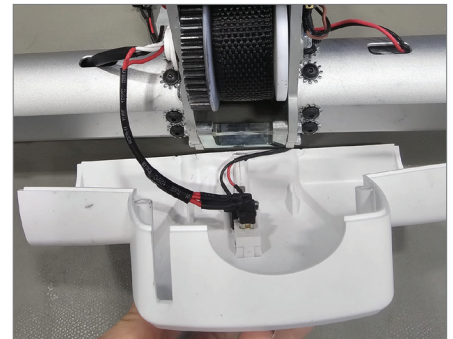
S. No	Part Number	Description	Quantity
1	RPL-GO-LIFT-PORT-STP	REPLACEMENT STRAP KIT	1
2	RPL-GO-LIFT-PORT-MTR	REPLACEMENT MOTOR KIT	1
2.1	GO-LIFT-MTR-ZN1203	GOLIFT MOTOR	1
2.2	GO-LIFT-MTR-BRK-ADP-PLT-V02-ASY	GOLIFT MOTOR BRAKE ADAPTER BRAKE	1
2.3	GO-LIFT-PORT-MTR-EM-BRK	PORTABLE MOTOR BRAKE	1
3	RPL-GO-LIFT-PORT-BAT	REPLACEMENT BATTERY KIT	1
4	RPL-GO-LIFT-PORT-LMT-SWT	REPLACEMENT LIMIT SWITCH KIT	1
5	EL-CRC-BRD-GLP	PORTABLE CIRCUIT BOARD	1
6	RPL-KIT-PTB-FRNT-CVR	REPLACEMENT FRONT COVER KIT	1
7	RPL-KIT-PTB-BACK-CVR	REPLACEMENT BACK COVER KIT	1
8	GO-LIFT-HND-CTRL-2-FIX	PORTABLE HAND CONTROL	1
9	GO-LIFT-PORT-TUBE	PORTABLE TUBE	2
10	GO-LIFT-PORT-TUBE-INSRT-MTR-SL	CARRY BAR INSERT SELF LOCKING -MOTOR SIDE	1
11	GO-LIFT-PORT-TUBE-INSRT-SL	CARRY BAR INSERT SELF LOCKING	1
12	GO-LIFT-PORT-HUB-GEAR-SUB-ASSY	PORTABLE HUB GEAR SUB-ASSEMBLY	1
13	GO-LIFT-PORT-STP-GUD-ASSY	PORTABLE STRAP GUIDE ASSEMBLY	1
14	GO-LIFT-PORT-EMRG-STOP	EMERGENCY STOP FOR PORTABLE	1
15	FS-SPR-0.125-0.5-8.1	0.125 OD SPRING-0.5" LONG	2
16	GO-LIFT-PORT-MTR-GEAR	MOTOR GEAR PORTABLE LIFT	1
17	GO-LIFT-PORT-HOOK-SL	PORTABLE LIFT HOOK SELF LOCKING	2
18	FS-SCR-SK-8-32-0.88-ZP	#8-32 COUNTERSINK SCREW	6

Error Codes

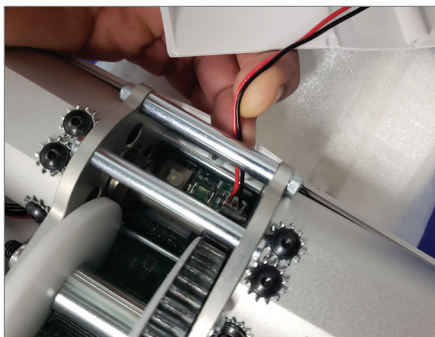
Error Codes		Recommended Solution
Battery not plugged in/No temperature sensor detected	Blinking red (3x/s, 1s off), beeping 1x/5s	Refer to "Replacing the GoLift Portable450 Battery" to ensure the battery is connected or if it needs replacement.
Over capacity	Blinking red (2x/s), continuous beep	If the load is in excess of the safe working load the GoLift Portable450 will not work due to over-current protection.
Charging error: Battery over temperature/Sensor Error	Blinking red (2x/s), beeping 1x/5s	Unplug the lift if it's in charge if not turn the unit off for 10 minutes and try again.
Brake end of life	Blinking red (4x/s,1s off), beeping 1x/5s	Refer to "Replacing the GoLift Portable Brake" .
Maintenance alarm	Blinking green (2x/s)	<p>After 1,001 lifts, the LED will flash green. To reset, press buttons in the following sequence: Up, Down, Up, Down, then hold both buttons for 10 seconds. If successful, the LED turns red, green and amber. The buzzer will beep three times.</p> <p>NOTE: Reset can be performed at any time, not just after the 1000th lift.</p>

Getting Access to the GoLift Portable450

1. Use a stand to support the lift while it is being serviced.
2. Remove three (3) screws from the case using 7/64" Allen key.



