AFP – REVIEW & TROUBLESHOOTING

AFP – Articulating Foot Platform

- Dual Motor Operation
  - Actuator (with internal switches) for lift/elevation
  - Motor with worm gear for articulation (extension)

- Three AFP Mounted Switches

Articulating Foot Platform

- Broad articulation range for enhanced adjustment
- 450 lbs. weight capacity
- Unmatched adjustment, durability and strength
- Multiple calf pads, calf panel and footplate options

AFP - Adjustments

- Lower Extensions
  - Independent and height adjustable
  - Split footplates
  - Independent Adjustments for leg length discrepancy

- Articulation of Footplates
  - Can adjust distance of footplate articulation

Quantum Power Chair with an AFP

➢Recline with AFP

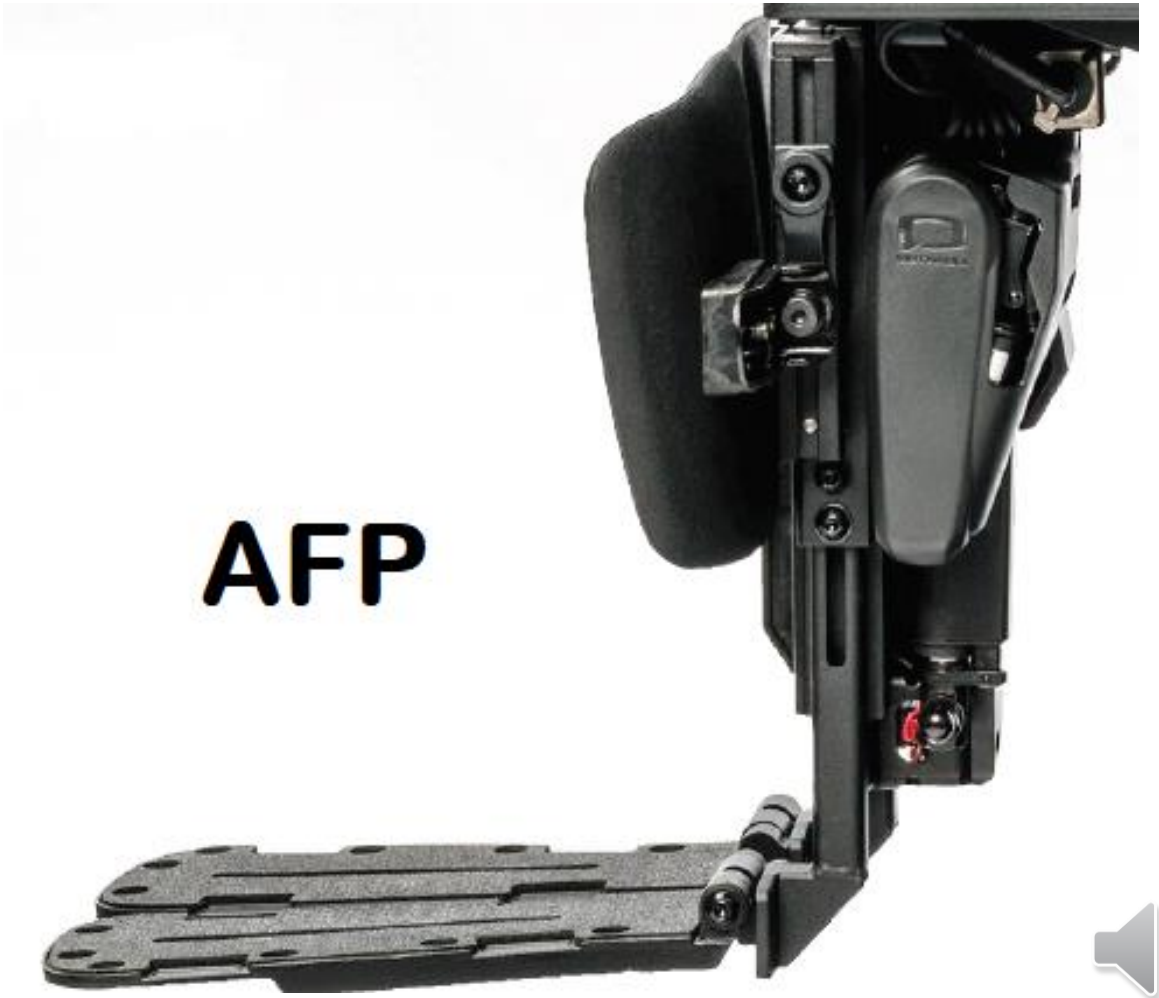
This seating system is programmed to have the Recline and AFP as a combined function.

As the power chair's back reclines, the AFP lifts and articulates.

The AFP can also be programmed to work independently.

AFP Mounted Switches

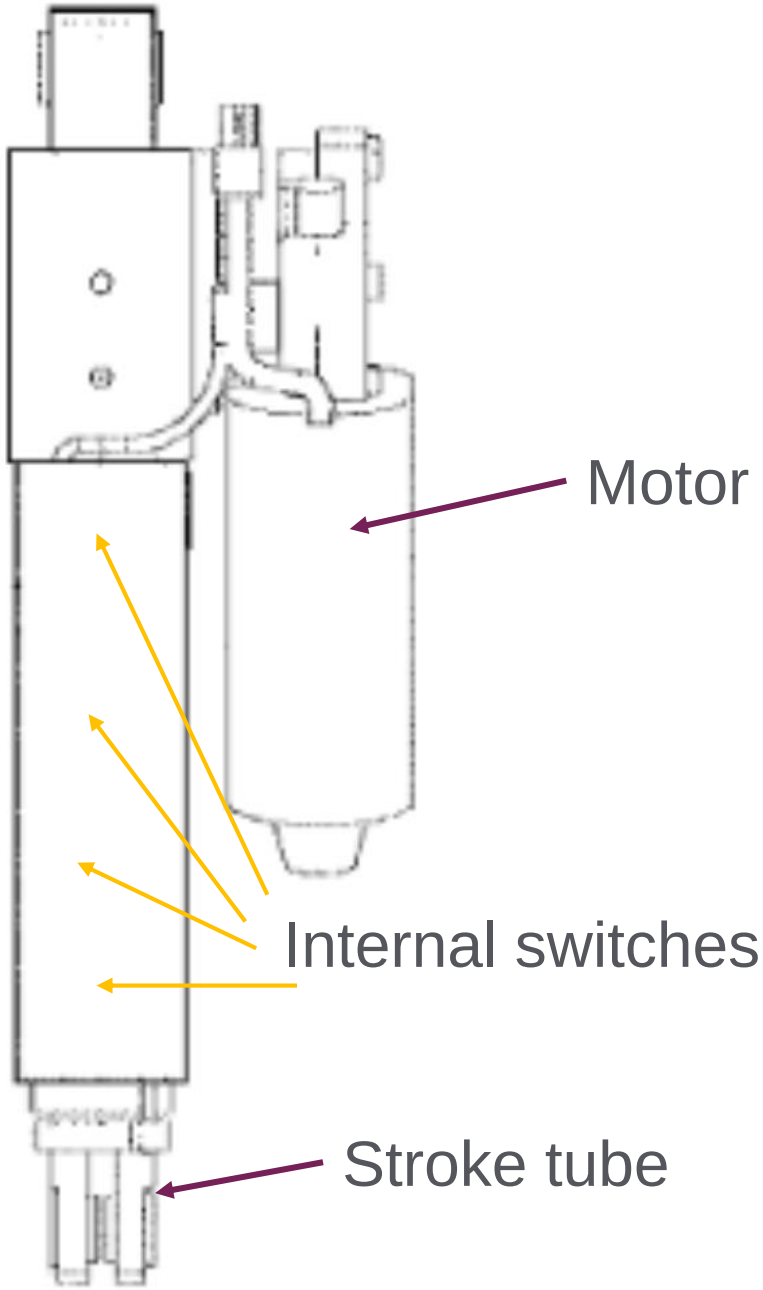
- Inward Motion Limit Switch – Stops articulation when fully retracted
- Synchronize Switch – Prevents footplates from hitting the ground when lowering the AFP
- Outward Motion Limit Switch – Stops articulation when fully extended

