AMYLIOR

# INSTRUCTION GUIDE

## *REPLACING A TILT ACTUATOR & A DRIVE LOCK-OUT SWITCH*

## *VERSION 2: AFTER DECEMBER 2022*



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## 1. Warning

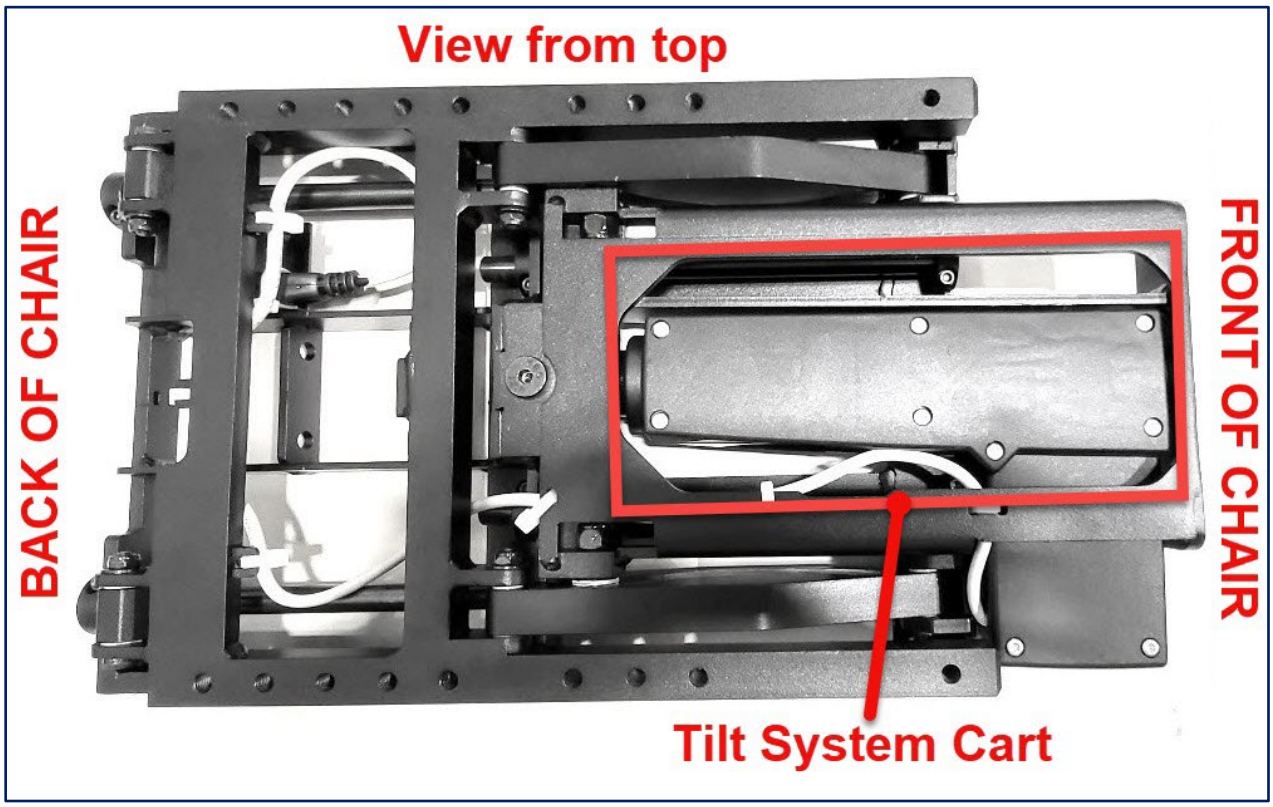
Before performing any type of replacement work, the following instructions must be read and understood. If these instructions are not fully understood or guidelines are not followed, technicians and/or users could be seriously injured, equipment could be damaged, and the warranty could become void. For information on parts or if your have any questions, please contact Amylior Technical Support by email at techsupport@amylior.com or by phone at 1 888 453-0311.

## 2. Replacement parts/kits in this guide

| | |
|---|---|
| 1004102 | KIT – STD ELECT. ACTURATOR, 127 MM |
| S-0204 | KIT - IQ ACTUATOR STD TILT, STROKE 127 MM |
| S-0152 | MECHANICAL LIMIT SWITCH WITH HARDWARE |
| S-0205 | DRIVE LOCK-OUT SWITCH FOR TILT, E-BX |

## 3. Important information

This guide is intended for wiring cables on tilt actuators installed after December 2022.





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*Replacing tilt actuator & drive lock-out switch (cont'd)*

## 4. Required tools

| | |
|---|---|
| 1 x 6 mm Allen key |  |
| 1 x 6 mm Allen 3/8" socket &<br>1 x 3/8" extension bar |  |
| 1 x 5 mm Allen key or 5 mm Allen 3/8" short socket |  |
| 1 x 3/8" ratchet or impact driver |  |
| 1 x cutter pliers |  |
| 2 x 48" x 1"straps |  |
| 1 x portable light |  |


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*Replacing tilt actuator & drive lock-out switch (cont'd)*