3. Before removing the back cover, cut the zip ties securing the charging harness to the bar then carefully pull the charger harness from the PCB.
4. Gently pull the mylar strip from the PCB and remove the front cover.

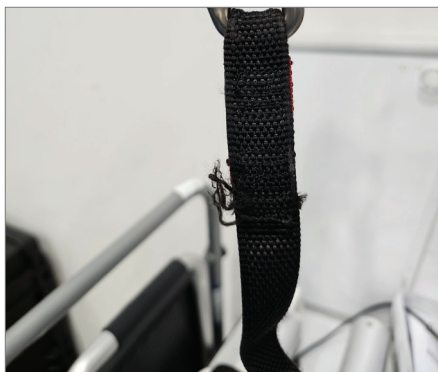
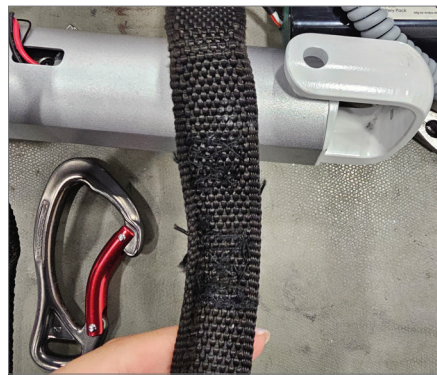



Replacing the GoLift Portable450 Strap

If the strap is damaged, shows signs of wear, or exhibits discoloration, its load capacity may decrease significantly, posing a potential risk to the patient or caregiver. Amico strongly recommends conducting a thorough inspection of the strap prior to each use.

Below are some examples of straps that are considered unacceptable for use:

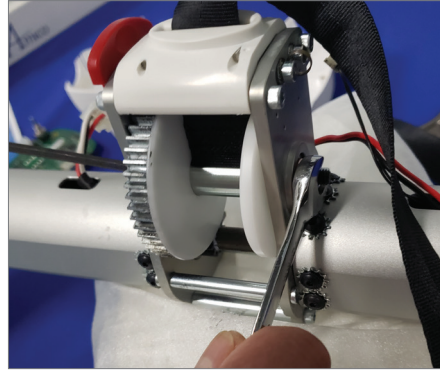
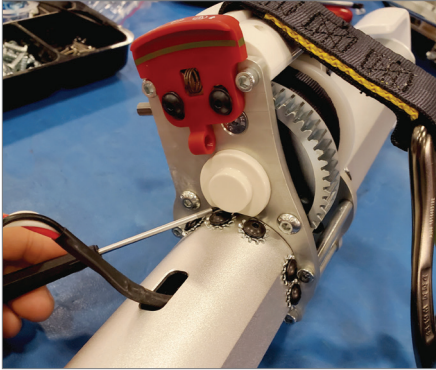
- Straps with visible fraying or cuts.
- Straps with loose stitches.
- Straps showing signs of stretching, deformation, or compromised integrity.



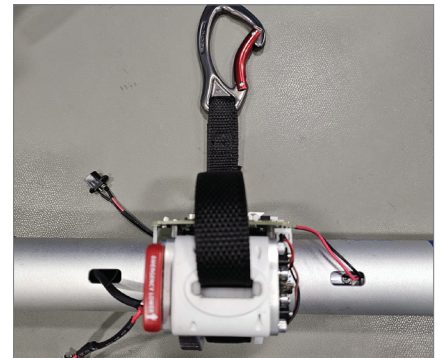
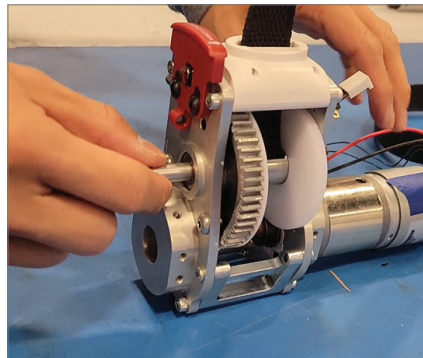
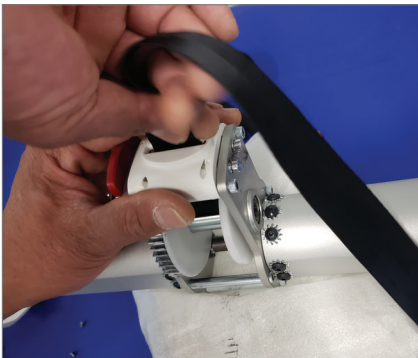
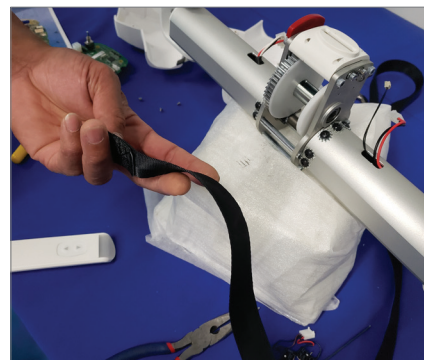
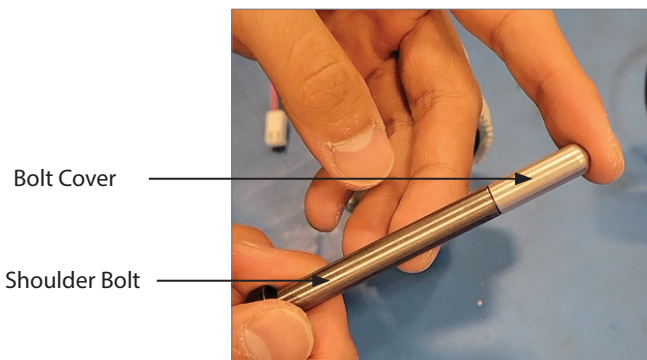
 **WARNING:** If any signs of wear, as described above, or other visible defects are detected, the strap must be replaced immediately to ensure safety.

