<u>Owners, Operators, and Maintenance</u> <u>Manual</u>

For The

Series 107 Powered Wheelchair

with standard equipment

Black Hawk edition

User: Before using the Series 107 power chair, please read and understand this manual.

Dealer: This manual must be given to the user of the Series 107 power chair and the dealer should assure that the user understands the contents of the manual.

<u>Redman Power Chair, LLC</u>

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<u>Warning</u>

Do not operate the Series 107 power chair, its options, or its accessories without first reading and understanding this manual.

If you do not or are unable to understand the warnings, cautions, and instructions in this manual, contact a healthcare professional, Series 107 power wheelchair dealer, or Redman Power Chair Customer Service personnel before attempting to use the Series 107 power wheelchair.

Use of the Series 107 power wheelchair without understanding this manual may result in damage to the Series 107 power wheelchair, property and/or injury to the user.

The information, specifications, optional equipment and accessories described in this manual are subject to change without notice. Contact Redman Power Chair Customer Service if additional information is needed.

The U.S. Department of Transportation has not approved any tie-down systems for the transportation, in a moving vehicle, of a user while in a wheelchair. Seat belts, chest belts, chest harnesses and similar restraints installed on the Series 107 Power Wheelchair are provided as positioning straps and body restraints while the user is in the Series 107 Power Wheelchair. Seat belts, chest belts, chest harnesses, and similar restraints installed on the Series 107 Power Wheelchair. Seat belts, chest belts, chest belts, chest belts, chest belts, and similar restraints installed on the Series 107 Power Wheelchair.

When traveling in a motor vehicle, Redman Power Chair recommends transferring the user to the occupant seating and restraining system approved for that motor vehicle.

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Thank you for purchasing a Chief 107-ZRX power wheelchair and bodypositioning system. You have selected a power chair incorporating some of the most innovative features available on any power chair in the Chief 107-ZRX.

Redman Power Chair wants to assure that the 107-ZRX exceeds your expectations in product design that address both clinical and lifestyle needs. As you become familiar with the 107-ZRX's safety precautions, and operating and maintenance instructions, keep in mind, that we are only a phone call away if you need any assistance or additional information.

Our Customer Service Department is available to you for any of your needs and you can contact them on their own toll-free number --- 800-727-6684 The Customer Service representatives are your first stop when you need any assistance from Redman Power Chair.

Because we custom build each 107-ZRX to meet your individual needs, we feel a special bond to our customers that you will not find anywhere else in the industry. Your satisfaction with every facet of the 107SRX experience is paramount in our organization from the market researchers, to the sales reps, to the quality assurance and production personnel, to our customer service and delivery experts.

It is an honor to provide you with the 107-ZRX and we look forward to many years of continued service.

Sincerely,

Don Redman

2.2 Operating Conditions

Your control system uses industrial-grade components throughout, ensuring reliable operation in a wide range of conditions. However, you will improve the reliability of the control system if you keep exposure to extreme conditions to a minimum.

Do not expose your control system or its components to damp for prolonged periods. If the control system becomes contaminated with food or drink clean it off as soon as possible.

2.3 Cleaning

Clean the control system and the joystick with a cloth dampened with diluted detergent. Be careful when cleaning the joystick and screen.

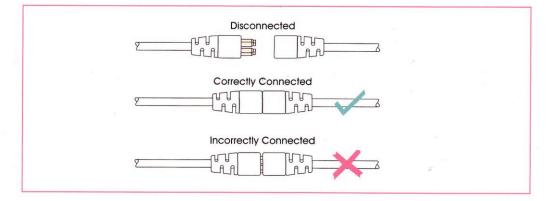
Never use abrasive or spirit-based cleaners.

3 Mating Connectors

To connect the Communication Cables:

Holding the connector housing, firmly push the connector into its mate until you can no longer see the yellow plastic.

The connectors are secured using a friction system.

