Powered Wheelchair

Hula

Instructions for Use

QUICKIE®

21417002

User Information

Intended use power wheel wheelchairs:

This power wheelchair was designed for persons whose ability to walk is impaired but who have sufficient eyesight and have the physical and mental attributes to be able to operate an electric wheelchair safely. It has been classified according to EN 12184 as a class A mobility product (indoor use).
The Quickie HULA powered wheelchair has been designed for indoor use, however the Hula can be used outdoors provided its use remains within the stated criteria:
The Hula can be used on slopes/ramps where the gradient or slope does not exceed 6 degrees (1 in 10 slope). Ramps and slopes for many buildings have a slope of 1 in 12 (5 degrees)
The Hula can be used to climb kerbs or obstacles to a maximum height of 50mm (2”). Most door threshold steps will be less than 50mm.
It is important the user does not attempt to use the wheelchair in the home environment where the slopes/ gradient are greater than 6 degrees or steps that are greater than 50mm.

Please refer to the technical specification (section 13), of this manual for further information.

Area of application

Indications
The varieties of fitting variants, as well as the modular design, mean that it can be used by those who cannot walk or have limited mobility because of:

- Paralysis
- Loss of extremity (leg amputation)
- Extremity defect deformit
- Joint contractures/joint injuries
- Illnesses such as heart and circulation deficiencies, disturbance of equilibrium or cachexia as well as for elderly people who still have strength in the upper body.

Contraindications
The wheelchair shall not be used in case of:

- Perception disorder
- Imbalance
- Seating disability.

When considering provision, please also note the body size, weight including the distribution of body weight, the user’s physical and psychological constitution, the age of the user, their living conditions and their environment.
If in doubt a health care professional should be involved to ensure the user is not exposed to unacceptable risks.

IMPORTANT:
DO NOT USE YOUR Wheelchair UNTIL THIS MANUAL HAS BEEN READ AND UNDERSTOOD.

We at SUNRISE MEDICAL have been awarded the ISO-13485 certificate, which affirms the quality of our products at every stage, from R & D to production.

CE As the manufacturer, SUNRISE MEDICAL, declares that this product conforms to the Medical Device Regulation (2017/745).

Sunrise Medical declares that this product fulfils the Performance requirements of ISO 7176-19 - Wheeled mobility devices for use as a seat in a motor vehicle; (known as the Crash Test).

Notice to the user and/or patient: Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

B4Me special adaptations
Sunrise Medical strongly recommends that in order to ensure that your B4Me product operates, and performs as intended by the manufacturer; all the user information supplied with your B4Me product is read and understood, before the product is first used.

Sunrise Medical also recommends that the user information is not discarded after reading it, but it is kept safely stored for future reference.

Medical Device Combinations
It may be possible to combine this Medical device with one or more other Medical Device or other product. Information on which combinations are possible can be found at www.Sunrisemedical.co.uk. All combinations listed have been validated to meet the General Safety and Performance Requirements, Annex I Nr. 14.1 of the Medical Device Regulation 2017/745.

Guidance on the combination, such as mounting, can be found at www.SunriseMedical.co.uk.

HULA

Service Agent Details:

Wheelchair Serial Number:

1.0 Your Wheelchair

We at Sunrise Medical want you to get the best out of your Hula wheelchair. This Owner's Manual will familiarise you with the wheelchair and its features. It contains hints on everyday usage and general care in addition to information on the high quality standards which we adhere to and details about the guarantee.

Your wheelchair should be delivered fully configured for your use; there are a wide range of components and adjustments available on the Hula. For further information about these you should contact your Sunrise Medical authorised dealer.

Your wheelchair will reach you in excellent condition having been personally inspected before leaving our factory. Following the guidelines for maintenance and cleaning your wheelchair will maintain its first class condition and give you complete satisfaction.
The Hula has been designed for use by an individual on a daily basis.
This wheelchair has been designed for a single occupant of limited mobility up to the weight of 136Kg.

The end user must have the cognitive, physical and visual ability to control the vehicle safely on a maximum slope of 6°.
If you are in any doubt as to the suitability of the power wheelchair, contact your local Sunrise Medical authorised dealer or health care provider for clarification, prior to commencing use.

