Rascal 710

OWNER'S MANUAL

The Rascal Company®
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CUSTOMER SERVICE: 1-800-257-7955

Rascal® move on it

Welcome aboard your new powerchair. We wish to thank you for letting us improve your freedom and independence. This model has been designed with your practical needs in mind. It is equipped with modern high-tech electronics and special features for a more comfortable ride. Its safety and performance will provide you with years of excellent service and pleasure.

Table of Contents

General Warnings

Read and understand these Warnings and the entire manual before using your Power Chair. This unit may tip over if these instructions are not adhered too.
Note: The anti-tip caster wheels may NOT prevent the powerchair from tipping if the powerchair is used improperly.

Warning!

Failure to follow these instructions may result in damage to the vehicle or serious injury

1. **DO NOT** exceed the specifications of this unit, modify this unit in any way, or use the unit for other than a powerchair. Specifications for this unit are on page 8.
2. **DO NOT** operate this unit if your health or medications you are taking cause you to feel dizzy, affect your vision, or in any way impact your thought process, coordination, or ability to safely operate the unit. Check with your physician should you experience any of these symptoms.
3. **DO NOT** operate this unit after consuming any alcoholic beverages.
4. **DO NOT** transfer "on" or "off" the unit until it is turned "off", completely stopped, and when it is on a stable and level surface.
5. **DO NOT** attempt to ride over curbs or other obstruction higher than 1-1/2 inches.
6. **DO NOT** stop when going up an incline. If you must do so, always lean forward when you start to move. This will shift your center of gravity forward to prevent the unit from tipping over backwards.
7. **DO NOT** climb inclines that pose a concern for stability. The ability to climb or descend grades varies with the load rating of the powerchair. See the specification (page 8) section for the maximum grade recommendation.
8. **DO NOT** drive across an incline or attempt to turn while on an incline.
9. **DO NOT** back down an incline or allow the unit to be backed down an incline.
10. **DO NOT** turn off the power while the unit is moving.
11. **DO NOT** operate on a ramp or incline unless the seat is in an upright position and the seatlift is in the lowest position.
12. **ALWAYS** remember vehicle capacity is limited to one occupant only. This unit is not approved for towing or for weight in excess of the published maximum.
13. **ALWAYS** drive straight up and down inclines.

14. **ALWAYS** turn the power off when the unit is not in use. This will not only extend the life of the battery but will keep the unit from being accidentally moved.

15. **ALWAYS** use a 3-prong grounded receptacle for the battery charger. If you must use and extension cord, use a UL approved 3-prong cord with 16 gauge wire.

16. **ALWAYS** reduce speed when making a turn.

17. **ALWAYS** use a positioning belt and keep arms and legs within the confines of the unit. Do not carry passengers, animals, or packages while operating the powerchair.

18. **ALWAYS** keep your feet on a footrest when operating the PowerChair.

19. **USE EXTRA CAUTION** when climbing inclines (ramps, hills, driveways, etc.)

20. **USE CAUTION** when braking on an incline or wet or slippery surfaces as the unit will take longer to come to a complete stop.

21. **USE CAUTION** when driving over soft, uneven or unprotected surfaces such as grass, gravel and decks.

22. **USE CAUTION** when operating the unit in bad weather or driving through water as moisture could affect the control system or other parts of the unit either temporarily or permanently.

23. **NEVER** hose off your PowerChair, use it in a shower or steam room, or allow it to come in direct contact with water.

24. **NEVER** charge batteries that may be frozen.

25. **SET** the speed control knob according to your driving ability and the environment in which you are going to operate it. We recommend that you keep the speed at the slowest (fully counter-clock-wise) until you are familiar with the driving characteristics of this vehicle.

26. **NEVER** occupy your PowerChair when transporting it in a motor vehicle. When transporting, make sure it is securely strapped with an approved tie-down system.

27. **NEVER** drive on the roadway. Leave and join sidewalk curb-cuts perpendicular to the road. Always cross street intersections via the most direct route and make sure that you are visible to traffic.

28. **NEVER** use electronic radio transmitters such as CB's, walkie-talkies, portable computers or cellular phones while using the vehicle without first turning the vehicle off.

Electromagnetic Interference (EMI) from Radio Wave Sources

The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (radio) waves that are emitted by television, radio and communication signals. These EM waves are invisible and their strength increases as one approaches the source. All electrical conductors act as antennas to the EM signals and, to varying degrees, all powerchairs and scooters are susceptible to electromagnetic interference (EMI). This interference could result in abnormal, unintentional movement and/or erratic control of the vehicle. The United States Food and Drug Administration (FDA) suggests that the following statement be incorporated to the user's manual for all powerchairs.

Powerchairs and motorized scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself or move in unintended directions. It can also permanently damage the powered wheelchair's control system. The intensity of the EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called the "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of providing at least 30V/m of immunity level, which would provide useful protection against common sources of radiated EMI.

Following the warnings listed below should reduce the chance of unintended brake release or powerchair movement that could result in serious injury:

1) Do not turn on hand-held personal communication devices such as citizens band (CB) radios and cellular phones while the powerchair is turned on.
2) Be aware of nearby transmitters such as radio or TV stations and try to avoid coming close to them.
3) If unintended movement or brake release occurs, turn the powerchair off as soon as it is safe.
4) Be aware that adding accessories or components, or modifying the powerchair, may make it more susceptible to interference from radio wave sources. (Note: there is no easy way to evaluate their effect on the overall immunity of the powerchair).
5) Report all incidents of unintended movement or brake release to the powerchair retailer, and note whether there is a radio wave source nearby.

TURN OFF YOUR POWER CHAIR AS SOON AS POSSIBLE WHEN EXPERIENCING THE FOLLOWING:

1. Unintentional motions.
2. Unintended or uncontrollable direction.
3. Unexpected brake release.

The FDA has written to the manufacturers of power wheelchairs, asking them to test their new products to be sure they provide a reasonable degree of immunity against EMI. This letter says that powered wheelchairs should have an immunity level of at least 30V/m, which provides a reasonable degree of protection against the more common sources of EMI. The higher the level, the greater the protection.

Your power chair has an immunity level of 30V / m which should protect against EMI.

Environmental Conditions

Environmental conditions may affect the safety and performance of your powerchair. Water and extreme temperatures are the main elements that can cause damage and affect the performance.

A) Rain, Sleet and Snow

If exposed to moisture, your powerchair is susceptible to damage of electronic or mechanical components. Water will cause electronic malfunction or promote premature corrosion of electrical and frame components.

B) Temperature

Some parts of the power chair are susceptible to changes in temperature. At extremely low temperatures, the batteries may freeze, and your power chair may not be able to operate. In extremely high temperatures, it may operate at slower speeds due to the controller safety feature to prevent damage to the motors and other electrical components.

Features diagram

In this section, we will acquaint you with the many features of your power wheelchair and how they work. Upon receipt of your power wheelchair, inspect it for any damage. Your power wheelchair consists of the following components.