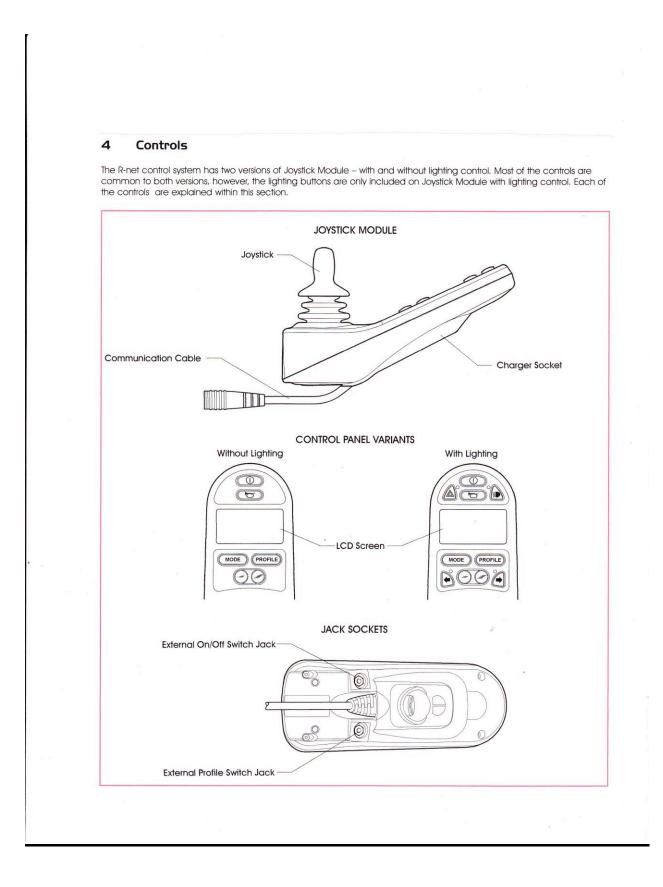


To disconnect the Communication Cables:

Holding the connector housing firmly, pull the connectors apart.

Do not hold or pull on the cable. Always grip the connector when connecting and disconnecting.

When the control system is first switched on after a connection, or system component change the Timer will be displayed whilst the system checks itself and then the re-start icon will be displayed. Switch the control system off and on again to operate.

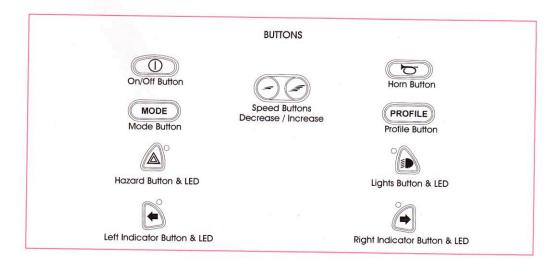




The primary function of the joystick is to control the speed and direction of the wheelchair. The further you push the joystick from the center position the faster the wheelchair will move. When you release the joystick the brakes are automatically applied.

If the wheelchair is fitted with actuators, the joystick can also be used to move and select actuators, refer to section 3.8 for more details.





4.2.I On/off Button

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).

4.2.2 Horn Button

The Horn will sound while this button is depressed.

4.2.3 Speed Decrease Button

This button decreases the maximum speed setting.

Depending on the way the control system has been programmed a momentary screen may be displayed when the button is pressed.

Refer to section 5 for details of the momentary screen

Refer to Chapter 3 - Programming for details.

4.2.4 Speed Increase Button

This button increases the maximum speed setting.

If the control system is set to latched drive or actuator control operation, then the polarity of the jack input is reversed to effect a fail safe system; meaning this input will provide an External Profile Switch function and an Emergency Stop Switch function.



The Joystick Module is supplied with rubber bungs which must be inserted into the Jack Socket when no external device is connected.

4.3 LCD Screen

The status of the control system can be understood by observing the LCD screen. The control system is on when the screen is backlit.

Refer to section 5 for details on screen symbols.

4.4 Charger Socket

This socket should only be used for charging or locking the wheelchair. Do not connect any type of programming cable into this socket.

Refer to section 10 for more details on charging.

This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the E.M.C. performance of the wheelchair.



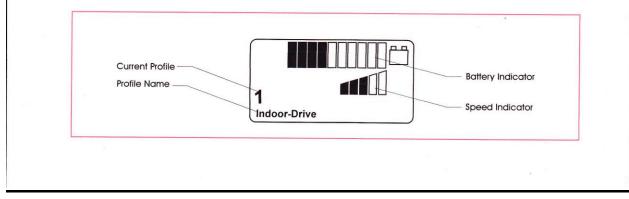
The control system's warranty will be voided if any device other than a battery charger supplied, with the wheelchair, or the lock key is connected into this socket.

