Action Trackchair ST Model Owner's Manual

KCF
DISABILITY ENGINEERING

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Action Manufacturing

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Introduction

Welcome to the Action Trackchair Experience!
We at KCF Disability Engineering and Action Manufacturing want to make your experience the best it can be.
Enclosed in this owner's manual you'll find information for the use and maintenance of your Action Trackchair.
Thank you for your purchase & if we may be of further assistance please don't hesitate to call.

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Safety Guidelines

- Only one person should be on the Trackchair at any time.
- Upper torso support harness is recommended.
- **Do not** navigate Trackchair on more than a 20 degree slope
- Trackchair will climb inclines enough to tip over in any direction.
- When climbing over small logs or curbs approach incline at an angle, **not** directly at 90°
- Make sure controls are in the off position before sitting in Trackchair and before getting out of seat.
- Always have a backup plan, “What if…?”
- **Do not** ride the Trackchair during loading or unloading from vehicle or carrier.
- **Do not** attempt to climb stairways.
- Failure to know the limits can cause personal injury or equipment damage

Operating Your Action Trackchair

- When you are ready to drive the Trackchair, make sure controls are in the off position before sitting in Trackchair.
- When operating your Trackchair, make sure you are securely fastened in with the 4 point upper torso support harness.
- If you wish to **lock the control**, it is done in this way. After the control has been turned off, hold the on/off button until the control has cycled both on and then off. Control is now set in the locked mode.
- If you wish to use your Trackchair that is in locked mode, **it can be unlocked in this way**. Turn control on, hold joystick forward until you hear a beep or three seconds, then joystick back until you hear a beep or three seconds. It is now unlocked and ready for operation.
- The Action Trackchair control has five speeds, one-five and can be changed with the up and down arrows.
- Battery indicator is on the main screen on controls. Battery charge will last up to six hours, depending on battery condition and type of use the Trackchair is subject to. The Action Trackchair has a built-in battery charger that plugs into 240 volt outlet using the power cord provided.
- Forward facing lighting is controlled on the joystick control panel by momentarily depressing the button with the light symbol on it.
- If for some reason it is necessary to pull the Trackchair, **disengage the brakes** on the motors with the levers on back of motors. Push levers to the outsides on both motors.
  Do not pull Trackchair at speeds more than 8km/h.
- Action Manufacturing does not recommend operating your Trackchair in salt water. Although our Trackchairs are powder coated to the highest quality with very durable powder coat, salt water is very corrosive and causes problems with powder coat and metal. If your Trackchair has been exposed to salt water, thoroughly wash the Trackchair completely with fresh water and dry off.

Comfort Adjustments

- There are few adjustments that are necessary.
- The foot rest will flip up and can be moved up or down to suit the rider's needs.
- The chair itself can be leveled to the desired comfort of the rider.
- The armrests can fold back for easier transferring into the chair.
- The headrest can be adjusted up/ down & in/ out to suit the rider's needs.
- Electronic controls can be adjusted at a servicing distributor/dealer as far as speed, acceleration, deceleration, braking, etc.

Batteries and Charging

- Battery charge will last up to six hours, depending on battery condition, temperatures and type of use the Trackchair is subject to (terrain and weight of rider). The Trackchair has a built-in battery charger that plugs into 240 volts using the power cord provided.

Operation after Applying AC Power to a ProSport Charger Connected to Discharged Batteries

During the startup test the battery type LED will be illuminated and the red charge mode LED will flash indicating that the unit is in a self-test mode. When complete and if there are no faults, the charger's system check OK indicator will illuminate green and the ProSport's solid red charging LED will be ON indicating the charge process is initiated. Note: If there is a fault the appropriate bank LED will illuminate and the charge process may not start, depending on the location of the fault.

If there are no Battery Faults, the Green System Check OK LED will illuminate and the following sequences will proceed:

The red battery type LED (factory set for standard Flooded (lead-acid)/AGM batteries) will illuminate.

