

# Maxi Sky<sup>1000</sup>

Technical Manual



**CE**

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# General Information

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ArjoHuntleigh designs and manufactures quality engineered patient lifting equipment for the care of the elderly and disabled in a home care setting, nursing homes and other health care facilities.

Please take the time to read the entire manual, including the section on "Safety Instructions and Warnings". It contains important information that will allow you to take advantage of the many characteristics of your ArjoHuntleigh patient lift.

## ArjoHuntleigh Credentials:

- CE mark (European Union Listing)
- Global operations for in-warranty and out-of-warranty service support for the Maxi Sky<sup>1000</sup>.
- Each finished Maxi Sky<sup>1000</sup> unit is individually tested in our laboratory.
- Maximum lifting capacity is 454 kg (1000 lb). Engineering safety factor exceeds European Standards.
- Complete range of patient lift slings and supports designed and manufactured by ArjoHuntleigh using medical quality materials and fabrics.
- FDA Quality System Regulations

## COMPLIANT WITH:

CAN/CSA-C22.2  
CSA-Z323.5.98  
IEC 60601-1  
UL 60601-1  
ISO 10535

## Introduction

### How to use this Manual

**WARNING: Do not attempt to use this equipment without understanding this manual.**

To ensure a safe operation of the Maxi Sky<sup>1000</sup>, read the entire manual carefully, especially the section on "Safety Instructions and Warnings", before installing, operating, or servicing this equipment.

Refer to this manual as required. If anything is not completely understood, please contact your supplier for more details. Failure to comply with warnings in this manual may result in injury.

**NOTE: ArjoHuntleigh is constantly improving its products. For this reason, it may be possible to encounter product modifications without revision of this manual or that the contents of this manual changes without prior notice to users.**

You can obtain additional copies of this manual by contacting your supplier. Include the User Manual product number (see front page) and equipment identification number.

### Equipment Identification

The unit's identification number (specification, model, serial number) appears on a silver name plate affixed to one end of the housing of the lift.

# Safety Instructions

## Instructions and Warnings

Please read the following important information.

### General

**WARNING: Read the following instructions to avoid serious injury. Read the Operating and Product Care manual before installing, operating and servicing this equipment.**

- ArjoHuntleigh ceiling lifts and track system must be installed by an authorized contractor or installer.
- Only a certified technician or installer can remove and reinstall the lift into the track.
- The installation is capable of accepting at least 567 kg (1250 lb).
- ArjoHuntleigh ceiling lifts are specifically designed for use with Kwiktrak ceiling rail systems, and ArjoHuntleigh slings and accessories.
- Use all controls and safety features only according to the manner specified in the User Manual. Never attempt to force a control or button on the lift.
- DO NOT install the charger in a shower, bath or other areas with high humidity.

**CAUTION: Keep all components of the lift clean and dry, and have electrical and mechanical safety checkpoints performed as instructed in the "Maintenance" section of the User Manual.**

- Replace any precautionary or instruction labels that cannot be easily read.
- Avoid violent impact during transportation.

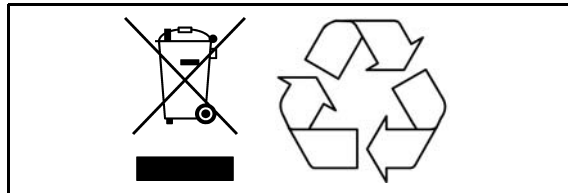
### Shock Prevention

- DO NOT touch or use a lift with bare conductors or a damaged power cord. Electrically live equipment can electrocute a patient. If the lift or charger has any exposed or damaged wires, contact your local dealer immediately.
- Do not splash or expose electric parts of the device to water or moisture.
- Check nameplate for voltage and frequency requirements. These requirements differ by country. Do not attempt to use the lift in an area that has a different voltage and cycle requirement.

## Fire and Explosion Prevention

**WARNING: Dispose of the batteries safely. Batteries may explode, leak and cause personal injuries if disposed improperly. If battery acid comes into contact with skin or eyes, flush immediately with water.**

- Do not dispose of batteries in fire.
- Do not short the battery terminals.
- For recycling and disposal of the batteries, the rules according to the WEEE directive (Waste of Electronic and Electrical Components) as well as local laws and regulations must be followed. When returning batteries, insulate their terminals with adhesive tape. Otherwise, the residual electricity in used batteries may cause fire or explosion. The figure below shows the symbols for disposal and recycling.



## Safe Working Load

The **Maxi Sky<sup>1000</sup>** has been designed with a lifting capacity of 454kg (1000lb).

**WARNING: The Maxi Sky<sup>1000</sup> is intended to be used for patients whose weight is within a specified safe working load. Do not attempt to lift more than the lowest weight limit indicated on the following:**

- the track system
- the "maximum load" label on the Maxi Sky<sup>1000</sup>
- on the spreader bar
- on the accessories
- on the sling

# Part Designation

## Lift and Charger Station

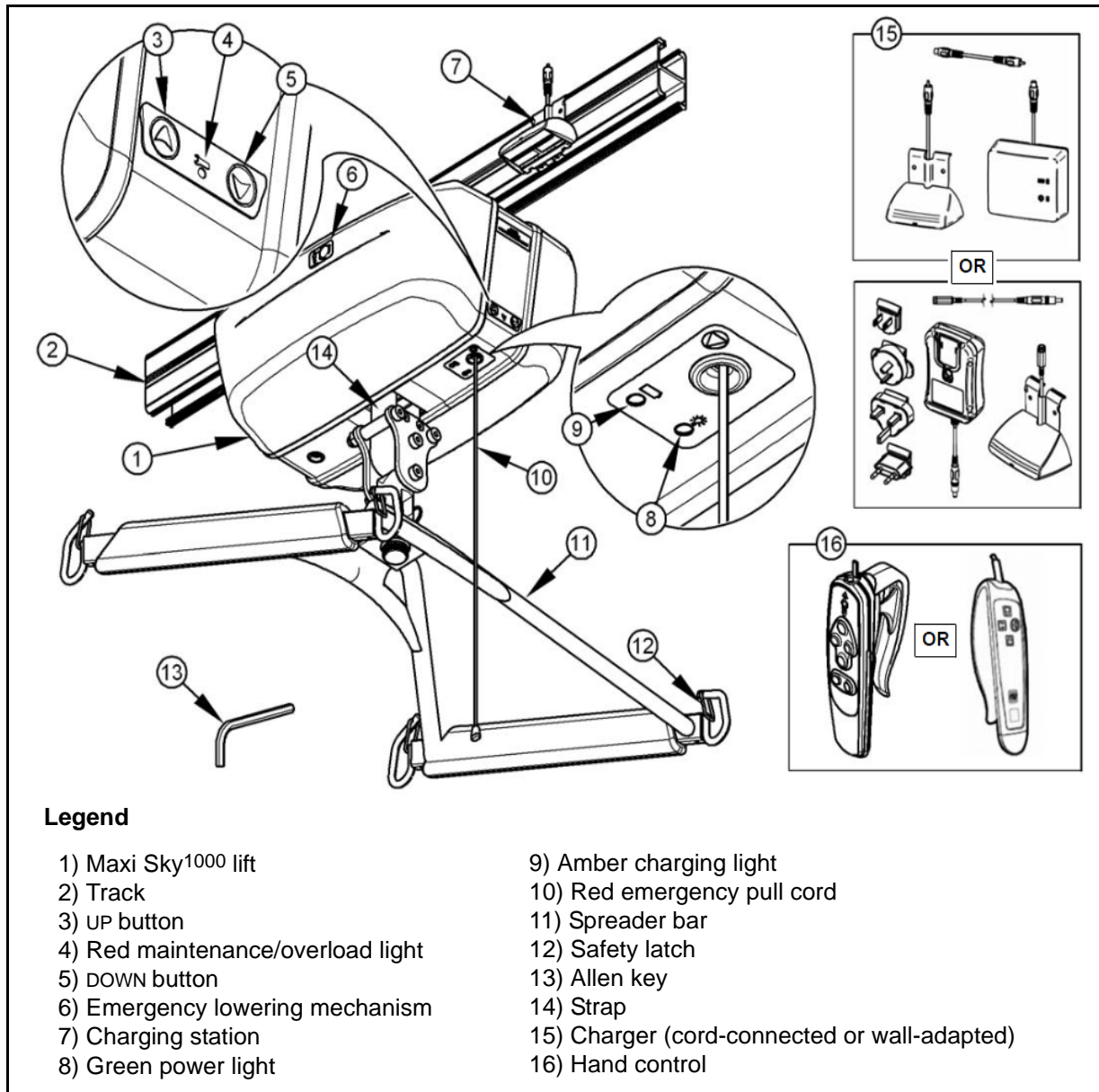


Fig. 1

### Notes:

- The yellow light "charger" flashes while charging and illuminates when charge is finished;
- The green light "on" illuminates once the lift is on and ready for use; the green light flashes when the batteries are low.
- The red light illuminates to confirm that the lift is in the programming service mode.
- The red light illuminates in the normal mode when the lift is under overheat protection caused by an overuse.
- The red light flashes when servicing is required (contact customer service).