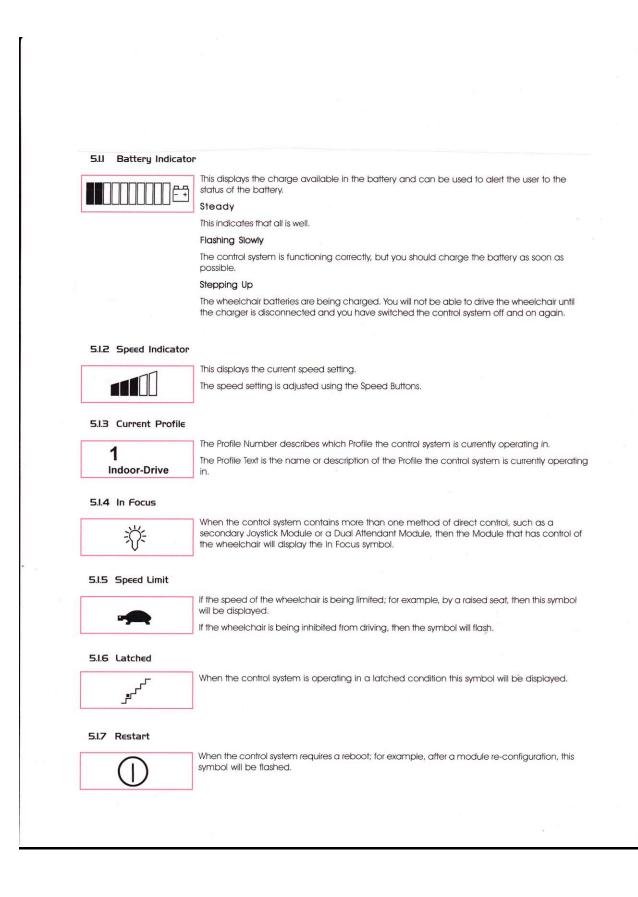
5 LCD Screen

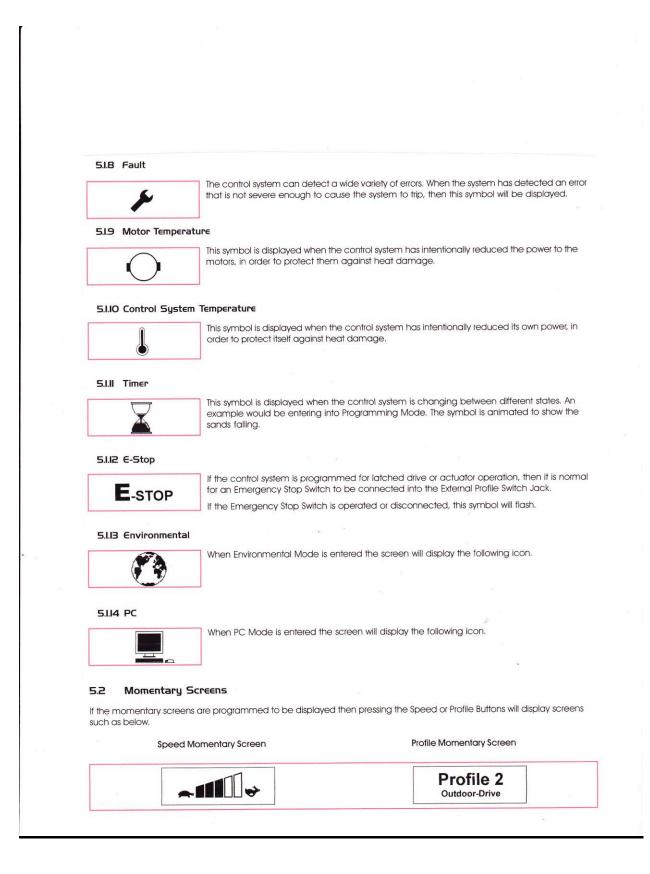
The status of the control system can be understood by observing the LCD screen.

5.I Screen Symbols

The Drive screen for the R-net has common components, which will always appear, and components which will only appear under certain conditions. Below is a view of a typical Drive screen in Profile 1.



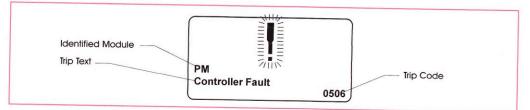




5.3 Diagnostic Screen

When the control system safety circuits have operated and the control system has been prevented from moving the wheelchair a diagnostics screen will be displayed.

This indicates a system trip, i.e. the R-net has detected a problem somewhere in the wheelchair's electrical system.



If the error is in a non-active module, for example in the ISM but with a drive Profile is selected, then drive will still be possible, however, the diagnostic screen will appear intermittently.

5.3.1 Identified Module

This identifies which module of the control system has registered the problem.

PM	Power Module
JSM	Joystick Module
ISM	Intelligent Seating/lighting Module

5.3.2 Trip Text

The Trip Text gives a brief description of the trip type.

5.3.3 Trip Code

The 4 digit code displayed gives the exact trip that has been recorded.

5.3.4 Diagnostic Procedure

Please follow this procedure:

- Read and note the Trip Text displayed, the identified Module and the Trip Code.
- Switch off the control system.
- Make sure that all connectors on the listed Module and the wheelchair are mated securely.
- Check the condition of the battery.
- Find the definition of the Trip Code in the Service Guide, and take the required action.
- 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.

Example:		
	PM Low Battery 2C00	
Identified Module	Power Module Trip.	
Trip Text	Low Battery	
Trip Code	2C00	
This means the battery n	eeds charging or there is a bad connection to the battery.	
Check the connectio 5.4 Locking the Control System can be	ns to the battery. If the connections are good, try charging the batter ontrol System De locked in one of two ways. Fitther using a button sequence on the	
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To unlock the wheelchair

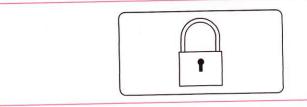
- If the control system has switched off, press the On/off button.
- Deflect the joystick forwards until the control system beeps.
- Deflect the joystick in reverse until the control system beeps.
- Release the joystick, there will be a long beep.
- The wheelchair is now unlocked.

5.4.2 Key Locking

To lock the wheelchair with a key lock.

- Insert and remove a PGDT supplied key into the Charger Socket on the Joystick Module.
- The wheelchair is now locked.