The red charge mode LED will illuminate indicating the charger has started its multi-stage charging process.

When the charge process is approximately 80% complete the red charge mode indicator will turn off and the amber conditioning LED will turn on indicating the conditioning mode.

When the multi-stage charge process is completed you will observe the following: Battery type red LED goes OFF.

The red charging LED and the amber conditioning LED will be off and the green ready/maintain LED will illuminate indicating your batteries are fully charged.

The only LEDs on after the multi-stage charge process is completed are the green system OK LED, blue AC power LED and the green ready/maintain LED.

Multi-Stage Charging Overview

Stage 1 - System Check OK and Battery Analyzing: During this stage the ProSport red “Charge” LED will flash indicating ProSport is analyzing all battery connections in addition to checking each battery is capable of being charged. Upon completion the “System Check OK” indicator will illuminate green followed by Stage 2 Charging.

Stage 2 - Charging: During this mode the “Charging” indicator will be red. The ProSport Series will use all of its available charging amps (as controlled by temperature) until the battery voltage is raised to 14.6VDC (Flooded lead-acid factory setting).

Stage 3 - Conditioning: During this mode the “Conditioning” status indicator will be amber. Batteries will hold at 14.6 VDC (factory set for Flooded lead-acid batteries) to complete charging while conditioning each battery connected. Upon completion the ProSport will go into its Energy Saver Mode.

Stage 4 - Auto Maintain (Energy Saver Mode): During this mode the blue “Power” and green “Auto Maintain” LED's will be on indicating Stage 2 charging and Stage 3 conditioning are completed. At this time ProSport will initiate its Auto Maintain (Energy Saver Mode) which will monitor and Auto Maintain batteries only when needed to maintain a full state of charge.

Stage 5 - Storage Recondition Mode: During this mode the ProSport “Storage Recondition Mode” green indicator will illuminate with a slow fade in and out pulse. This indicates that while your batteries/boat are in storage the ProSport will automatically recondition all batteries for up to 3 hours once a month extending battery life and maximizing on the water battery power performance.

Batteries and Charging (Continued)

- To get maximum daily use, the battery must be fully charged. This is accomplished by having the Trackchair plugged in and charging until the "READY LIGHT" comes on.

INDEPENDENT CHARGING BANK INDICATIONS

When your battery charging system is activated, each bank provides charging information utilizing five red Light Emitting Diode (LED) indicators and one green Light Emitting Diode (LED) indicator.

The five red LEDs enable you to track the progress of the charge cycle on each battery as the voltage rises. (see the following chart)

Dual Pro

Standard Operation of Charge Status LED Indicators	
1 RED LED = 10% Charged	2 to 12.78 volts = 10% 12.79 to 13.25 volts = 10%, 30% 13.26 to 13.49 volts = 10%, 30%, 50% 13.50 to 14.04 volts = 10%, 30%, 50%, 70% 14.05 to 14.52 volts = 10%, 30%, 50%, 70%, 90% Green Flashing {Finishing Stage} 14.52 to 15.49 volts
2 RED LEDs = 30% Charged	
3 RED LEDs = 50% Charged	
4 RED LEDs = 70% Charged	
5 RED LEDs = 90% Charged	
1 GREEN LED FLASHING = FINISH STAGE	
1 SOLID GREEN LED = 100% Charged + Maint. Mode	

Operation of Fault Codes on the Charge Status LED Indicators	
30% RED LED FLASHING with the 100% GREEN LED	This is caused when the charger does not read the proper voltage on a battery. Reverse Polarity, A battery below 2 volts, and leads disconnected will all cause this indication. This is also the the indicator for DeltaView Output
30 & 50% FLASHING	This happens when a 12 volt battery will not rise above 10.5 volts during the first 3 hours of charge, which would indicate that there is a problem with the battery.
30, 50 & 90% FLASHING	This indication means that the battery was being charged for over 20 hours, which would mean there could be a problem with the battery.
30 AND 90% FLASHING	This indicates that the internal temperature of the charger reached a level that was beyond the acceptable operating temperature and the charger shut itself down for protection purposes. This will reset when the a/c power is removed.