1. Controller
2. Joystick
3. Armrest
4. Cover
5. Drive wheel
6. Front Caster
7. Footplate

Quick Reference Guide

1. Controller
2. Joystick
3. Armrest
4. Cover
5. Drive wheel
6. Front Caster
7. Footplate

Model No.	710 / MP3HD
Length	43"
Width	27"
Seat height (from ground)	21.25"~22.25"
Front wheel	9" FF
Rear wheel	12" Pneumatic tire
Weight Capacity	600 lbs
Speed	max 5 mph
Range	25 miles
Turning Radius	31.5"
Battery	GP 24 x 2
Brakes	Intelligent, regenerative and electromagnetic brakes
Anti-tip	2 rear anti-tip wheels
Unit Weight	281 lbs w/GP 24 batteries and seat
Charger	6A off-board 110-220v 50~60HZ

EMC Part: 55066800・Rev.3・8/25/2008

Terminology

Joystick: The device used to "move" the power chair.

Controller: The device that allows the joysticks to function. Not all joysticks have a controller.

Armrests: Where arms can rest during time spent on power chair.

Cover: The plastic piece or pieces that cover the power chair base.

Footplate: Where feet rest during time spent on the power chair.

Anti-tip Wheels: Wheels that allow slight tipping, or prevent tipping while driving.

Drive Wheel: Wheels that move the power chair. These are the main wheels.

Caster Wheel: The front wheels.

Controller Harness Connectors: Joystick cables connect to the power wheelchair.

Free Wheel Levers: L-Shaped levers at the top rear part of the cover.

Freewheel Lever

WARNING: DO NOT use the power wheelchair without the presence of an attendant while the drive motors are disengaged! **DO NOT** disengage the drive motors when your power wheelchair is on an incline, as the chair could roll down on its own, causing injury!

Disassembly of the Power Wheelchair

Seat Removal:

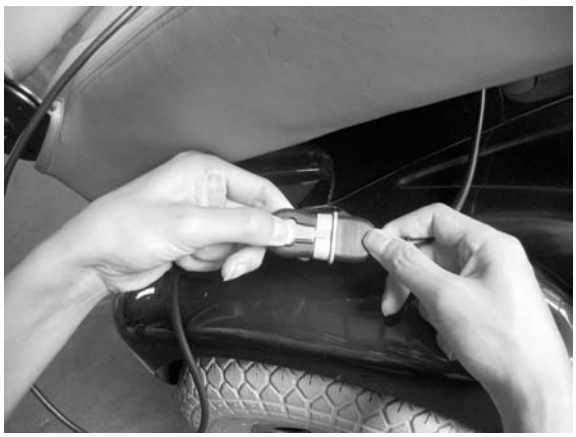


Fig A

Fig B

(1) Disconnect the controller connector. (Fig A)
(2) Push the latch down with hand. (Fig B)

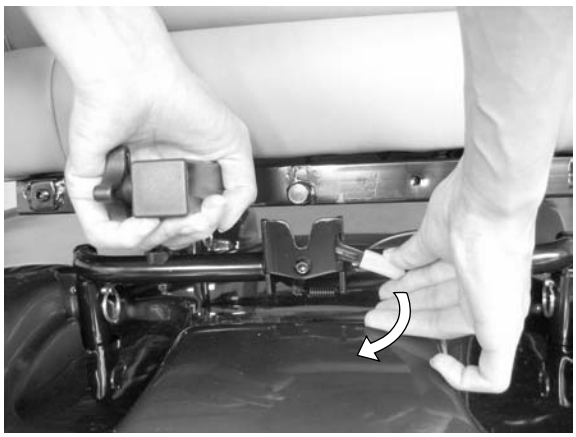


Fig C

Fig D

(3) Tilt the seat forward. (Fig C, Fig D)

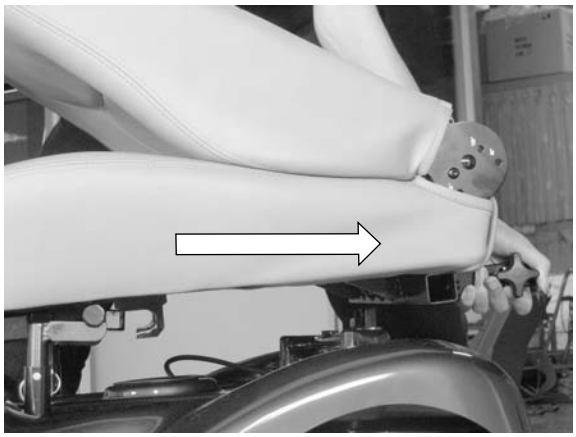


Fig E

Fig F

(4) Lift the seat off backwards. (Fig E)
(5) Take off the seat vertically. (Fig F)

Seat installation:

(1) Lift the seat vertically and insert the hook into front trapeze bar. (Fig F→Fig E)
(2) Tilt the seat to horizontal position, then locked-shaft of seat will be inserted in lock-device of power wheelchair directly. (Fig D→Fig B)

Seat height adjustment:

(1) Take off the seat first.
(2) Remove the retaining clips. (Fig G)
(3) Pull the trapeze bar out as far as the required height until the correct hole appears in the seat tube hole. (Fig H)
(4) Insert the pin into the hole, repeat this action with the other 2 pins. Ensure pins are placed at same height and trapeze bars are level. (Fig I, J)
(5) Reinstall the seat.

Fig G

Fig H

Fig I

Fig J

▪ Assembly of the seat mounting and hooks

(1) Assembly the seat mounting and hooks in the light of arrows. (Fig K)
(2) Just use 4 pcs socket screws for hooks. (Fig L)
(3) Use 4 pcs socket screws and 4 pcs washers for mounting the rear seat mounting plate. If needed you can adjust the position of the screws in elliptical holes on the rear seat mounting plate to ensure a proper fit on the powerchair. (Fig L, Fig M)

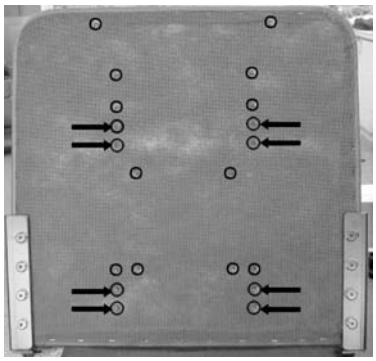


Fig K

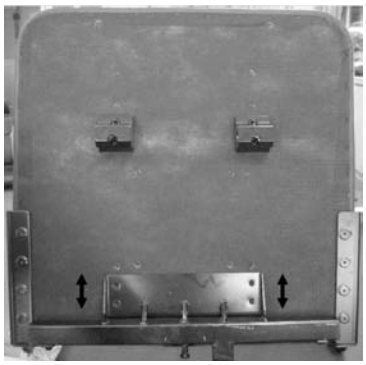


Fig L

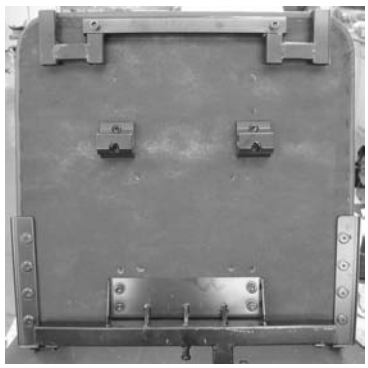


Fig M

INSERTING THE HEIGHT AND WIDTH ADJUSTABLE ARMRESTS

SETTING THE INITIAL WIDTH

1. Loosen the screws on the seatbase.
2. Slide armrest into the horizontal receiver brackets.
3. Select desired width and tighten the screws.