The following screen will be displayed.



To Unlock the wheelchair.

- If the control system has switched off, press the On/off button.
- Insert and remove a PGDT supplied key into the Charger Socket.
- The wheelchair is now unlocked.

5.5 Actuator Selection Screen

To adjust the seat position the actuator screen must be visible.

Depress the Mode Button to scroll through the Mode screens until you reach the actuator screen, displayed below.

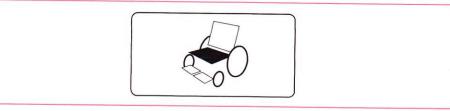


Actuator adjustment is achieved as follows.

Move the Joystick sideways to select the desired axis.

(This is indicated by the section of the wheelchair that is highlighted)

Move the joystick forwards and backwards to move the actuator.

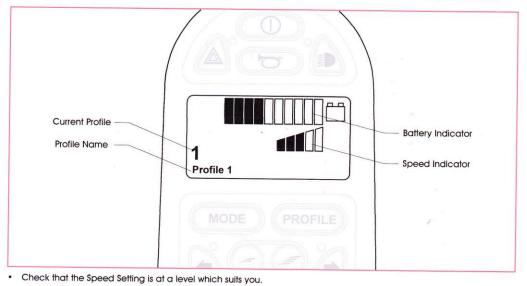


· Repeat these steps for each actuator that requires adjustment.

To drive again depress the Mode button until the Drive screen is reached.

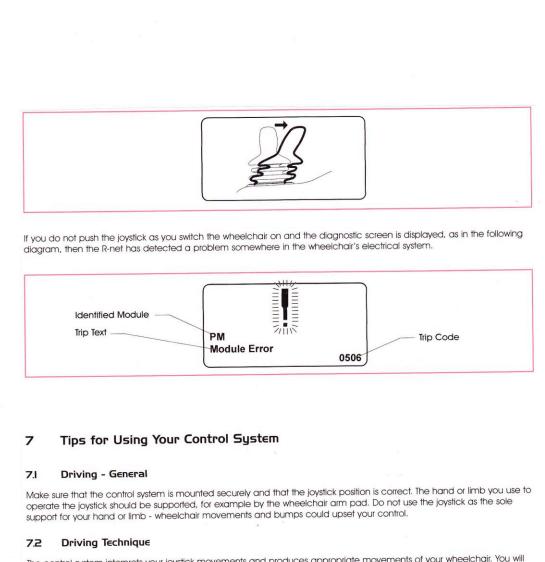
6 Getting Ready to Drive

Operate the on/off switch. The screen will go through an initializing process then show the base screen as follows.



Push the joystick to control the speed and direction of the wheelchair.

If you push the joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen. You must release and center the joystick to resume normal operation. If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and push it again. The screen will display the diagnostic screen at this time. You can reset this condition by switching the control system off and on again.



The control system interprets your joystick movements and produces appropriate movements of your wheelchair. You will need very little concentration to control the wheelchair, which is especially useful if you are inexperienced. One popular technique is to simply point the joystick in the direction you want to go. The wheelchair will "home-in" on the direction you push the joystick.

The further you push the joystick away from the rest position, the faster the wheelchair will go. Releasing the joystick will stop the wheelchair.

The intelligent speed control system minimizes the effects of slopes and different types of terrain.



The wheelchair user must be capable of driving a wheelchair safely. PGDT accepts no liability for losses of any kind arising from failure to comply with this condition.

7.3 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 nonhazardous fault. Contact your service agent.

8 Precautions for Use

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In the event of the wheelchair moving in an unexpected way RELEASE THE JOYSTICK. This action will stop the wheelchair under any circumstances.

8.I Hazards

Do not drive the wheelchair:

- Beyond restrictions indicated in your wheelchair user manual, for example maximum inclines, curb height etc.
- In places or on surfaces where a loss of wheel grip could be hazardous, for example on wet grassy slopes.
- If you know that the control system or other crucial components require repair.

Although the R-net control system is designed to be extremely reliable and each unit is rigorously tested during manufacture, the possibility of a system malfunction always exists (however small the probability). Under some conditions of system malfunction the control system must (for safety reasons) stop the chair instantaneously. If there is any possibility of the user falling out of the chair as a result of a sudden braking action, it is imperative that a restraining device such as a seat belt is supplied with the wheelchair and that it is in use at all times when the wheelchair is in motion. PGDT accept no liability for losses of any kind arising from the unexpected system.



Do not operate the control system if the chair behaves erratically, or shows abnormal signs of heating, sparks or smoke. Turn the control system off at once and consult your service agent. PGDT accepts no liability for losses of any kind arising from failure to comply with this condition.

Electronic equipment can be affected by Electro Magnetic Interference (EMI). Such interference may be generated by radio stations. TV stations, other radio transmitters and cellular phones. If the chair exhibits erratic behavior due to EMI, turn the control system off immediately and consult your service agent. PGDT accepts no liability for losses of any kind arising from failure to comply with this condition.