Replacing the GoLift Portable450 Strap

1. Before replacing, press the down button from either the remote or the lift to pull the strap all the way out.
2. Refer to "Getting Access to the GoLift Portable450" for removing the covers.
3. Use a small flat screw driver to remove the screw cover.
4. Use a 5/32" Allen key and a 10mm wrench to remove the strap pin.
5. Remove the washer and nut then pull the Shoulder Bolt out all the way.



6. Replace with a new strap.
Note: Ensure the gate of the carabiner is facing the limit switch not the emergency switch
7. Place a Bolt Cover on the Shoulder Bolt and insert it through the holes and through the loop in the strap.
Note: Using the Bolt Cover prevents strap damage during the replacement.



8. Remove the cover and secure the shoulder bolt with the lock nut and the washer.
9. All the strap has been replaced, ensure all parts are re-assembled onto the lift before closing the covers and finishing the service.

Replacing the GoLift Portable450 Battery

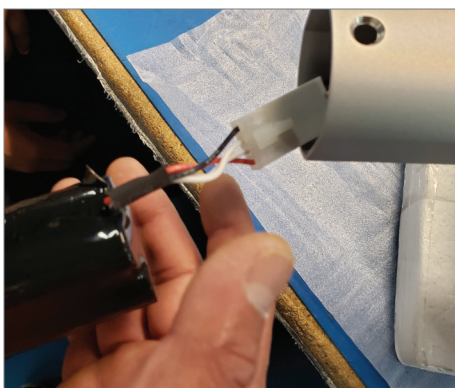
1. Make sure the lift is off.
2. Using a 3/32" T handle, remove the three (3) screws securing the hook from the right side of the tube.
3. Pull off the cap and hook on the end of the tube once all the screws have been taken out.



4. Gently pull out the battery from the tube to avoid damaging the wire.
5. Disconnect the battery connector.

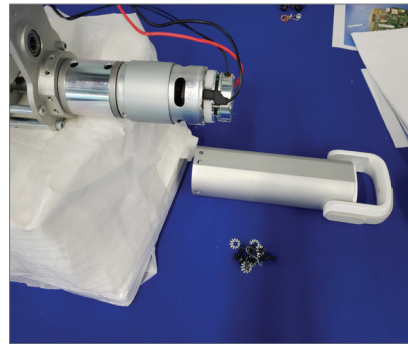
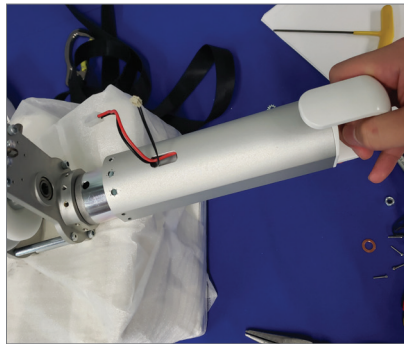
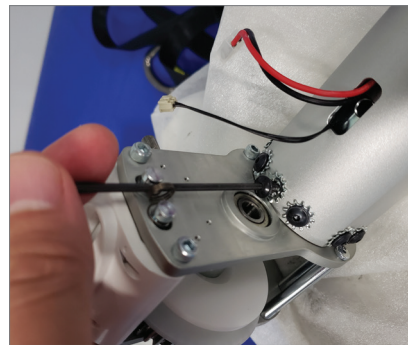


6. Replace with a new battery and follow these instructions in reverse to install the new battery.
Note: Ensure to position the hook as shown.
Note: Apply one (1) or two (2) drops of Blue Loctite 243 on the two (2) screws from Step 2 when installing them back.