SETTING THE INITIAL HEIGHT

1. Locate and loosen the screws on the vertical armrest bracket.
2. Insert the armrest into the receiver.
3. Select desired height and tighten the screws securely.

INSTALLING THE CONTROLLER

1. Insert controller bracket tube into the receiver on short armrest.
2. Adjust the controller to your desired length, then tighten it with the included Allen wrench.
3. Insert the main plug into the controller socket.

Adjusting the seat

SETTING THE SEAT BACK-ANGLE

There is provision to set the seat back-angle to one of four positions:

a) Back vertical (90 degrees)
b) Back reclined by 10 degrees (100 degrees)
c) Back reclined by 15 degrees (105 degrees)
d) Back reclined by 30 degrees (120 degrees)

For reasons of operator forward visibility and vehicle stability, it is suggested that the most forward back-angle be choosen that is consistent with operator comfort.

RESETTING THE BACK ANGLE

1. Note that at the pivot point of the seat back a screw is positioned through the pivot that limits backward motion of the seat back. The left side pivot is imprinted with the stop angles. Observe the current stop position.
2. Remove the nut and screw from the stop position on each pivot.
3. If you need to recline the back more, reposition the stop screws into the stop positions 1 higher than was observed in (1). If you wish to reduce the back angle, reposition the stop screws in the position 1 lower than was observed in (1)
4. Replace the nuts onto the stop screws to lock the setting in place.

Adjusting the Footplate

ADJUSTING THE HEIGHT

(After removing the seat and the cover)

1. Using a 10mm hex wrench, remove the bolts and nuts.
2. Slide the platform to your desired height.
3. Replace the bolts and nuts and be sure to tighten them.

ADJUSTING THE ANGLE

1. Flip up the footplate for easy access and loosen the nut.
2. With an Allen key, simply turn the bolt counter-clockwise to increase the angle or clockwise to decrease it.
3. Be sure to re-tighten the nut.

Adjusting the joystick

ADJUSTING THE JOYSTICK LENGTH FORWARD OR BACKWARD

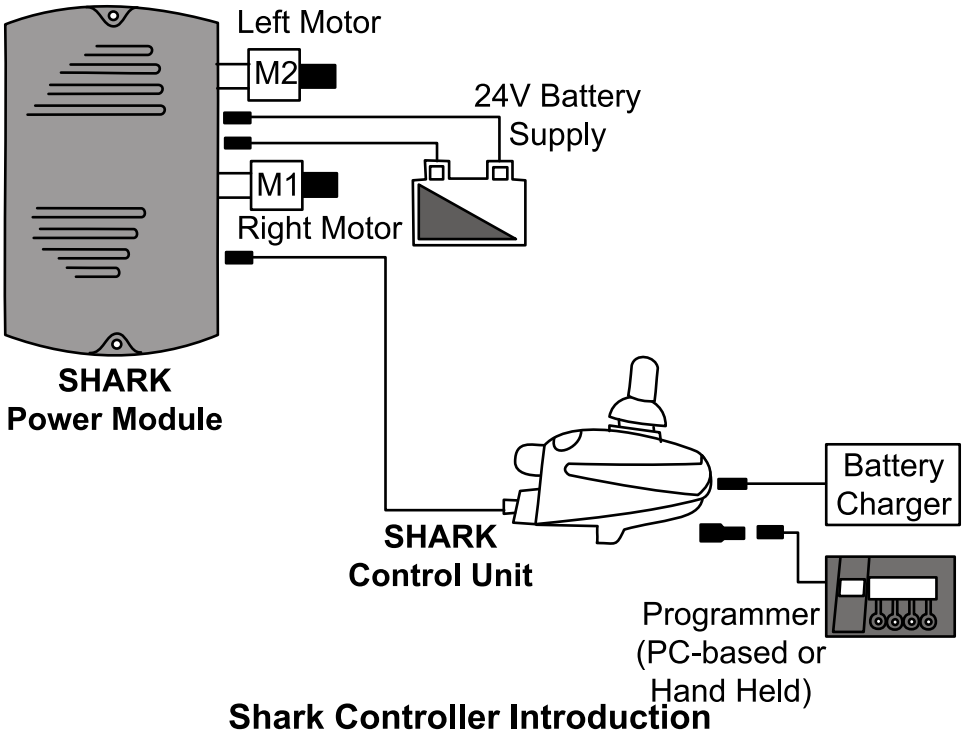
1. Flip up the armrest for easy access.
2. Loosen the set screw with an Allen key. Slide the Joystick bracket in or out to your desired length.
3. Re-tighten the bolt.

MOVING THE JOYSTICK TO OTHER SEAT ARM

1. Disconnect the joystick cable.
2. Remove both sets of armrests, while the joystick still is secured on one of armrest.
3. Exchange both armrests.
4. Be sure to tighten the knobs.

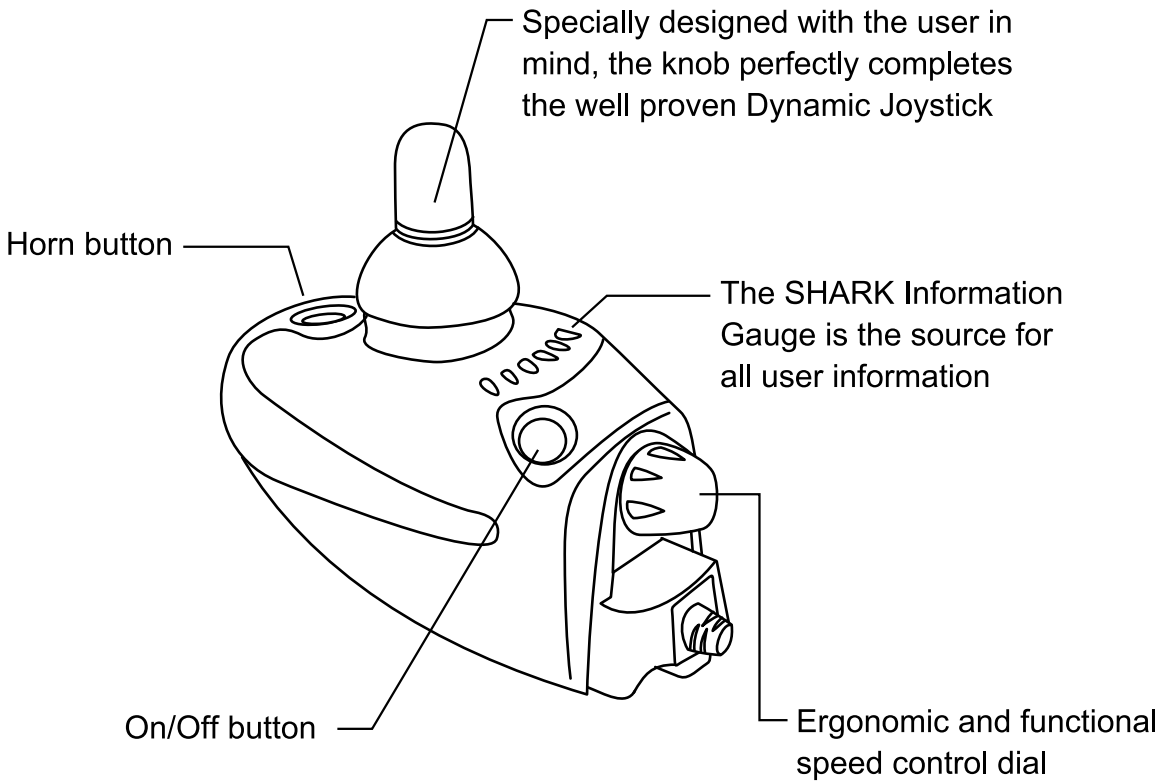
This manual includes instructions for both the VR2 and Shark Joysticks. Please note which joystick your unit is equipped with and refer to the appropriate instructions.