It is the responsibility of the chair manufacturer to ensure that the wheelchair complies with appropriate National and International EMC legislation. PGDT accepts no liability for losses of any kind arising from failure to comply with this condition.

The wheelchair user must comply with all wheelchair safety warnings. PGDT accepts no liability for losses of any kind arising from failure to comply with this condition.

9 Safety Checks

The electronic circuits in your control system have been designed to be extremely safe and reliable. The on-board microcomputer carries out safety checks at up to 100 times per second. To supplement this safety monitoring you should carry out the following periodic checks.

If the control system fails any of these checks, do not use the wheelchair and contact your service agent.

9.1 Daily Checks

Joystick:

With the control system switched off, check that the joystick is not bent or damaged and that it returns to the center when you push and release it. If there is a problem do not continue with the safety checks and contact your service agent.

9.2 Weekly Checks

Parking brake:	This test should be carried out on a level floor with at least one meter clear space around the wheelchair.
	Switch on the control system.
	Check that the screen remains on, after initialization and that the battery gauge is displaying a reasonable amount of charge.
	Push the joystick slowly forwards until you hear the parking brakes operate. The chair may start to move.
	Immediately release the joystick. You must be able to hear each parking brake operate within a few seconds.
	Repeat the test a further three times, pushing the joystick slowly backwards, left and right.
Connectors:	Make sure that all connectors are securely mated.
Cables:	Check the condition of all cables and connectors for damage.
Joystick gaiter:	Check the thin rubber gaiter or boot, around the base of the joystick shaft, for damage or splitting. Check visually only, do not handle the gaiter.
Mounting:	Make sure that all the components of the control system are securely mounted. Do not overtighten any securing screws.

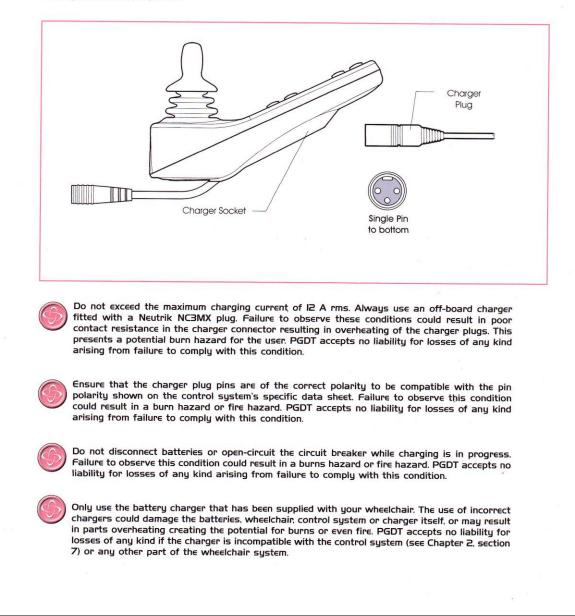
9.3 Servicing

To ensure continued satisfactory service, we suggest you have your wheelchair and control system inspected by your service agent after a period of 1 year from commencement of service. Contact your service agent for details when the inspection is due.

IO Battery Charging

To charge the wheelchair batteries connect the charger plug into the battery charging socket on the R-net JSM. You will not be able to drive the wheelchair when the charger is connected.

To connect the charger plug, ensure the single pin is at the bottom, as shown in the following illustration, then offer the charger plug to the R-net in a horizontal orientation. The molded guide on the R-net will help you to locate the plug. Ensure the plug is pushed fully in position.



<u>General care</u>

- Avoid knocking your joystick controller against hard objects.
- Remove and protect the joystick controller when transporting your power chair
- To prolong life of the joystick and other components of the electronic control system, avoid extreme conditions.
- Use a damp cloth to clean the joystick and other components of the electronic control system. Use a small amount of Acetone on a rag to clean off paint and abrasion from side panels. (Do not use abrasive or spirit based cleaning system.)

Daily checks

- Charge batteries each night. Complete charge of the batteries takes 8 to 9 hours.
- Check that the joystick handle is not bent or damaged and returns to the center when released.

