

STERLING

Ruby - Ruby Plus



Owner's Manual

 **SUNRISE
MEDICAL**

ENGLISH

I. INTRODUCTION

Thank you for choosing a Sunrise Medical wheelchair. Before using your wheelchair please **read this manual carefully**. It will provide you with all the information you will require. However, if you have any queries about the use, maintenance or safety of your wheelchair please contact your local Sunrise Medical Service Agent. If you have any other questions please write to the address below:

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This wheelchair is designed for comfort, safety and durability and has been exhaustively researched and tested by our experts. The wheelchair is classified as a category A vehicle under the European Wheelchair Standard EN 12184.

It is intended for the use of people of all ages who may have difficulty walking distances or for periods of time. It is ideal for indoor use and suitable for users up to 100kg (220lbs) in weight. Please see specifications. Differing user weights can cause performance variation. Maximum user weight tested using 100kg test dummy.

It has been manufactured to comply with the requirements of the Medical Device Directive 93/42/EEC, the radio interference requirements of EEC Directive 89/336/EEC and the battery charger requirements of CE EEC Directive 73/23/EEC and 89/336/EEC.



Electro Magnetic fields, such as those emitted by shop alarms may be disturbed by use of the wheelchair. The function of the wheelchair may also be disturbed by Electro Magnetic fields emitted by shop alarms.

Sunrise Medical is dedicated to providing products of exacting quality which conform fully and reliably to the requirements of their intended use. We are BS/EN ISO9001 accredited which is the internationally recognised standard for quality management systems. This approval ensures we provide quality in all areas of our business from development through to final delivery. Should you require any further assistance then please contact your local dealer.

FOR ANSWERS TO YOUR QUESTIONS

Your authorized supplier knows your wheelchair best and can answer most of your questions about chair safety, use and maintenance. For future reference, fill in the following:

Supplier: _____

Address: _____

Telephone: _____

Serial #: _____ Date/Purchased: _____

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III. YOUR CHAIR AND ITS PARTS



Ruby



Ruby Plus

1. Flip back/down armrest
2. Integral controller joystick-programmable
3. Fish-on/High back seat
4. Front caster 5"
5. Rear anti-tip
6. Single plate foot platform
7. Fold down seat back
8. Battery pack
9. 8" drive wheels
10. Freewheel release
11. Caster Fork (front)
12. Basket

Weight

Ruby- 55 lbs (base),
19 lbs (seat)

22 lbs (battery pack)

Ruby Plus- 55 lbs (base),

22 lbs (seat)

22 lbs (battery pack)

Drive Wheels

8" Mag: Std, airless insert

Joystick

Standard - integral (right-hand or left-hand mount)

Batteries

2 X 12 AH battery pack

Battery Charger

off board 1.5 AMP

Seats, Upholstery and Style

Ruby- Fish-on

Ruby Plus- High back

Material: vinyl

Color: grey

Width: 17, 18

Depth: 17, 18

Footrest

Standard - Foot platform

Casters (front)

Standard - 5" solid

Armrests

Flip back 10" arm pad

IV. NOTICE– READ BEFORE USE

A. CHOOSE THE RIGHT CHAIR & SAFETY OPTIONS

Sunrise provides a choice of many power wheelchair styles, sizes and adjustments to meet the needs of the rider. However, final selection of a wheelchair rests solely with you and your health care professional. Choosing the best chair for you depends on such things as:

1. Your size, disability, strength, balance and coordination.
2. Your intended use, and your level of activity.
3. The types of hazards you must overcome in daily use (in areas where you are likely to use your chair).
4. The need for options for your safety and comfort (such as positioning belts or special seat systems).

B. ADJUST CHAIR TO YOUR ABILITY

You need to work with your doctor, nurse or therapist, and your supplier, to fit this chair and adjust the controller settings for your level of function and ability.

C. REVIEW THIS MANUAL OFTEN

Before using this chair you, and each person who may assist you, should read this entire Manual and make sure to follow all instructions. Review the warnings often, until they are second nature to you.

D. WARNINGS

The word "WARNING" refers to a hazard or unsafe practice that may cause severe injury or death to you or to other persons. The "Warnings" are in four main sections, as follows:

1. V — EMI

Here you will learn about electromagnetic interference and how it can affect your chair.

2. VI — GENERAL WARNINGS

Here you will find a safety checklist and a summary of risks you need to be aware of before you ride this chair.

3. VII — WARNINGS — COMPONENTS & OPTIONS

Here you will learn about your chair. Consult your supplier and your health care professional to help you choose the best set-up and options for your safety.

4. XI — BATTERIES

Here you will learn about battery and charger safety, and how to avoid injury.

NOTE– Where they apply, you will also find "Warnings" in other sections of this Manual.

V. EMI (ELECTROMAGNETIC INTERFERENCE)

⚠WARNING

Heed all warnings to reduce the risk of unintended brake release or chair movement:

1. Beware of the danger from hand-held transceivers. Never turn on or use a hand-held transceiver while power to your chair is on. Use extra care if you believe that such a device may be in use near your chair.
2. Be aware of nearby radio or TV stations, and avoid coming close to them.
3. If unintended movement occurs, turn your chair off as soon as it is safe to do so.

A. WHAT IS EMI?

⚠WARNING

1. EMI means: electromagnetic (EM) interference (I). EMI comes from radio wave sources such as radio transmitters and transceivers. (A “transceiver” is a device that both sends and receives radio wave signals).
2. There are a number of sources of intense EMI in your daily environment. Some of these are obvious and easy to avoid. Others are not, and you may not be able to avoid them.
3. Powered wheelchairs may be susceptible to electromagnetic interference (EMI) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two way radios, and cellular phones.
4. EMI can also be produced by conducted sources or electro-static discharge (ESD).

B. WHAT EFFECT CAN EMI HAVE?

⚠WARNING

1. EMI can cause your chair, without warning, to:
 - Release its brakes
 - Move by itself
 - Move in unintended directionsIf any of these occurs, it could result in severe injury to you or others.
2. EMI can damage the control system of your chair. This could create a safety hazard, and lead to costly repairs.

C. SOURCES OF EMI

⚠WARNING

The sources of EMI fall into three broad types:

1. Hand-Held Transceivers:

The antenna is usually mounted directly on the unit. These include:

- Citizens band (CB) radios
- “Walkie-talkies”
- Security, fire and police radios
- Cellular phones
- Lap-top computers with phone or fax
- Other personal communication devices

NOTE– These devices can transmit signals while they are on, even if not in use.

2. Medium-Range Mobile Transceivers:

These include two-way radios used in police cars, fire trucks, ambulances and taxi cabs. The antenna is usually mounted on the outside of the vehicle.

3. Long-Range Transceivers:

These include commercial radio and TV broadcast antenna towers and amateur (HAM) radios.

Note: The following are not likely to cause EMI problems: Lap-top computers (without phone or fax), Cordless phones, TV sets or AM/FM radios, CD or tape players.