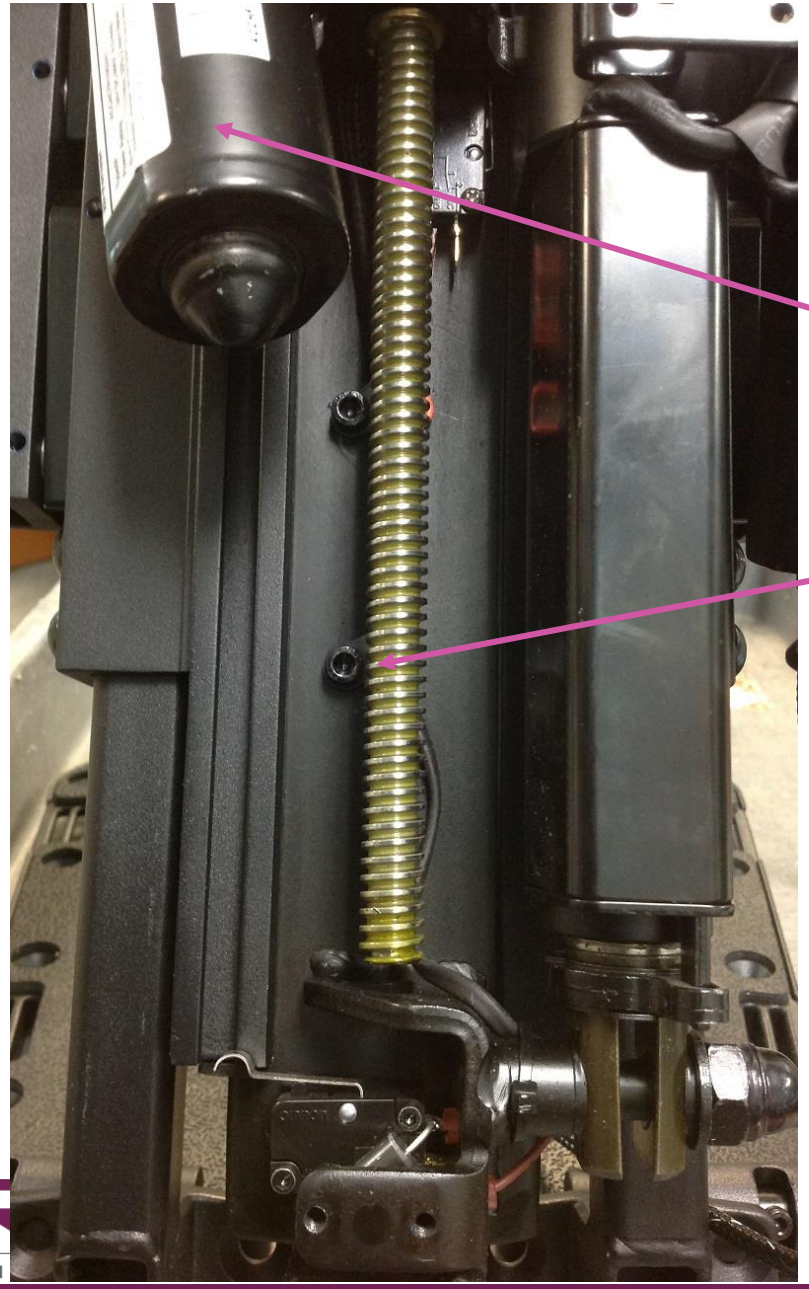


AFP – How it Works

The elevating actuator consists of a motor, stroke tube and four internal switches.

These switches work with the printed electronic circuit board that is mounted on the top of the AFP. The retraction and extension of the stroke tube are affected by the internal and three AFP mounted switches.





AFP – How it Works

The articulating actuator consists of a

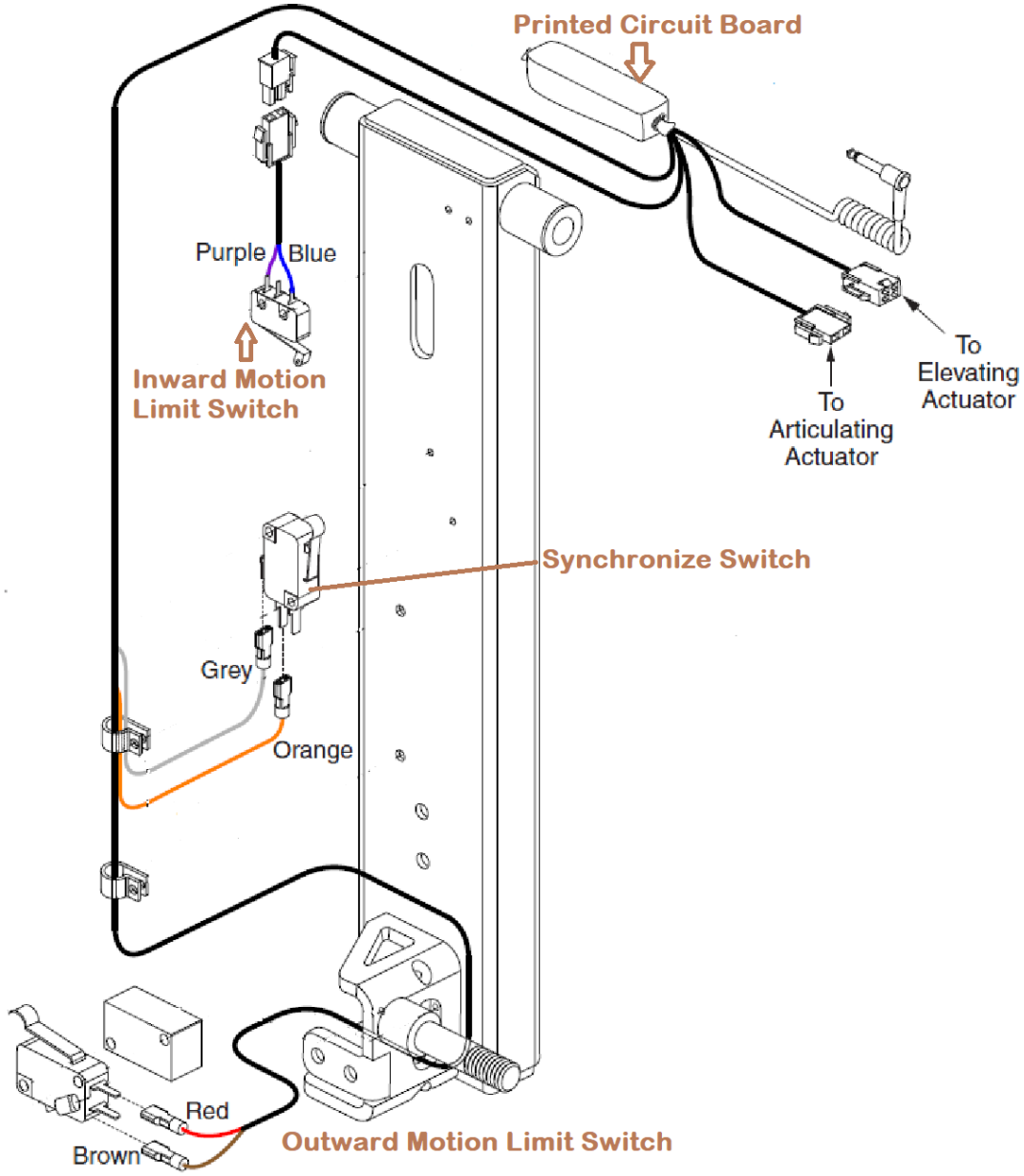
motor

and a

worm gear mechanism.