# Maintenance and Service

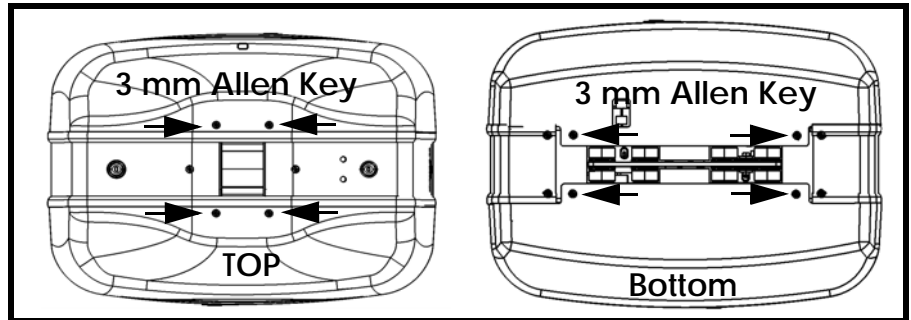
## Required Maintenance

The **Maxi Sky<sup>1000</sup>** is equipped with an electronic monitor. This red light will flash when a maintenance inspection is necessary to ensure the durability of the unit and the security of the patient and user.

Once this light red begins to flash, please contact your distributor/representative in order to perform the necessary maintenance inspection requirements.

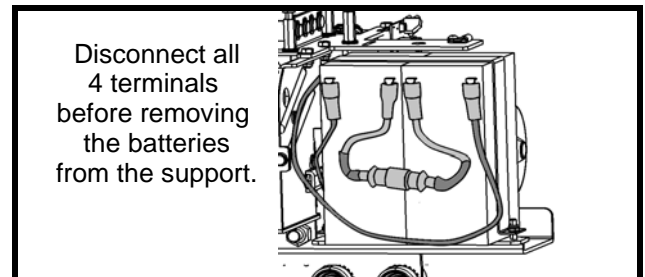
### Service Procedure #1- Removing the Plastic Shell from the Chassis

- 1) Turn the lift off by pulling the red cord.
- 2) Place the unit upside down over two wood blocks to stabilize it and to avoid damaging the contact blades.
- 3) Take off the two plastic covers. Unscrew the 8 screws with a 3 mm Allen key (4 on top, 4 underneath).



### Service Procedure #2- Battery Replacement

- 1) Turn unit off by pulling the red cord.
- 2) Remove the plastic shell (refer to service procedure #1).
- 3) Unplug the battery terminals (4).
- 4) Release the batteries from the support by loosening the nut with an 8 mm hexagonal socket and remove batteries.
- 5) Install new batteries (2) 12V 7.5 Ah and connect wiring making sure to respect polarity (red to red, black to black).



**DO NOT USE A BATTERY NOT AUTHORIZED BY ARJOHUNTLEIGH.**

ARJOHUNTLEIGH BATTERIES ARE SPECIALLY DESIGNED FOR MAXI SKY<sup>1000</sup> CHARGING SYSTEMS. ATTEMPTING TO USE AN UNAUTHORIZED BATTERY MAY SERIOUSLY DAMAGE THE LIFT AND /OR THE CHARGER.

- 6) Make sure that the on/off switch travels freely by pulling on the red cord.
- 7) Reassemble the lift. Proceed by following the preceding steps in the reverse order. Make sure to re-install every screws and bolts.

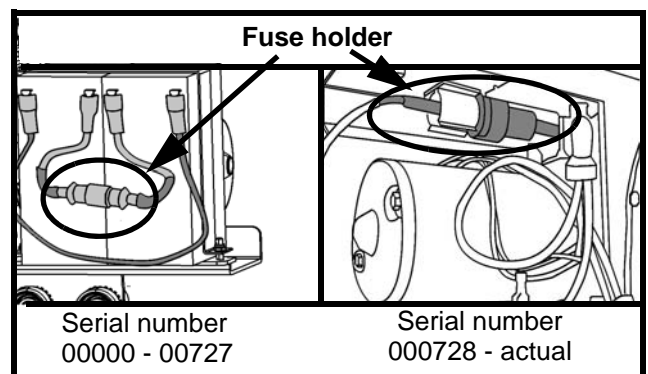
### Service Procedure #3 - Main Fuse (30 A) Replacement

- 1) Refer to service procedure #1 to remove the plastic shell.
- 2) Locate the fuse holder and replace the fuse.

#### Fuse location:

Serial number 00000 to 00727: fuse is located inside the jumper wire between the two batteries.  
Serial number 00728 to actual: fuse is located inside a screw type fuse holder underneath the top plate on the same side of the main switch.

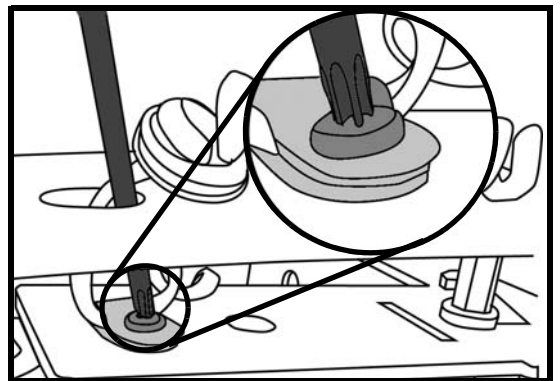
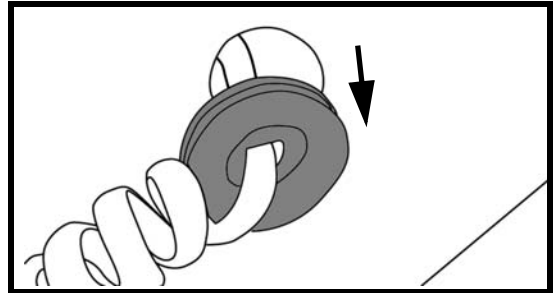
- 3) Reassemble the lift.



# Maintenance and Service

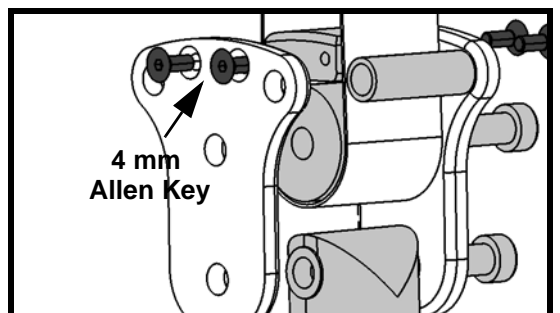
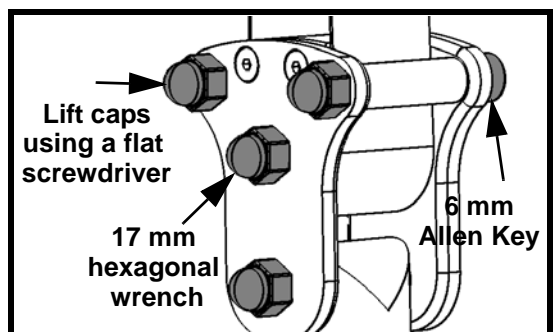
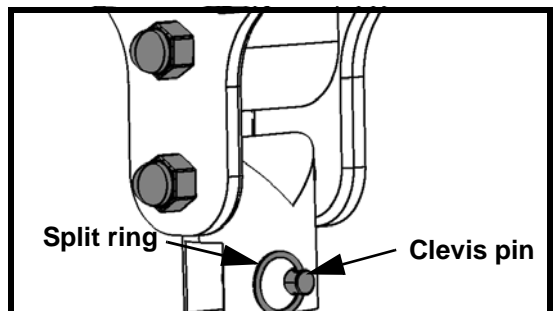
## Service Procedure #4 - Hand Control Replacement

- 1) Refer to service procedure #1 to remove the plastic shell.
- 2) Remove the rubber grommet (where the hand control wire enters the Maxi Sky<sup>1000</sup>). No tool required.
- 3) Insert a screwdriver through the rubber grommet hole and unscrew the cable clamp.
- 4) Disconnect the hand control wire from the phone jack located on the master circuit board. Remove hand control wire.
- 5) Install the new hand control cable making sure it is routed the same way as it was originally.
- 6) Reconnect the hand control in the phone jack of the master circuit.
- 7) Reassemble the lift. Be sure to re-install every screws and bolts.



## Service Procedure #5 - Pulley System Dissassembling

- 1) Disassemble the spreader bar by removing the split ring and the clevis pin.
- 2) Lift plastic caps with a small flat screwdriver.
- 3) Unscrew the bolt using a 17 mm hexagonal key on one side, use a 6 mm Allen key on the other side to retain the bolt.
- 4) Remove the 4 remaining screws and pull the pulley system apart.