D. DISTANCE FROM THE SOURCE**⚠ WARNING**

EM energy rapidly becomes more intense as you get closer to the source. For this reason, EMI from hand-held devices is of special concern. (See C.1 above) A person using one of these devices can bring high levels of EM energy very close to your chair without you knowing it.

E. REPORT ALL SUSPECTED EMI INCIDENTS**⚠ WARNING**

You should promptly report any unintended movement or brake release. Be sure to indicate whether there was a radio wave source near your chair at the time. Contact: Sunrise Medical Customer Service Department at (800) 333-4000.

VI. GENERAL WARNINGS**⚠ WARNING**

Heed all warnings in this section. If you fail to do so a fall, tip-over or loss of control may occur and cause severe injury to you or others.

A. NOTICE TO RIDER**⚠ WARNING**

1. Before using this chair, you should be trained in its safe use by your health care professional.
2. Every wheelchair is different. Take the time to learn the feel of this chair before you begin riding.
3. Be aware that you must develop your own methods for the safe use of this chair that are best suited to your level of function and ability.
4. Have someone help you practice bending, reaching and transferring until you learn how to do them safely.
5. Never try a new maneuver on your own unless you are sure it is safe.
6. Get to know the areas where you plan to use your chair. Look for hazards and learn how to avoid them.
7. Do not allow additional riders on the chair, armrests or chassis. Doing so may result in injury or damage.

B. NOTICE TO ATTENDANTS**⚠ WARNING**

Make sure you heed all warnings and follow all instructions in each section of this manual. (Be aware that warnings that apply to the rider also apply to you).

Notes:

1. You need to work with the rider and the rider's doctor, nurse or therapist, to develop safe methods best suited to your abilities and those of the rider.
2. To manually push the chair you must release the motor locks.
 - Make sure you have full control over the chair when you release the motor locks. When you do so the chair will not have brakes.
3. Propel this chair by the armrest supports only. If using a seat frame, propel the chair by the push handles on the top of the backrest posts. They provide secure points for you to hold the rear of the chair to prevent a fall or tip-over.

C. WEIGHT LIMIT**⚠ WARNING**

1. Never exceed a total weight of 225 lbs/102.2 kg for rider plus items carried.
2. Never use this chair for weight training if the total weight (rider plus additional weights) exceeds 225 lbs/102.2 kg.
3. Exceeding the weight limit is likely to damage the seat, frame, or fasteners and may cause severe injury to you or others from chair failure.
4. Exceeding the weight limit will void the warranty.

D. CONTROLLER SETTINGS**⚠ WARNING**

Be aware that you may need to adjust the controller settings of your chair to reduce the risk of a collision, fall or tip-over.

1. Check and adjust the settings every six to twelve months (or more often, if needed).
2. Consult your supplier to adjust the control settings immediately if you notice any change in your ability to:
 - Control the joystick.
 - Hold your torso erect.
 - Avoid running into objects.

E. EMI

⚠ WARNING

Read Section V to learn about EMI. To reduce the risk of unintended brake release or chair movement:

1. Never turn on or use a hand-held transceiver while power to your chair is on. Use extra care if you believe that such a device may be in use near your chair.
2. Be aware of nearby radio or TV stations, and avoid coming close to them.
3. If unintended movement or brake release occurs, turn your chair off as soon as it is safe.

F. SAFETY CHECK-LIST

⚠ WARNING

Before each use of this chair:

1. Make sure the chair operates smoothly. Check for noise, vibration, or a change in ease of use. (They may indicate low tire pressure, loose fasteners, or damage to your chair). If you detect a problem, make sure to repair or adjust the chair. Deferring repair or adjustment could increase the risk for injury. Your supplier can help you find and correct the problem.
2. Make sure batteries are charged. Green lights on charge indicator will light up when charge is full. Yellow lights indicate battery charge level is getting low. Red lights indicate batteries are in immediate need of charging.

G. CHANGES & ADJUSTMENTS

⚠ WARNING

Never use non-Sunrise parts or make changes to your chair unless authorized by Sunrise. (Doing so will void the Warranty and may create a safety hazard).

1. If you modify or adjust this chair it may increase the risk of a fall or tip-over.
2. Modifications unauthorized by Sunrise constitutes remanufacturing of the wheelchair. This voids the warranty. The rider then assumes all future liability for the wheelchair.

H. WHEN SEATED IN A PARKED WHEELCHAIR

⚠ WARNING

1. Always turn off all power to your chair when you are parked, even for a moment. This will prevent:
 - Accidental movement from contact with the joystick by you or others.
 - Unintended brake release or movement from EMI sources. (See Section V)
2. Make sure that persons who help you (for example, store clerks) are aware of the joystick and do not touch it. If they do, your chair may move suddenly when you do not expect it.

I. ENVIRONMENTAL CONDITIONS

⚠ WARNING

Your chair is not designed for use in a heavy rain storm, or in snowy or icy conditions.

1. Contact with water or excessive moisture can cause an electrical malfunction. The frame, motors and other chair parts are not watertight and may rust or corrode from the inside. To avoid a chair failure:
 - Minimize exposure of your chair to a rain storm or very wet conditions.
 - Never take your chair into a shower, tub, pool or sauna.
 - Do not use your chair in fresh or salt water (such as at the edge of a stream, lake, or ocean).
 - Make sure shroud cover and deck lid are secure.
 - Replace joystick boot if it becomes torn or cracked.
 - Make sure all electrical connections are secure.
 - Dry the chair as soon as you can if it gets wet, or if you use water to clean it.

2. Proceed slowly and use extra care if you must operate your chair on a wet or slick surface.
 - Do so only if you are sure it is safe.
 - Stop if one or both main wheels lose traction. If this occurs, you may lose control of your chair or fall.
 - Never operate your chair on a slope or ramp if there is snow, ice, water or oil film present.
 - When in doubt, have someone help you.
3. When not in use, keep your chair in a clean, dry place.

⚠WARNING

Extra caution should be used when employing the disc switch or the proximity head array as control devices. These two devices are susceptible to malfunction when wet.

J. TERRAIN

⚠WARNING

1. This chair is designed for use on firm, even surfaces such as concrete, asphalt and indoor flooring.
2. Do not operate your chair in sand, loose soil or over rough terrain. Doing so may damage wheels, bearings, axles or motors, or loosen fasteners.

K. STREET USE

⚠WARNING

Power chairs are not legal for use on public roads. Be alert to the danger of motor vehicles on roads or in parking lots.

1. At night, or when it is hard to see, use reflective tape on your chair and clothing.
2. It may be hard for drivers to see you. Make eye contact with drivers before you proceed. When in doubt, yield until you are sure it is safe.

L. MOTOR VEHICLE SAFETY

⚠WARNING

To date, there is no approved tie down system for transporting a wheelchair in a motor vehicle.