Extension and retraction of the articulating portion of the AFP is affected by the top (Inward Motion Limit) and bottom (Outward Motion Limit) mounted switches.

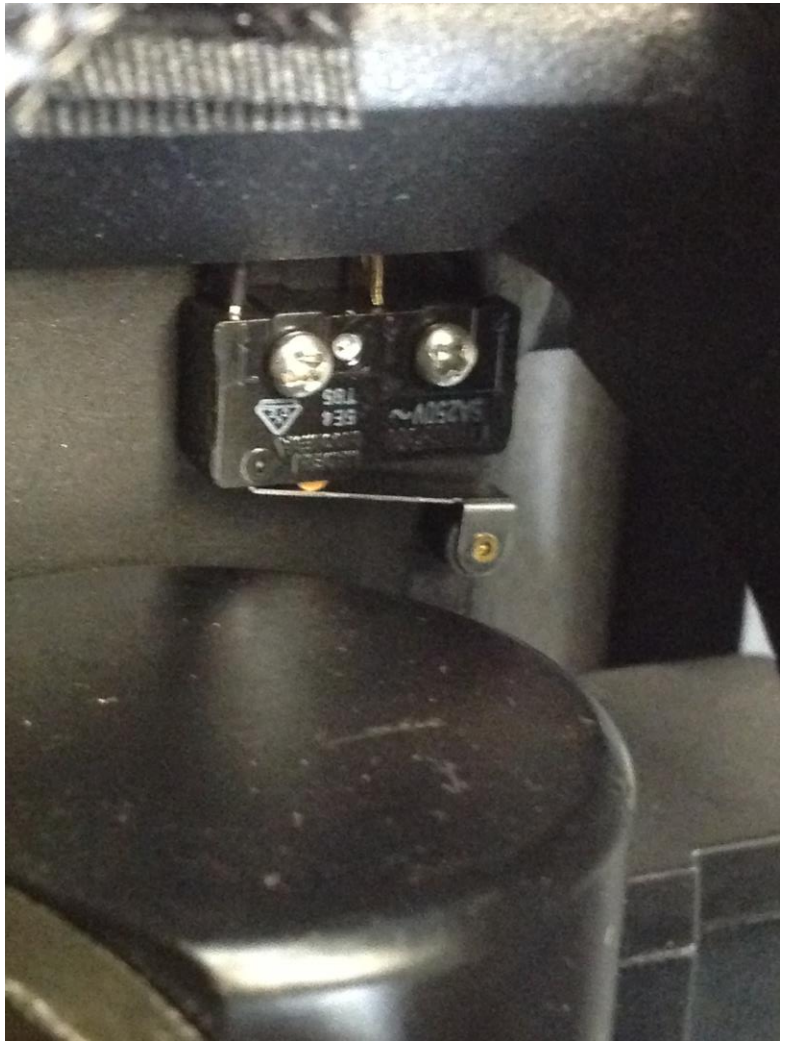
AFP Switches



Inward Motion Limit Switch

Stops articulation when fully retracted.

Switch is closed when lever is not pressed and open when lever pressed.



Synchronize Switch

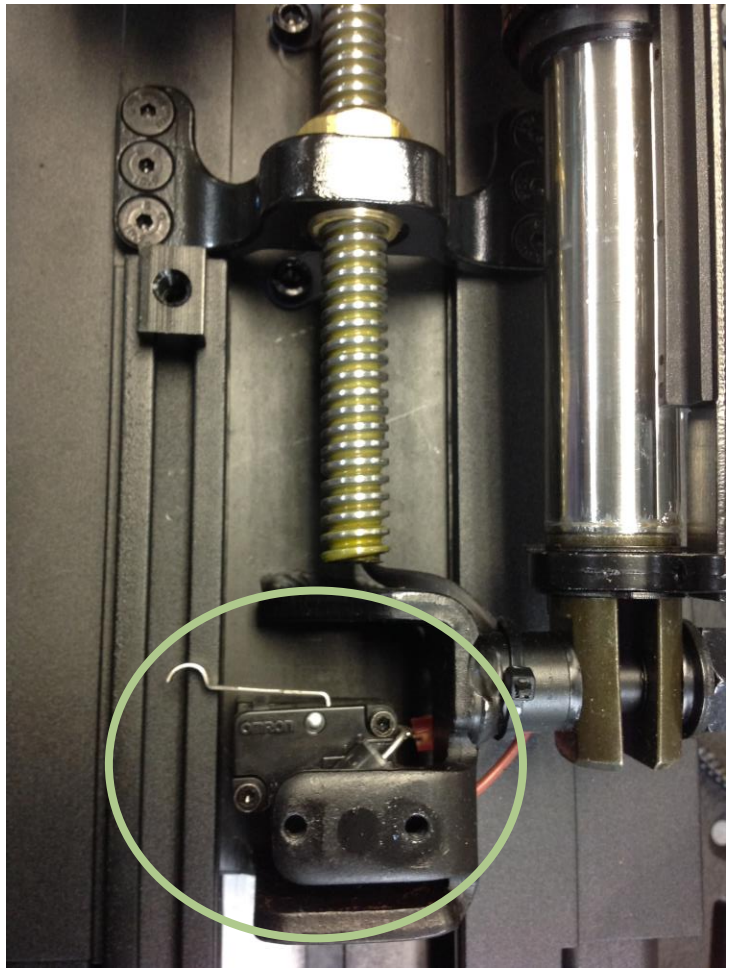
Working with internal switches in elevating actuator, prevents footplates from hitting the ground when lowering the AFP.

Switch is open when lever is not pressed and closed when lever is pressed.

Outward Motion Limit Switch

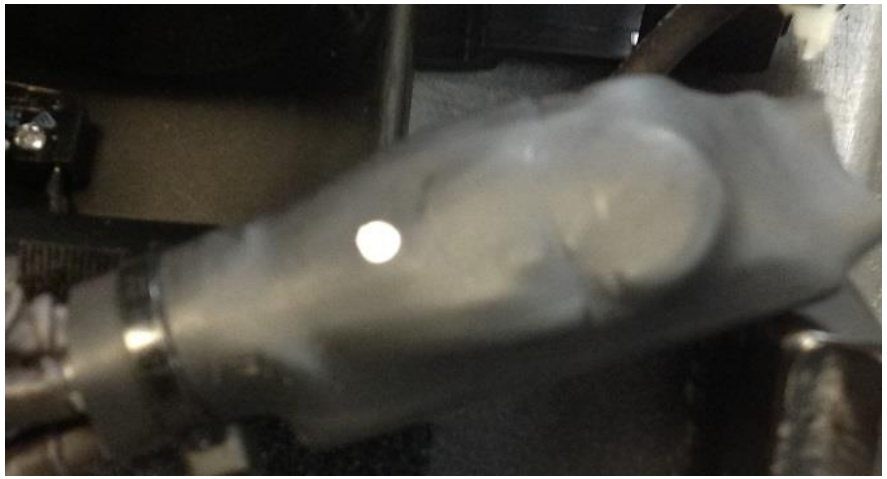
Stops articulation when footplates are fully extended.