The charger can be left on for an extended period of time without harming the battery.

Your system provides an equalization stage every 30 days while plugged in. If the charger is normally disconnected from A/C after completing charge, equalization can be accomplished by plugging back into A/C whenever this stage is desired. Battery manufacturers recommend that equalization is done once a month in order to further reduce sulfation on the lead plates of a battery, which helps promote longer battery life. Note: During this process the LEDs will go through their normal routine (Red counting up for % of charge) and the Green Led will blink until the unit returns to the maintenance mode and a steady Green LED. (Not applicable to a Gel Profile)

Repairs and Maintenance

- All bearings are sealed and need no additional greasing.
- Track can be adjusted by loosening both bolts on the front idler wheels, inside and outside. Track tensioners can be tightened with a 9/16” wrench by holding the lock nut and turning track tensioner bolts clockwise an even amount. Adjustment is only needed if the track tension does not meet the below spec. IT IS NOT NECESSARY TO OVER TIGHTEN THE TRACKS. Re-tighten front idler wheels, inside and outside to 14Nm.

Rotate the track so an internal lug is directly above the “A” frame cross support as shown

Press down on track with 9 to 11kg of force and observe location of track lug. When properly tensioned the lug at blue arrow should just contact “A" frame with 9 to 11kg of force. Note arrow

Use suitable spring tension gauge purchased from your distributor/dealer

Cleaning your Trackchair

- The Action Trackchair can be washed with a garden hose, do not use high pressure wash to clean the chair. Always cover the joystick with a plastic bag to protect it from getting moisture inside. **THE JOYSTICK IS NOT WATERPROOF** and should be covered when washing, or stored outside or when transporting behind the vehicle open.
- Do not spray water directly onto the motor controller under the seat.

Warranties

- **1 YEAR**: The following components are covered against manufacture defects in materials and workmanship for the period of one year.
  - Batteries
  - Control box and joy stick
  - Motors
  - All sprockets and idler wheels
  - Seats
  - Tilt Actuator
  - All other parts 1 year

  Parts and Labor.

- **2 YEARS:** The following components are covered against manufacture defects in materials and workmanship for the period of two years.
  - ProSport battery charger

    1st Year- Parts and Labor 2nd Year- Parts Only.

- **3 YEARS:** The following components are covered against manufacture defects in materials and workmanship for the period of three years.
  - Tracks

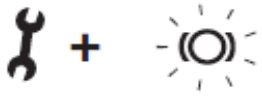
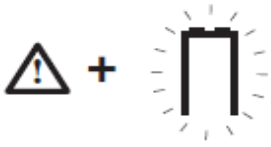
    1st Year- Parts and Labor 2nd and 3rd Years- Parts Only.

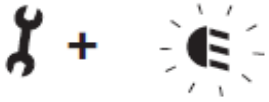
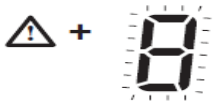
  - Frame welding

* Warranty period starts @ delivery date to customer.

Specifications

	ST Models **ST16, ST18, ST20, ST22, ST24**
Height	107cm
Width	94cm, 99cm, 104cm, or 109cm
Length	134cm with rear idler wheels
Weight	176kg approx
Occupant Weight	up to 136kg
Seat height	58cm
Seat Depth	42cm
Tilt angle for chair	20° each way
Track Size	16.5cm X 228cm
Batteries	Two 12 volt AGM 100Ah each
Controls	Curtis Industries enAble 40
Motors	24 volt DC 24:1 ratio high thrust
Speed	0 - 4 km/h
Turning Radius	ZERO
Width between armrest	41cm, 46cm, 51cm, 56cm or 61cm
Ground Clearance	8 cm
Battery Charger	20 amp on board
Range	Variable up to 11 kilometres
Foot rest	Adjustable up & down and flip up for easier access
Accessory holders	Two on each side and two on back of chair
4 point Upper Torso support harness.	Standard.