1. Never sit in this chair while in a moving vehicle. In an accident or sudden stop you may be thrown from the chair.
 - Wheelchair belts are designed to position the rider only and will not protect you in an accident; further injury may result from the belts.
2. Always move to an approved vehicle seat. You must be secured with proper motor vehicle restraints.
3. Never transport this chair in the front seat of a vehicle. It may shift and interfere with the driver.
4. Always secure this chair so that it cannot roll or shift.

M. CENTER OF BALANCE

⚠WARNING

The point where this chair will tip forward, back or to the side depends on its center of balance and stability.

The Center Of Balance Is Affected By:

1. The seat height and seat angle.
 2. A change in your body position, posture or weight distribution.
 3. Using this chair on a ramp or slope.
 4. The use of a back pack or other options, and the amount of added weight.
-

To Reduce The Risk Of A Fall Or Tip-Over:

1. Consult your supplier for information on modifications authorized by Sunrise before you modify or adjust this chair.

NOTE– You may need to make additional changes to correct the center of balance.

2. Use extreme care until you know the balance points of this chair and how to avoid a fall or tip-over.

N. TRANSFERS**⚠WARNING**

It is dangerous to transfer on your own. It requires good balance and agility. Be aware that there is a point during every transfer when the wheelchair seat is not below you. To avoid a fall:

1. Always turn off power before you transfer to or from your chair. If you fail to do so you may touch the joystick and cause your chair to move when you do not expect it.
2. Make sure motor locks are engaged. This keeps the chair from moving when you transfer.
3. Work with your health care professional to learn safe methods.
 - Learn how to position your body and how to support yourself during a transfer.
 - Have someone help you until you are sure you can do a safe transfer on your own.
4. Move your chair as close as you can to the seat you are transferring to. If possible, use a transfer board.
5. Rotate the front casters until they are as far forward as possible.
6. Be careful of the foot platform. If you can, remove or swing it out of the way.
 - Never stand on footrests when you transfer. Doing so may damage them or cause your chair to tip.
 - Make sure your feet do not “hang up” or get caught in the space between the footrests.
7. Make sure armrests do not interfere.
8. Transfer as far back onto the seat surface as you can. This will reduce the risk that you will miss the seat or fall.

O. REACHING OR LEANING**⚠WARNING**

Reaching or leaning affects the center of balance of your chair. If done improperly, a fall or tip-over is likely. When in doubt, ask for help or use a device to extend your reach.

To Reduce the Risk of injury and/or Damage to the Chair:

1. Never reach or lean if you must shift your weight sideways or rise up off the seat.
2. Never reach or lean if you must move forward in your seat to do so. Always keep your buttocks in contact with the backrest.
3. Never reach with both hands (you may not be able to catch yourself to prevent a fall if you lose your balance).
4. Never try to pick up an object from the floor by reaching down between your knees.
5. Never put pressure on the foot platform while reaching. This may cause the chair to tip if you lean too far.
6. Never reach or lean over the top of the seat back. This may damage the backrest and cause you to fall.

IF YOU MUST REACH OR LEAN, DO SO AT YOUR OWN RISK.**Remember to:**

1. Move your chair as close as you can to the object you wish to reach.
2. Rotate the front casters until they are as far forward as possible. This makes the chair more stable.

NOTE– To do this: Move your chair past the object you want to reach, then back up alongside it. Backing up will rotate the casters forward.

3. Turn off all power to your chair. If you fail to do so, you may touch the joystick and cause your chair to move when you do not expect it.
4. Firmly grasp an armrest with one hand. This will help to prevent a fall if the chair tips.

P. DRESSING OR CHANGING CLOTHES

⚠ WARNING

Be aware that your weight will shift if you dress or change clothes while seated in this chair. To make the chair more stable, rotate the front casters until they are forward.

Q. OBSTACLES

⚠ WARNING

Obstacles you may have to overcome in daily use include door thresholds, lifts, ramps and hazards such as potholes and broken pavement. These can damage your chair and may cause a fall, tip-over or loss of control.

1. Be aware that thresholds are very dangerous. (Even a small change in height may stop a caster wheel and cause your chair to tip). You may need to:
 - Remove or cover threshold strips between rooms.
 - Install a ramp at entry or exit doors.
2. Keep your eyes moving when you ride; scan the area well ahead of your chair.
3. Make sure the floor areas where you use this chair are level and free of obstacles.
4. To help correct your center of balance:
 - Lean your upper body forward slightly as you go up over an obstacle.
 - Press your upper body backward as you go down from a higher to a lower level.

R. DRIVING IN REVERSE

⚠ WARNING

Use extra care when you drive your chair in reverse. You may lose control or fall if one of the rear wheels hits an object.

1. Operate your chair slowly and at an even speed.
2. Stop often and check to make sure your path is clear of obstacles.

S. RAMPS, SLOPES & SIDEHILLS

⚠ WARNING

The center of balance of your chair changes when you are on a slope.

NOTE– “Slope” includes a ramp or sidehill. Your chair is less stable when it is at an angle. Never use this chair on a slope unless you are sure it is safe.
When in doubt, have someone help you.

Beware Of:

1. Steep slopes. Do Not use this chair on a slope steeper than 10%. (A 10% slope means: One foot in elevation for every ten feet of slope length).
2. Wet or slippery surfaces (such as when ice, snow, water or oil film is present). A loss of traction may cause a fall or tip-over.
3. A change in grade on a slope (or a lip, bump or depression). These may cause a fall or tip-over.
4. A drop-off at the bottom of a slope. (A drop-off of as small as 3/4 inch can stop a front caster and cause the chair to tip forward).

T. TO REDUCE THE RISK OF A FALL, TIP-OVER OR LOSS OF CONTROL**⚠ WARNING**

1. Never use your chair on a slope unless you are sure you can do so without losing traction.
2. Always go as straight up and as straight down as you can.
 - Do not “cut the corner” on a slope or ramp.
 - Do not turn or change direction on a slope.
3. Always stay in the center of the ramp. Make sure ramp is wide enough that you are not at risk that a wheel may roll off the side.
4. Lean or press your body uphill. This will help adjust for a change in the center of balance caused by the slope. (Figure 1)
5. Keep your chair moving at a slow, steady speed. Keep control over the chair at all times.
 - On a descent, do not let your chair accelerate beyond its normal speed.
 - If the chair picks up speed, center the joystick to slow down or stop.

NOTE– The solid state controller of your chair has a logic system that will help control your speed when driving on a slope or uphill.

- If you stop, re-start slowly.

U. RAMPS AT HOME & WORK**⚠ WARNING**

Make sure ramps meet all Building Codes for your area.

1. For your safety, have a licensed contractor build or remodel ramp to meet all standards.
2. **NOTE**– The proper design will vary, depending on such things as: the length and height of the ramp; the need for an intermediate platform; landing size; doors and the direction of swing; and whether the ramp includes a turn or angle.