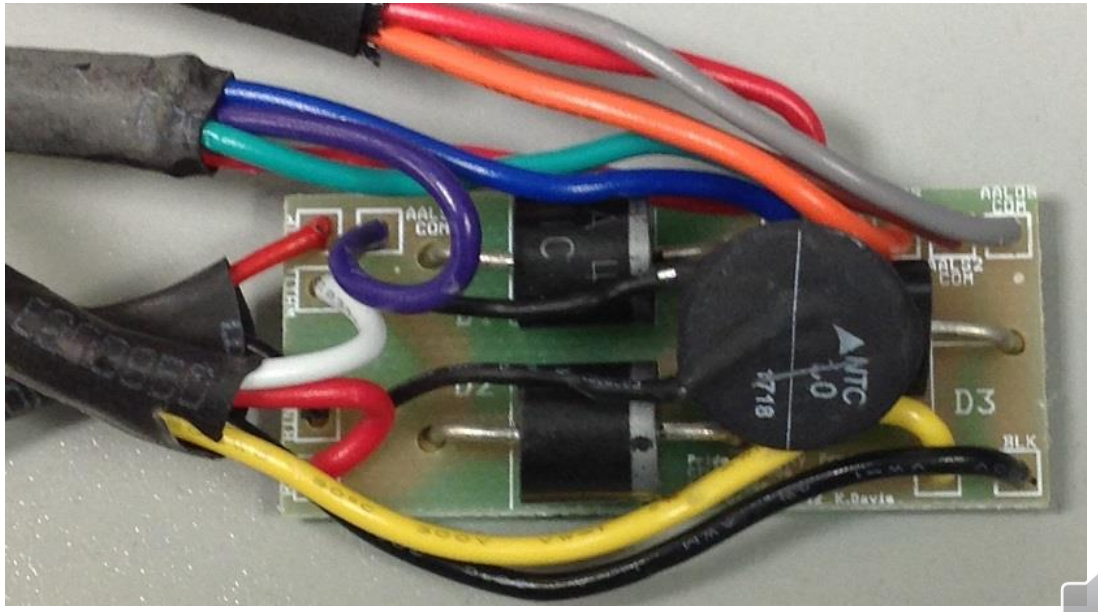
Switch is closed when lever is not pressed and open when lever is pressed.



Electronic Circuit Board

- Contains circuitry including diodes
- Receives voltage from AFP plug
- Using input from switches to operate AFP





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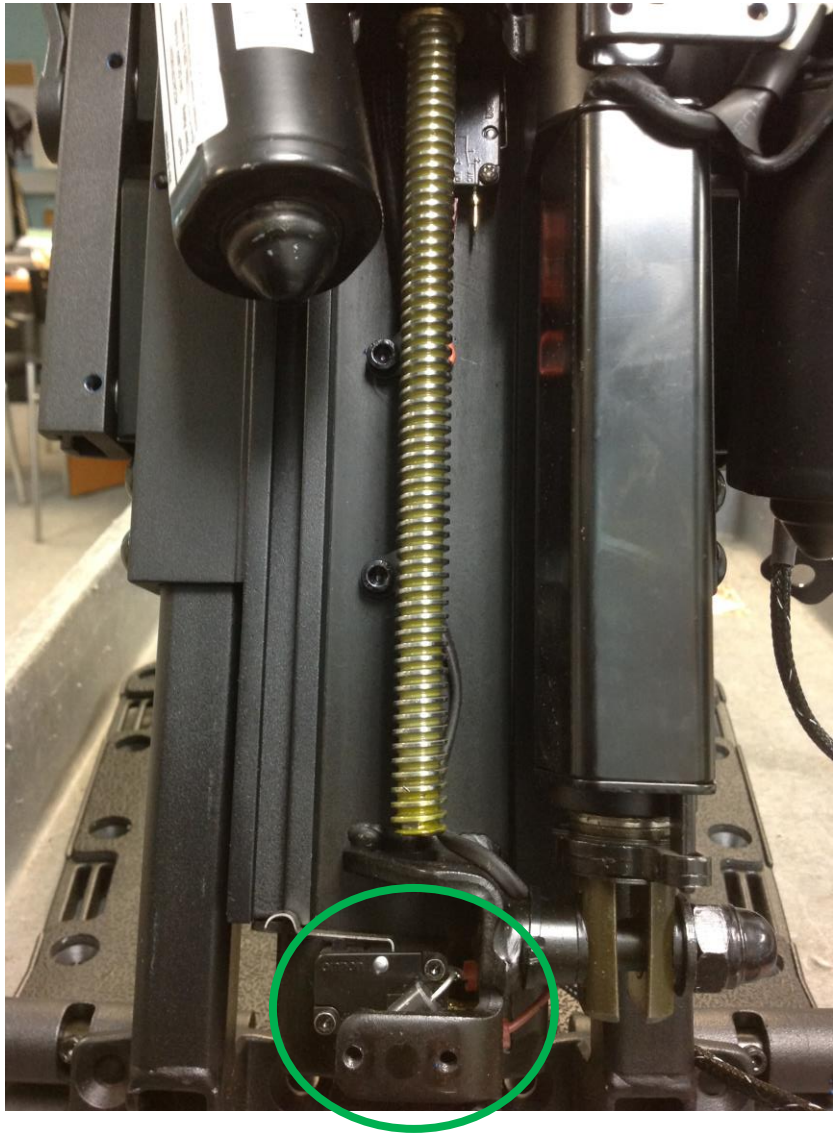
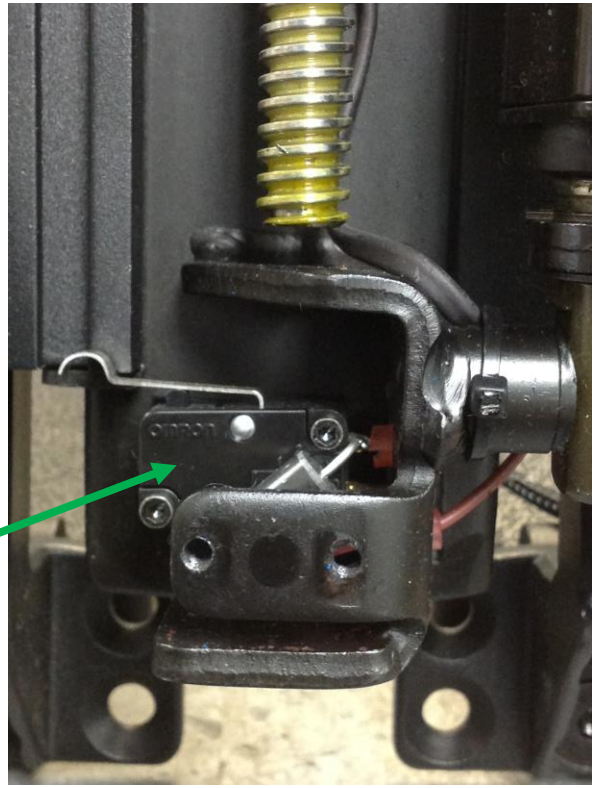


AFP Worm Gear and Motor

AFP with outward motion limit switch at bottom of gear.