HANDCONTROL LCD DISPLAY	FAULT/WARNING	REMEDY
	Power Section Fault, or Current Sensor Fault, or EEPROM Fault, or Main Relay Fault, or Precharge Fault, or HW Failsafe Fault.	1. Cycle power 2. Replace powerbase.
	Handcontrol Fault, or Joystick Fault: Joystick out of center, Joystick stuck OOC, Joystick Out-of-Range	1. Return joystick to neutral and cycle power 2. Recalibrate joystick. 3. Check joystick cable and cable connections. 4. Repalce joystick. 5. Replace hand control.
	Communications Fault	1. Check cable and cable connections. 2. Replace cable.
	Brake Fault.	1. Check wiring. 2. Replace motor. 3. Replace powerbase.
	Seatback Actuator Driver Fault	1. Select drive or a different actuator; fault may clear. 2. Check wiring. 3. Check that the seatback is not jammed. 4. Check actuator; replace if faulty. 5. Replace powerbase.
	Seat Actuator Driver Fault.	1. Select drive or a different actuator; fault may clear. 2. Check wiring. 3.Check that the seat is not jammed. 4. Check actuator; replace if faulty. 5. Replace powerbase.
	Leg Actuator Driver Fault	1. Select drive or a different actuator; fault may clear 2. Check wiring. 3. Check that the leg rest is not jammed 4. Check actuator; replace if faulty. 5. Replace powerbase.
	Under voltage warning	1. Recharge battery. 2. Replace old battery. 3. If this is happening frequently, replace charger. 4. Check charger port on hand control; replace if damaged.
	Overvoltage Warning.	1. Wait for voltage to come down 2. Replace old battery. 3. Check charger; replace if faulty

	Controller Over/Under temperature warning.	1. If too hot, wait for controller to cool. 2. If too cold, drive chair in limited current mode until controller warms up.
	Drive Thermal Warning	1. Wait for motor to cool.
	Open Motor Fault	1. Check wiring. 2. Replace motor. 3. Replace powerbase.
	Left Indicator Fault	1. Press Left Indicator button. 2. Replace Bulb. 3. If fault continues, check wiring.
	Right Indicator Fault.	1. Press Right Indicator button 2. Replace bulb. 3. If fault continues, check wiring.
	Hazard Lights Fault.	1. Press Right or Left Indicator button. 2. Replace bulb. 3. If fault continues, check wiring.
	Running Lights Fault	1. Press Running Lights button. 2. Replace bulb. 3. If fault continues, check wiring.
 The numerical icon showing the present Speed Mode flashes.	Speed Limit Warning.	1. Return seat to normal or upright position. 2. If fault continues, check all limit switches and wiring.
	Low battery	1. Recharge battery.
	Locked Mode. *	1. Unlock the system.
	Chair under attendant control. *	1. Turn off attendant control (1742)
 *The bars on the battery icon light up in a chase sequence.*	Battery charging; Inhibit. *	1. Unplug charger when charging is complete.