At A Minimum:

1. Open sides of ramp must have side rails to prevent your chair from going over the edge.
2. Slope must not be steeper than one inch in height for every one foot of slope length.
3. Ramp surface must be even, and have a non-skid surface.
4. You may need to add a section at the top or bottom to avoid a lip or drop-off.
5. Ramp must be sturdy. Add bracing if needed, so ramp does not “bow” when you ride on it.

V. WHEELCHAIR LIFTS**⚠ WARNING**

Wheelchair lifts are used in vans, buses, and buildings to help you move from one level to another.

1. Always turn off all power to your chair when you are on a lift. If you fail to do so, you may touch the joystick by accident and cause your chair to drive off the platform. (Be aware that a “roll-stop” at the end of the platform may not prevent this).
2. Make sure there is not a lip or drop-off at the top or bottom of the platform. These may cause a fall or tip-over. When in doubt, have someone help you.
3. Always secure the rider with a positioning belt to help prevent falls during transfers.
4. Avoid moving forward if a wheel is “hung up” on the lip of the ramp. Backup, reposition the caster for a more direct approach and slowly try again.

W. CURBS & SINGLE STEPS**⚠ WARNING**

1. Your chair is not designed to drive up or down a curb or step more than 1/2 inch high. Doing so may:
 - Result in a fall or tip-over.
 - Damage the frame, wheels, axles or other chair parts, or loosen fasteners.



Figure 1

2. To prevent a fall or tip-over, use wheelchair access ramps or have someone help you.
3. If you must climb or descend a curb or step alone do so at your own risk and use extreme care.
 - Go as straight up or straight down as you can. Never turn or climb or descend at an angle as a fall or tip-over is likely.
 - Proceed slowly, at a steady speed.
4. Make sure that persons who assist you review the "Tips For Attendants" and heed all warnings.
5. Avoid driving along curb edges and drop-offs. A minimum distance from the edge of 18" is recommended.

X. STAIRS** WARNING**

Never use this chair to go up or down stairs, even with an attendant. Doing so is likely to cause a fall or tip-over.

Y. ESCALATORS** WARNING**

Never take this chair on an escalator, even with an attendant. Doing so is likely to cause a fall or tip-over.

VII. WARNINGS: COMPONENTS & OPTIONS**⚠ WARNING**

Note: If you use parts or make changes not authorized by Sunrise it may create a safety hazard and will void the Warranty.

A. ARMRESTS**⚠ WARNING**

Armrests flip back/down and cannot be used to lift chair or the seat.

1. Never lift this chair by its armrests.
2. Lift this chair only by non-detachable parts of the main frame.

B. BATTERIES**⚠ WARNING**

1. Only an approved battery case should be used in this device.
2. To prevent an acid spill, always keep battery case upright. (wet cell batteries only)
3. Never smoke or hold an open flame near battery case. They are a known explosion hazard.
4. Read all of section XI Batteries before attempting to change or charge batteries.
5. Always remove batteries using straps or handle provided. Pinched fingers may occur if the batteries are removed by grasping the battery casings.

C. CUSHIONS**⚠ WARNING**

1. Sterling seats are designed for comfort, not specifically for the relief of pressure.
2. If you suffer from pressure sores, or if you are at risk that they will occur, you may need a special seat system such as can be provided by the Seat Frame, or a device to control your posture.
 - Consult your doctor, nurse or therapist to find out if you need such a device for your well-being.

D. FASTENERS**⚠ WARNING**

Many of the screws, bolts and nuts on this chair are special high-strength fasteners. Use of improper fasteners may cause your chair to fail.

1. Only use fasteners provided by Sunrise.
2. If fasteners become loose, tighten them as soon as you can.
3. Over- or under-tightened fasteners may fail or cause damage to chair parts.
 - See Section IX, "Set-Up, Adjustment & Use", for proper torque settings.

E. FOOTPLATE & FOOTRESTS**⚠ WARNING**

1. At the lowest point, the foot platform and footrests should be at least 1.0" off the ground. If set too LOW, it may "hang up" on obstacles you can expect to find in normal use. This may cause the chair to stop suddenly and tip forward.
2. To avoid a trip or fall when you transfer:
 - Make sure your feet do not "hang up" or get caught in the space surrounding or in between the footrests.
 - Avoid putting weight on the footplate or footrests, as the chair may tip forward.
 - Flip the footplate back or swing the footrests out of the way, if possible.
3. Never lift this chair by the footplate or footrests. Footrests fold or detach and will not bear the weight of this chair. Lift this chair only by non-detachable parts of the main frame.

F. MOTOR LOCKS**⚠WARNING**

1. Do not engage or disengage motor locks unless power to the chair is off.
2. Be aware that the chair will not have brakes when motor locks are in the free-wheel position.
3. Make sure that the person pushing the chair has full control when motor locks are disengaged.

G. ON/OFF SWITCH**⚠WARNING**

1. Never use the ON/OFF switch to stop the chair except in an emergency. This will result in an abrupt stop and may cause you to fall.
2. To slow your chair to a stop, return the joystick to neutral.

H. POSITIONING BELTS (OPTIONAL)**⚠WARNING**

Use a positioning belt only to help support your posture. Improper use of such belts may cause severe injury or death.

1. Make sure you are not at risk to slide down in the wheelchair seat. If this occurs, you may suffer chest compression or suffocate due to pressure from the belt.
2. A pelvic wedge or a similar device can help you from sliding down in the seat. Consult your health care professional to find out if you need such a device.
3. The belt must be snug, but must not be so tight that it interferes with breathing. You should be able to slide your open hand, flat, between the belt and your stomach.
4. Make sure you can easily remove the belt in an emergency.
5. Never use a positioning belt:
 - In place of a motor vehicle seat belt. In an accident or sudden stop you may be thrown from the chair. A positioning belt will not prevent this, and further injury may result from the belt.
 - As a restraint. A restraint requires a doctor's order.
 - On a rider who is comatose or agitated.

I. SEATING SYSTEMS**⚠WARNING**

1. Use of a seating system not approved by Sunrise may alter the center of balance of this chair. This may cause a fall or tip-over.
2. Never change the seating system of your chair unless you consult your supplier first.

J. UPHOLSTERY FABRIC**⚠ WARNING**

1. Replace worn or torn fabric of the seat as soon as you can. If you fail to do so, the seat may fail and cause you to fall. Worn fabrics may increase the potential for a fire hazard.
2. Fabric will deteriorate with age and use. Look for fraying, thin spots, or stretching of fabric at rivet holes. Replace fabric as required.
3. Be aware that washing may reduce flame retardation of the fabric.

K. WIRING**⚠ WARNING**

Never pull on cables directly. This can result in wires breaking inside the connector or harness. To remove a plug or connector, always grasp the plug or connector itself.