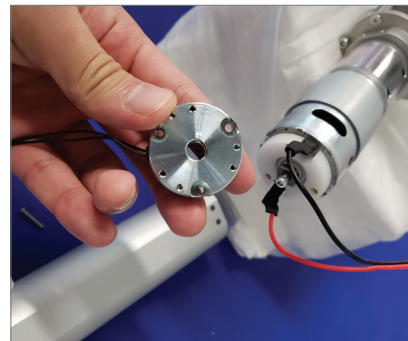
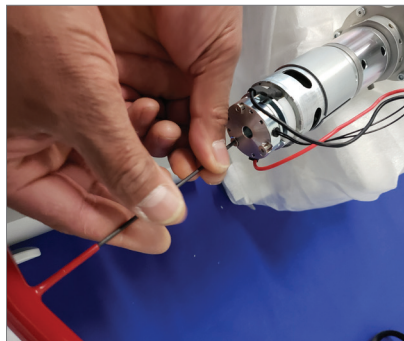


Replacing the GoLift Portable450 Brake

1. Remove the strap. Follow "Replacing the GoLift Portable450 Strap" section for instructions on removing the strap.
2. Disconnect motor cable and motor brake cable from the PCB, refer to page 15.
3. In order to replace the motor, the left side tube has to be removed.
4. If the screws are Black Oxide Hex Button Head screws on the tube, use a 3/32" Allen key to remove eight (8) screws. If the screws are Torx Alloy Steel Button Head screws use a IP15 or T15 screwdriver to remove eight (8) screws from the tube on the left. Slowly pull the tube out with caution.
Note: Tighten the screws to 30 in-lb of torque when reattaching them to the tube.
5. When pulling out the tube, make sure the brake wires and connector gently go through the hole on the tube. This is to ensure the connection is not lost between the motor and the brake wires.

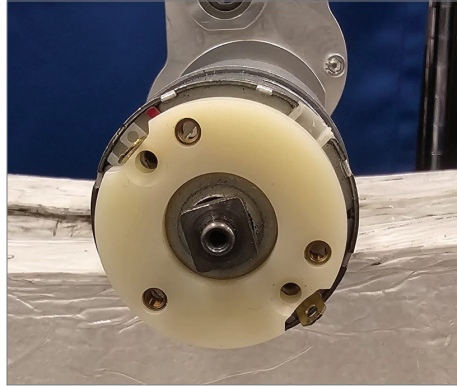


6. Remove three (3) screws holding the motor brake, using a 2mm Allen key.
7. Replace the old brake with the new one and follow the steps in reverse.
Note: Apply one (1) drop of Blue Loctite 243 to adapter plate screws, ensure the positioning of the plate is as shown
Note: Apply one (1) drop of Blue Loctite 243 to motor brake screws, gently put the screws back in, using a 2mm Allen key, so that they are just touching the motor brake. Do not over tighten the screws.

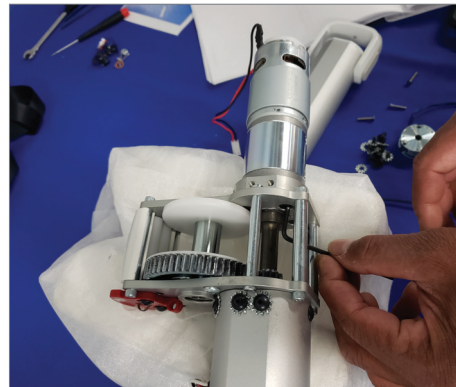
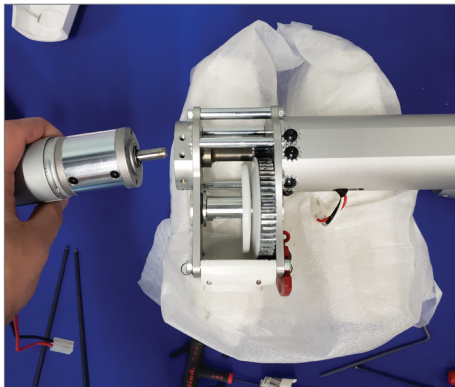


Replacing the GoLift Portable450 Motor

1. Follow the steps in section "Replacing the Golift portable 450 brake" to remove the brake.
2. Pull out the motor cable from the motor.
3. Remove two screws holding the adapter plate.
Note: if there is no screws on the adapter plate, just pull out the adapter plate from the motor.