## 5. Required items when replacing actuators 1004102 or S-0204

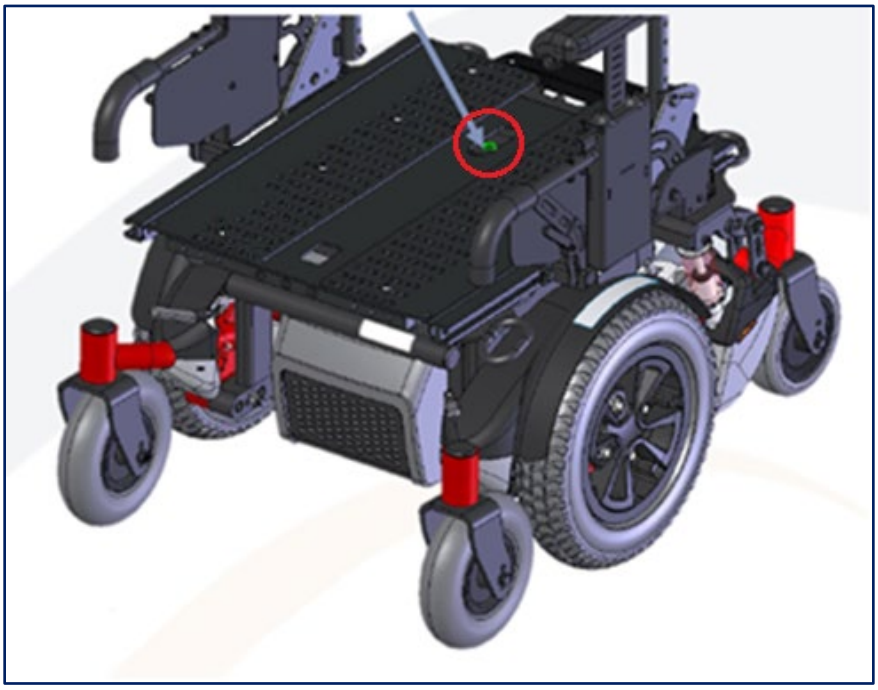
| | |
|---|---|
| 1 x new actuator<br>1004101 (Actuator S-0153) or<br>1000415 (iQ Actuator S-0204) |  1004101  1000415 |
| 7 x B00051 5½" Zip ties (S=small) |  |

## 6. Replacing actuators 1004102 and S-0204

1. Retract tilt system back to its closed (neutral) position and remove seat cushion.
2. Using a 6 mm Allen key, through the hole in the seat pan, unscrew socket shoulder bolt to release the actuator shaft from the tilt module.

! WARNING

HD tilt systems for 300 lb to 450 lb (160 kg to 205 kg) weight capacity, have compressed springs in the module when the actuator is in its neutral position. Unscrewing the actuator's socket shoulder bolt will release tension suddenly, which causes the seat pan to pop up. It is important to take the necessary measures to avoid injury.

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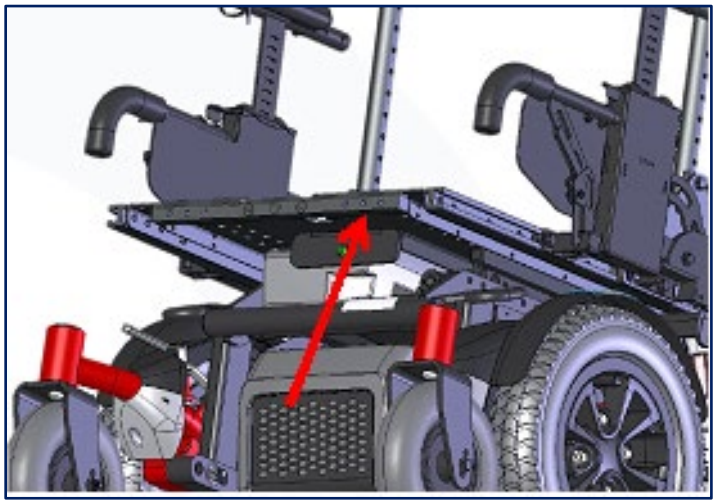
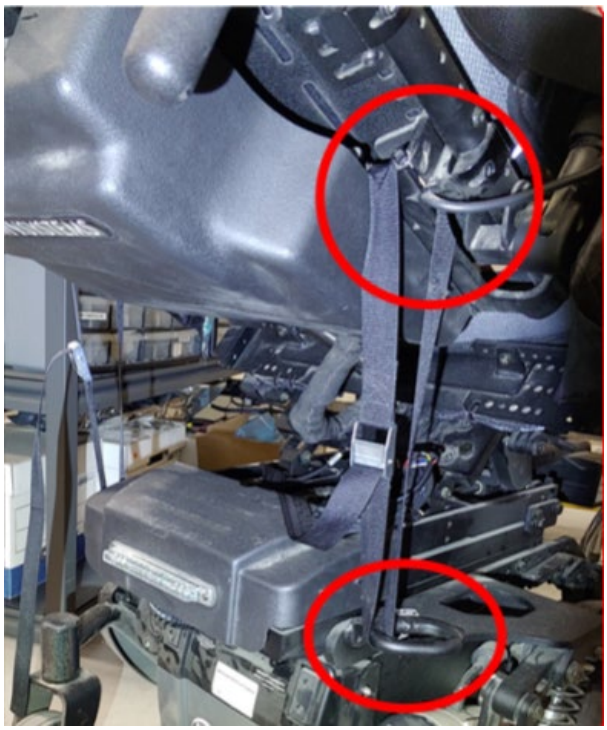
## *Replacing tilt actuator & drive lock-out switch (cont'd)*

3. Hold the edge of the seat pan with your hand and lift the tilt system up to its maximum height.



CAUTION!

4. To secure the seat pan completely tilted and for safety reasons, the tilt system must be blocked to avoid injury. Attach straps on either side of the chair from behind the backrest to the back tie-down brackets.