VIII. TIPS FOR ATTENDANTS**⚠WARNING**

1. Persons who help a rider do one of the following tasks should review and heed the warnings "Notice to Attendants" and all warnings in this Manual for that task.
2. The "Tips" that follow are suggestions only. Be aware that you will need to learn safe methods best suited to the rider and to your abilities. Consult your health care professional for instructions.

A. TO CLIMB A CURB OR SINGLE STEP**⚠WARNING**

The following is one way to safely help a rider climb a curb or single step going FORWARD:

1. Stay behind the chair.
2. Face the curb and tilt the chair up on the rear wheels so that the front casters clear the curb or step.
3. Move forward, placing the front casters on the upper level as soon as you are sure they are past the edge.
4. Continue forward until the rear wheels contact the face of the curb or step. Lift and roll the rear wheels to the upper level.

B. TO DESCEND A CURB OR SINGLE STEP**⚠WARNING**

The following is one way to safely help a rider descend a curb or single step going BACKWARD:

1. Stay at the rear of the chair.
2. Several feet before you reach the edge of the curb or step, turn the chair around and pull it backward.
3. Proceed carefully. Look over your shoulder and carefully step back until you are off the curb or stair and standing on the lower level.
4. Pull the chair toward you until the rear wheels reach the edge of the curb or step. Then allow the rear wheels to slowly roll down onto the lower level.
5. When the rear wheels are safely on the lower level, tilt the chair back to its balance point. This will lift the front casters off the curb or step.
6. Keep the chair in balance and take small steps backward. Be sure to look where you are going. Turn the chair around and gently lower front casters to the ground.

IX. SET-UP, ADJUSTMENT & USE

NOTES:

1. Work Surface For Set-Up:

Use a flat surface, such as a table, to assemble, adjust and check your chair. This makes the steps easier and helps ensure a correct set-up.

2. Fasteners:

- Many of the screws and bolts on this chair are special high-strength fasteners and may have special coatings.
- Many nuts are of the Nylock type. They have a plastic insert to help prevent loosening.

⚠ WARNING

1. Use of improper fasteners may cause the chair to fail.
2. Over- or under-tightened fasteners may fail or cause damage to chair parts.
3. If bolts or screws become loose, tighten them as soon as you can. Loose bolts or screws can cause damage to other chair parts causing them to fail.

3. Washers & Spacers:

- Note the position of washers and spacers before disassembly.
- To avoid damage to the frame, replace all washers and spacers when you reassemble parts.

4. Torque Settings:

- A torque setting is the optimal tightening for a particular fastener. Use a torque wrench that measures 120 inch-pounds to secure screws, nuts and bolts on this chair.

NOTE– Unless otherwise noted, use a torque setting of 120 inch-pounds for all fasteners.

TOOLS YOU WILL NEED

1. Basic Tool Kit:

To set-up, adjust and maintain your chair you will need the following tools:

- 3mm Allen Wrench
- 5mm Allen Wrench
- 6mm Allen Wrench
- 8mm Allen Wrench
- 13mm Open-end Wrench
- Phillips screwdriver #2
- 17mm Socket Wrench

You can obtain a multi-purpose tool kit from Sunrise, or buy the tools you need from a hardware store.

2. Torque Wrench:

If you plan to adjust and maintain this chair yourself, Sunrise recommends that you use a torque wrench.

NOTE– The wrench must measure inch-pounds. You can buy a torque wrench and proper sockets from a hardware store.

⚠ WARNING

When properly set up, this chair will operate smoothly. Check to see that all components work properly. If you detect a problem, be sure to correct it before use.

A. BATTERY CASE REMOVAL (Figures 1 & 2)

To remove the batteries for transporting or servicing:

1. Remove Battery Case

- a. Pull red battery pack release (A) forward.
- d. To remove battery pack, lift up on battery pack handle (B).

2. Battery Installation

See Section XI. Batteries, D for installation and wiring diagram.

⚠ WARNING

Batteries may weigh up to 55 lbs. Care must be taken to avoid injury when lifting up on battery straps.

B. FOOTPLATE ANGLE ADJUSTMENT (Figure 3)

Adjust bolt (C) until desired angle is reached.

⚠ WARNING

Avoid opening doors with footplate or legrests. Damage or injury may result.

C. INTEGRAL JOYSTICK

(Figure 4)

1. To Connect

- a. Line up receptacle on large rectangular connector (Beau Connector) located behind the seat with the pins on the connector located on the joystick harness.
- b. Push in firmly.

2. To Disconnect

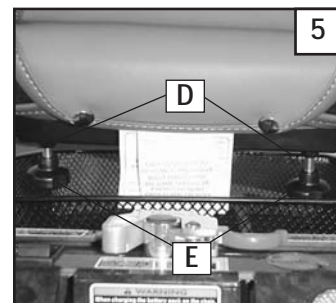
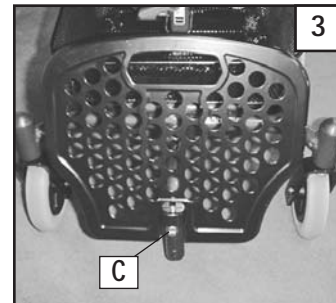
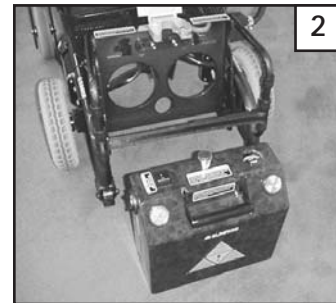
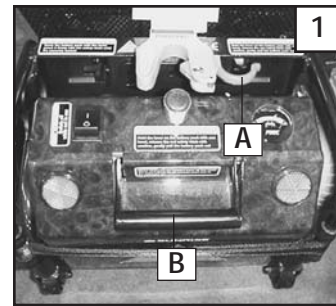
Pull up on beau connector until it disconnects from the frame mounted receptacle, located behind the seat.

D. ARMRESTS WIDTH ADJUSTMENT (Figure 5)

- a. Insert armrest support inside of 1" square tube (D) located on back of the seat.
- b. Repeat for other side of seat.
- c. Position armrest at appropriate width.
- d. Tighten knob screws (E) on square tube.

⚠ WARNING

Avoid pinching fingers in the flip-back armrest.



E. BACKREST

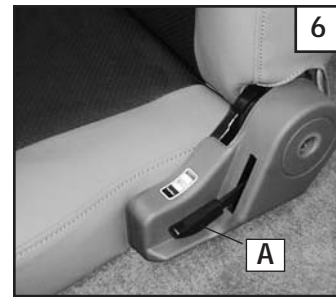
A backrest angle-adjustment is standard on the High Back Seat.

Adjustment for the High Back Contour Seat

(Figure 6)

- a. Pull lever (H) upwards.
- b. Lean back to desired position.
- c. Release lever (A).