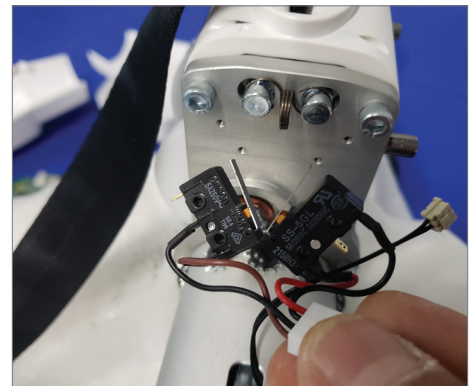
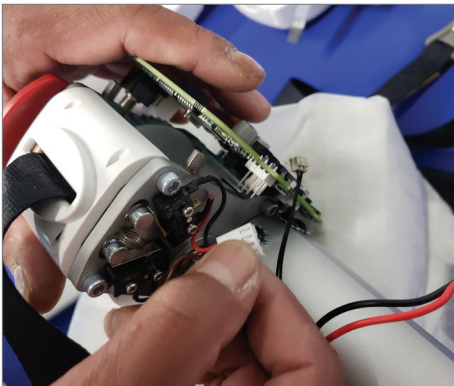


4. Use L-type 2.5mm Allen key to loosen four (4) Black Oxide screws securing the motor to the plate and remove all of them using a ball pointed Allen key.
5. Pull out the motor with force.
Note: When installing a new motor, make sure the D-slot from the motor lines up with the motor mounting plate.
6. Follow instruction 1 to 5 in reverse to assemble the portable lift.
Note: Ensure to connect the red wire of the motor cable harness to the motor pin with a red mark.
Note: Apply one (1) drop of Blue Loctite 243 to adapter plate screws, ensure the positioning of the plate is as shown
Note: Apply one (1) drop of Blue Loctite 243 to motor brake screws, gently put the screws back in, using a 2mm Allen key, so that they are just touching the motor brake. Do not over tighten the screws.



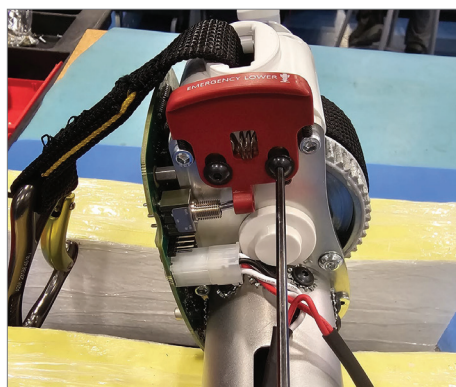
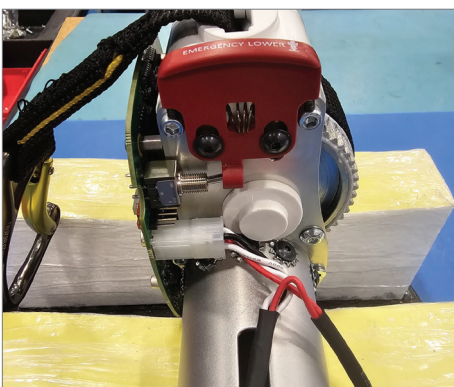
Replacing the GoLift Portable450 Limit Switch

1. Disconnect the limit switch harness from the PCB.
2. Remove the two (2) screws from both sides of the limit switch, using a 1.5 mm Allen key.
3. Replace the limit switch and follow these instructions in reverse to install the new limit switch.
Note: Apply two (2) drops of Blue Loctite 243 to the screws.
Note: Make sure not to swap limit switches when installing them (Red and Brown wires).