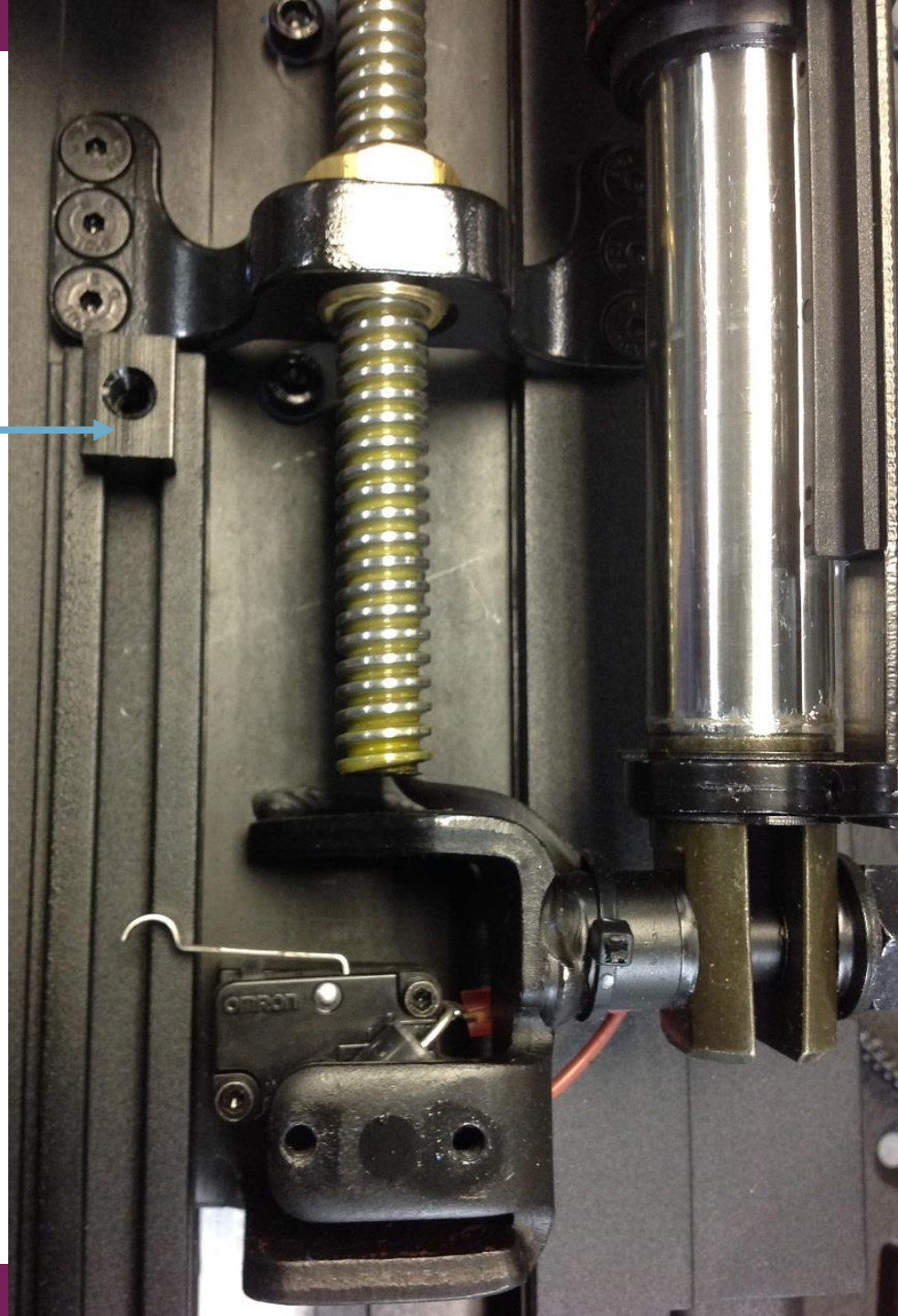
Closeup of outward switch when AFP is in home position.



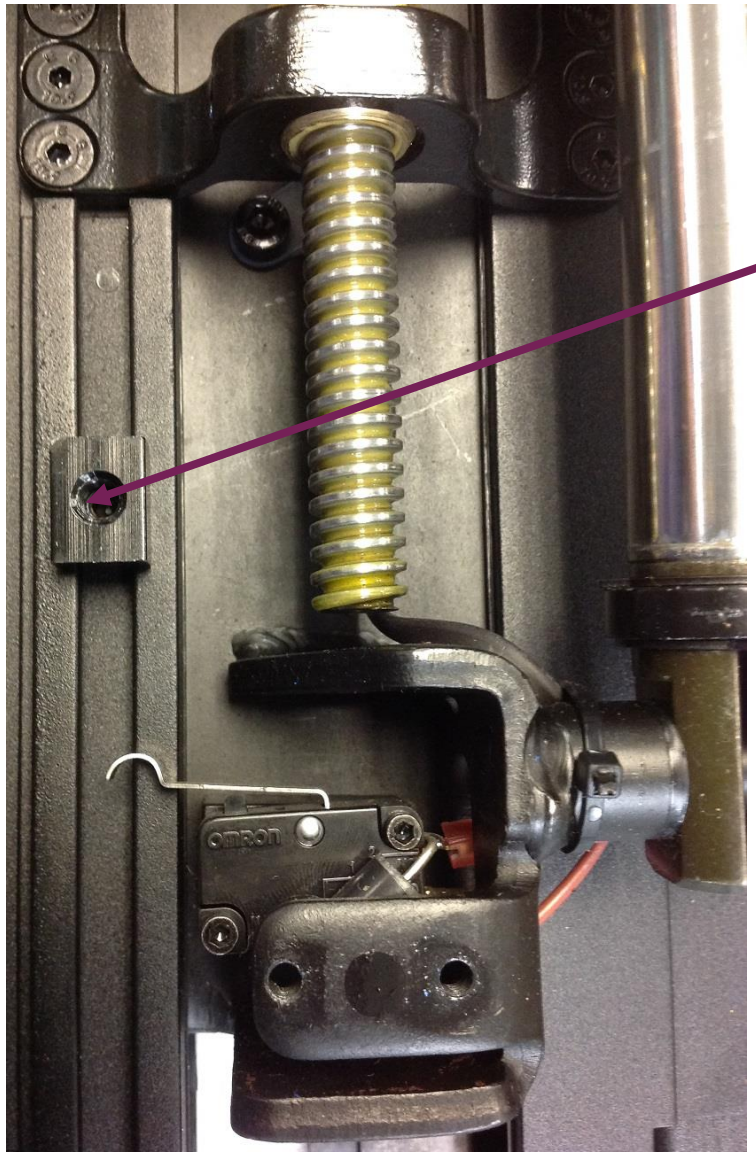
AFP Adjustment

This is the position where block is mounted from production.

To adjust the articulating distance of the footplates, move the block up or down on the rail until desired distance is achieved.