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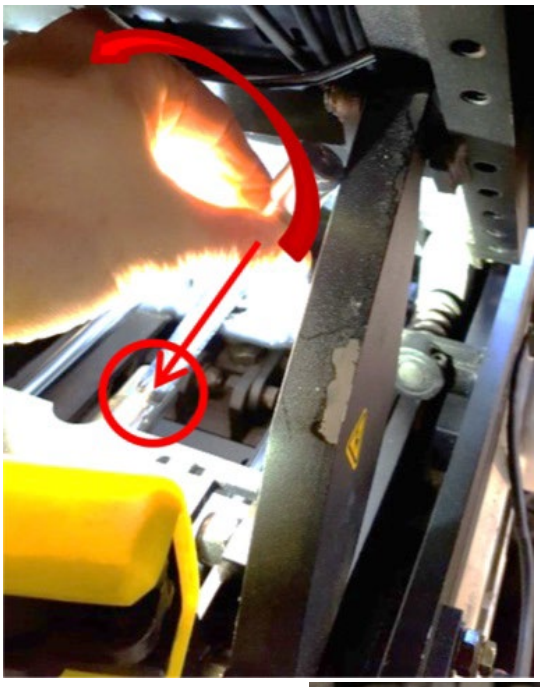
## *Replacing tilt actuator & drive lock-out switch (cont'd)*

5. Completely retract (close) tilt actuator if not already done and disconnect the actuator cable. If the actuator can no longer move with power, manually screw actuator shaft to its minimum length. Using the 3/8" extension bar or the ratchet's handle as a lever, insert it into the actuator shaft hole to finish tightening it.

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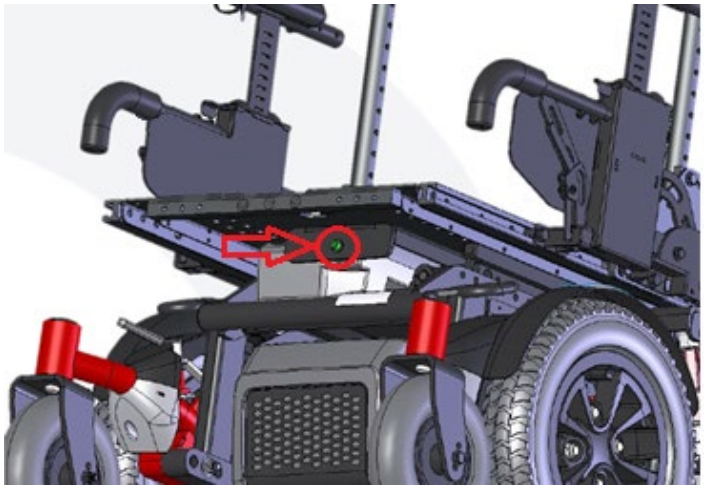
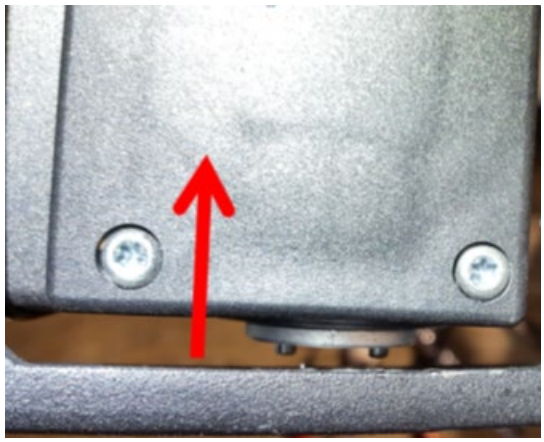
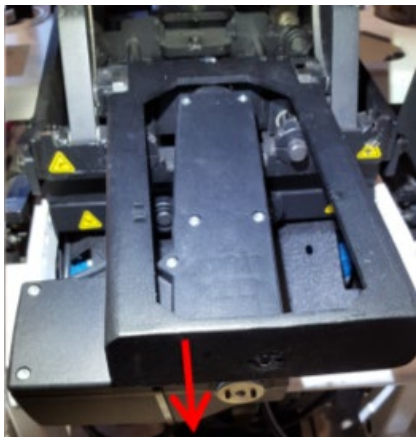
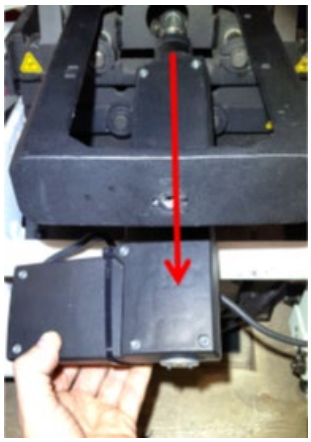
## *Replacing tilt actuator & drive lock-out switch (cont'd)*

6. Take note of the actuator wiring path and cut zip ties holding the actuator cable and connector.
7. Using a 5 mm Allen key, unscrew the back securing screw on the actuator located at the front of the chair. Once the actuator is released, slide it slightly toward the back of the chair to remove the actuator's centering pins from the tilt system's cart. At this point, the actuator should come down in front of the chair. Remove the actuator from the cart by pushing it downward and then pulling it toward the front of the chair.









Note: If it is not possible to free the actuator from the cart, make sure the tilt system is up to its maximum height (fully opened) and check that the actuator is closed to its minimum length. Repeat previous steps if necessary.