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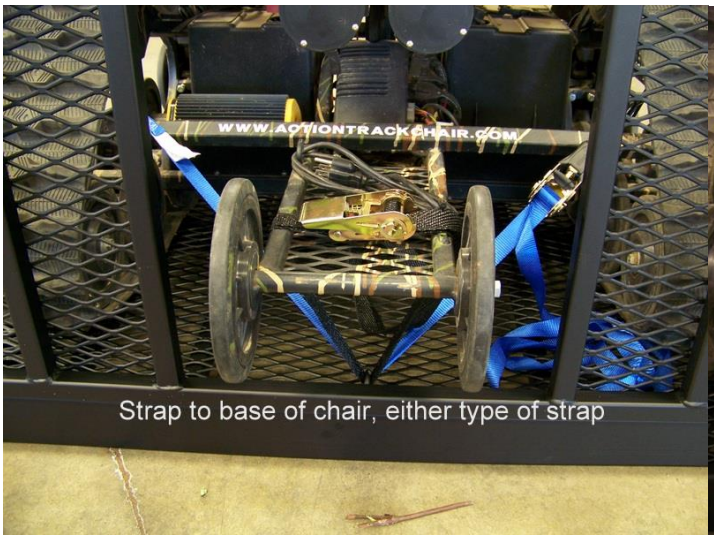
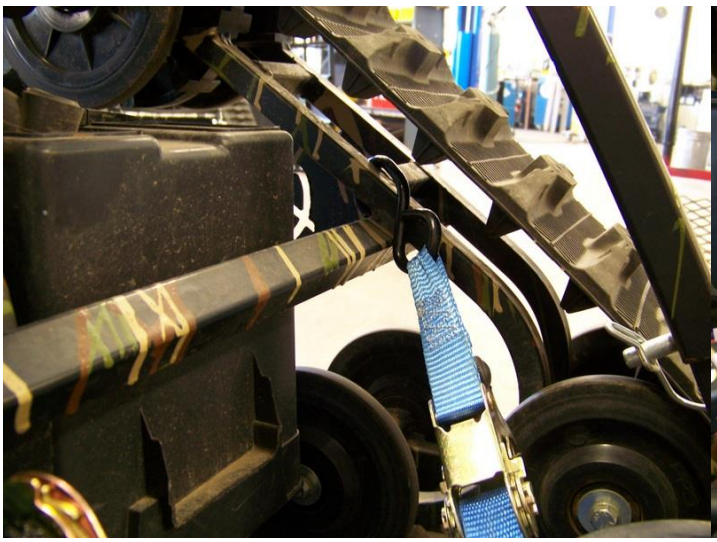
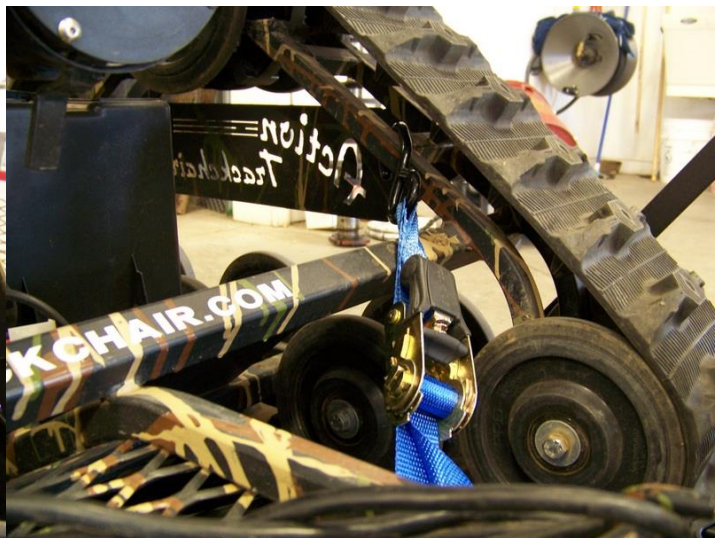
* These icons indicate a problem only if they appear when they shouldn't.

Strapping Methods



Proper strapping options for Trackchair to carrier





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Rocker switch override instructions

Actuator not moving up or down?