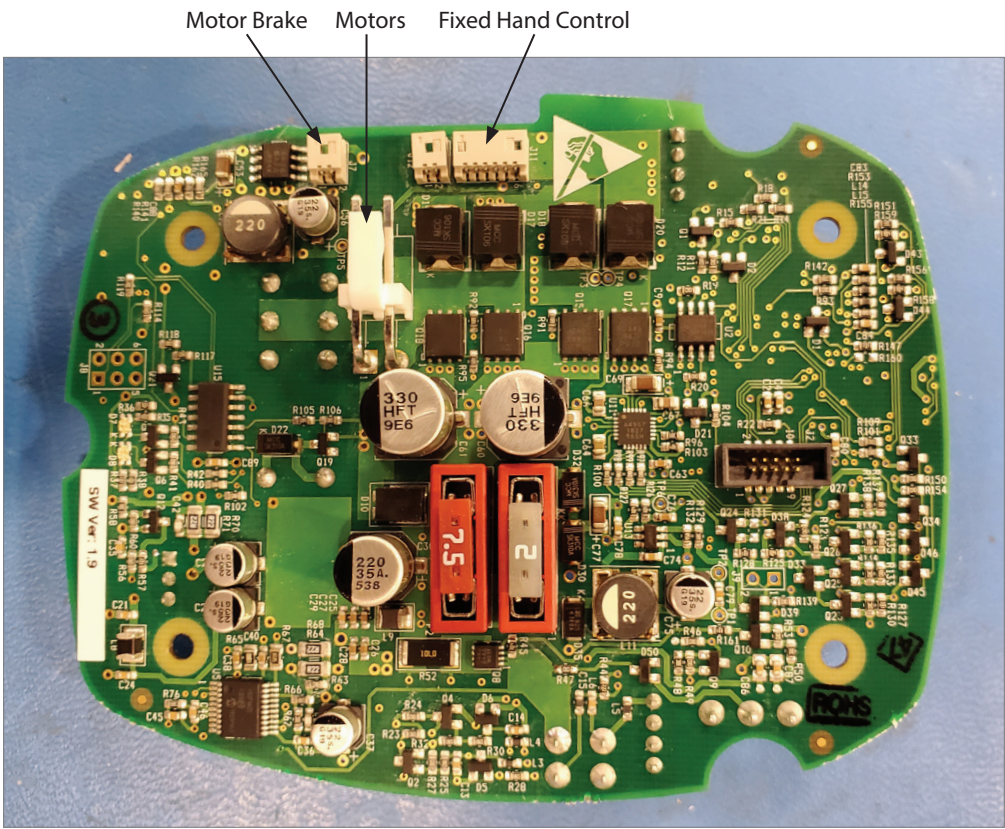
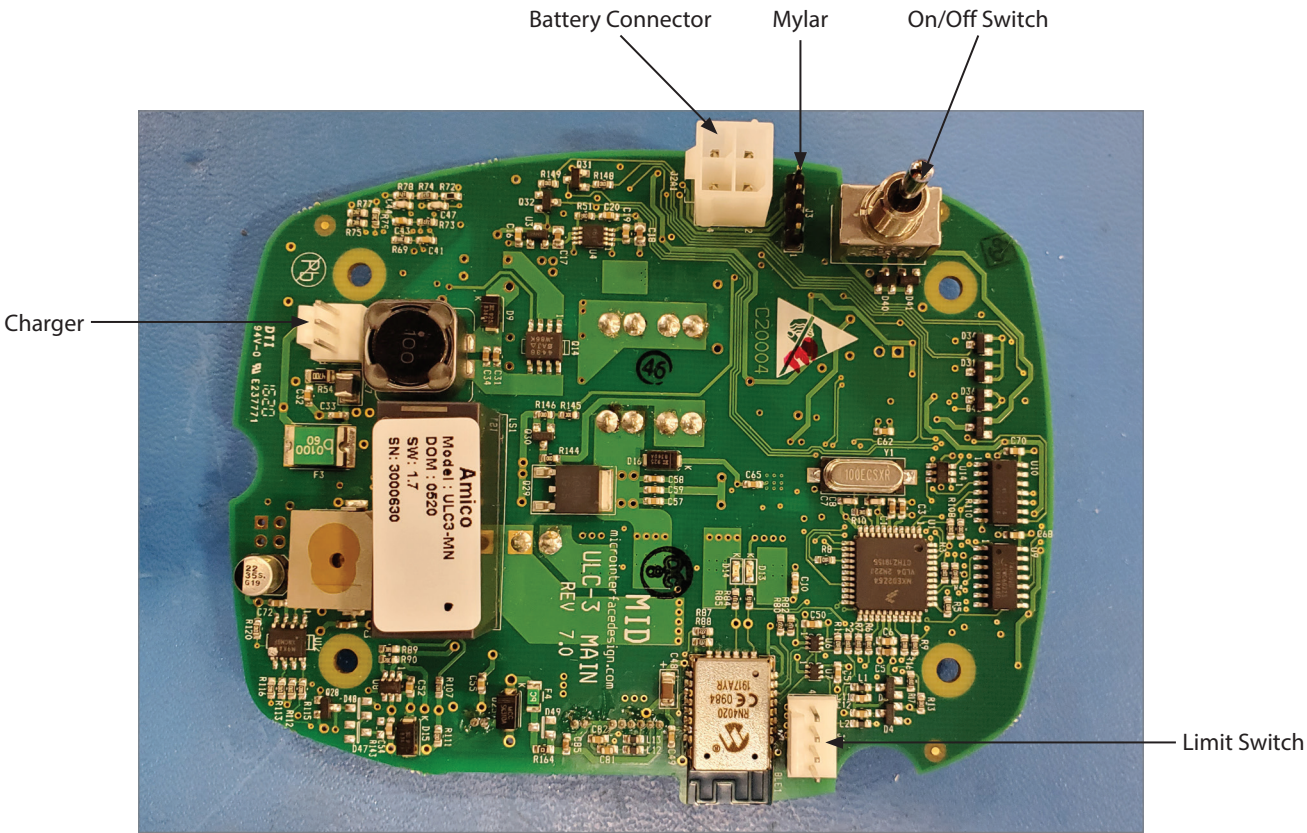


Replacing the Emergency Switch

1. Remove two (2) screws and two (2) bushings from the red emergency push switch using a 3/32" Allen key.
2. Replace the push switch and follow these instructions in reverse to install the new push switch.
Note: Ensure the two springs are re-assembled on either side of the Emergency Switch.