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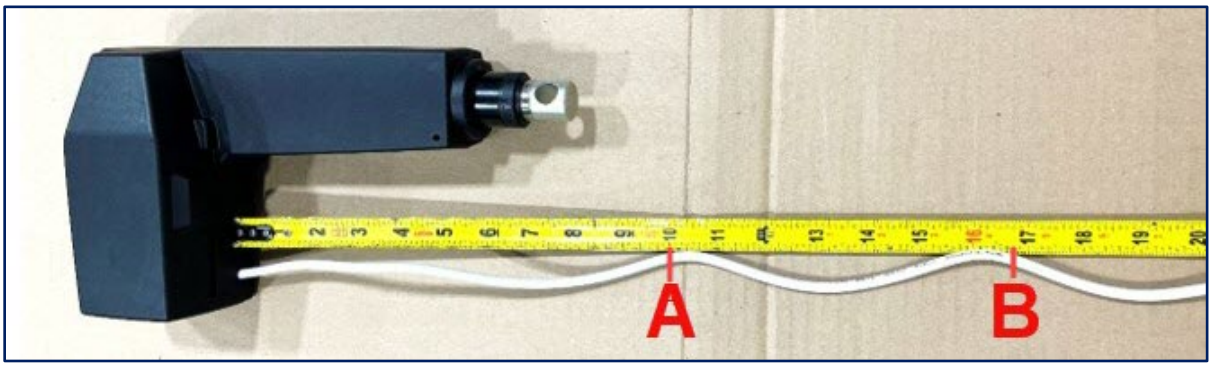
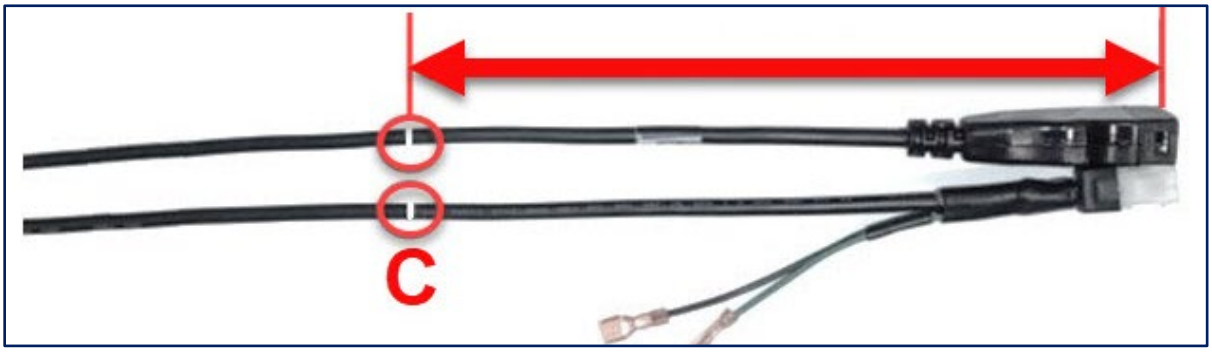
## 6.1 Preparing the actuator cable

1. To position the cable correctly, draw lines at the following lengths on the cable with a marker, starting from the side of the actuator.
    a. Line A: 10" (255 mm)
    b. Line B: 16¾" (425 mm)




2. Draw lines at the following length on the cable with a marker, starting from the end of the connector.
    a. Line C: 8¾" (220 mm)





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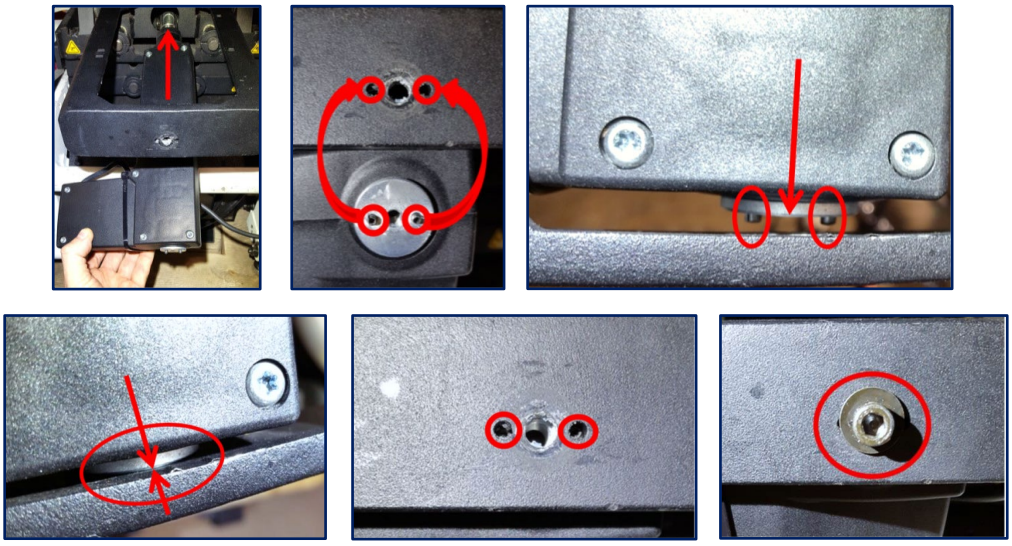
## 6.2 Installing the actuator

Make sure that the actuator is at its shortest length. Insert it into the tilt system's cart. Make sure the centering pins are aligned with the cart's two centering holes. Using a 5 mm Allen key, screw the back of the actuator to the cart.

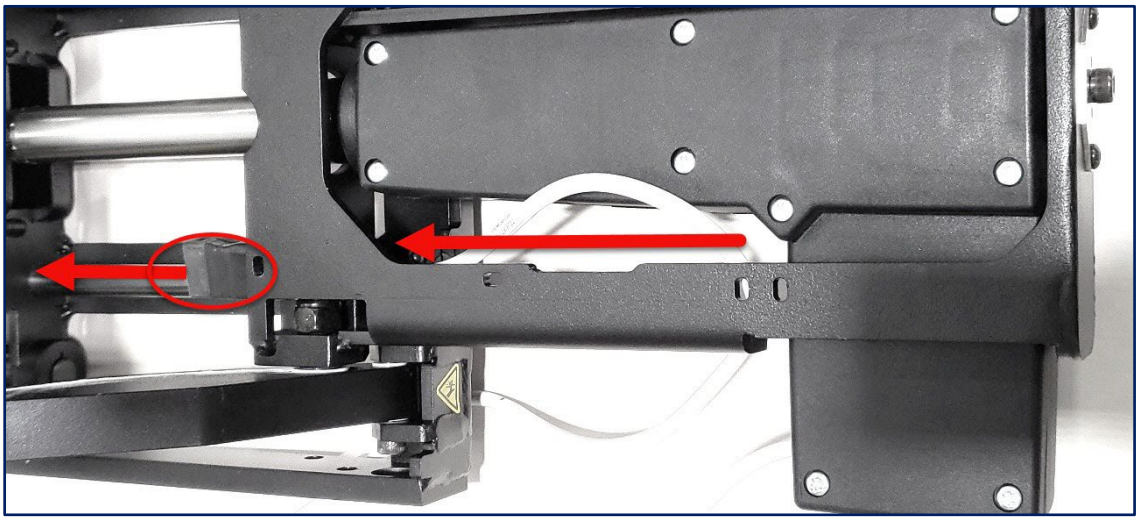


! WARNING

Before using the chair's electronic system to move an actuator, take the necessary measures to avoid any injury.