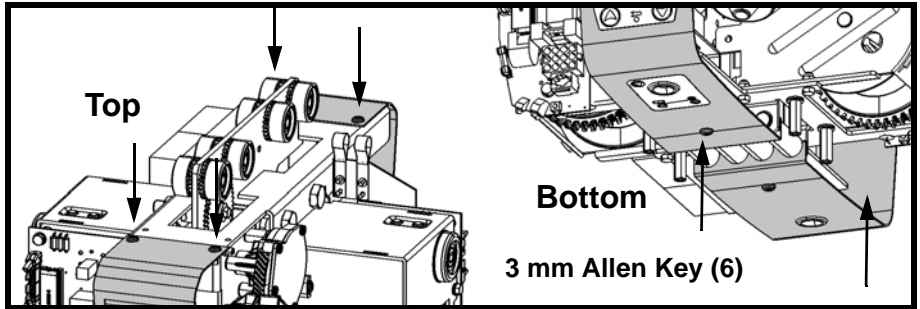
### Note!

**Always use new locknuts when reassembling the pulley system and tighten all 17 mm nuts to 160 - 180 lbf•in (18 - 20 N•m).**

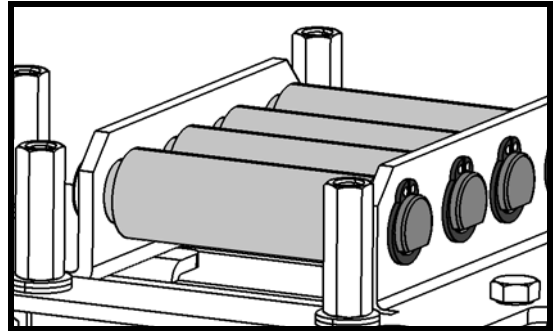
# Maintenance and Service

## Service Procedure #6 - Strap Replacement

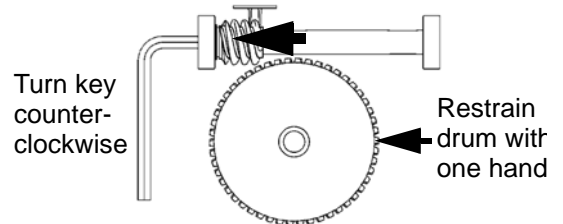
- 1) Refer to service procedure #1 to remove the plastic shell and service procedure #5 to disassemble the pulley system.
- 2) Remove the stainless steel plates.



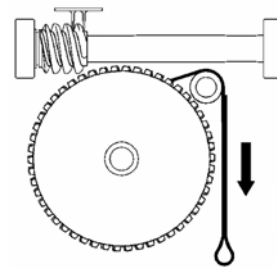
- 3) Remove the four black rollers. To do so, first remove the four retaining rings with a snap ring tool.



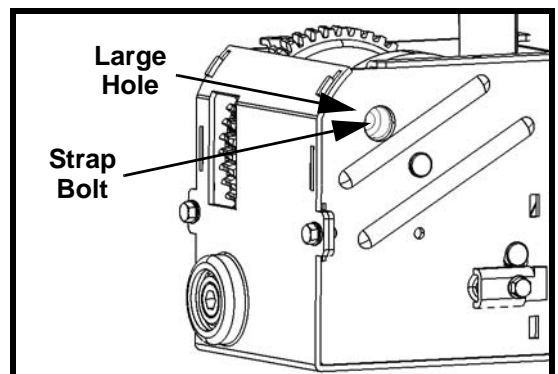
- 4) Disengage the transmission with the 8 mm Allen key.
- 5) While restraining the drum with one hand, turn the worm gear shaft counter-clockwise using an 8 mm allen key until the worm gear is disengaged completely from the drum.



- 6) Unwind the strap completely.

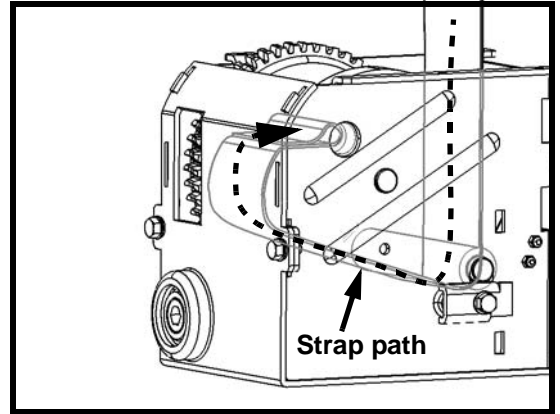


- 7) Rotate the drum to make the strap bolt aligned with the large hole.
- 8) Completely unscrew the strap bolt with a 6 mm Allen key.
- 9) Remove the old strap.
- 10) Prepare for the installation of the new strap. Place the threaded part (interfacing) facing the limit plate.

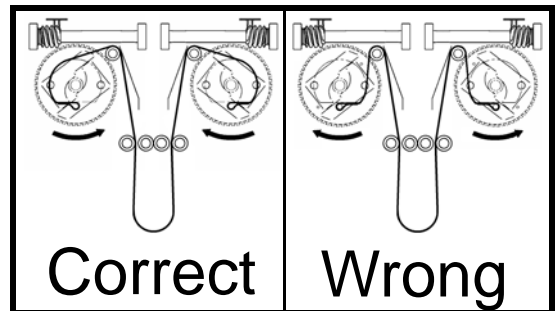


# Maintenance and Service

- 11) Align the loop of the strap with the hole for the retaining bolt.
- 12) Reinsert the bolt and tighten.
- 13) Wind up the strap manually until it is nearly completely wound onto the drum.
- 14) Engage the transmission by turning the main shaft clockwise with the 8 mm Allen key.
- 15) Repeat procedure from step 4 for the second transmission.

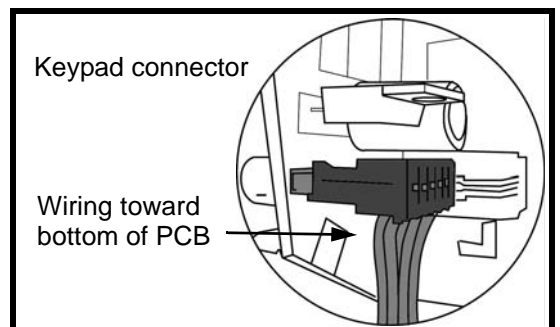
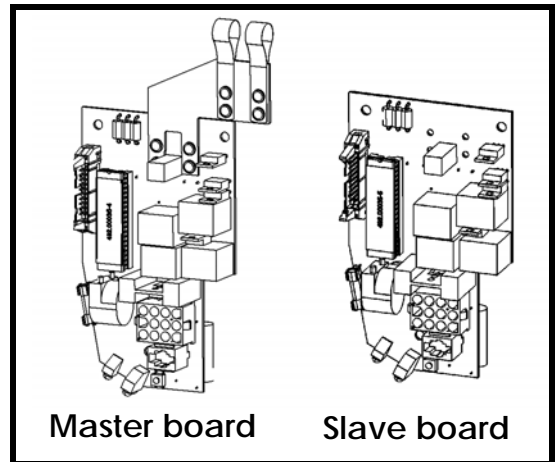


- 16) Make sure both straps are rolled back in the proper winding direction.
- 17) Grease the drum teeth with food-grade grease.
- 18) Reinstall the rollers and the stainless plates.
- 19) Reassemble the lift making sure to re-install adequately every screws and bolts.



## Service Procedure #7 - Circuit Board Replacement

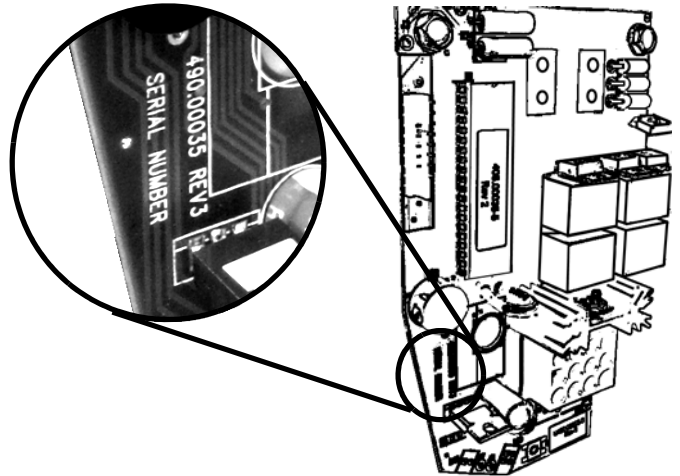
- 1) Refer to service procedure # 1 to remove the plastic shell.
- 2) Locate the circuit board that needs replacement.
- 3) Unplug all connectors.
- 4) Unscrew the 3 retaining screws using an 8 mm socket tool.
- 5) Remove the circuit.
- 6) Install the new circuit and reconnect all connectors. Some connectors are not polarized. Be careful not to invert the connection orientation.



# Maintenance and Service

For lifts with serial n° lower than XX-XXXX-00728, wiring #402-14712 must be ordered with new PCBs. Always make sure that the revision of both PCB are the same for adequate operation of the lift.