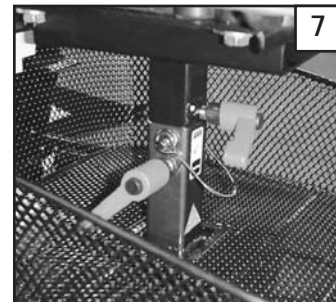
CAUTION– Backrest latches must be locked into place before operating wheelchair.



F. SEAT HEIGHT ADJUSTMENT

(Figure 7)

1. Remove pins from seat mount post.
2. Unscrew set screw.
3. Select the desired seat height (rear seat mount should never be more than one position lower than the front).
4. Reinsert the pins.
5. Tighten set screw.



G. SEAT REMOVAL

1. Remove Seat

- a. Unplug controller connections at the back of the seat.
- b. Loosen seat mount screw.
- c. Pull the seat forward and remove.
- d. When replacing the seat into the mounts, ensure you do not pinch your fingers.

⚠ WARNING

Always replace the safety lock-out pin to prevent inadvertent release of the seat.

H. CHECK-OUT

Once the wheelchair is assembled and adjusted, it should roll smoothly and easily. All accessories should also perform smoothly.

If you have any problems, follow these procedures:

1. Review the Set-up, Adjustment & Use section and Operating Guide to make sure chair was properly prepared.
2. If your problem persists, contact your authorized supplier. If you still have a problem after contacting your authorized supplier, contact Sunrise customer service. See the introduction page for details on how to contact your authorized supplier or Sunrise customer service.

X. OPERATING GUIDE

A. PERFORMANCE CONTROL SETTINGS

1. It is vital to match control settings to your level of function and ability.
2. Consult your health care professional and your supplier to select the best control settings for you.
3. Check and adjust the settings every six to twelve months (or more often, if needed).
4. Adjust the control settings immediately if you notice any change in your ability to:
 - Control the joystick.
 - Hold your torso erect.
 - Avoid running into objects.
5. Control Settings are adjusted through the use of the Quickie QTRONIX Programming Pad. See your supplier if you do not own a Quickie QTRONIX Programming Pad.

B. THERMAL ROLL-BACK

Your chair has a thermal roll back circuit. This protects the controller from damage due to overheating. In extreme conditions (such as repetitive hill climbing) the circuit will decrease the power to your motors. This allows the chair to operate at a reduced speed. When the controller cools, the chair will return to normal speed.

C. CIRCUIT BREAKERS

1. Notes:

Your Sunrise Microlite has a circuit breaker on the battery case.

- In the unlikely event of a short circuit or heavy overload, all power to your chair will be shut off.
- To reset your chair, depress the circuit breaker button located at the rear corner of the chair. A few minutes wait is required before the circuit breaker will reset.

2. Repeated Shutdown:

If the chair continues to shut down after resetting, have it serviced by a supplier.

D. JOYSTICK ASSEMBLY

The standard integral joystick controls the chair's performance. It consists of the following parts:

1. Speed Control or Drive Mode Selection Buttons (A and B)

To decrease the speed level depress button A. Or, when 1- 5 Drive modes are programmed, depress button A to activate lower drive mode(s).

To increase speed level, depress button B. Or, when 1- 5 Drive modes are programmed, depress button B to activate higher drive mode(s).

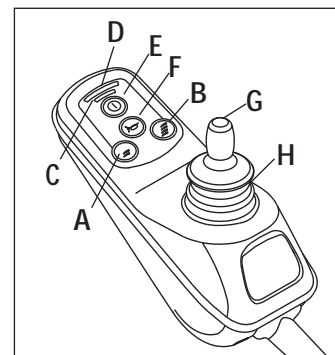
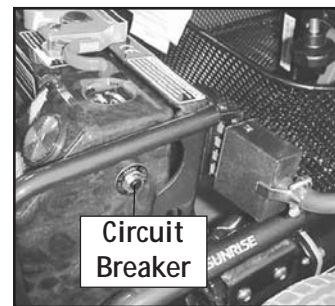
Speed level active, or Drive Mode selected, is indicated on display (C) by a series of five lights. One light indicates slowest level/mode currently active, while five lights indicates highest level/mode currently active.

2. Battery Charge Indicator (D)

- Green lights indicate that batteries are fully charged.
- Yellow lights indicate that batteries need recharging.
- When the lights stay in the red band, the batteries must be recharged.

3. On/Off Button (E)

Turning the chair on or off is accomplished by depressing button E.



Integral Joystick

4. Horn (F)

5. Joystick (G)

The joystick controls the direction and speed of your chair. Turn the chair on and move the joystick in the direction you want to go.

- Moving the joystick from the neutral (center) position disengages the motor locks, allowing the chair to move.
- The chair will move faster the more you move the joystick away from neutral.

NOTE– If your speed becomes hard to manage, release the Joystick and the chair will come to a complete stop.

- When you release the joystick it will return to neutral; the chair will slow to a stop and the motor locks will reengage.
- We recommend that you switch the chair off if you stop for any length of time. This will conserve battery power.

NOTE– Once the chair stops, switching the chair off will not affect the motor locks.

6. Joystick Boot (H)

Make sure the boot is not torn or cracked (this could allow debris, water or moisture to enter). If the boot is torn or cracked, replace it as soon as you can.

E. MOTOR LOCKS

Disconnect the motor locks when you need to manually push the chair.
(For example, in an emergency, or if batteries fail).

⚠ WARNING

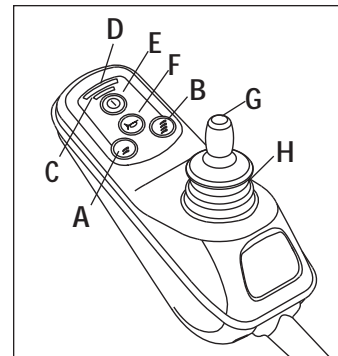
1. Do not disengage motor locks unless power to the chair is off.
2. With either one or both brakes released, the chair will not operate and the battery charge indicator will flash 9 bars rapidly (if power to the chair is on.)
3. Be aware that the chair will not have brakes in the free-wheel position.
4. Make sure that the person pushing the chair has full control when motor locks are disengaged.

1. Release Motor Locks

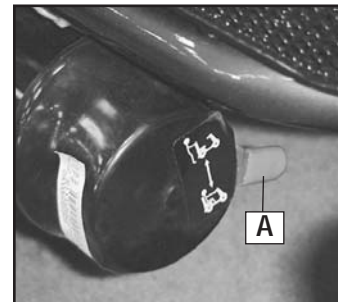
- a. Underneath the chair you will find two levers marked in red.
- b. Push the brake releases upward.

2. Engage Motor Locks

- a. Underneath the chair you will find two levers marked in red.
- b. Push the brake releases down. (A).



Integral Joystick



XI. BATTERIES

A. INTRODUCTION

1. Notes:

- Batteries supply the power for your chair. They contain a finite amount of energy and have limits on how long they can store and supply energy.
- You can charge batteries only a certain number of times before they will fail and no longer hold a charge.
- For answers to questions about batteries, consult your supplier.