It is very important to read the relevant section of the owner's manual when making any minor adjustments. Complicated adjustments should only be carried out by your heath care provider or authorised Sunrise Medical dealer

If you have any queries about the use, maintenance or safety of your wheelchair, please contact your local authorised Sunrise Medical dealer. If you do not know of an approved dealer in your area or have any other questions please write or telephone:

Sunrise Medical
Thorns Road
Brierley Hill
West Midlands
DY5 2LD
Phone: 0845 605 66 88
Fax: 0845 605 66 89
www.SunriseMedical.com

2.0 How to use this manual

2.1 Introduction

Please keep a note of your local service agent's address and telephone number and your wheelchair serial number in the space on the previous page.
In the event of a breakdown, contact them and try to give all relevant details so they can help you quickly.
The wheelchairs 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.
NOTE: The manufacturer reserves the right to alter without notice any weights, measurements or other technical data shown in this manual. All figures, measurements and capacities shown in this manual are approximate and do not constitute specifications.

2.2 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.

2.3 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 a specific manufacturing or material defect, within **twenty four months** 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.

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. On powered products this will also include batteries, motor brushes, arm pads etc.
Batteries have a warranty period of 6 months for manufacturing defects only.

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 or serviced in accordance with the manufacturer's recommendations, as stated in the Owner's Manual and/or Service Manual. 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.

Life Expectancy
We estimate a life expectancy of 5 years for this product, provided that:

- It is used in strict accordance with the intended use as set out in this document.
- All service and maintenance requirements are met.

The estimated life expectancy can be exceeded if the product is carefully used and properly maintained.
The life expectancy can also be considerably reduced by extreme or incorrect usage.
The fact that we estimate a life expectancy for this product does not constitute an additional warranty.

3.0 Label Explanation / Word definitions

3.1 Definitions of words used in this manual

Word	Definition
DANGER!	Advice to the user of Potential Risk of serious injury or death if the advice is not followed
WARNING!	Advice to the user of a potential risk of injury if the advice is not followed
CAUTION!	Advice to user that potential damage to equipment may occur if the advice is not followed
	Possible finger pinch or trap hazard
NOTE:	General advice or best practice
	Reference To Additional Documentation

3.2 Label explanations

Drive lever position for normal driving by the user.

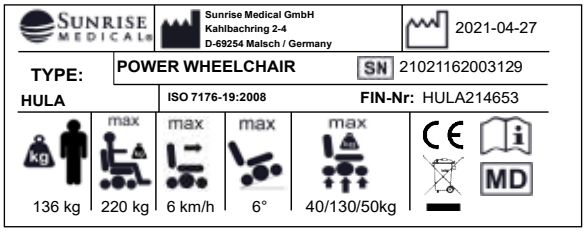
Drive lever position for manoeuvring the wheelchair manually.

NOTE: The drive levers must be returned to the normal driving position as soon as manual positioning is completed

Freewheel/Drive Information Label (Section 4.0)

The wheelchair is intended for indoor use. Outdoor use must be in accordance with the advice given within this Owner's Manual.

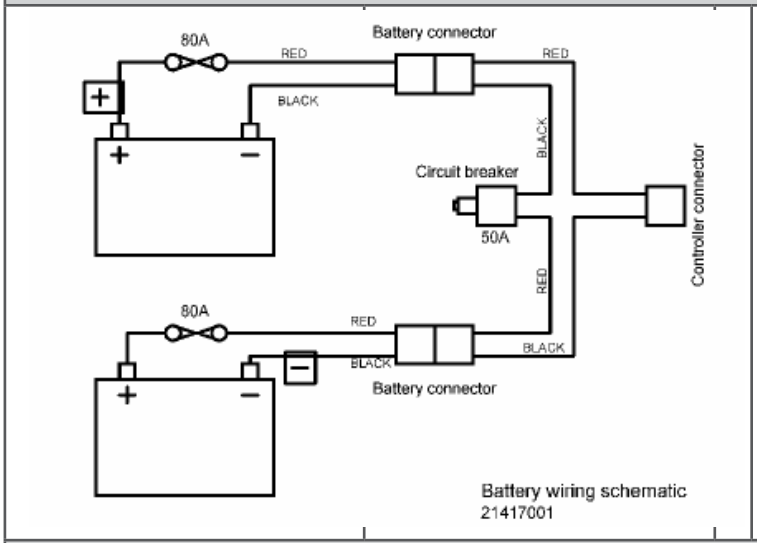
Indoor/Outdoor Information Label (Section 4.0)



Serial Number Label

Indicates the position of the wheelchair tie-down restraints.