Dynamic Shark Controller Operation:

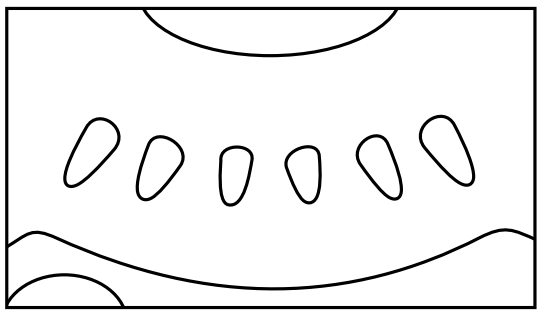


Shark Controller Introduction

The Shark Controller Unit



The Shark Information Gauge



The SHARK Information Gauge is the primary source of user feedback. It displays every possible status the SHARK may have, including;

- SHARK Power ON

  True state-of-battery-charge, including notification of when the battery desperately requires charging.

  ○ **Any green** LED's lit indicates well-charged batteries.

  ○ If only **amber and red** LED's are lit, the batteries are moderately charged. Recharge before undertaking a long trip.

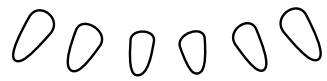
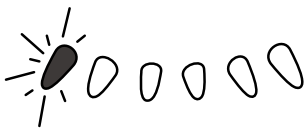
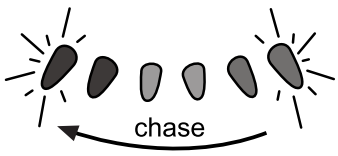
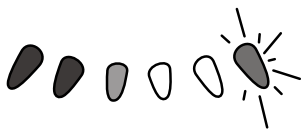
  ○ If **only red** LED's are lit, the batteries are running out of charge. Recharge as soon as possible.

- SHARK Lock Mode countdown

- Program, inhibit or charge modes

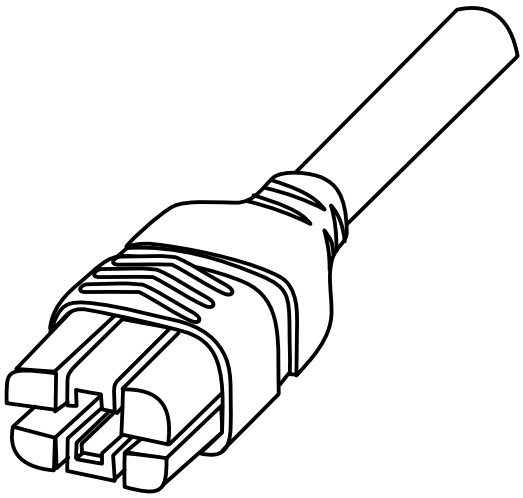
- Fault indication (Flash Codes)

The following table indicates what the gauge will display for any given state.

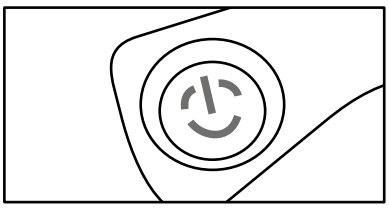
Display	Description	This means...	Notes
	All LED's OFF	Power is OFF	
	All LED's ON steady	Power is ON	Less LED's imply a reduced battery charge.
	Left RED LED is flashing	Battery charge is low	The batteries should be charged as soon as possible.
	Right to left 'chase'	SHARK is being brought out of Lock mode	To unlock SHARK, press the Horn button twice within 10 seconds.
	Left to right 'chase' alternating with steady display	SHARK is in programming, inhibit and/or charging mode	The steady LED's indicate the current state of battery charge.
	Right GREEN LED is flashing	SHARK is in SPEED LIMIT mode	The current state of battery charge will be displayed at the same time.
	All LED's flashing slowly	SHARK has detected an Out Of Neutral At Power Up (OONAPU) condition	Release the joystick back to neutral.
	All LED's flashing quickly	SHARK has detected a fault	SHARK uses Flash Codes to indicate faults. Refer to the Diagnostics section for further information about fault diagnostics.

The Shark Controller Harness

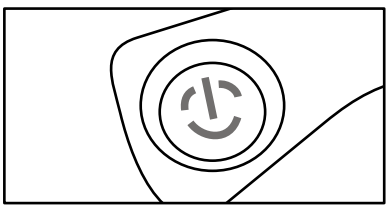
The SHARK Power Module communicates to the Control Unit through the SHARK Controller harness. The harness also supplies power to the Control Unit. The connector is ' keyed' and can only be plugged in one way.



Turning the Power ON

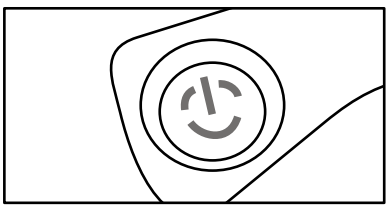
	Press the Power button. All indicators will light briefly. Either the current battery charge or Lock Mode will then be indicated.

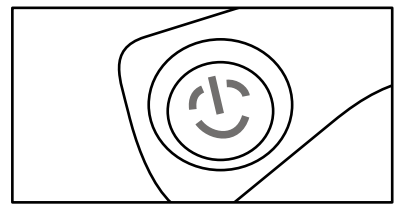
Turning the Power OFF

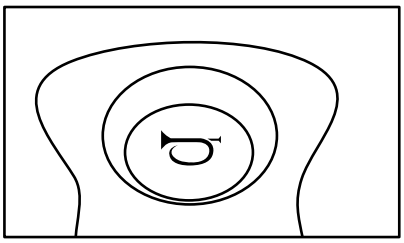
	Press the Power button. The LED's will turn off.

Locking Controller

The controller has a Lock Feature that prevents unauthorized people from turning the controller on.

	**To Lock** While the power is ON, press and hold the Power button for 2 seconds. The display will turn off immediately. After 2 seconds all LEDs will flash briefly and the horn will sound a short beep. The powerchair will then turn off





To Unlock

While locked, press the power button to turn on.

All LEDs will flash briefly The LEDs will then perform a slow right-to-left countdown.

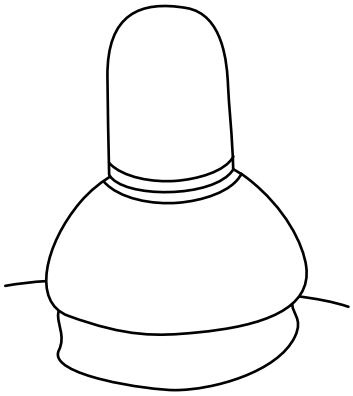
Press the Horn button twice before the countdown is completed (approximately 10 seconds).