**Note :**  
Make sure you refer to the revision printed directly on the circuit board (white printing), do not refer to paper labels.

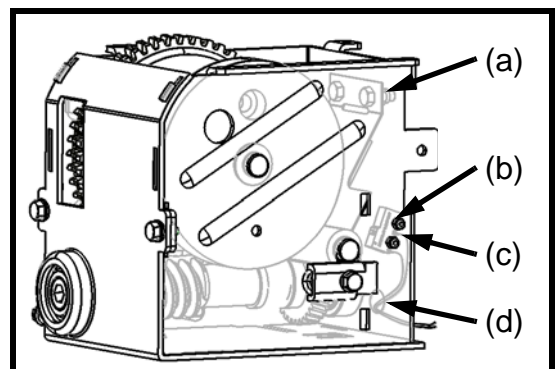
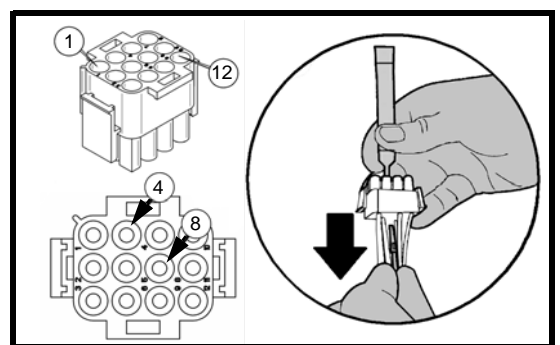
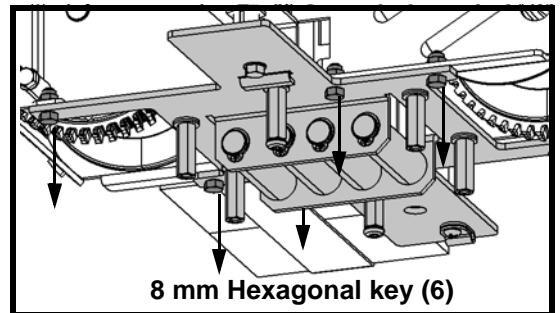


## WARNING!

**LIFT MUST BE TESTED WITH SWL AFTER BEING RE-ASSEMBLED.**  
Refer to Programming Manual 001-14154-33 to adjust maximum lifting capacity.

## Service Procedure #8 - High Limit Switch Replacement

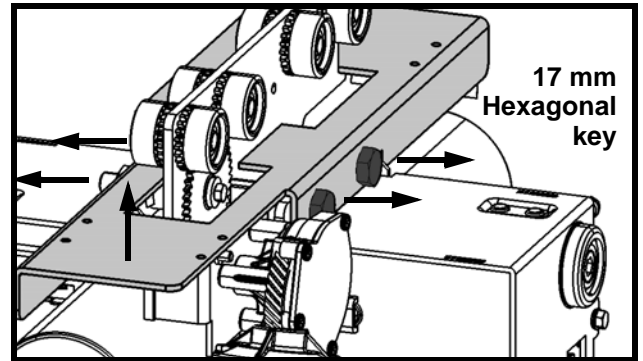
- 1) Refer to service procedure # 1 to remove the plastic shell.
- 2) Remove the stainless steel plate as indicated in service procedure #6 step 2.
- 3) Remove the main bottom plate.
- 4) Disconnect the main connector from the circuit board.
- 5) With an extractor tool #000.00001, remove the two blue wires of the limit switch from the main connector (position numbers 4 and 8).
- 6) Refer to image below for switch replacement.
  - a) Unscrew the two locknuts holding the limit switch plate (a) using an 8 mm socket tool and an 8 mm (5/16) wrench.
  - b) Unscrew the two nuts of the limit switch (b) using a 3/16 in or 5-mm socket.
  - c) Affix the new limit switch (c) in the same position as the original.
  - d) Place the limit plate back between the frame and the strap. Ensure that the limit switch wires pass through the round opening (d) in the frame.
- 7) Bolt the limit switch plate back into place.
- 8) Test the system by placing the double thickness of the strap between the strap roller and the plate. If the installation is correct, you should hear the switch clicking.
- 9) Reconnect the two blue wires of the limit switch plate to the main connector.
- 10) Reassemble the lift.



# Maintenance and Service

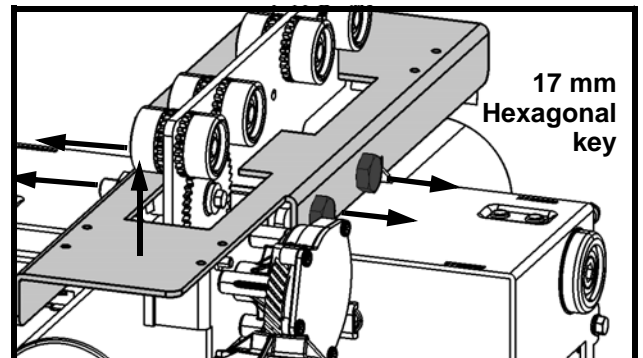
## Service Procedure #9 - Trolley Replacement

- 1) Refer to service procedure #1 to remove the plastic shell.
- 2) Refer to service procedure #2 to remove the batteries.
- 3) Refer to service procedure #6 to remove the 2 stainless steel plates.
- 4) Remove the two screws holding the trolley from the top plate.
- 5) Remove the top plate.
- 6) Insert the new trolley on the lift.
- 7) Reassemble the lift.

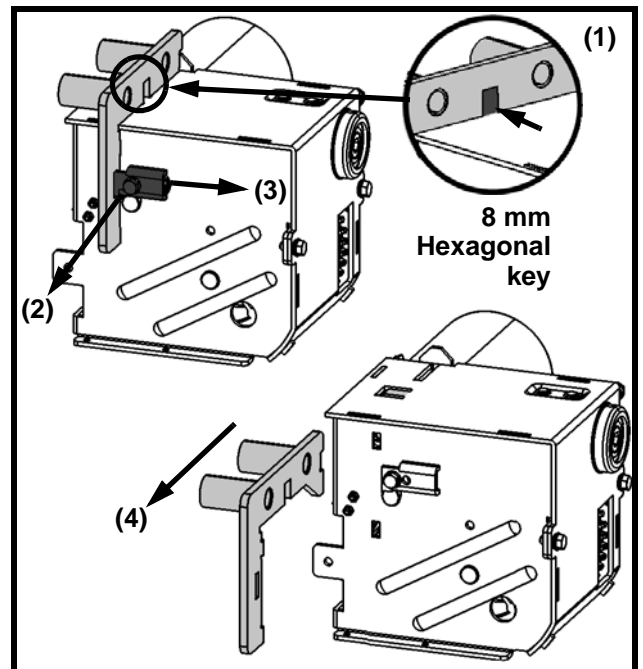
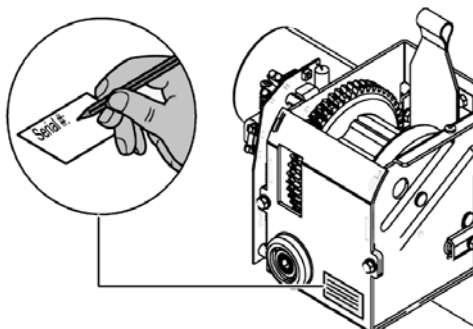


## Service Procedure #10 - Transmission Replacement

- 1) Refer to service procedure #1 to remove the plastic shell.
- 2) Refer to service procedure #2 to remove the batteries.
- 3) Refer to service procedure #6 to remove the 2 stainless steel plates and to release the strap from the transmission being replaced.
- 4) Refer to service procedure #7 to remove the circuit boards.
- 5) Refer to service procedure #8 to remove the bottom plate and the high limit switch.
- 6) Remove the top plate.
- 7) Refer to service procedure # 8 to remove the high limit switch.



- 8) Remove the trolley support plate by unfolding the locking tab then loosening the locking device screw and sliding it away from the support plate.
- 9) Copy the serial number of the unit in the blank area on the label already applied on the new transmission.



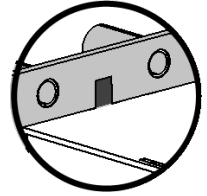
# Maintenance and Service

- 10) Assemble the vertical motor to the new transmission housing (refer to service procedure #11).
- 11) Reinstall the trolley support plate to the new transmission assembly.
- 12) Reinstall the locking device and fold the locking tab back as it was in the first place.