2. Use Proper Battery Case:

Your chair operates on two 12 volt batteries in a battery case.

- Only use a battery case.

3. Breaking In:

- A battery requires “breaking-in” for the first 6 to 12 charges. It will not accept a full charge for this period.
- It is best to limit the length of your trips until you break the batteries in and you know the range of your chair.

4. Discharged Batteries:

- **Never** allow a battery to completely discharge. If you operate your wheelchair until it has almost stopped, you will greatly reduce the life of your batteries.
- **Never** let a battery sit in a discharged condition. Give unused or stored batteries a full charge once per month.
- **Always** fully charge the batteries. Avoid “topping off” with frequent charges.

⚠ WARNING

Never connect a life support or auxiliary device to a wheelchair battery. The electrical system may fail and result in severe injury to or death of rider.

B. BATTERY CHARGER

A battery charger produces a direct current (DC). When applied to a discharged battery, this reverses the chemical reaction that led to its discharge.

1. Charge Rate. How fast a battery will charge depends on:

- Its electrical capacity, state of charge, electrolyte temperature, and internal condition.
- The DC output of the charger. (The charge rate will vary if the alternating current (AC) supply is higher or lower than 110 volts).

2. CAUTION– To Avoid Damage to the Charger

- **Never** expose charger to rain or snow.
- **Never** unplug charger by pulling on the electrical cord. This will damage the cord.
- **Never** open a charger or attempt to repair it yourself. Return charger to Sunrise or have repairs made only by a qualified person.
- Keep cord out of the way, where it will not be stepped on, tripped over, or damaged.

3. CAUTION– To Avoid Damage to the Battery

- Make sure you use the correct setting for sealed (gel) batteries (located on the off-board charger).
- **Never** charge a frozen battery. A fully charged battery will rarely freeze, but the fluid in a discharged battery can freeze at 16 degrees Fahrenheit (minus 9 degrees Centigrade). If you suspect a battery is frozen, thaw it before charging.

⚠ WARNING

Lead acid batteries generate explosive gas while charging. Completely read and follow all warnings about the batteries in this user instruction manual and any labels applied to the product. Failure to do so could result in fire, explosion, injury and/or death.

C. ACID BURNS (UNSEALED WET CELL BATTERIES)

⚠WARNING

1. Use extreme care not to spill acid when you handle wet cell batteries. Keep batteries upright.
2. Avoid contact of acid with bare skin or clothing.
3. Always wear rubber gloves and safety glasses when you handle batteries.
4. If acid contacts your skin or clothing, wash immediately with soap and water.
5. If acid contacts your eyes, immediately flood eyes with cold running water for at least 15 minutes. Seek medical attention immediately.

Sunrise Medical does not recommend the use of wet cell batteries on this chair.

D. CONNECTING BATTERIES IN BATTERY WELL

⚠WARNING

1. Each battery weighs up to 22 lbs. Take care to avoid injury when lifting.
2. Keep batteries upright. Take care not to spill acid (wet cell batteries).
3. Always wear rubber gloves and safety glasses when you handle batteries.
4. Before working around batteries, remove all metal personal effects, such as necklaces, rings, watches, pins, and other metal jewelry that might contact battery terminal and cause a short.

⚠WARNING

Never make direct contact across both battery terminals, as an explosion may occur. A spark may result in an explosion and/or fire resulting in severe injury or death.

E. CHARGING BATTERIES

⚠WARNING

To avoid the risk of severe injury or death from electrical shock, fire or explosion while charging:

1. Connect charger to a 240 volt source.
2. **Never** touch the charger after it is connected to an electrical outlet. This may cause electrical shock.
 - **Never** connect or disconnect charger from battery while there is power to the charger.
3. **Never** use an extension cord. Use of an improper cord could damage the charger or cause a fire or electrical shock.
4. A battery emits explosive hydrogen gas during charging. To reduce the risk of fire or explosion:
 - Make sure area is well vented. Never charge battery in a closed-in area.
 - Never smoke or allow a spark, flame or high heat near battery during charging.
 - Never allow metal tools or chair parts to make direct contact across both battery terminals.
5. Never look directly into cells when charging battery (wet cell batteries).

ALWAYS:

1. Use the charger that comes with your wheelchair. Read and follow all instructions and warnings.
2. Make sure room is well ventilated.
3. Turn off all power to your chair.
4. Connect and disconnect battery cables with caution.
5. Make sure to allow enough time to fully charge batteries.

NOTE– Batteries should never be left for long periods in the discharged state. Unused or stored batteries should be given a charge once per month.

6. Or, use the off-board charger by plugging it into the integral controller.

F. DISPOSING OF BATTERIES

⚠ WARNING

1. All batteries once they have reached the end of their useful life are deemed to be hazardous waste.
2. For further information on handling and recycling contact your local recycling authority.
3. Always dispose of product through a recognized agent.



Off-board charger port

XII. MAINTENANCE

A. NOTES

1. Proper maintenance will improve performance and extend the useful life of your chair.
2. Clean your chair regularly. This will help you find loose or worn parts and will make your chair easier to use.
3. To protect your investment, have all major service and repair work done by your supplier.

⚠ WARNING

1. Your chair needs regular maintenance for peak performance and to avoid injury from chair failure, damage or premature wear.
2. Inspect and maintain this chair strictly per the "Maintenance Chart".
3. If you detect a problem, make sure to service or repair the chair before use.
4. At least once a year, have a complete safety check and service of your chair performed by a supplier.

B. CLEANING

1. Frame:

- Clean the frame with mild soapy water monthly.

2. Motors:

- Clean around motor area weekly with a slightly damp (not wet) cloth.
- Wipe off or blow away any fluff, dust, or dirt on or around the motors.
- Note: You do not need to grease or oil the chair.

3. Upholstery:

- Hand-wash only as needed. Machine washing may damage fabric (rehab seat only).
- Drip-dry only. Heat from a dryer may damage fabric.

NOTE– Washing the fabric may decrease fire retardant properties.

C. STORAGE TIPS

1. Store your chair in a clean, dry area. If you fail to do so, parts may rust or corrode.
2. Before using your chair, make sure it is in proper working order. Inspect and service all items on the "Maintenance Chart".
3. If you store this chair for more than three months, have it inspected by a supplier before use.

D. BATTERY MAINTENANCE

⚠ WARNING

1. To prevent an acid spill, always keep batteries upright. (wet cell batteries)
2. Never smoke or hold an open flame near batteries.
3. Always wear rubber gloves and safety glasses when you handle batteries.

1. Maintenance Schedule:

This varies for different types of batteries. Always follow the instructions supplied with your batteries.

NOTE– Always wear rubber gloves and safety glasses when you handle or service batteries.

3. Corrosion:

Check battery terminals often for corrosion.