Crash Test/ Tie Down Information Label (Section 11.0)



Electrical circuit diagram showing connections.
For use if the batteries require disconnecting.

Battery Wiring Label (Section 10.0)

4.0 General safety warning and user tips

4.1 General warnings

⚠WARNING!

- Always ensure that your wheelchair is switched off before attempting to transfer in or out.
- Always ensure that you are able to operate all controls from a comfortable position. Paying attention to your posture is essential to ensure your continued comfort and well being.
- Always make sure that you can be seen clearly, especially if you intend using your wheelchair in poor light.
- This wheelchair has been built to match the needs of a particular user. If used by another user then it may need to be adjusted and reprogrammed.
- Do not let children or others use your wheelchair.
- Be aware that the wheelchair may come to a sudden stop during operation. Sunrise Medical recommend that the anterior pelvic support be worn at all times.
- Do not operate the wheelchair if it is behaving abnormally or erratically.

4.2 Features and options

NOTE: Some of the options shown in this manual may not be available in your country and may also restrict the overall physical limits of the standard product (e.g. max. speed, user weight limit, etc.). Those limitations are marked on the order form, in the technical manual and in this owner's manual. For further information please consult your Sunrise Medical authorised dealer.

4.3 Obstacles

⚠DANGER!

- Never descend a kerb backwards with a MWD wheelchair. Please read carefully the section 4.23.1 on kerb climbing in this manual before attempting to mount and dismount any kerbs in your wheelchair.
- Do not attempt to climb or descend a series of steps. It is unsafe to do so and could cause personal injury or damage the wheelchair. The Hula has only been designed to climb a single step or kerb.
- We recommend that users with upper trunk instability wear further personalised support systems to keep the upright body position during descending or ascending ramps, curbs or obstacles.

4.4 Routine service

The recommended service interval is one year. See service history table, section 14.

⚠WARNING!

This wheelchair is designed to be repaired and assembled by a Sunrise Medical authorised dealer and not the user. Information on disassembly and assembly of the wheelchair for storage is shown in section 5.1-5.2.

4.5 Brake release

⚠DANGER!

- The Brake release, (freewheel), is only to be used in an emergency power breakdown situation e.g. Where a large distance has to be covered to get the user home or into a safe environment.
- Brake release can also be used to manually manoeuvre the wheelchair to safety if a complete and catastrophic loss of power such as control system failure or battery failure has occurred.
- Brake release should not be habitually used as a means of transporting the user as if in a manual wheelchair.
- When the power wheelchair is functioning normally, the brake release should only be used to park or store the unoccupied wheelchair.

⚠DANGER!

- Please remember that you have no braking facility when the Brake release, (freewheel), levers are moved from the normal drive position to the freewheel position, Fig. 4.1, Fig 4.2,
- Always ensure an attendant is with you when bringing the wheelchair into the freewheel mode.
- The wheelchair must never be left with one or both levers in the freewheel position.

For an enhanced description of this facility and its limitations to use, please see later section at 5.4.

Fig. 4.1

Fig. 4.2

4.6 EMC - Radio transmitting devices.

⚠WARNING!

When operating two-way radio, walkie-talkies, C.B., amateur radio, public mobile radio and other powerful transmitting devices the wheelchair should be brought to a halt and turned off.
The operation of cordless, mobile telephones and cell phones including hands-free devices is permitted but if abnormal operation of the wheelchair is encountered then the wheelchair must be brought immediately to a halt and turned off.

NOTE: the electrical systems of the wheelchair may disturb the performance of alarm systems in retail shops.

4.7 Emergency braking

There are three ways to stop your wheelchair:

1. Simplest and safest way to stop the wheelchair is to release the joystick (see Hand Control section 7). This will bring the wheelchair to a halt in a controlled manner.

2. Pulling back the joystick will brake the wheelchair abruptly with a fast stop

3. Switching the control system off whilst the wheelchair is in motion will also bring the wheelchair to a halt.

⚠WARNING!