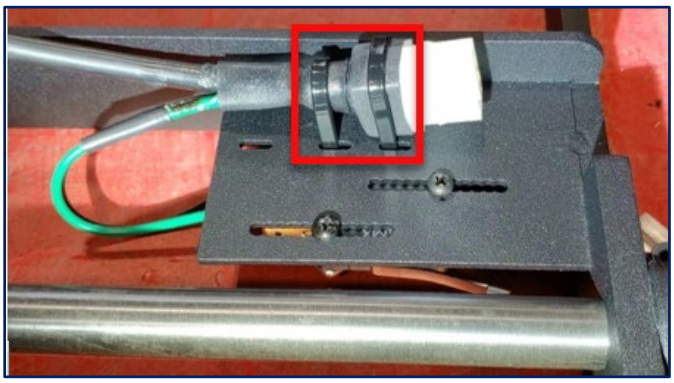
## 6.3 Wiring the actuator cable

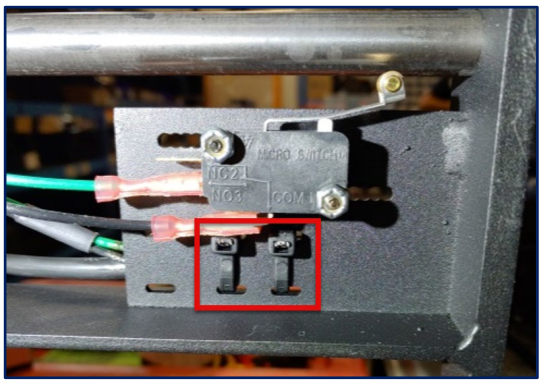
Run the actuator cable along the right-hand side of the tilt mechanism through to the rear of the wheelchair.



## 6.4 Securing the actuator connector using Kit 1004102

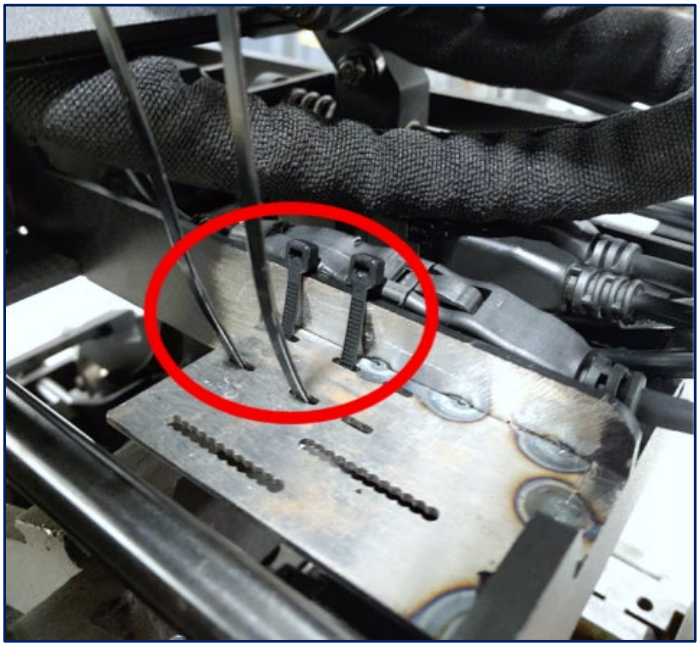
Using 2 "S" zip ties, attach actuator connector onto connector support, making sure heads are placed as shown below. Cut excess tie off, flush with head, and make sure no sharp edges remain. Reconnect actuator to extension cable previously disconnected.

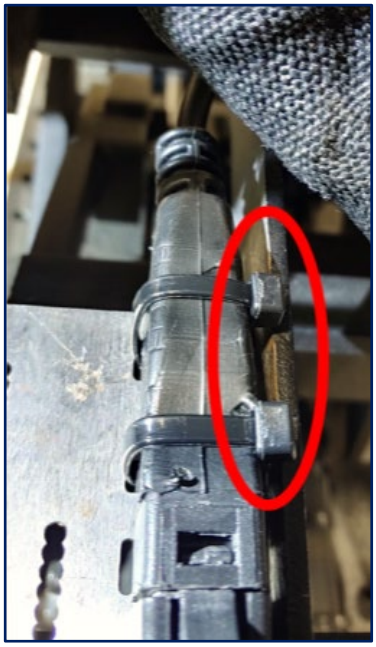





## 6.5 Securing the actuator connector using Kit S-0204

Using 2 "S" zip ties, attach actuator connector onto connector support, making sure heads are placed as shown below. Cut excess tie off, flush with head, and make sure no sharp edges remain. Reconnect actuator to extension cable previously disconnected.