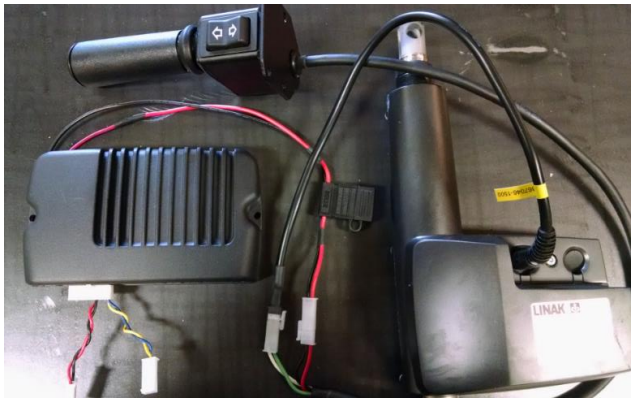
First check the fuse in the black fuse holder located at the black & red, 16 gauge wire harness which comes off the battery, fuse type is an ATC 20 amp.

If you suspect the actuator has failed and you have a “Tilt on the Fly” rocker switch, (not tilt through the joystick) you can simply bypass the rocker switch as follows:

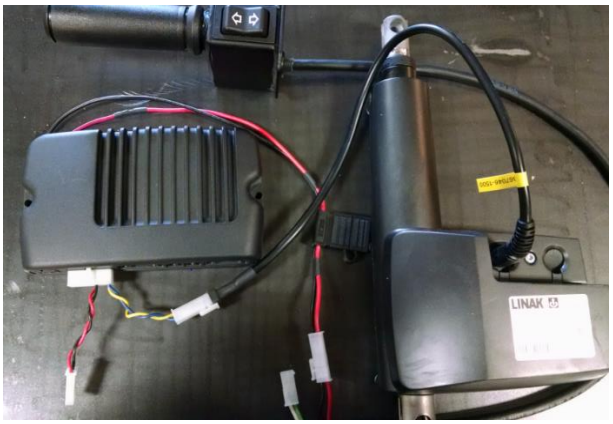
Locate wire coming out of the side of the actuator, unplug from the current plug it is attached to. Plug lead from actuator into blue/yellow lead from the 14 pin connector which is located under the seat.

Now turn joystick on and press the “M” button, move the joystick forward or reverse and the actuator should move up or down.

If you find that the actuator does work, then the problem would be in the “Tilt on the Fly” rocker switch or wiring to it.



Tilt on the fly wiring



Tilt with joystick

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Australian Standards Requirements:

The KCF Disability Engineering Action Trackchair has been tested to the following Australian Standards methods: AS3696-1:2008, AS3696-2:2008, AS3696-3:2008, AS3696-4:1992, AS3696-5:1989, AS3696-6:1990, AS3696-8:1998, AS3696-9:2008, AS3696-10:1990, AS3696-14:1998, ISO7176-7:1996 and with the relevant requirements of AS3695.2:2013 (excluding the methods indicated in the report as "not tested" or "not applicable")

1. This is a Class C wheelchair which is not intended for indoor use but capable of travelling over longer distances and negotiating outdoor obstacles.
2. Caution should be exercised when negotiating steep slopes as the capabilities of the Action Trackchair may exceed the capabilities of the operators to safely negotiate these obstacles.
3. The identification plate is attached to the steel seat frame on the left hand side.
4. The action of disengaging the drive motor levers will put the Action Trackchair into a freewheel mode and as such there is no braking on the Action Trackchair.
5. Surface temperatures can increase when the Action Trackchair is exposed to external sources of heat (e.g. sunlight).
6. Dispose of used batteries at a registered waste handling facility.
7. As of the printing date of this manual the flammability testing of the seating components has not yet been completed.
8. Please refer to page 17 and 18 for information on the power and control system circuitry.
9. The Action Trackchair could disturb the operation of other devices in its environment if these devices are susceptible to electromagnetic interference.
10. The driving performance of the Action Trackchair could be influenced by electromagnetic fields that are generated by other devices.
11. The manufacturer, Australian importer, SWL, year of production and serial number are printed on an adhesive label attached to the steel frame on the right hand side of the seat base.
12. An "AS/NZS 3696.19 non-compliant adhesive warning label" is attached to the steel frame stating that the Action Trackchair is not intended for use as a seat in a motor vehicle.