The current state-of-charge will then be displayed and the controller may be operated normally.

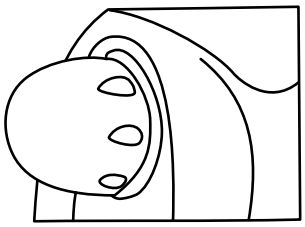
The Power button can also be used to turn SHARK off in case of an emergency.

After a certain amount of time with no joystick movement SHARK will automatically turn itself off.

Any button pressed (or joystick movement if Wakeup style has been set to "Joystick or Button") will bring the system out of sleep mode.

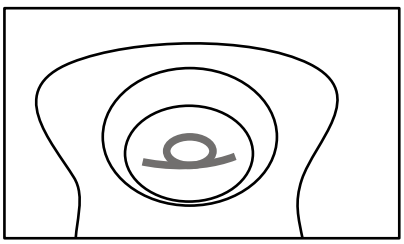


Moving the joystick will cause the powerchair to drive in that direction. The amount of joystick movement will determine the speed that the powerchair will move in that direction.



A user may adjust the top speed of their powerchair to suit their preference or environment by turning the speed control dial.

Simply turn the dial fully clockwise to travel at top speed when the joystick is pushed fully forward. The top speed progressively reduces as the dial is turned counter-clockwise.



Press the Horn button.

The horn will sound for as long as the button is pressed.

Flash codes indicate the nature of an abnormal condition directly from the SHARK Information Gauge. Without the use of any servicing tools, the condition can be simply diagnosed.

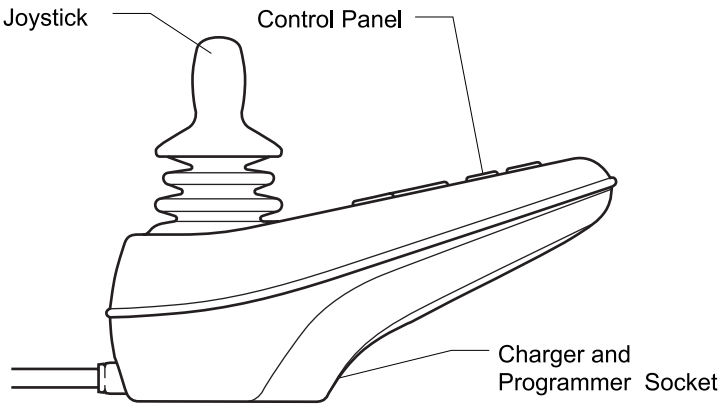
Flash Code	Description	
1	User Fault	Possible stall timeout or user error. Release the joystick to neutral and try again.
2	Battery Fault	Check the batteries and cabling. Try charging the batteries. Batteries may require replacing.
3	Left Motor Fault	Check the left motor, connections and cabling.
4	Right Motor Fault	Check the right motor, connections and cabling.
5	Left Park Brake Fault	Check the left park brake, connections and cabling.

Flash Code	Description	
6	Right Park Brake Fault	Check the right park brake, connections and cabling.
7	SHARK Control Unit Fault	Check the SHARK Controller Harness connections and wiring. Replace the Control Unit.
8	SHARK Power Module Fault	Check SHARK connections and wiring. Replace the Power Module.
9	SHARK Communications Fault	Check SHARK connections and wiring. Replace the SHARK Control Unit.
10	Unknown Fault	Check all connections and wiring. Consult a service agent.
11	Incompatible Control Unit.	Wrong type of Control Unit connected. Ensure the branding of the Power Module matches that of the Control Unit.

VR2 Controller Operation:

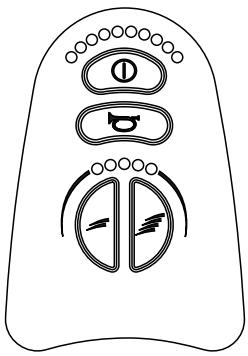
The VR2 control system has two versions of the front control panel - with and without actuator control. Most of the controls are common to both versions, however, the actuator buttons are only included on VR2 control systems with seat actuator control. Each of the controls is explained within this section.

VR2 USER CONTROLS

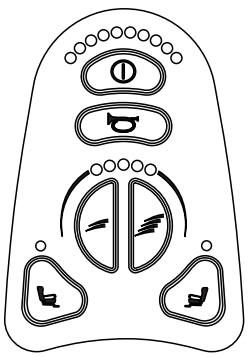


Front Control Panel Details

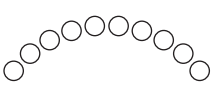
No Actuators



With Actuators



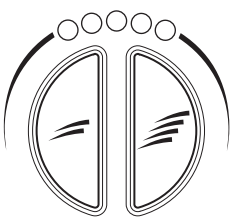
VR2 CONTROL BUTTONS



Battery Gauge

On/Off Button

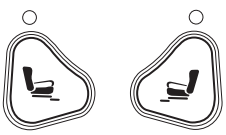
Horn Button



Maximum Speed / Profile Indicator

Speed / Profile Decrease Button

Speed / Profile Increase Button



Actuator Buttons

On/Off Button and Battery Gauge

The on/off button applies power to the control system electronics, which in turn supply power to the wheelchair's motors. Do not use the on/off button to stop the wheelchair unless there is an emergency. (If you do, you may shorten the life of the wheelchair drive components).

The battery gauge shows you that the wheelchair is switched on. It also indicates the operating status of the wheelchair. Details are given in section 1.

1 Control System Status indication

The battery gauge and maximum speed / profile indicator show the status of the control system.

> A number of supposedly defective control systems returned to us are subsequently found to operate correctly. This indicates that many reported faults are due to wheelchair problems rather than the control system.

1.1 Battery Gauge is Steady

This indicates that all is well.

1.2 Battery Gauge Flashes Slowly

The control system is functioning correctly, but you should charge the battery as soon as possible.

1.3 Battery Gauge steps Up

The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again.

1.4 Battery Gauge Flashes Rapidly (even with the joystick released)

The control system safety circuits have operated and the control system has been prevented from moving the wheelchair.
This indicates a system trip, i.e. the VR2 has detected a problem somewhere in the wheelchair's electrical system. Please follow this procedure.

- Switch off the control system.
- Make sure that all connectors on the wheelchair and the control system are mated securely.
- Check the condition of the battery.
- If you can't find the problem, try using the self-help guide given in section 1.6.
- Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair.

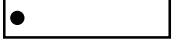
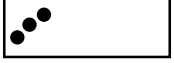
Contact your service agent.

1.5 Self-Help Guide

If a system trip occurs, you can find out what has happened by counting the number of bars on the battery gauge that are flashing.

Below is a list of self-help actions. Try to use this list before you contact your service agent. Go to the number in the list which matches the number of flashing bars and follow the instructions.
If the problem persists after you made the checks described above contact your service agent.

* If the programmable parameter, Motor Swap has been enabled, then left and right hand references in this table will need transposing.