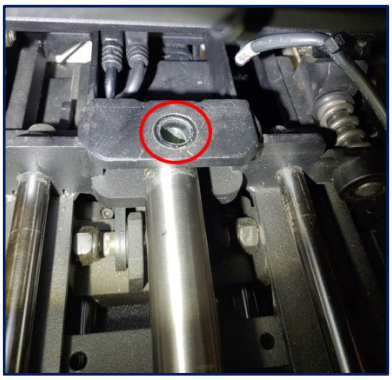




*Replacing tilt actuator & drive lock-out switch (cont'd)*

## 6.6 Securing the actuator to the base of the tilt

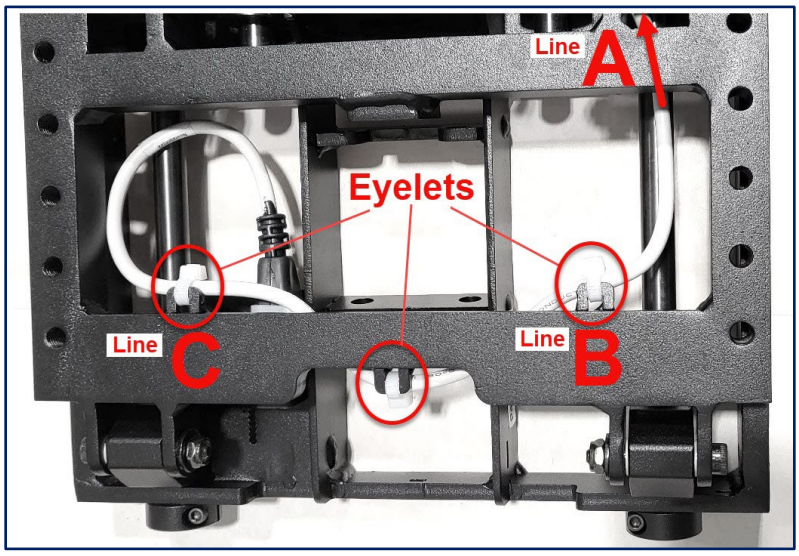
1. Using the wheelchair's electronic system, deploy the actuator until the hole in the actuator rod is exactly aligned with the hole in the actuator bracket on the tilt base. Tighten the bolt using a 6 mm Allen key.



2. Remove straps that held the seat pan tilted.

## 6.7 Securing the actuator cable on the seat support for tilt systems installed after December 2022

1. Use eyelets along the rear cross bar of the tilt mechanism to secure actuator cable.
   a) Thread an S zip tie through each of the eyelets.
   b) Place the cable so that lines B and C are aligned with the zip ties placed in eyelets on the cross bar.
   c) Avoid over-tightening the zip ties to prevent kinking the cable. Cut excess tie off, flush with head, and make sure no sharp edges remain.
   d) The extra cabling between lines B and C should be secured with zip tie in center eyelet.





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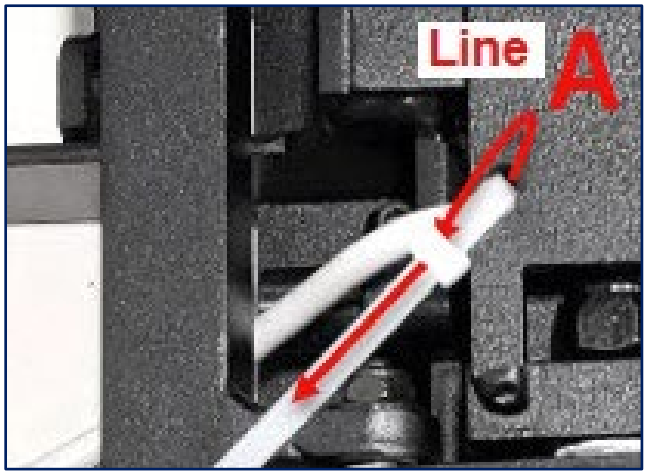
2. Place an S zip tie on the tilt system's cart.

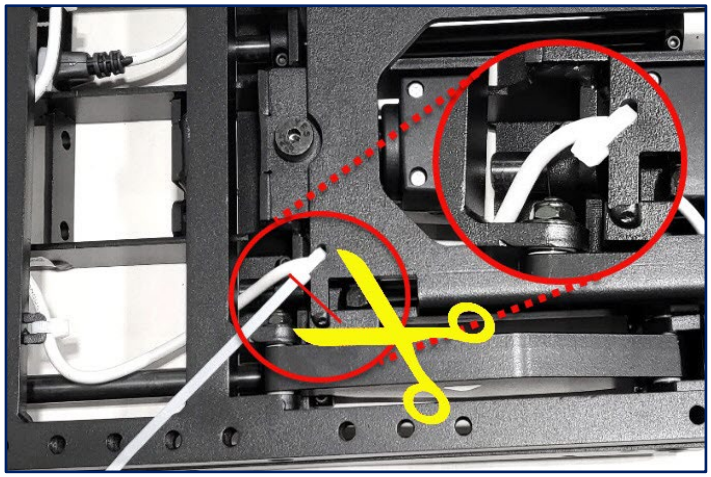
   a) Ensure that line A on the cable is aligned with the edge of the cart.

   b) Thread the zip tie under the cable (from left to right) through the hole going up to slip into its head, making sure the cable remains inside the cart and will not interfere with the mechanism.

   c) Avoid over-tightening the zip tie to prevent kinking the cable.

   d) The zip tie must remain under the cart. Cut excess tie off, flush with head, and make sure no sharp edges remain.



### 6.7.1 Verifying the accuracy of the wiring path

**Caution!**

1. Be aware that the lines drawn on the cable are typical measurements for securing the cable and that due to the complexity of the system, there may be some physical differences from one tilt system to another.

   a) The cable should never be too tight, and the loops too large, to cause interference during the full movement of the tilt.