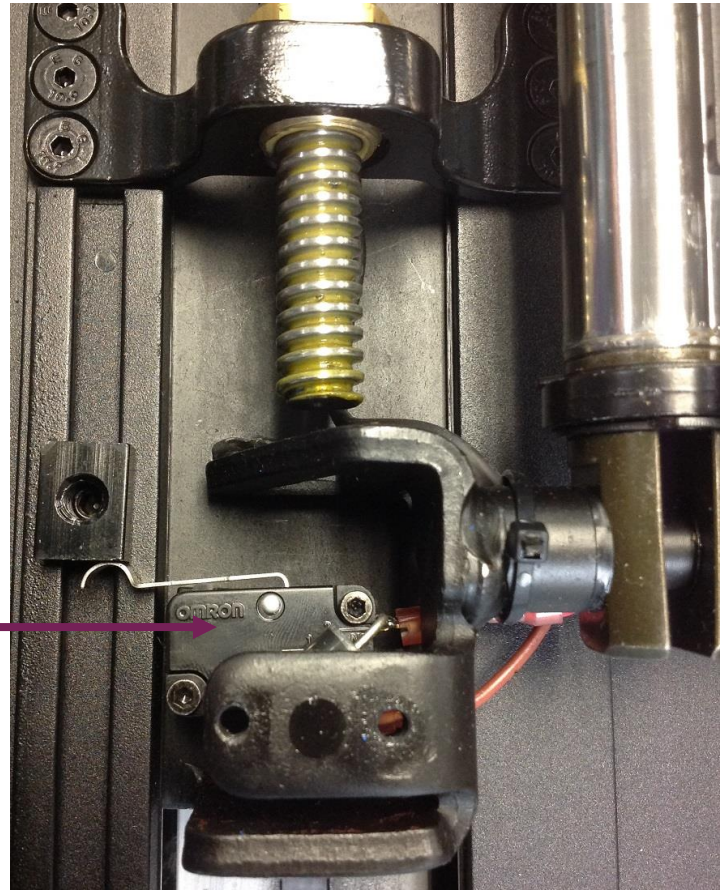


AFP Adjustment



Block in adjusted position

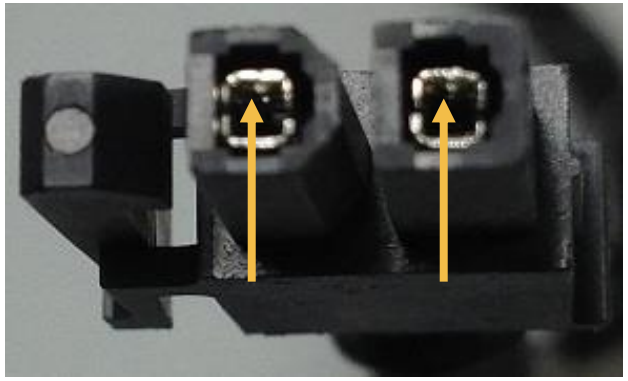
Switch with lever pressed down



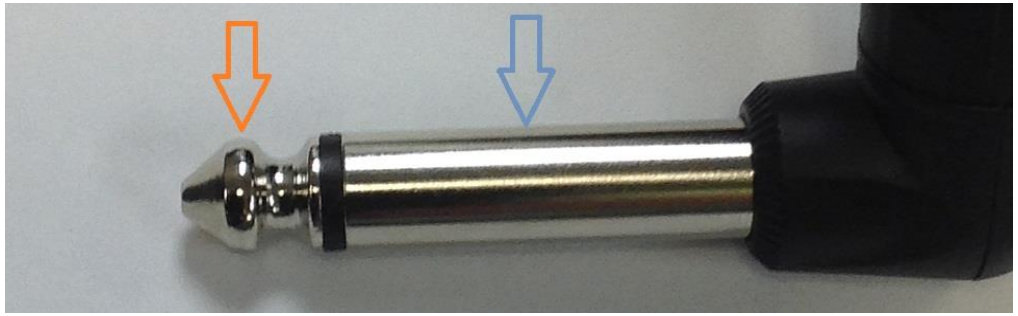
AFP - Troubleshooting

- AFP is Not Operating in Any Position

✓Disconnect 2-pin AFP harness from seating module (AAM) and run power to connector

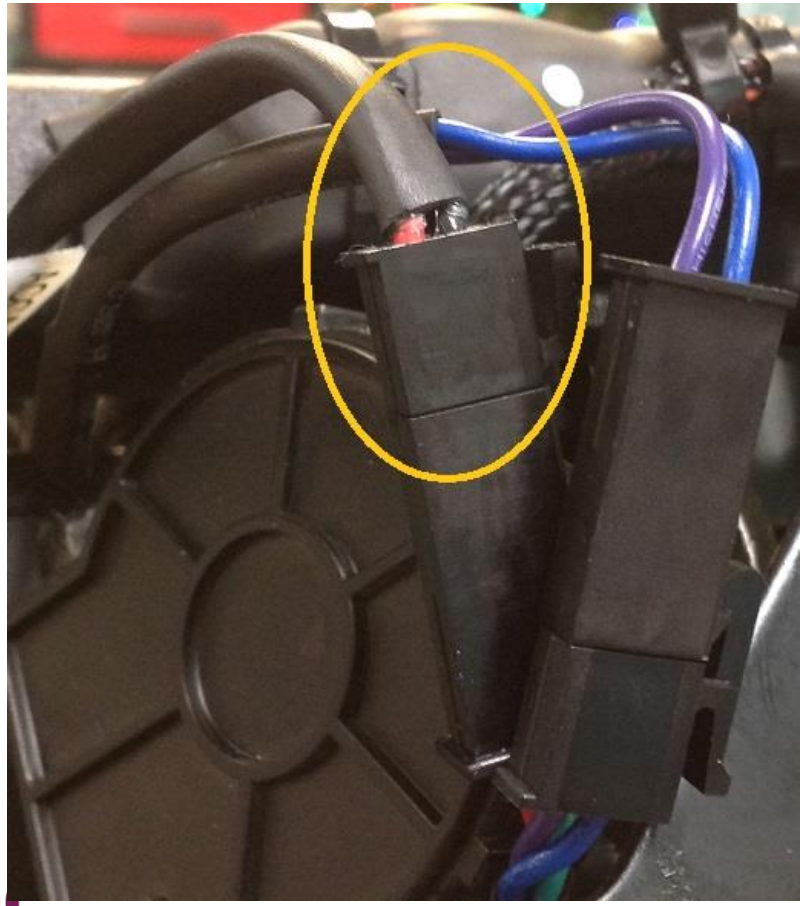


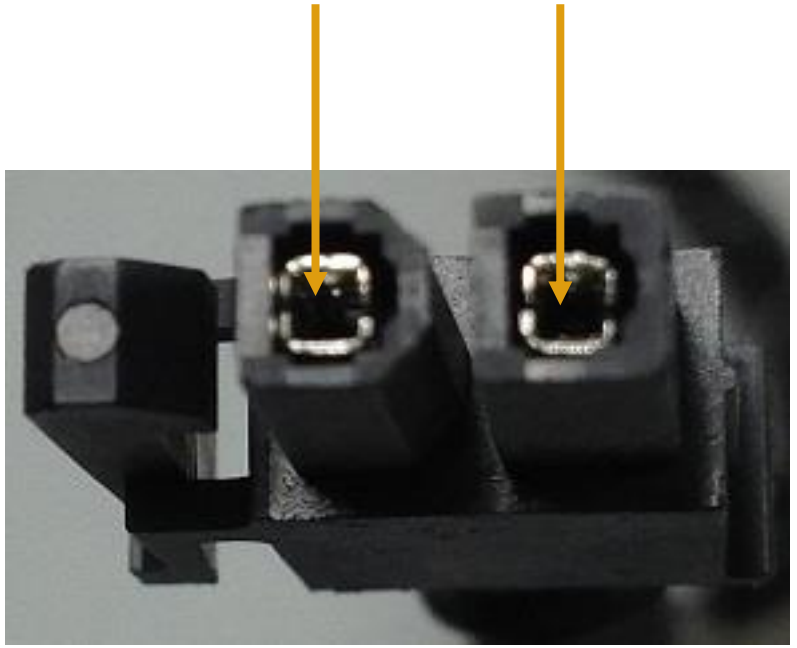
✓Disconnect AFP phono type plug from power chair harness. Jumper power to plug in marked areas.