## WARNING!

**It is imperative to fold the locking tab back to its original position to avoid damaging the product or to avoid injuries.**

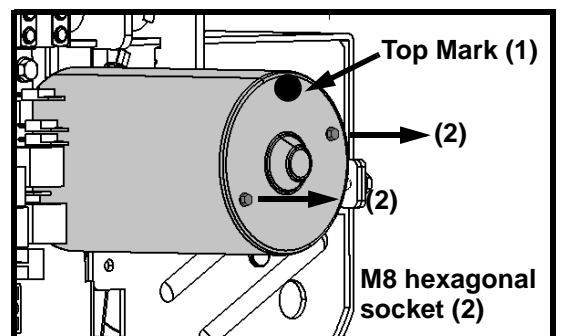
**THIS OPERATION COULD ONLY BE PERFORMED UP TO A MAXIMUM OF FOUR TIMES.**



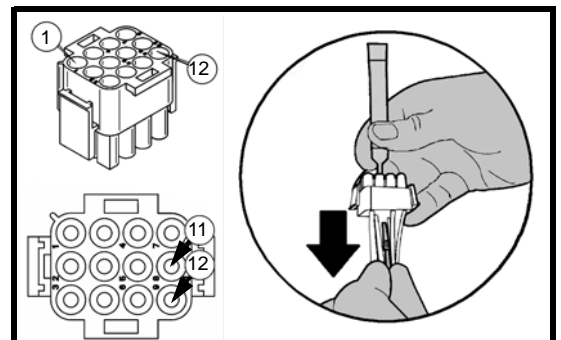
- 13) Lubricate the drum if necessary.
- 14) Reassemble the lift but do not put plastic shell back at this time.
- 15) Turn the unit on by pulling gently on the red emergency cord and test the up down and left right functions on the remote to make sure there are no inversion in the up down or left right direction.  
If there is an inversion in one direction, this may be caused by a reversed connection or an incorrect motor installation. Review the procedures relevant to motors replacement and fix the issue accordingly.
- 16) Reassemble the plastic shell.
- 17) Before putting the lift back in service, perform a weight load test: Attach a weight equivalent to the ceiling lift's SWL 454kg (1000lb) to the spreader bar. Press the UP button to verify if the unit can lift the load up until the strap is fully wound. Lower the weight and remove it from the spreader bar.

## Service Procedure #11 - Vertical Motor Replacement

- 1) Refer to service procedure #1 to disassemble the plastic shell.
- 2) Refer to service procedure #2 to remove the batteries.
- 3) Refer to service procedure #6 to remove the stainless steelplates. Note that you only need to remove the plate on the side where the motor needs replacement.
- 4) Put a mark on the back of the motor housing to indicate the top of the housing, this mark will be your reference to make sure that the motor is reassembled in the right position.
- 5) Remove the 2 screws on the back of the motor using a M8 hex socket and pull the motor assembly out.

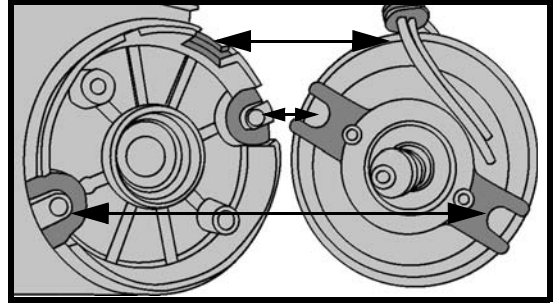


- 6) If the motor is being transferred to a replacement transmission, you do not need to disconnect the wires from the main connector. If the motor is being replaced, disconnect the blue and red wire from the main connector (position 11 and 12) by using an extracting tool.



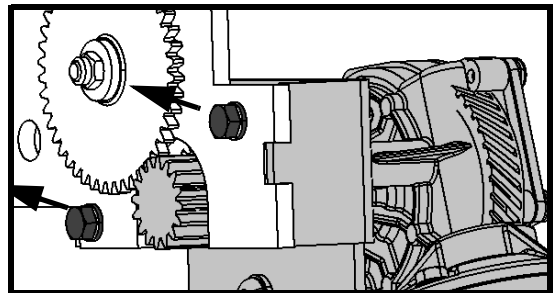
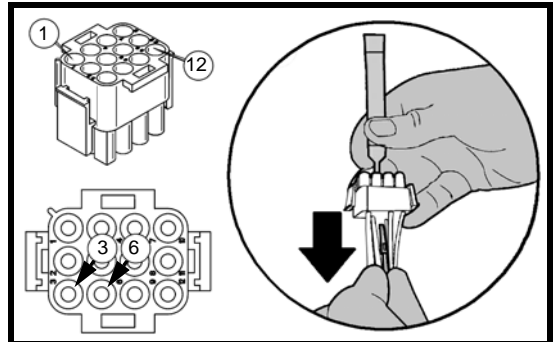
# Maintenance and Service

- 7) Insert the motor assembly into the new transmission housing. Position the rubber grommet into the top groove making sure that the connection point of the wires inside the motor are above the shaft. Position the motor plate into the side grooves.
- 8) Tighten to 25 - 30 lbf•in (2.8 - 3.4 N•m) the 2 screws to secure the motor in place.
- 9) Reassemble the lift but do not put the plastic shell back at this time.
- 10) Turn the unit on by pulling gently on the red emergency cord and test the up down functions on the remote to make sure there are no inversion in the direction.  
If there is an inversion in the direction, make sure that all motor elements where replaced in the proper orientation.  
Also make sure that the wires where inserted into the appropriate position of the main connector.
- 11) Reassemble the plastic shell.



## Service Procedure #12 - Horizontal Motor Replacement

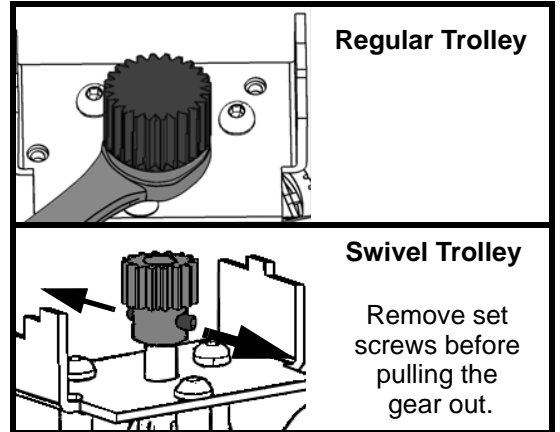
- 1) Refer to service procedure #1 to remove the plastic shell .
- 2) Refer to service procedure #2 to remove the batteries.
- 3) Refer to service procedure #6 to remove the 2 stainless steel plates.
- 4) Refer to service procedure #9 to remove the trolley.
- 5) Disconnect the main connector from the circuit board.
- 6) With an extractor tool #000.00001, remove the two wires of the horizontal motor from the main connector (position numbers 3 and 6).
- 7) Remove the 2 screws fastening the motor assembly to trolley.



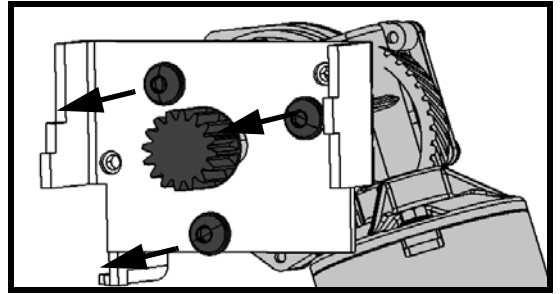
# Maintenance and Service

- 8) Retract the gears from the shaft of the motor; a 12 mm wrench could act as a lever to remove the gear. Make sure the gear stays greased. Use food grade grease if needed. Refer to the "Parts list" section to order the grease.

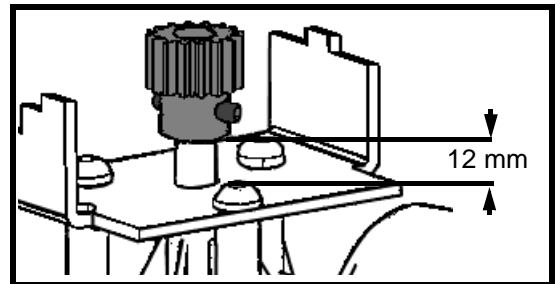
**Note:** The swivel trolley is secured with 2 set screws, remove these set screws prior to pulling the gear out.



- 9) Unscrew the three screws holding the motor using a 4 mm Allen key.
- 10) Change the motor.
- 11) Screw the new motor back onto its support. Replace the gear using a small plastic hammer. Carefully fit the D shaped hole with the D shaped shaft.



- 12) Replace the 2 set screws (if equipped). Place the first set screw aligned with the flat part of the shaft then follow with the second set screws. Make sure to position the gear to leave a gap of 12 mm between the gear and plate.
- 13) Screw the motor support back onto the trolley. Align teeth.
- 14) Reconnect the wires to the main connector. Make sure to respect polarity as failure to do so will reverse motor displacement. Refer to main connector diagram.

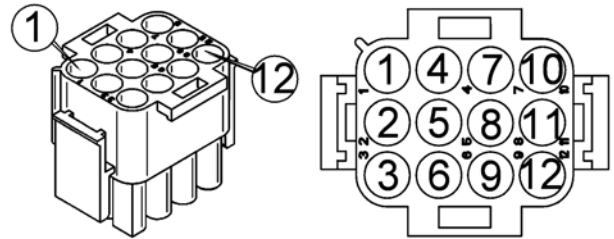


- 15) Reassemble the lift.