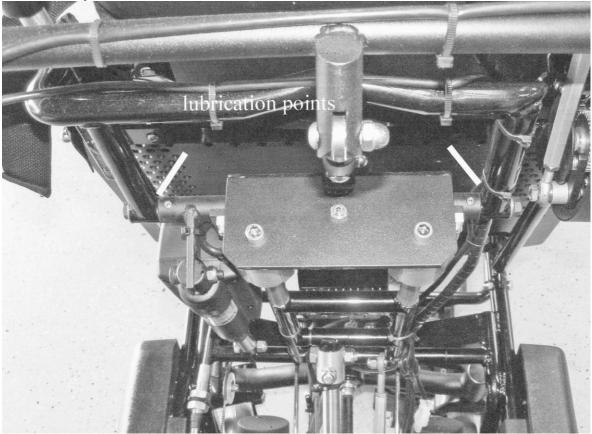
Weekly checks

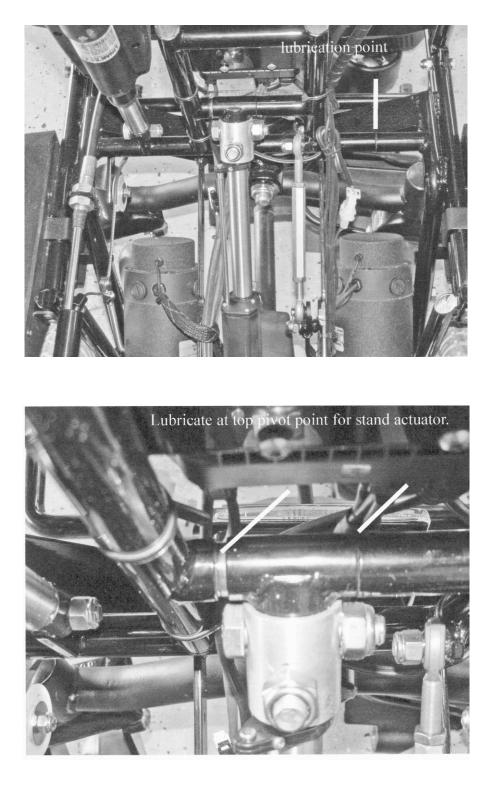
- <u>Electrical brakes</u>
 - Turn on the system and check that after 1 second the battery level gauge remains on or flashes slowly.
 - Push the joystick forward until you hear the electrical brakes operate (the chair may move forward).
 - Immediately release the joystick. You must be able to hear the electric brakes operate within a few seconds. Repeat the test three times, pushing the joystick backwards, left and right respectively.
 - If your 107-ZRX has the Safety Lighting Package, check the operation of the lights.

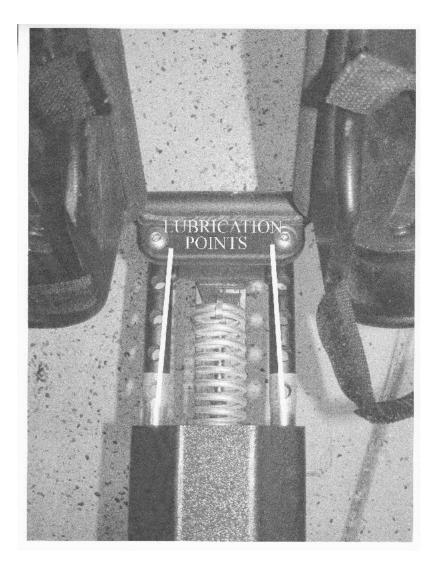
- Check that all connectors are secure, properly mated and free from damage.
- Check condition of all cables for signs of damage.
- Check the joystick rubber boot visually for damage or splitting
- Check that the joystick controller is mounted to its bracket securely.

Other recommended care and maintenance

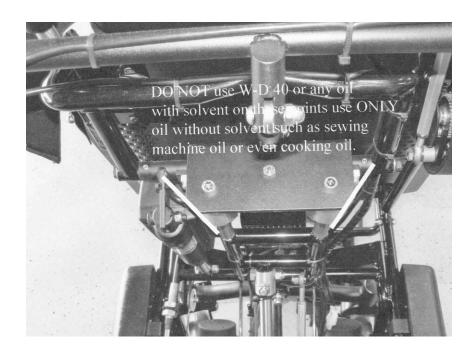
- Keep the 107-ZRX power chair clean and free of dirt build up, especially on moving parts and pivot points.
- Clean all tubes that slide and pivot points using a damp rag and lubricate frequently (WHERE INDICATED BELOW) using WD-40 liberally.



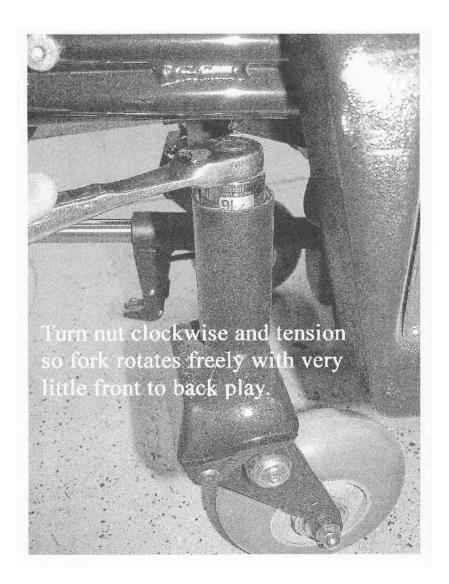




Do not use WD-40 to lubricate points below as bearings are Teflon. Use only sewing machine oil or cooking oil.



- Keep painted, plastic and rubber components looking fresh by using products such as ARMOR-ALL™.
- Plastic side panels may be cleaned using Acetone lightly to remove paint etc.
- Clean upholstered parts by vacuuming and wiping clean with a damp cloth. Some upholstered parts can be removed and laundered following instructions included with the parts.
- Bearings on the front wheel fork assembly need periodic lubrication with the light lubricating oil and may in time require adjusting if you experience wheel chatter (like a grocery cart)
- To do this: tilt chair on side and prop up using a block of wood. Rotate the front tiller bar down and remove chrome cap using a screwdriver to pry off.
- Now use a 15/16" socket with a short extension, repeat the procedure for the other side.