AFP is Not Operating in Any Position

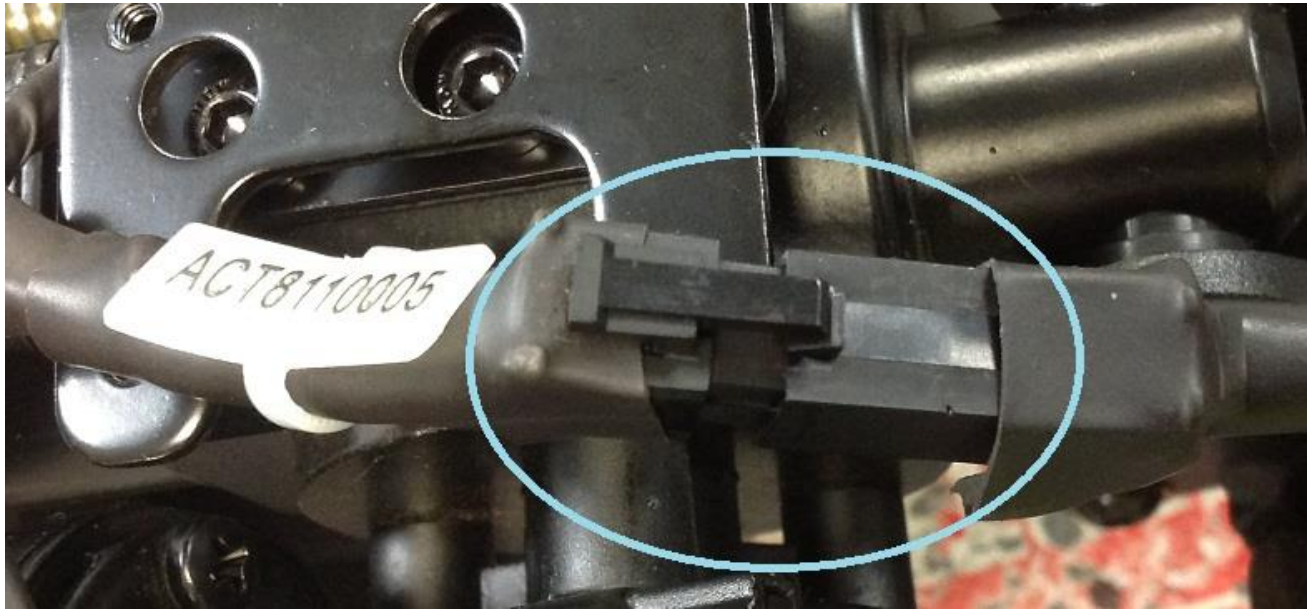
- ✓Test both actuators - Run power to 2-pin connector of articulating actuator.





AFP is Not Operating in Any Position

- ✓Test both actuators - Jumper power to pins 1 & 3 (black & white wires) of elevating actuator 4-pin connector.



AFP is Not Operating in Any Position

- Always check seat configuration programming for AFP.
- Verify power (DC voltage) to each harness; AAM and AFP plug.

- To test the AFP actuators and switches, the AFP should be taken off power chair so can have access to connections.

➢ If articulating actuator not work when tested at 2-pin, then replace actuator.

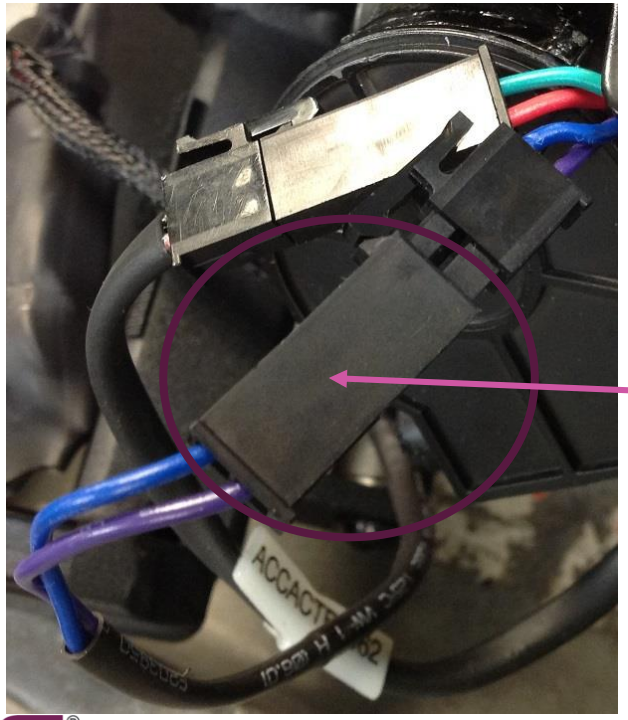
➢ If the elevating actuator works when tested, then the electronic PCB likely failed. However, it may be possible that one of the internal actuator switches failed. Start with the PCB if not replacing both.

AFP - Troubleshooting

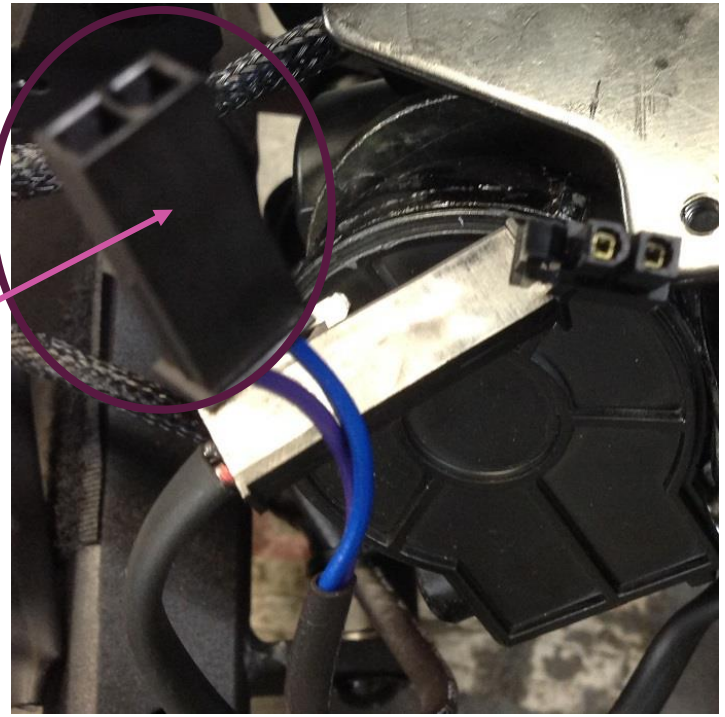
- AFP will not articulate back in

✓Test articulating actuator (run power to 2-pin connector)

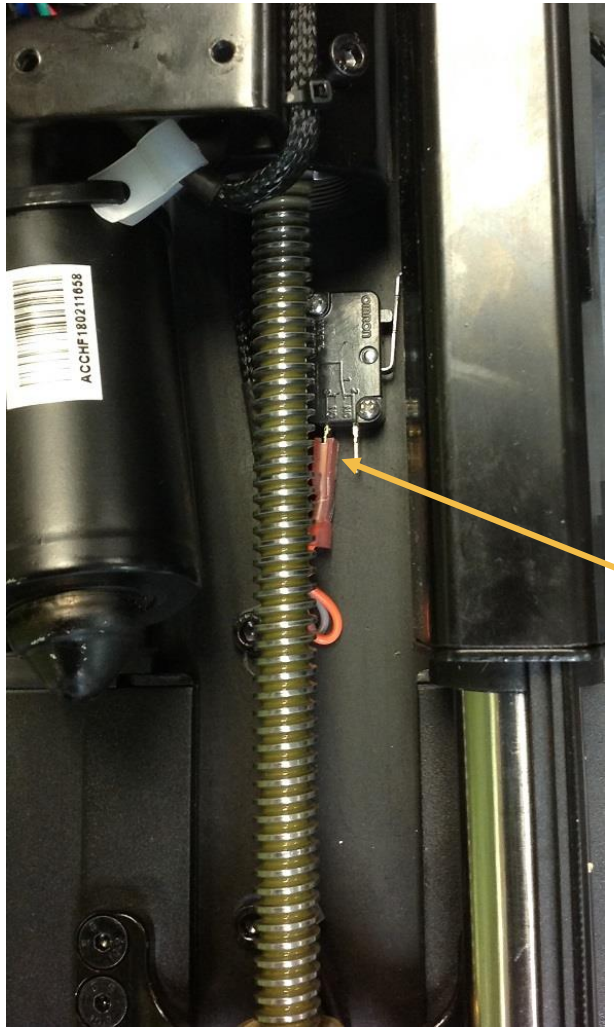
✓Test Inward Motion Limit Switch (2-pin blue & purple wires)