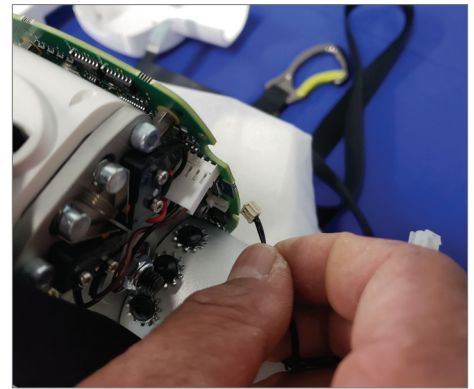
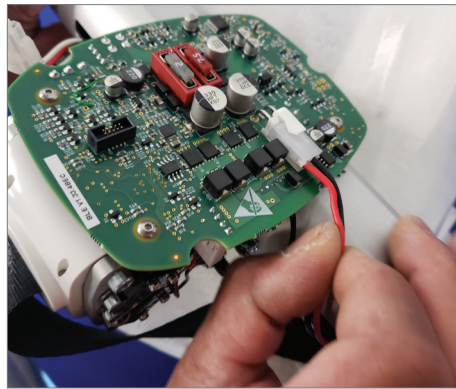
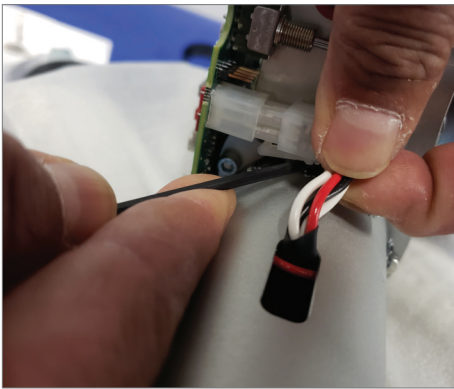


PCB Connections

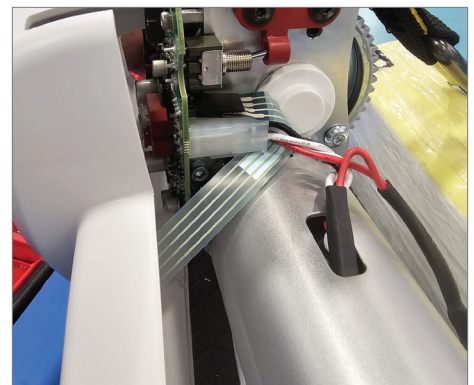
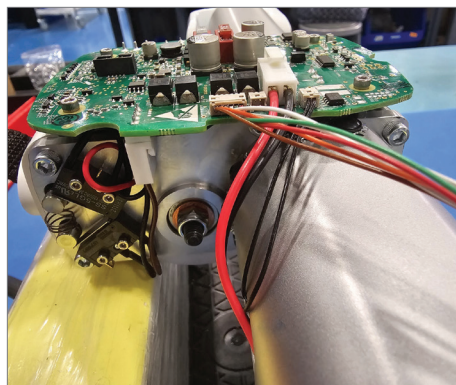
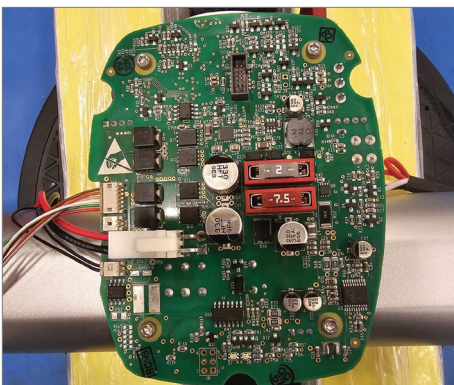
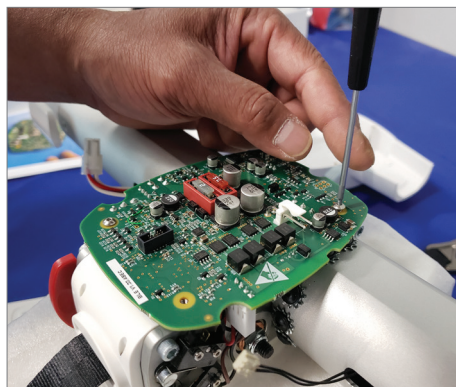


Replacing the PCB

1. Make sure to use proper ESD equipment (wrist strap) prior to handling the PCB.
2. Open up the GoLift Portable 450 by following the steps in the section "Getting access to the GoLift".
3. Unplug all the harnesses from the PCB (battery connector, motor connector, brake connector, limit switch connector).