- a. If corrosion is present, use a wire brush to clean the terminals.

NOTE– Always wear safety glasses and rubber gloves.

- b. Use baking soda to neutralize acid.
- c. Use petroleum jelly to re-grease the terminals after connecting cables to battery. (Completely cover the terminal nut and bolt, cable clip and any exposed cable with jelly).

4. For Answers To Questions: Contact your supplier.

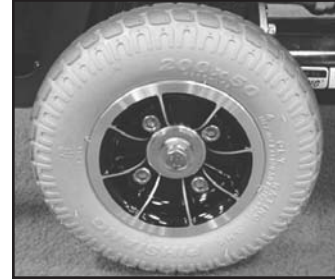
E. TO REPAIR OR REPLACE A TIRE

⚠WARNING

Residual air pressure in tires can cause severe injury. Make sure you release all air in tire before attempting to service or repair tires.

8" Drive Wheels:

- a. Elevate and securely support chair so that wheel is off the ground. Release all air from tire (solid aluminum rim only).
- b. Remove lock nut.
- c. Remove washer.
- d. Remove wheel from chair.
- e. Remove all bolts holding two halves of rim together (not applicable on solid aluminum rim), and remove tire and solid insert.
- f. Repair or replace inner tube (replace rim strip if necessary).
Use a torque setting of 420 in.-lbs. to re-tighten bolts.
- g. Inflate tire to proper pressure level (listed on tire sidewall).



F. MOTOR BRUSHES

Check the motor brushes every four (4) months for wear. The brushes should be clean and shiny. Replace worn or blackened brushes.

G. ORDERING PARTS

When you order parts, provide the following:

- 1. Model of chair
- 2. Serial number of chair
- 3. Left hand or right hand control
- 4. Part number, description and quantity of parts you need.
- 5. State reason for replacement.

H. MAINTENANCE CHART

You should check the items on this chart at the indicated intervals. If any of the items are loose, worn, bent or distorted, immediately have them checked and/or repaired by your authorized Sunrise supplier. Frequent maintenance and servicing will improve performance and extend wheelchair life, and help prevent injuries.

CHECK...	Daily	Weekly	Monthly	Quarterly	Annually
Charge batteries	✓				
Check tires for proper inflation level		✓			
Check plugs and connectors for proper connections			✓		
Check all moving parts for wear				✓	
Inspect all nuts, bolts and fasteners for looseness or wear				✓	
Inspect upholstery for wear				✓	
Remove and inspect motor brushes				✓	
Service by authorized supplier					✓

XIII. TECHNICAL SPECIFICATIONS

	RUBY	RUBY PLUS
Colour	Candy Red	Candy Red
Seat type	Lightweight	Luxury high-back
Arm rests	Flip up	Flip up
Head rest	No	Yes
Height adjustment	48cm–53cm (19"-21")	48cm–53cm (19"-21")
Overall Length (with footplate)	89cm/35"	89cm/35"
Overall Length (without footplate)	69cm/27"	69cm/27"
Overall Width	48cm/19"	48cm/19"
Maximum User Weight	100kg/225lb/16 stone	100kg/225lb/16 stone
Maximum range*	15km/9.4m	15km/9.4m
Maximum speed	6kph/3.8mph	6kph/3.8mph
Turning radius	48cm/19"	48cm/19"
Maximum safe climbing angle	8°	8°
Maximum kerb climbing	2.5cm/1"	2.5cm/1"
Total weight (excl. batteries)	29kg/63lb	37kg/81lb
Weight of heaviest part	20kg/44lb	20kg/44lb
Weight of seat	8.2kg/18lb	16.5kg/36lb
Weight of batteries	9.9kg/22lb	9.9kg/22lb
Batteries	2 x 12Ah	2 x 12Ah
Front castor size	5cmx12.5cm/2"x5"	5cmx12.5cm/2"x5"
Rear tyre size	5cmx20cm/2" x 8"	5cmx20cm/2" x 8"
Rear Tyres	Solid	Solid

* Range is calculated under test conditions.

Weight, terrain and weather conditions can affect range.

XIV. GUARANTEE

A. YOUR GUARANTEE

The guarantee form is included in the Sunrise Pack, please fill in the relevant details and return to us to register your entitlement.

THIS IN NO WAY AFFECTS YOUR STATUTORY RIGHTS.

B. WARRANTY CONDITIONS

1. The repair or replacement will be carried out by an authorised Sunrise Medical Dealer/Service Agent.
2. To apply the warranty conditions should your wheelchair require attention under these arrangements, notify the designated Sunrise Medical Service Agent immediately giving full information about the nature of the difficulty. Should you be operating the wheelchair away from the locality of the designated Sunrise Medical Service Agent work under the "Warranty Conditions" will be carried out by any other Service Agent designated by the manufacturer.
3. Should any part of the wheelchair require repair or replacement as a result of specific manufacturing or material defect within two years from the date on which the possession of the wheelchair was transferred to the original purchaser, and subject to it remaining within that ownership, the part or parts will be repaired or replaced completely free of charge if returned to the authorised Service Agent.

Note: This guarantee is not transferable.

4. Any repaired or replaced part will benefit from these arrangements for the balance of the warranty period applicable to the wheelchair.
5. Parts replaced after the original warranty has expired are covered for a further twelve months.
6. Items of a consumable nature will not generally be covered during the normal warranty period unless such items have clearly suffered undue wear as a direct result of an original manufacturing defect. These items include amongst others upholstery, tyres, inner tubes, and similar parts.
7. The above warranty conditions apply to all wheelchair parts, for models purchased at full retail price.
8. Under normal circumstances, no responsibility will be accepted where the wheelchair has required repair or replacement as a direct result of-
 - a. The wheelchair or part not having been maintained in accordance with the manufacturer's recommendations, where such exist. Or failing to use only the specified original equipment parts.
 - b. The wheelchair or part having been damaged by neglect, accident or improper use.
 - c. The wheelchair or part having been altered from the manufacturer's specifications, or repairs having been attempted prior to the Service Agent being notified.

Please keep a note of your local Service Agent's address and telephone number in the space provided. In the event of a breakdown, contact them and try to give all relevant details so they can help you quickly.

The wheelchair shown and described in this manual may not be exactly the same in every detail as your own model. However, all instructions are still entirely relevant, irrespective of detail differences.

The manufacturer reserves the right to alter without notice any weights, measurements, or other technical data shown in the manual. All figures, measurements, and capacities shown in this manual are approximate, and do not constitute specifications.

Your local service agent:

Your local service agent:



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Please remember to fill in and post the guarantee registration card enclosed with this manual. Sunrise Medical Limited recommend that you do not undertake maintenance tasks other than those explained in this manual. Your local authorised Sunrise Medical service agent is fully trained by Sunrise Medical to carry out detailed maintenance as and when required. **Use only genuine Sunrise Medical replacement parts.**



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