1 Bar 	The battery needs charging or there is a bad connection to the battery. Check the connections to the battery. If the connections are good, try charging the battery.
2 Bar 	The left hand motor* has a bad connection. Check the connections to the left hand motor.
3 Bar 	The left hand motor* has a short circuit to a battery connection. Contact your service agent.
4 Bar 	The right hand motor* has a bad connection. Check the connections to the right hand module.
5 Bar 	The right hand motor* has a short circuit to a battery connection. Contact your service agent.
6 Bar 	The wheelchair is being prevented from driving by an external signal. The exact cause will depend on the type of wheelchair you have, one possibility is the battery charger is connected.
7 Bar 	A joystick fault is indicated. Make sure that the joystick is in the center position before switching on the control system.
8 Bar 	A control system fault is indicated. Make sure that all connections are secure.
9 Bar 	The parking bakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.
10 Bar 	An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery connections.
7 Bar + S 	A comunication fault is indicated. Make sure that joystick cable is securely connected and not damaged.
8 Bar + A 	An Actuator trip is indicated. If more than one actuator is fitted, check which actuator is not working correctly. Check the actuator wiring.

1.6 Slow or sluggish movement

If the wheelchair does not travel at full speed or does not respond quickly enough, and the battery condition is good, check the maximum speed setting. If adjusting the speed setting does not remedy the problem then there may be a non-hazardous fault. Contact your service agent.

1.7 Maximum Speed / Profile Indicator is Steady

The display will vary slightly depending on whether the control system is programmed to operate with drive profiles.

1.7.1 Maximum Speed Indication

The number of LEDs illuminated shows the maximum speed setting. For example, if the setting is speed level 4, then the four left hand LEDs will be illuminated.

1.7.2 Profile Indication

The LED illuminated shows the selected drive profile. For example, if drive profile 4 is selected, then the fourth LED from the left will be illuminated.

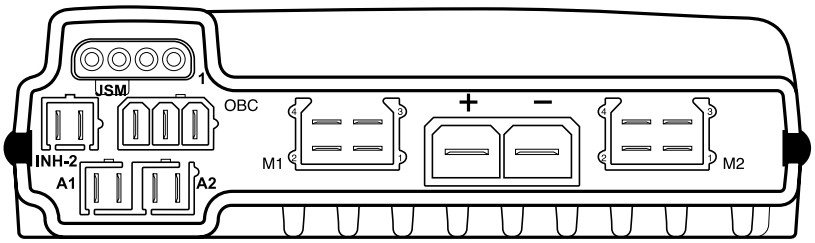
1.8 Maximum Speed / Profile Indicator Ripples Up and Down

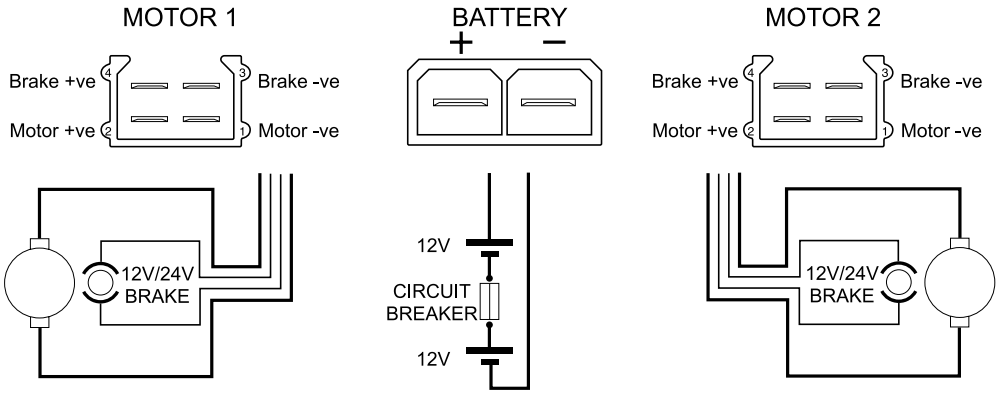
This indicates the control system is locked.

1.9 Maximum Speed / Profile Indicator Flashes

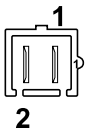
This indicates the speed of the wheelchair is being limited for safety reasons. The exact reason will depend on the type of wheelchair, however, the most common cause is that the seat is in the elevated position.

VR2 POWER MODULE CONNECTIONS



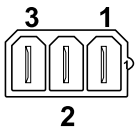


INHIBIT 2



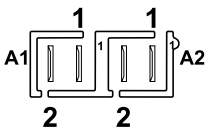
INH-2	Function
1	0V
2	Inhibit 2

ON-BOARD CHARGER



OBC	Function
1	Battery +ve
2	Inhibit 3
3	0V

ACTUATORS



Joystick Movement	Pin 1	Pin 2	Actuator Movement
Forward	+ve	-ve	Channel Up
Backward	-ve	+ve	Channel Down

Pushing Your Wheelchair.

This model uses manual brake release levers, one attached to each motor. The levers are accessible from the rear of the vehicle, just behind the rear cover at the center bottom of the cover. The normal (drive) position for these levers is both UP. The levers are each moved down to manually release each of the motor brakes. If either of the Manual Brake Release Levers is set to the DOWN position, (released), the controller will enter an error condition with 9 bars flashing if drive is attempted. With the brakes manually released, the wheelchair can be pushed. It is important however that the controller power be set to OFF while pushing the vehicle or it will try to resist that pushing.

Batteries and Charging

Your powerbase wheelchair uses two long-lasting, 12-volt batteries. These batteries are sealed, maintenance free, deep-cycle batteries. Since they are sealed, there is no need to check the electrolyte (fluid) level. Deep-cycle batteries are designed to handle a deep discharge. Though they are similar in appearance to automotive batteries, they are not interchangeable. Automotive batteries are not designed to handle a long, deep discharge, and are also unsafe for use in power wheelchairs.

WARNING! Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

BATTERY BREAK-IN

To break in your power wheelchair new batteries for maximum efficiency:

1. Fully recharge any new battery prior to initial use. This will bring the battery up to about 90% of its peak performance level.
2. Run your power wheelchair about the house and yard. Move slowly at first, and do not stray too far until you become accustomed to the controls and break in the batteries.
3. Give the batteries another full charge of 8 to 14 hours and operate the power wheelchair again. The batteries should now perform at over 90% of their potential.
4. After four or five charging cycles, the batteries will top off at 100% charge and last for an extended period.

IMPORTANT INFORMATION ABOUT BATTERIES

A fully charged deep-cycle battery provides reliable performance and extended battery life. Keep your batteries fully charged whenever possible. Batteries that are regularly discharged, infrequently charged, or stored without a full charge may be permanently damaged, causing unreliable operation and limited battery life.

If you do not use your power wheelchair regularly, we recommend maintaining battery vitality by charging the batteries at least once a week.

Note: If you are storing a power wheelchair for an extended period of time, you may wish to block the unit up off the ground with several boards under the frame. This keeps the tires off the ground and prevents the possibility of flat spots developing.

If you intend to use public transportation while using your power wheelchair, you must contact in advance the transportation provider to determine their specific requirements.

Sealed Lead Acid and Gel Cell batteries are designed for application in wheelchairs and in other mobility vehicles. Generally, Sealed Lead Acid batteries that are marked as "Non-Spill" are safe for all forms of transportation such as aircraft, buses, and trains. We suggest that you contact your transportation provider to determine specific requirements of transportation and packaging.