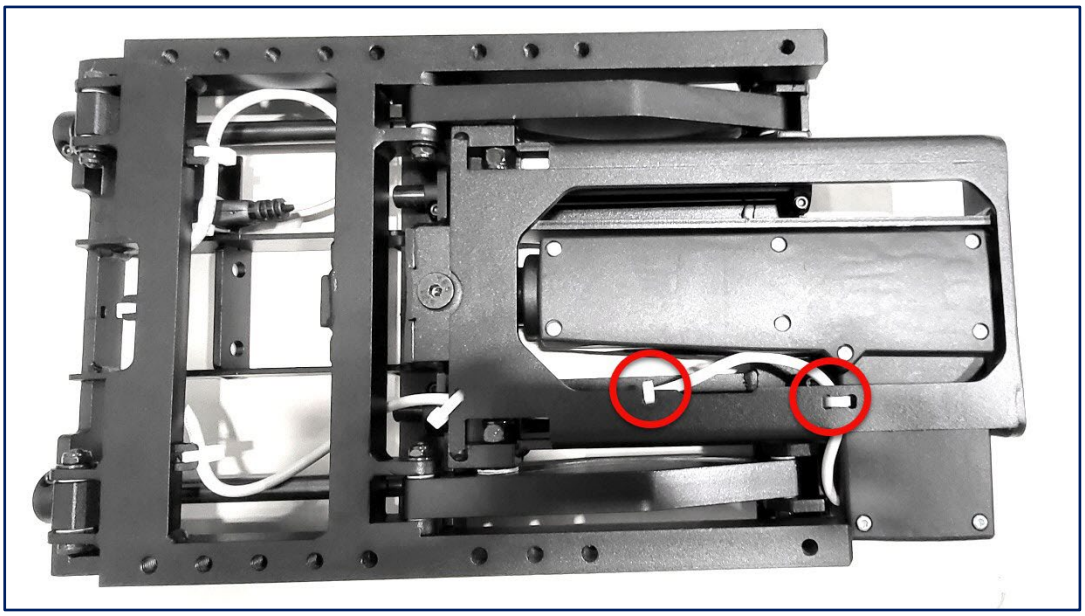
   b) If the cable is too tight or a loop is too large, slightly slide it through the cable zip tie attached to seat support (± ½"/15 mm).

   c) The location of line A on the cable should not change unless the cable is too tight, or it interferes with the mechanisms during the full movement of the tilt.

*Replacing tilt actuator & drive lock-out switch (cont'd)*

### 6.7.2 Finalizing cable installation on the tilt system

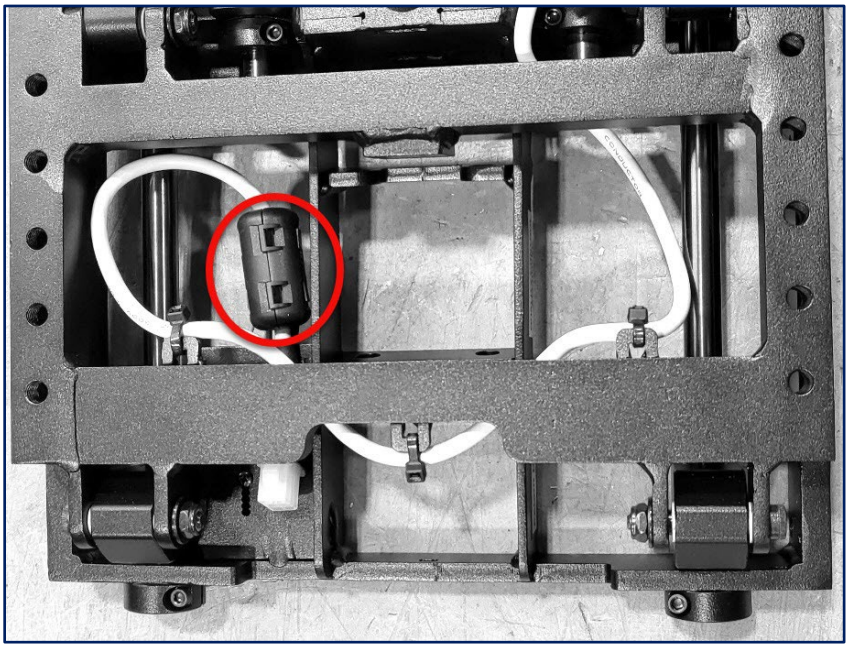
1. Using 2 S zip ties, secure the actuator cable to the cart. Cut excess tie off, flush with head, and make sure no sharp edges remain.



2. Deploy power tilt and check that the cable is not pinched during opening and closing movement.

### 6.7.3 Ferrite filter installation supplied in the 1004102 kit.

Once the cable is secured onto the tilt system, install the ferrite filter about 3" (75 mm) from the connector.

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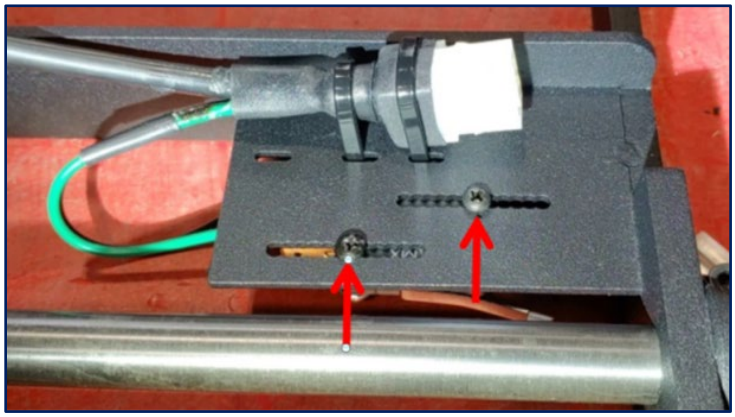
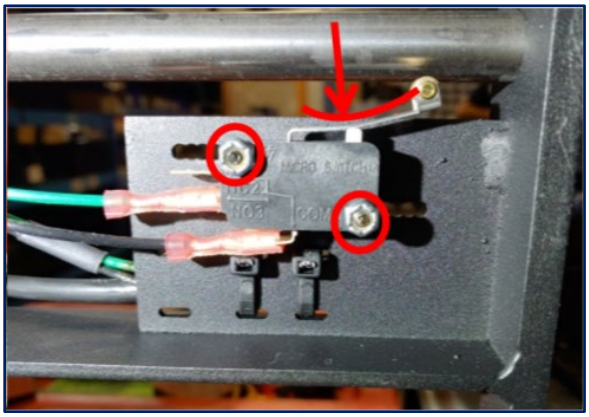
# 7. Replacing drive lock-out switch