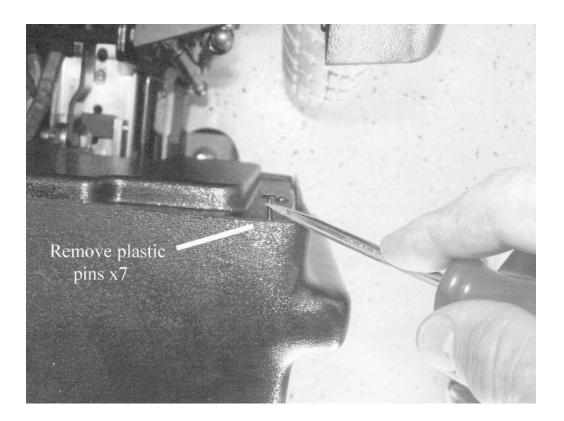
- Detach and flip the Velcro attached knee bolster pad once a month.
- If your chair is equipped with inflatable tires check tire pressure at least monthly to assure that tires are inflated to the proper pressure.
 - Rear tires 12"x 3", inflate to 40-50 psi
 - Front tires 8" x 1.75" inflate to 55-70 psi

(Note: Both rear tires (and/or front tires) should have the same (equal) pressure to assure that the power chair will drive and turn correctly)

Batteries

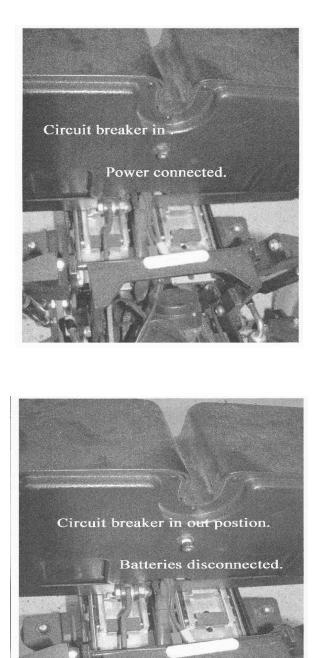
In normal daily use keep the batteries charging when your chair is not in use. If you are going to store the chair for a period of time you should charge the batteries at least every two weeks. Try not to run the batteries in the red zone as this will result in more frequent replacement.





- Observe the connections and make a note on how they are connected.
- **Troubleshooting**

The 107-ZRX is equipped with a master circuit breaker located on the battery box. The circuit breaker can be manually reset by pressing the popped out center button back to the "IN" position. When the master circuit breaker is in the "IN" position, the batteries are connected to the rest of the electronic control system. When the master circuit breaker is in the "OUT" position (popped out), the batteries are disconnected from the rest of the electronic control system.



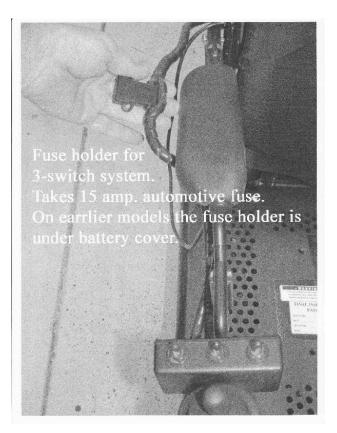
Optional accessories, such as automotive horn and 12-volt outlet are connected to the batteries with separately fused circuits. Please check the fuses (regular automotive type) if experiencing any problem with the automotive horn and 12volt outlet. The fuses are located inside the battery box (page 20)

Mechanical Troubleshooting

Power wheelchair veers left or right	Check for correct and equal tire
	pressure
	Check for loose front stem nuts/bolts
Power wheelchair has sluggish turn	Check for correct and equal tire
performance	pressure
	Check for loose front stem nuts/bolts
	adjust turn acceleration.
Front casters flutter	Check for correct and equal tire
	pressure
	Check for loose front stem nuts/bolts

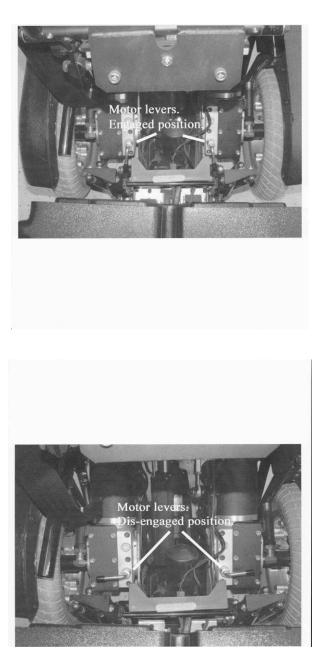
Body postion Troubleshooting

All other control components are under batteries, in the event of a power failure of motor check to make sure connections are tight. The ISM controls the actuators for positioning if your chair is not equipped with a 3-switch system. If the chair will not stand or positioning systems fail try a re-set by disconnecting the main power several times at the circuit breaker. If the component is defective and the chair will not stand to access the ISM remove the seat pan to access.