# Maintenance and Service

## Connection Diagram, Main Connector

Please refer to connector diagram for the wire positions.



### Master circuit board connector (492.00035-4)

Applies to unit with serial number below 00728.

- Position 1: Red / White - On/Off switch ;
- Position 2: No connection;
- Position 3: Red - Horizontal motor;
- Position 4: Blue - High limit switch;
- Position 5: No connection;
- Position 6: Blue - Horizontal motor;
- Position 7: No connection;
- Position 8: Blue - High limit switch;
- Position 9: Black / White - Chassis ground;
- Position 10: No connection;
- Position 11: Red - Vertical motor;
- Position 12: Blue - Vertical motor.

### Master circuit board connector (492.00035-4)

Applies to unit with serial number above 00727.

- Position 1: Red / White - Positive terminal of the first battery;
- Position 2: Red - Positive terminal of the second battery;
- Position 3: Blue - Horizontal motor;
- Position 4: Blue - High limit switch;
- Position 5: Black - Negative terminal of the first battery;
- Position 6: Red - Horizontal motor;
- Position 7: No connection;
- Position 8: Blue - High limit switch;
- Position 9: Black / White - Negative terminal of the second battery;
- Position 10: No connection;
- Position 11: Red - Vertical motor;
- Position 12: Blue - Vertical motor.

### Slave circuit board connector (492.00035-5)

Applies to all units.

- Position 1: Red / White - On/Off switch ;
- Position 2: No connection;
- Position 3: No connection;
- Position 4: Blue - High limit switch;
- Position 5: No connection;
- Position 6: No connection;
- Position 7: No connection;
- Position 8: Blue - High limit switch;
- Position 9: Black / White - Chassis ground;
- Position 10: No connection;
- Position 11: Red - Vertical motor;
- Position 12: Blue - Vertical motor.

# Care and Maintenance

## Preventive Maintenance Schedule

The equipment is subjected to wear and tear, and the following maintenance instructions must be acted upon when specified to ensure that the equipment remains within its original manufacturing specifications. Care and maintenance must be carried out in accordance with the preventive maintenance schedule below.

Customer obligations must be carried out by qualified personnel in accordance with the instructions in this manual.

**WARNING: The maintenance described in the following checklist is the minimum that the manufacturer recommends. In some cases more frequent inspections should be carried out. Continuing to use this equipment without conducting regular inspections or when a fault is found will seriously compromise the safety of the user and of the resident. Local regulations and standards may be higher than those of the manufacturer. A load test for the ceiling lift is recommended. Preventive maintenance specified in this manual can prevent accidents and reduce repair costs.**

**WARNING: Safety related maintenance and authorized service must be carried out by qualified personnel, fully trained in servicing procedures by ArjoHuntleigh, and equipped with proper tools. Failure to meet these requirements could result in personal injuries and/or unsafe equipment.**

## User Inspections

Inspection of lift and track system	FREQUENCY					
	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Inspect for evidence of external damage, missing parts or broken housing.	X	X				
Make sure that end stoppers and rail caps are in place and tightened.	X	X				
Inspect strap for wear, discoloration or loose threads.		X				
Recharge batteries.		X				
Inspect wheels in rail for damage, rust or cracks. Replace if damaged.					X	
Clean the rail and the clip-on charging station contacts.				X		
Overall inspection by authorized personnel.					X	
Verify emergency stop cord.				X		
Verify emergency lowering device.				X		
Inspection of spreader bar and slings	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Inspect all sling parts (attachments, fabric, stitch areas and strap) for signs of wear, discoloration, deterioration or loose threads.		X				
Clean sling as indicated on the tag.			When necessary			
Inspect the spreader bar on the strap of the lift for damage or cracks. Make sure all attachments are properly secured (e.g. split ring).		X				

# Care and Maintenance

## Inspections by an Authorized Service Technician

Inspection of lift	FREQUENCY					
	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Replace strap.						X
Inspect frame parts interlock and hardware for malfunction and make sure there are no parts missing.					X	
Inspect gears for wear.					X	
Inspect connecting joints for proper attachment (trolley and spreader bar).					X	
Verify that the emergency brake on the drum is turning freely.					X	
Verify the emergency brake.					X	
Verify emergency lowering mechanism.					X	
Verify alternative up and down buttons on lift.					X	
Load test (safe working load-SWL) for ceiling lift recommended.					X	
Inspection of tracks	Initially	Before every use	Every two months or 500 cycles	Every four months or 1000 cycles	Every year or 2500 cycles	Every two years or 5000 cycles
Torque end stoppers to 15 lbf•in (20 N•m).	X				X	
Make sure that the bracket locking device is not visible.	X				X	
Make sure rail joints are closed and that the spring pins are centered.	X				X	
Make sure the rail is straight when it is not loaded.	X				X	
Make sure the adjusted load setting of the lift is equal or lower than the safe working load of the installation.	X				X	
Make sure that the attachments (ceiling brackets, wall post, wall brackets) have not been displaced.	X				X	
Inspect track end stoppers.	X				X	
Required SWL (safe working load) test for tracks	X				X	

**NOTE:** If the product does not work as intended, immediately contact your local ArjoHuntleigh representative for support.

**WARNING:** Always reinstall the track end stoppers (if removed) after servicing.

# Care and Maintenance

## Cleaning

To clean the Maxi Sky<sup>1000</sup>, wipe it down with a damp cloth using warm water and a disinfectant cleaner. Disinfectant wipes, supplied already impregnated with a 70% v/v solution of isopropyl alcohol, can also be used.

Rub the lift vigorously when using the wipes, to promote an effective disinfection of its entire surface. Do not use phenol, chlorine or any other type of solvent that may damage the finish.

To ensure a better rolling surface for the trolley wheels, clean the inside of the track every 4 months. To do so, insert a damp cloth in the opening and slide it from one end of the track to the other.

## Strap Inspection

If the strap is damaged or shows signs of wear or discoloration, the acceptable load on the strap before rupture can drop rapidly and present a danger for the resident or caregiver. ArjoHuntleigh recommends a thorough inspection of the straps every 2 months as follows:

- 1) Completely unwind the strap.
- 2) Look for any signs of wear or discoloration (see Fig. 2).

**WARNING:** If there is any sign of wear as indicated previously or any other visual defects, the strap must be changed. The manufacturer recommends changing the strap at least every two years. By continuing to use the lift without changing a damaged strap, the safety of the caregiver or resident is greatly compromised.

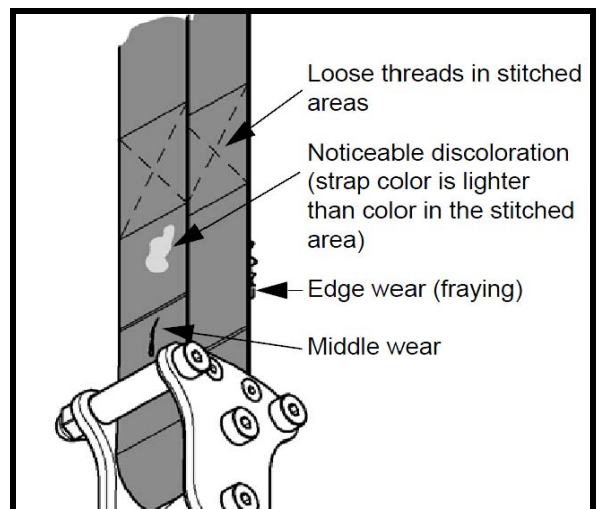


Fig. 2

## Handling and Storage

Avoid violent impacts while transporting the lift.

The lift should not remain stored for long periods of time without recharging the batteries.

**NOTE:** Even if the lift is not used, ArjoHuntleigh recommends charging the batteries at least every two weeks. This will prevent premature aging of batteries.

If you store or ship the Maxi Sky<sup>1000</sup>, ensure that the power (green light) is turned off beforehand.

## Battery Replacement

ArjoHuntleigh uses sealed lead-acid batteries in the Maxi Sky<sup>1000</sup> ceiling lifts. ArjoHuntleigh batteries do not have any memory effect. Therefore, batteries should not be completely discharged before recharging.

Replace the battery when there is a noticeable reduction in the number of transfers that can be performed between charges. If you hear the Maxi Sky<sup>1000</sup> lift beeping and notice a red light flashing, see the instructions in the "Troubleshooting" section of this manual to determine if it is a problem with the battery.

To replace batteries, be sure to contact your local ArjoHuntleigh representative.

**CAUTION:** Do not attempt to use a battery that was not supplied by ArjoHuntleigh. ArjoHuntleigh batteries are specially designed for ArjoHuntleigh charging systems. Attempting to use an unauthorized battery may seriously damage the lift and/or the charger.

# Care and Maintenance

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## Verification of the Charger's Power Source

If the light does not illuminate when there are batteries correctly installed in the Maxi Sky<sup>1000</sup>, try the following:

- 1) Make sure that the power cord is correctly plugged into the charger and in the wall AC outlet, and that the green light on the clip-on charging station is on.
- 2) Make sure that there is contact between the contact blades of the lift and the contact plates of the charging station.
- 3) Check the power of the AC outlet on the wall.
- 4) If the charger's green light does not light up, contact your local ArjoHuntleigh representative for assistance.