Switching the control system off is only to be used in an emergency situation as the stopping action is very abrupt. Sunrise Medical recommend the use of an anterior pelvic support at all times.

4.8 Sharp turns

⚠DANGER!

Full speed turns should not be attempted. If you need to turn sharply you must reduce your speed with the joystick or speed setting. This is particularly important when travelling across or down a slope. Disregarding this advice could lead to your wheelchair tipping over.

4.9 Batteries

Your wheelchair is supplied as standard from Sunrise Medical with maintenance-free batteries. These only require regular charging. Before charging, please read sections 10 and 12 in this manual.

⚠WARNING!

Do not, under any circumstances, tamper with the batteries. If in any doubt contact your local Sunrise Medical authorised dealer.

⚠CAUTION!

Before using your vehicle for the very first time, please charge your batteries for a period of 24 hours.

⚠WARNING!

- All lead/acid batteries contain sulphuric acid.
- Avoid contact with acid on damaged sealed type batteries or wet batteries.
- Battery acid can cause burns to the skin as well as damage to floors, furniture and your wheelchair.
- If it comes into contact with the skin or clothing, wash immediately with soap and water.
- If it comes into contact with the eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical attention immediately.
- Acid can be neutralised with baking soda and water. Take care to keep batteries upright at all times, especially when transporting your wheelchair.
- If you suspect that the batteries are damaged or leaking, contact your Sunrise Medical authorised dealer immediately.
- Only use the battery charger supplied with the wheelchair.
- Only replace a faulty charger with one of the same type.
- If you need a replacement battery charger, or are unsure about any of the above points, please contact your authorised Sunrise Medical dealer.

Battery and charger connector type Hula:
24V (2x12V) / 36 Ah. Maintenance free
Dimensions Max: h=180 x w=195 x d=130 mm.

Charger Connector: Must be a 3 pin Neutrik connector.

4.10 Tyres

Your wheelchair tyres can wear depending on use. Check them regularly in accordance with the service instructions in this manual, (section 12.0).

4.11 Weight limit

DANGER!

The user plus items carried should never exceed a total weight of 136Kg.
Never use this wheelchair for weight training if the total weight (user plus additional weights) exceed a total weight of 136Kg.
Exceeding the weight limit is likely to damage the seat, frame or fasteners and may cause severe injury to you or others from wheelchair failure
Exceeding the weight limit will void the warranty.

4.12 Wheelchair motors

After prolonged use, the motors will produce heat, which is radiated through the motors' outer casing.

WARNING!

Do not remove the protective shroud covering the motors as the motors' outer casing can remain hot for up to 30 minutes after using the wheelchair.

WARNING!

4.13 Hot surfaces

Not only the can the motors get hot during the operation of the wheelchair, but also the upholstery material and armrests can get hot when standing in direct sunlight on a hot day.

WARNING!

Avoid Leaving the wheelchair standing in direct sunlight for extended periods of time. The upholstery will get hot to the touch.

4.14 Wheelchair range

The range of your wheelchair can be affected by many factors such as user weight, terrain, ambient temperature, use of powered options and battery condition.

NOTE: The stated range in the sales literature is for comparison purposes with other wheelchairs and is a theoretical maximum (ISO 7176; Part 4) and may not be attained by every user (also see section 10.11 and section 13, in this manual).
We recommend that every user initially limit their journey to half the stated range, until they have confidence in the actual range their wheelchair can attain.

CAUTION!

If your battery indicator is showing a low charge then do not attempt a long journey unless you are confident in reaching your destination and also returning to your home without the risk of being left stranded.

4.15 Outdoor use (Fig.4.3)

Please ensure that the limitations of the Hula performance are understood before any outdoor use, by reading this Owners' Manual carefully.

If it is necessary to use the Hula outdoors, exercise caution and show the utmost consideration for other people.

Fig. 4.3

DANGER!

Remember that the last thing a car or lorry driver expects to see is a wheelchair backing off the kerb into the road. If in any doubt, do not risk crossing the road until you are certain that it is safe. Always cross the road as quickly as possible using a designated pedestrian crossing whenever possible.

4.16 Adverse conditions

Please be aware that when driving your wheelchair in adverse conditions, e.g. on wet grass, mud, ice, snow or other slippery surfaces, you may experience a reduction in the grip and traction of your wheelchair.