<u>Adjustments</u>

Your Chief can be free wheeled by turning the levers in the rear, it is easier to reach the levers if you stand the chair slightly.



<u>Remember</u> the 107-ZRX power chair is custom built and fitted to each individual and accommodates their specific clinical and lifestyle needs. Changing any of the adjustable features on the 107SRX may cause harm to the user and/or cause damage to the power chair.

Warning

Shoulder Harness Use Instructions

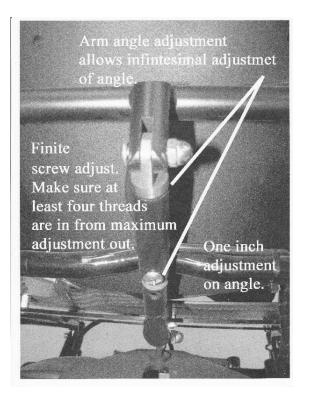
Shoulder harness straps are designed to be used only where each strap is vertical (backpack orientation).

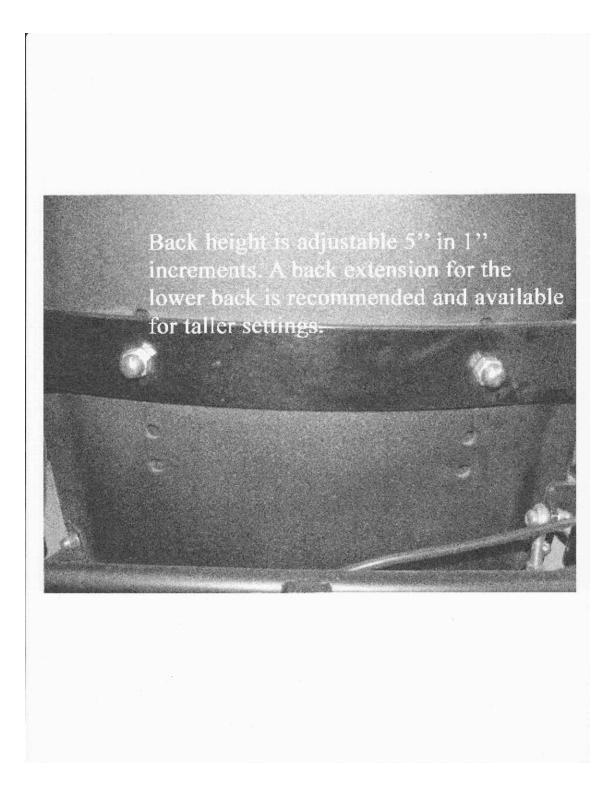
Do not use shoulder harness when the straps are crossed in front of the user's chest or in any orientation other than where each strap is vertical.

Shoulder harness straps that are crossed in front of the user's chest or in any orientation other than where each strap is vertical may be hazardous to the user and cause injuries.

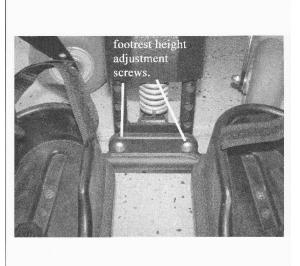
If shoulder harness straps need to be modified, call Customer Service at 800.727.6684 ext 2 for assistance.

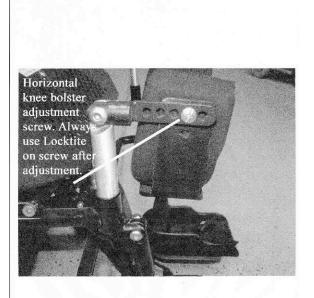


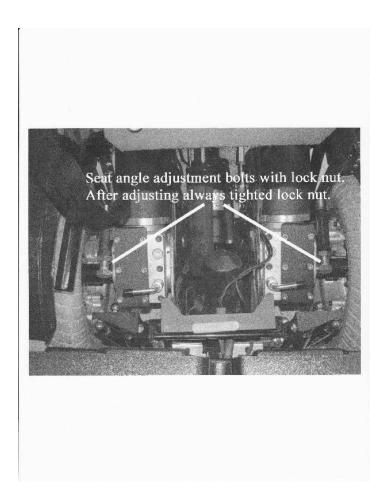




Do not adjust foot or knee bolster without consulting customer service.







Shoulder Harness Safety Warning

To avoid serious injury, only use the shoulder harness in the vertical (backpack position). This means that the top of the right shoulder harness must be buckled to the bottom of the right shoulder harness strap and the top of the left shoulder harness must be buckled down to the bottom of the left shoulder harness.

Do NOT cross the shoulder harness straps. If the shoulder harness straps are crossed, the straps can cause serious injuries.

Need technical support?

800-727-6684

check our web site for tech tips

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