## Sling Inspection and Care

For maximum resident safety and hygiene, read the following instructions:

### Regular Inspections

It is essential that the slings, their straps, loops and attachment clips are carefully inspected before each and every use. If the slings, loops or straps are frayed, or the clips damaged, the sling should be withdrawn from use immediately and replaced.

### Sling Laundering

**WARNING: The slings should be checked before and after use and, if necessary, washed according to instructions on the sling. This is especially important when using the same equipment for another resident. This minimizes the risk of cross infection.**

Before washing the slings equipped with head support pockets, always remove the plastic reinforcement inserts. Always refit the inserts before reusing the sling.

Mechanical pressure should be avoided during the washing and drying procedure (e.g. rolling or pressing), as these can damage parts vital to the safe and comfortable operation of the sling.

The stretcher cross straps and suspension straps should be checked and washed if necessary. Washing and drying temperatures must not exceed 80°C (176°F). Wash using normal detergents and do not iron.

## Annual Inspection

The Maxi Sky<sup>1000</sup> and its accessories must be inspected annually by a certified technician.

**WARNING: The Maxi Sky<sup>1000</sup> and accessories must be serviced every 12 months as a minimum requirement. Do not attempt to do the inspection unless you are certified to do so.**

### Maintenance Requirements

The Maxi Sky<sup>1000</sup> is equipped with an electronic monitor that causes a red light to flash when a maintenance inspection is necessary. Arranging for scheduled inspections ensures the durability of the unit and the security of the resident and user.

# Troubleshooting

**WARNING: Only a certified technician is authorized to open the Maxi Sky<sup>1000</sup> ceiling lift. Alterations made to the Maxi Sky<sup>1000</sup> ceiling lift by someone other than a certified technician may cause serious injury.**

PROBLEM	TO CHECK
The red “service” light is on and flashing.	<ul style="list-style-type: none"> <li>Contact your local ArjoHuntleigh representative to do maintenance.</li> </ul>
The red light is solid.	<ul style="list-style-type: none"> <li>The ceiling lift is under its overheat protection. Wait between 10 to 30 minutes until the red light turns off and press on the “UP” button to use the ceiling lift again.</li> </ul>
The unit starts and stops repetitively.	<ul style="list-style-type: none"> <li>If the load is over a safe working load, the unit will not work due to the overload protection on the motor.</li> </ul>
The ceiling lift emits a beep during utilization. The unit may stop lifting but the lowering function can still be used.	<ul style="list-style-type: none"> <li>Batteries are low. Return the ceiling lift to the charging station.</li> </ul>
The charger indicator (yellow) on the ceiling lift does not light up when the lift is on the charger.	<ul style="list-style-type: none"> <li>Check that the charger is plugged into a standard outlet, and that the outlet has power. The green light on the clip-on charging station indicates that it is functioning.</li> </ul>
When returning to charge, the ceiling lift passes the clip on the charging station, or goes in the wrong direction.	<ul style="list-style-type: none"> <li>Clean the contact blades of the charging station with mild detergent. Pass the ceiling lift through the charging station manually once, then retry the return to charger function.</li> </ul>
Batteries are always dead after only a few transfers (3 to 5).	<ul style="list-style-type: none"> <li>Verify the function of the ceiling lift charger and the contact plates on the clip-on charging station.</li> <li>Replace batteries with new ones. The life of the current batteries could be almost finished. It is important to always change both batteries at the same time. Contact your local ArjoHuntleigh representative to have the batteries replaced.</li> </ul>
The yellow light on the unit is solid, yet the ceiling lift will only perform one or two transfers.	<ul style="list-style-type: none"> <li>Contact your local ArjoHuntleigh representative to have batteries replaced.</li> </ul>
The yellow light on the unit is solid, yet the ceiling lift will only work when there is no one on the lift. When you try to transfer someone, the ceiling lift stops.	<ul style="list-style-type: none"> <li>Contact your local ArjoHuntleigh representative to have the batteries replaced.</li> </ul>
The ceiling lift does not work when you press the buttons on the hand control.	<ul style="list-style-type: none"> <li>If the charger light is on, move the ceiling lift away from the charging station in order to operate the lift.</li> <li>If the emergency stop is activated, gently pull on the emergency cord to turn the unit back on.</li> <li>Check if the buttons on the ceiling lift are working. If so, the problem may be coming from the hand control. If not, check the charge on the ceiling lift.</li> <li>Check if the hand control is plugged in properly into the ceiling lift; the hand control may be slightly pulled out from its socket and yet appears as though it is plugged in. Pull out the plastic cover to check the connection.</li> <li>Slide the ceiling lift over the clip-on charging station. Verify if the yellow light turns on.</li> <li>If, after testing all of the above, the ceiling lift will not operate, contact your local ArjoHuntleigh representative.</li> </ul>

# Troubleshooting

PROBLEM	TO CHECK
The charging light on the ceiling lift continues flashing yellow and the light does not turn solid even after recharging the unit overnight.	<ul style="list-style-type: none"> <li>• If available, try another integrated clip-on charging station from another ceiling lift, or a spare one; Clip it to the rail and charge the unit for 3 hours. If the yellow light is still flashing, contact your local ArjoHuntleigh representative.</li> <li>• Using a voltmeter, test two contact points on the charging station (see Fig. 3). The voltmeter should read between 26 and 30 volts VDC.</li> <li>• If, after testing all of the above, the ceiling lift will not operate, contact your local ArjoHuntleigh representative.</li> </ul>
When you press the button to return the ceiling lift to its charger, the ceiling lift goes past the charger.	<ul style="list-style-type: none"> <li>• The charger either has no power or is not working properly (the contacts are defective). See "Troubleshooting" question above.</li> </ul>

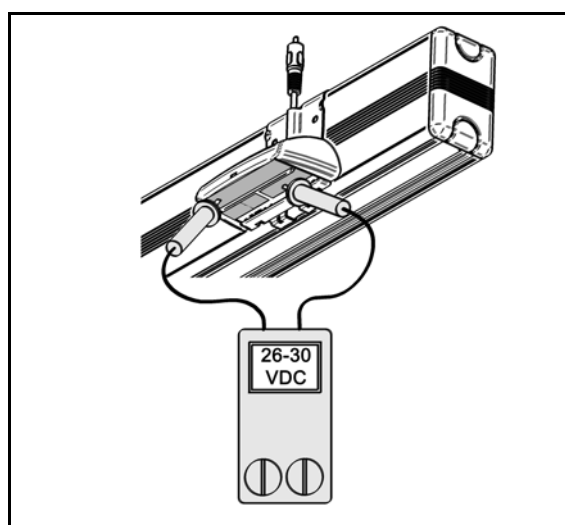
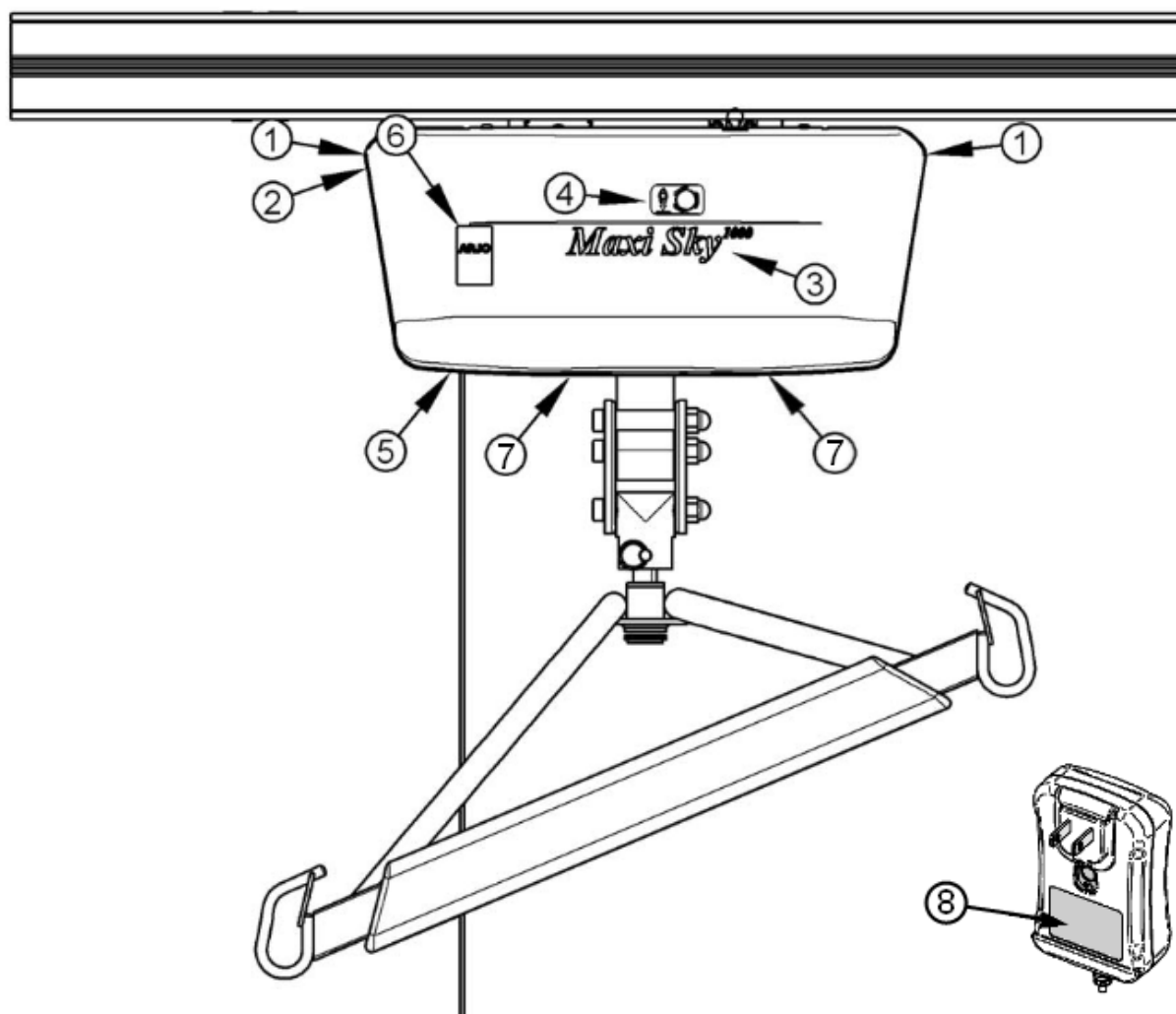