If you wish to use a freight company to ship the power wheelchair to your final destination, repack the power wheelchair in the original shipping container and ship its batteries in separate boxes.

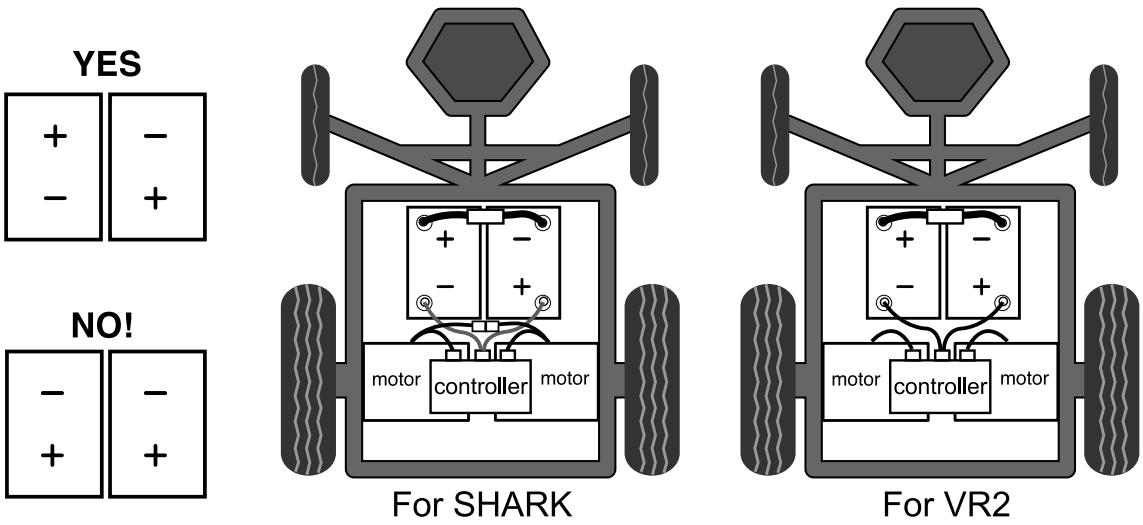
CHARGING YOUR BATTERIES

The battery charger is one of the most important parts of your power wheelchair. Optimize your power wheelchair performance by charging the batteries safely, quickly, and easily. Use only the charger supplied with the vehicle.

Battery Installation / Replacement.

Your service provider should perform battery installation and or replacement whenever this is possible. The batteries are heavy and awkward to handle. Old batteries must be disposed of in accordance with EPA regulations. Do not keep old batteries; they can be dangerous to health, property and the environment.

(a) Remove Seat
(b) Remove Top Cover.
(c) If replacement, pull back the black terminal cover of the forward-most battery terminal and unbolt the cable from that terminal. Use extreme caution to ensure that tools not contact two terminals at the same time.
(d) Pull back the red terminal cover of the forward-most battery terminal and unbolt the cable from that terminal. Remove the fused battery link.
(e) Pull back the black terminal cover of the rear-most battery terminal and unbolt the black cable from that terminal.
(f) Pull back the red terminal cover of the rear-most battery terminal and unbolt the red cable from that terminal.
(g) Release the battery hold-down straps and lift the batteries out of the vehicle.
(h) Set the replacement batteries into the vehicle as shown in diagram.
(i) Connect the fused battery joining cable (black terminal cover-end) to the forward-most negative (-) battery terminal. Tighten terminal bolt to approximately 30-inch/lb. Slip terminal cover over battery terminal.
(j) Connect the fused battery joining cable (red terminal cover-end) to the forward-most positive (+) battery terminal. Tighten terminal bolt to approximately 30-inch/lb. Slip terminal cover over battery terminal.
(k) Connect the black controller power cable to the rear-most negative (-) battery terminal. Tighten terminal bolt to approximately 30-inch/lb. Slip terminal cover over battery terminal.
(l) Connect the red controller power cable to the rear-most positive (+) battery terminal. Tighten terminal bolt to approximately 30-inch/lb. Slip terminal cover over battery terminal.



Your power chair is designed for minimal maintenance. However, we recommend that you periodically check the following:

Tire pressure:
Be sure to maintain the pressure of the tires between 30-37 psi. (If tire is pneumatic tire)

Tire tread:
Visually inspect the tire tread. If less than 1/32", please have your tires replaced by your local dealer.

Motor brushes:
Have your local dealer inspect the motor brushes every six months.

Joystick/controller:
Make sure to keep the controller from the elements. Moisture will damage the controller and void the warranty.

Battery terminal connections:
Inspect the state of the battery terminals. Make sure that they are not corroded.

Clean your power chair cover only with a damp cloth:
The ABS shroud (cover) has a clear coat that is very easy to clean. Please do not use water to clean your power chair.

Note: *If you experience any technical problems, contact EMC customer service at 1-800-257-7955 before attempting to trouble shoot on your own.*

Positioning Belt, Joystick & Joystick Cable Installation

The normal position for the joystick is on the right side. In this position the swing away arm will move the joystick outward. Alternately, the joystick may be positioned on the left side. However, when in the left side position, the swing away arm will swing the joystick inward.

After determining on which side the joystick will be positioned, attach the positioning belt(loop attachment type) as shown in Figure 6. The positioning belt loop is slid on the armrests prior to inserting the armrest into the armrest bottom mounting tube.

For positioning belts that have a hole instead of a loop, remove the rear seat base bolts then slide belt end between seat base and seat, align hole in end of belt with hole in base, then insert and tighten bolts.

Insert the armrest, obtain a comfortable armrest height and tighten the adjustment knobs. Make sure all adjustment knobs and set screws used to attach the armrests are tight.