Inward motion switch connection



AFP - Troubleshooting



- AFP elevate actuator will not retract completely

✓Test elevate actuator (jumper pins 1 & 3 of 4-pin connector)

✓Test Synchronize Switch

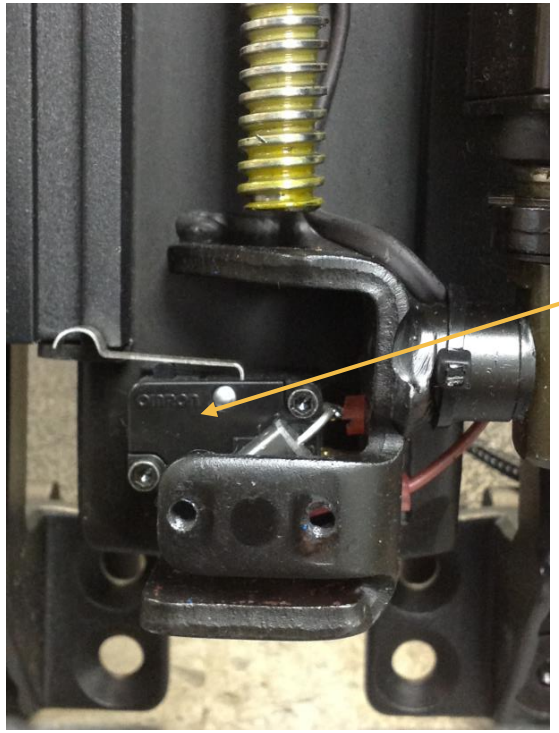
Synchronize switch

AFP - Troubleshooting

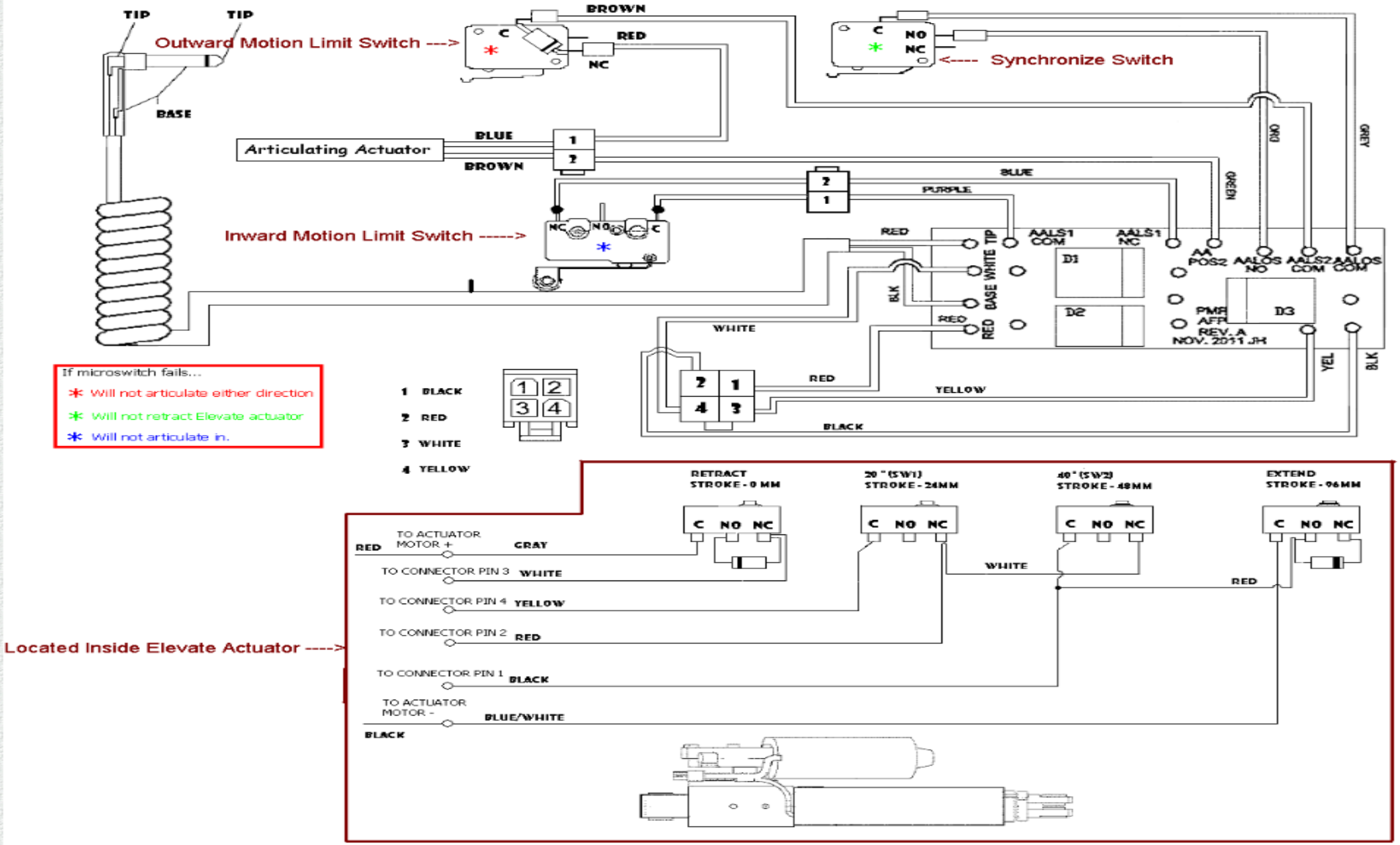
- AFP not articulate in either direction

✓Test articulating actuator (run power to 2-pin connector)

✓Test Outward Motion Limit switch



Outward motion limit switch


TIP
TIP
BASE
Outward Motion Limit Switch --->
BROWN
C
RED
NC
C NO NC
<---- Synchronize Switch
Articulating Actuator
BLUE
BROWN
1
2
Inward Motion Limit Switch ----->
NC NO C
2
1
BLUE
PURPLE
GREEN
ORG
GREY
RED
WHITE
BLK
RED
TIP
BASE
WHITE
RED
AALS1 COM
AALS1 NC
D1
D2
D3
AA POS2
AALOS NO
AALS2 COM
AALOS COM
PMR AFP
REV. A
NOV. 2011 JH
YEL
BLK
If microswitch fails...
Will not articulate either direction
Will not retract Elevate actuator
Will not articulate in.
1 BLACK
2 RED
3 WHITE
4 YELLOW
1 2
3 4
2 1
4 3
RED
YELLOW
BLACK
Located Inside Elevate Actuator ---->
RETRACT
STROKE - 0 MM
20 " (SW1)
STROKE - 24MM
40 " (SW2)
STROKE - 48MM
EXTEND
STROKE - 96MM
C NO NC
TO ACTUATOR MOTOR +
RED
GRAY
TO CONNECTOR PIN 3
WHITE
TO CONNECTOR PIN 4
YELLOW
TO CONNECTOR PIN 2
RED
TO CONNECTOR PIN 1
BLACK
TO ACTUATOR MOTOR -
BLACK
BLUE/WHITE
WHITE
RED

THANK YOU!