Connections to the batteries must be completed as shown below

1. The main wire harness (black in color) with the – symbol must be connected to the battery terminal that is identified with the – symbol and having a black colored ring around the battery bolt.
2. The main wire harness (red in color) with the + symbol must be connected to the battery terminal that is identified with the + symbol and having a red colored ring around the battery bolt. Improper connections can cause damage to the unit or may result in injury.

The wire connections to each battery are identical, the wire harness for each battery is also identical (see figure #1).

Main circuit protection is provided with a 100 amp circuit breaker. The tilt system fuse is an ATC style 20 amp rated fuse (see figure #2).

Figure #1

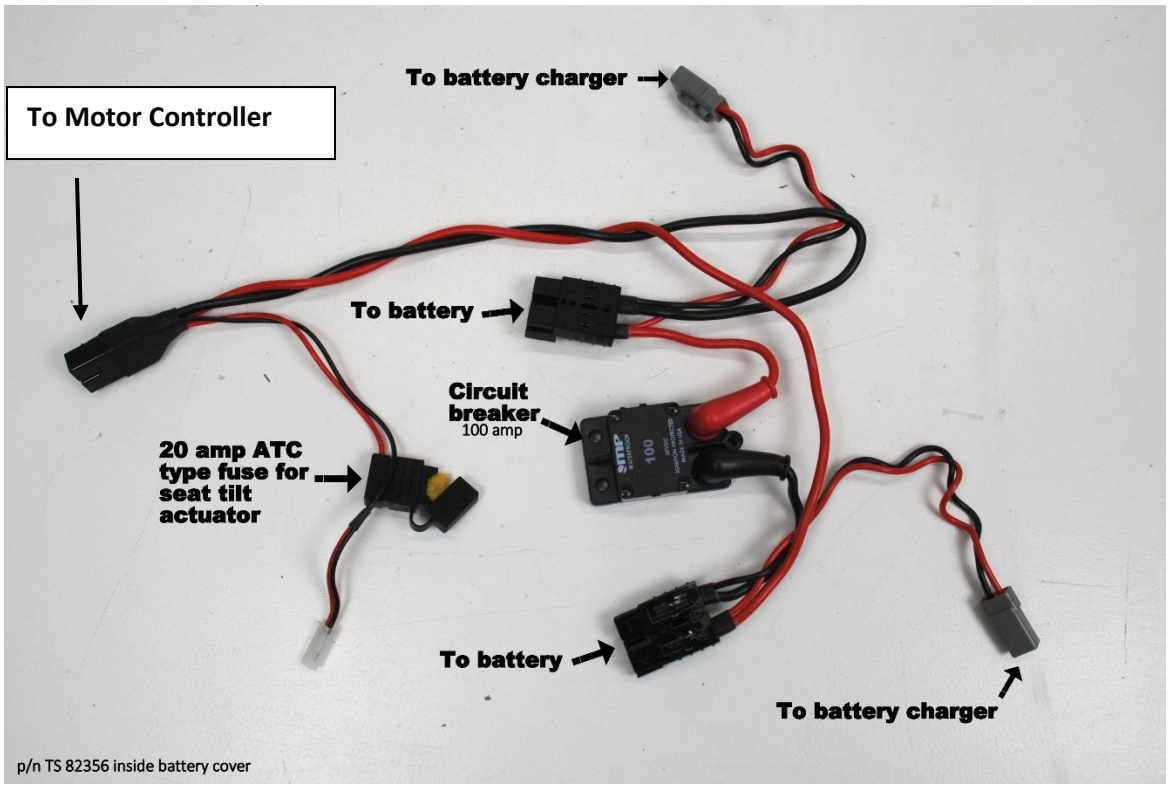
To Motor Controller
To battery charger
To battery
Circuit breaker
100 amp
20 amp ATC type fuse for seat tilt actuator
To battery
To battery charger
p/n TS 82356 inside battery cover

Figure #2