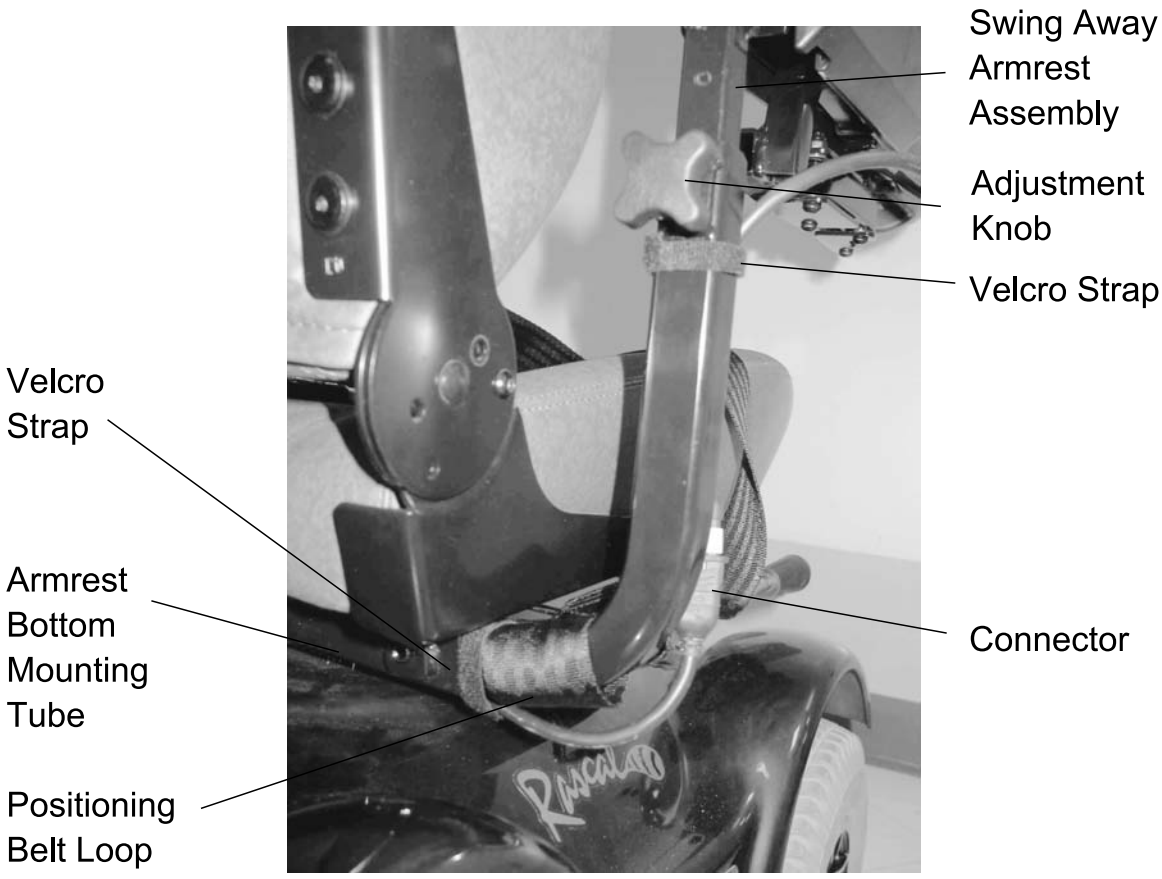


Figure 6 (right hand shown)

The velcro straps in the bag with this instruction are to secure the joystick cable to the powerchair as shown in the photos. The velcro strap is attached around the cable and seat bottom mounting tube as shown in Figure 6 and 7.

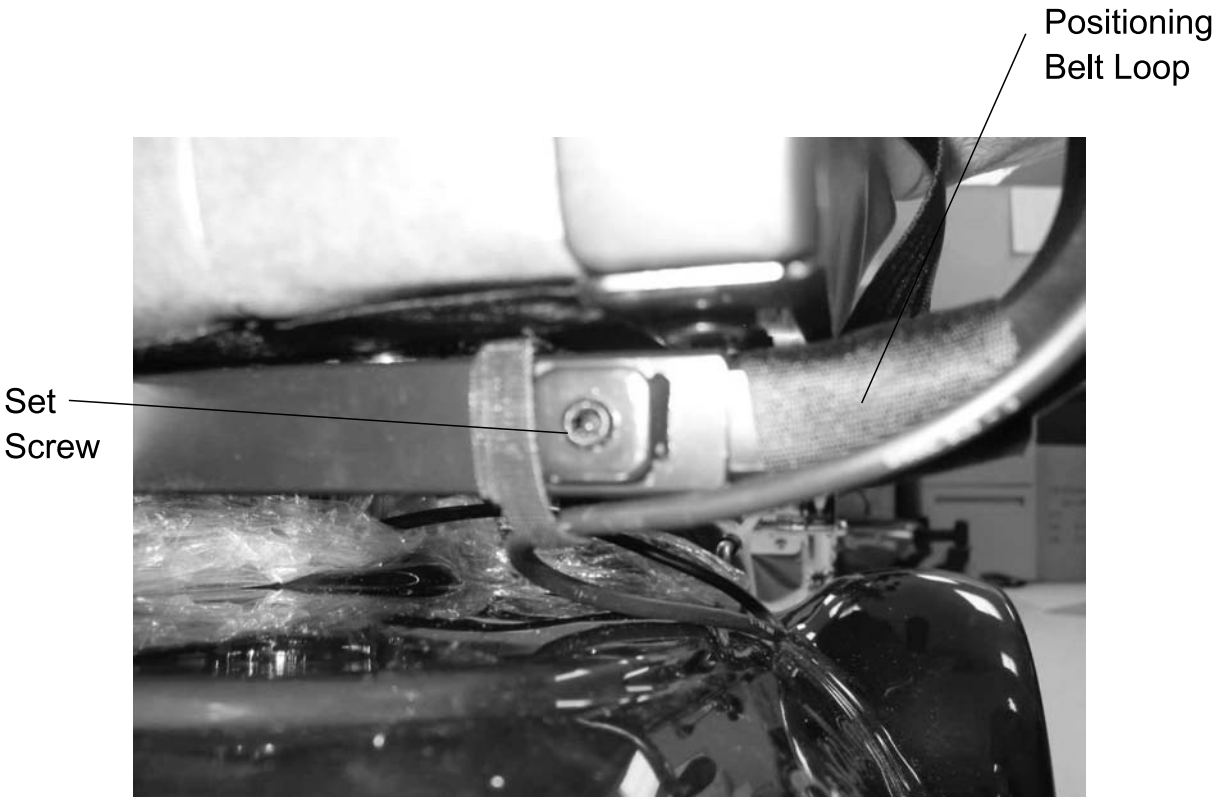


Figure 7

The velcro strap by the knob in Figure 6 is used for mounting the joystick cable to the left armrest. The velcro can be used to attach the cable for right mounted joystick if clip is not supplied.

To remove the chair assembly from the base remove the Velcro shown in Figure 7 and unplug the connector shown in Figure 6.

▶ Three Year Limited Warranty ◀

Three Year Warranty

For three years from the date of purchase, Electric Mobility will repair or replace at our option to the original purchaser, the main frame if found upon examination by an authorized representative of Electric Mobility to be defective in material and/or workmanship.

One Year Warranty

For one year from the date of purchase, Electric Mobility will repair or replace at our option to the original purchaser, any of the following parts found upon examination by an authorized representative of Electric Mobility to be defective in material and/or workmanship:

- Electronic controller and joystick modules
- Motor/gear box assembly
- Main frame sub-assemblies (forks, torsion bar, metal seat base, foot rest)
- Plastic components except body shell
- Rubber components except tires
- Bearings and bushings
- Casters and anti-tip wheels

One Year Warranty Exceptions:

Motor: Commutator damage as a result of not replacing motor brushes after heavy wear to the brushes.
Brushes are wear items and are not warranted.

Brakes: One year warranty for electrical functionality of the brake.
Brake pads are wear items and are not warranted.

Batteries: Battery warranties are covered by the battery manufacturer.
Battery warranty is not covered by Electric Mobility.
Note: Warranty service can be performed by EMC authorized sevrice center.

Warranty Exclusions:

- Plastic body shell is a wear item and is not warranted.
- Batteries are warranted by the battery manufacturer and not by Electric Mobility.
- Tires and tubes.
- Seating and upholstery.
- Damage caused by: battery fluid spillage or leakage; abuse, misuse, accident, negligence; improper operation, maintenance or storage; commercial use or use other than normal; repair and/or modifications made to any part without prior consent by Electric Mobility, or any circumstances beyond the control of Electric Mobility.
- Labor, service calls, shipping, and other charges incurred for repair of the product unless specifically authorized by Electric Mobility.
- There is no other expressed warranty.

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