Fig. 3

# Labels on the Lift



- 1) Maximum capacity/Safe Working Load (SWL)
- 2) Date of manufacture, serial number, product code
- 3) Product name
- 4) Emergency lowering system access identification
- 5) Emergency stop identification
- 6) Manufacturer identification
- 7) Travel direction indicators
- 8) Charger information

Fig. 4

# Technical Specifications

## PRODUCT INFORMATION

### Maxi Sky<sup>1000</sup>

Weight, complete	22 kg (48 lb)
Lifting capacity	454 kg (1000 lb)
Strap length	5000 mm (196.9 in)
Lifting speed	6.0 cm/s (2.4 in/s) without load 3.5 cm/s (1.4 in/s) at 230 kg (500 lb) 2.7 cm/s (1.2 in/s) at 454 kg (1000 lb)
Maximum stroke (from ceiling)	2300 mm (90.6 in)
Horizontal displacement speeds	10, 13, 15 and 20 cm/s. Speed is 15 cm/s (6 in/s) by default
Horizontal axis motor	24 VDC at 62 watts
Vertical axis motor (qty 2)	24 VDC at 110 watts

## ELECTRICAL

Duty cycle	Max 10%, 1 minute continuously
Rating	24 VDC, 30 A max.
Noise level for either raising or lowering, with or without load	61 dBA max.
Medical equipment	Type B protection against electrical shock in accordance with IEC 60601-1
The Maxi Sky <sup>1000</sup> is compliant with CAN/CSA-C22.2, CSA-Z323.5.98, IEC 60601-1, UL 60601-1 AND ISO 10535.	

**WARNING: Radio transmitting devices such as mobile telephones, two-way radios, etc., should never be used near the Maxi Sky<sup>1000</sup>, since they can interfere with the function of the lift. Cables from potentially strong sources of electromagnetic fields should not be placed near the unit. See “Electromagnetic Compatibility” section of this manual for full details.**

Battery type	Sealed rechargeable valve regulated lead acid battery Constant voltage charge Cycle used 14.1 - 14.4 V Standby use: 13.5 - 13.8 V Initial current: Less than 2.00 A Rating: 12 V, 7.5 Ah
Battery capacity	Provides up to 80 transfers with a load of 230 kg (500 lb), up to 25 transfers with a load of 454 kg (1000 lb).
Degree of protection - handset	IPX4
Degree of protection - Maxi Sky <sup>1000</sup>	IP23
Lift - protection class - shock prevention	Internally powered equipment
Battery Charger input	100-240 VAC, 50-60 Hz
Battery Charger output	28.1 VDC, 1 A max
Battery Charger safety protection	Class 2, double insulated

## OPERATION AND STORAGE CONDITIONS

Ambient temperature range	-10 °C to 50 °C (14 °F to 122 °F)
Relative humidity range	10 % to 80 % incl. condensation
Atmospheric pressure range	Operation: 700 hPa to 1060 hPa Storage: 500 hPa to 1060 hPa

# Technical Specifications

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**WARNING: This equipment is not suitable in the presence of flammable anesthetic mixtures with air or oxygen, or with nitrous oxide.**

## ***RECYCLING***

Battery	Sealed lead-acid, rechargeable, recyclable
Package	Cardboard recyclable
The lift	Separated and recycled, according to the European Directive 2002/96/EG (WEEE).

# Technical Specifications

## Lift Dimensions

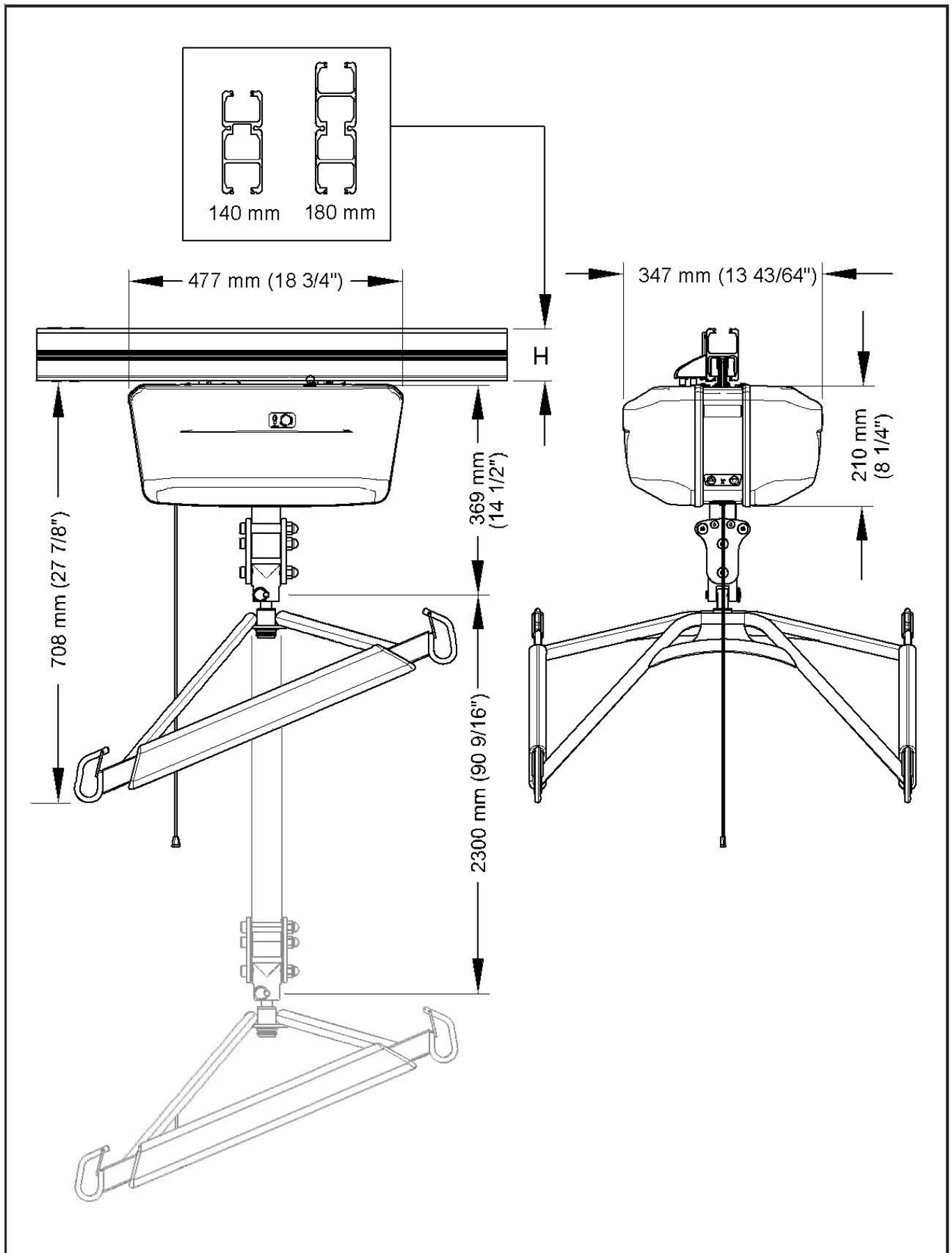


Fig. 5

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# ARJOHUNTLEIGH

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