4. Remove four (4) screws from the PCB, using a 1.5 mm Allen key for Button head screws or a 3/32" Allen key for Socket head screws.
5. Gently pull out the PCB from the lift.
6. Replace the PCB and follow these instructions in reverse to install the new PCB.



Replacing the Hand Control

1. Disconnect the hand control connector from the circuit board.
2. Turn the grommet until the hand control cable can be pulled out.
3. Insert the cable from the new hand control and reconnect to the circuit board.



Inspection and Maintenance

Prior to using the Amico GoLift Portable450, the inspections should be conducted per the following schedule:

Item	Before Use	Every Month	Annual
Portable Lift			
Inspect the lift strap for fray or wear along its entire length.	•		
Inspect the lift strap where it connects to the carabiner shows no signs of fraying or wearing.	•		
Ensure Batteries are charged.	•		
Portable Trolley			
Ensure that end stops are installed at both ends of the track.	•		
Inspect the wheels in the portable trolley. Replace if damaged.			•
Check the Portable trolley for any misalignment of the nut.			•
Sling			
The sling straps connecting to the lift's carry bar show no signs of fraying or wearing.	•		
Inspect the sling fabric for any damage in the fabric.		•	
Ensure there are no loose threads in the stitching.	•		
Maintenance by a certified technician			
Check emergency stop / emergency down button.			•
Check the upper and lower limit switch by pressing the up and down buttons to ensure the lift stops automatically at the top and bottom of the strap.			•
Inspect the hook components for any signs of damage or sharp edges that could potentially damage the sling.			•
Ensure the hand control and emergency buttons function as intended.			•
Fully unloop the strap and inspect it for any fraying or damage.			•
Inspect the gearbox for any unusual noises.			•
Inspect the gears for any broken or worn teeth.			•
*Reapply grease to the gears.			•
** Verify the overspeed cam is operating freely.			•
*Annual load test with 100% of lift load capacity.			•
Plug the charger into the portable lift and confirm that the LED light turns yellow.			•
Ensure that the LED turns green after 4 hours of charging or sooner.			•

* In accordance to the ISO 10535 Standard "Hoists for the transfer of disabled persons – Requirements and test methods" an inspection should be performed on the GoLift Portable450 at least once a year. This inspection should be performed by a qualified technician and should include a working load test of one (1) lifting cycle with the maximum load.

*Re-apply grease to the gears using the Amico certified grease. Can be bought from Amico.

** These two functions must be checked by a qualified technician to ensure the essential performance of the GoLift Portable450.



WARNING: Do not operate the GoLift Portable450 until any issues discovered during the inspection have been addressed by a certified technician.



Warranty Policy - Mobility Solutions

The primary purpose of our ceiling lift system is to safely lift, transfer and reposition a patient with as little effort as possible for the caregiver, regardless of the room type. The Amico Mobility Solutions Corporation's GoLift is easy and safe to use for caregivers as well as patients. The lift systems fit into all environments and fulfill the highest requirements of function, safety and reliability.

Amico Mobility Solutions Corporation warrants its lifting equipment and workmanship to be free from defects for a period of one (1) year from the date of shipment. This includes tracks, lift motor, carry bar and accessories. The Amico slings have a warranty of one (1) year.

Within this period, Amico Mobility Solutions Corporation will replace any part (at no additional charge), which is deemed defective. Shipping and installation costs after the first twelve (12) months will be borne by the customer. The following exclusions apply: the warranty for batteries is for a period of three (3) months from the time of shipment; the warranty for power supply is one (1) year from the time of shipment.

This warranty is valid only when the product has been properly installed as outlined in the Amico Mobility Solutions Corporation specifications; including but not limited to proper usage and servicing of systems according to factory recommendations. It does not cover damages as a result of shipment failures, accidents, misuse, abuse, neglect, mishandling, alternation, misapplication or damages which may be attributed to acts of God.

The manufacturer's warranty is void if persons unauthorized by Amico Mobility Solutions Corporation perform work on the GoLift Patient Lift or the GoLift Portable450 lift systems. Specifically, only an individual trained by Amico Mobility Solutions Corporation is to perform service to the equipment. Warranty coverage does not include incorrect performance due to unauthorized service.

Amico Mobility Solutions Corporation under the terms of this guarantee shall be limited to the servicing of defective parts and shall not be liable for incidental or consequential damages resulting from the use of the equipment.

All claims for warranty must first be approved by Amico Mobility Solutions Corporation's Service Department at amo-service@amico.com or through Amico's direct lines: 905-747-2032 or 1-833-843-8470. A valid Return Goods Authorization (RGA) number must be obtained from Amico Mobility Solutions Corporation prior to commencement of any service work. Warranty work which has not been pre-authorized by Amico Mobility will not be reimbursed.



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