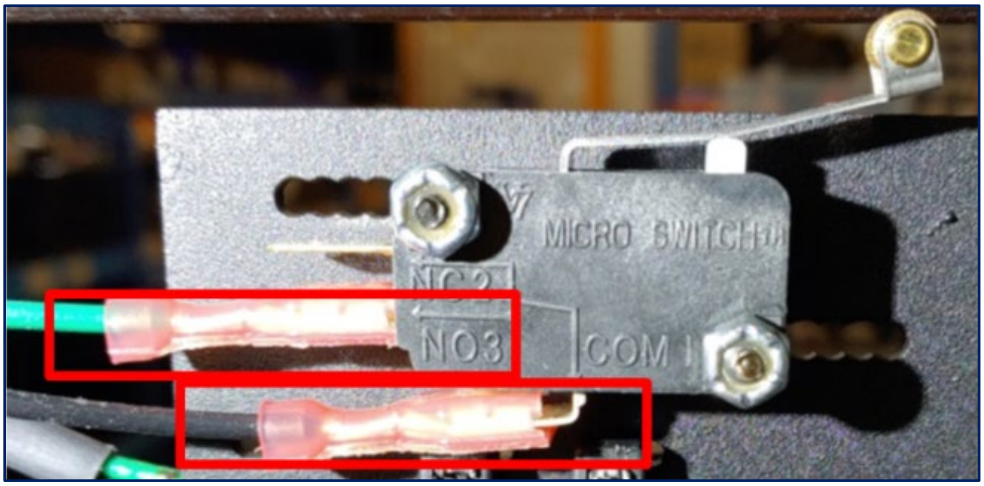
## 7.1 Instructions using kit S-0152

1. After taking note of the location of each securing screw as well as the curve angle of the drive lock-out lever, unscrew all. Disconnect the drive lock-out switch.





2. Replace the switch and tighten screws at the location previously noted. Recreate the same curve angle the lever had on the old one.
3. Reconnect the switch making sure to use terminal "COM" and "NO"




4. Move the power tilt. The drive lock-out switch should activate when the tilt reaches a 15° angle from seat pan to base.



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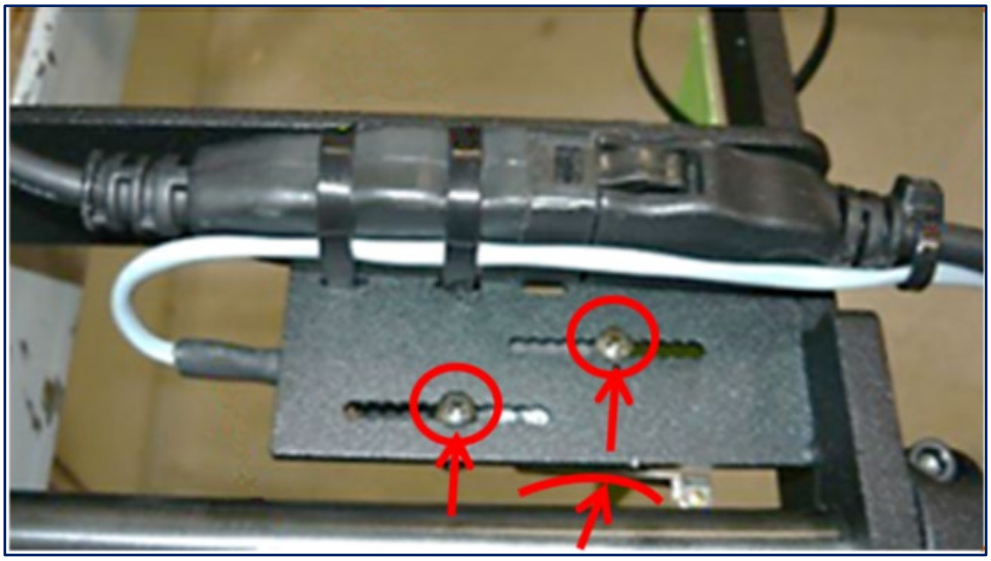
## 7.2 Instructions using kit S-0205

1. After taking note of the location of each tie-wrap attaching the cable for the drive lock-out switch as well as its path, cut all zip ties. Disconnect the end of the drive lock-out switch cable that is connected to the controller (ISM, Solo, Duo)



2. After taking note of the location of each securing screw as well as the curve angle of the drive lock-out lever, unscrew all.
3. Replace the switch and tighten screws at the location previously noted. Recreate the same curve angle the lever had on the old one.
4. After attaching the switch cable to the tilt actuator extension cable as previously noted, connect the cable to the ISM controller.
5. Move the power tilt. The drive lock-out switch should activate when the tilt reaches a 15° angle from seat pan to base.

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This completes the *Instruction Guide on Replacing a Tilt Actuator & a Drive Lock-out Switch*. If further information is required, please contact Amylior Technical Support by email at techsupport@amylior.com or by phone at 1 888 453-0311.