⚠WARNING!

- We recommend you take extra precautions in these conditions, particularly on hills and slopes; your wheelchair could become unstable or skid causing possible injury.
- Take extra precautions when using your wheelchair during darkness or in poorly lit areas. Consideration should be given to the use of high visibility markers or reflectors, which can be fitted to the wheelchair.
- Alternatively, use high visibility/reflective clothing such as fluorescent waistcoats, belts or armbands, particularly in poorly lit areas or when crossing the road.

⚠**DANGER!**

When you are using a Powered Scooter or Wheelchair, take extra care with loose or long items of clothing. Moving parts, such as wheels, can be potentially dangerous or even fatal if clothing becomes entangled.

NOTE: Extreme variances in temperature may trigger the self protect mechanism in the control system. If this occurs the control system will temporarily shut down to prevent damage to the electronics or the wheelchair.

4.17 Ramps

⚠**WARNING!**

When using a ramp, please ensure that it is capable of taking the combined weight of the power wheelchair and yourself. If a ramp is being used to load a wheelchair into a vehicle, please ensure the ramp is properly secured to the vehicle.
Always approach the ramp head-on and exercise caution.

⚠**CAUTION!**

Please ensure your ramp is suitable for the product you are transporting.

4.18 Transfer to and from the wheelchair

⚠**WARNING!**

- Sunrise Medical recommend that you consult your health care professional for assistance in developing your personal front or side transfer technique to best suit your needs and avoid any personal injury.
- Ensure controller is switched off during transfers to avoid unintentional movement.
- If a reclining arm rest is fitted, please ensure that the reclining support bar is secured into the recline receiver that is attached to the seat frame.

4.19 Use on a slope

Your wheelchair has been designed and tested to allow its use on slopes or gradients of up to 6°. However, you have the option of adjusting your seating position.
Please see warnings below.

⚠WARNING!

In certain circumstances your wheelchair could become unstable. Before attempting to climb or descend a slope or a kerb, caution should be taken when using weight shift options and/or using your body positioning for a counter balance weight. To improve stability lean forward when driving uphill, with the seat and back in an upright position. Alternatively sit in an upright position when travelling in a forward, downhill direction or tilt and/or recline the seat backwards.

⚠WARNING!

If you are in any doubt about the capabilities of your wheelchair on a slope then do not attempt to drive up or down the slope/kerb; try to find an alternative route.

4.19.1 Gradients: ascents

⚠WARNING!

When going uphill, keep the wheelchair moving. Steer by moving the joystick gently in the direction you wish to go. If you have stopped going up hill, you should start slowly. If necessary lean forward to prevent the tendency for the front wheels to lift.

Please ensure that the limitations of the Hula performance are understood before any outdoor use, by reading this Owners' Manual carefully.

4.19.2 Gradients: descents

⚠WARNING!

On descents, it is important not to let the wheelchair accelerate beyond its normal level of ground speed. In fact, it is safer to proceed slowly down steep descents (below the speed of 5kph) and stop, if any anxiety arises regarding directional control. If the wheelchair picks up speed, centre the control to slow it or to stop all forward movement, then restart slowly and do not allow the speed to increase.

NOTE: The solid state controller has the benefit of a logic system that will help compensate when driving along a camber or up a hill. This is an added safety feature on your wheelchair. In addition of course, you may control the wheelchair speed by using the speed control.

4.20 Using a vehicle mounted passenger lift

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

⚠DANGER!

- Ensure that the user and all carers fully understand the lift manufacturer's instructions for using the passenger lift.
- Never exceed the lift manufacturer's recommended safe working load and load distribution guidance.
- Always turn off all power when you are on the lift. If you fail to do so, you may touch the joystick by accident and cause your wheelchair to drive off the platform. Be aware that a rollstop at the end of the platform may not prevent this.
- Always position the user securely in the wheelchair to help avoid falls while on the lift.
- Always ensure the wheelchair is in drive mode when using passenger lift (wheels locked not in freewheel mode).

4.21 Stability of your wheelchair

Please follow the user instructions in this manual regarding the use of your wheelchair on a slope.

⚠WARNING!

Other variables can affect your wheelchair stability, including:

- Movement of the user.
- Effects of the addition of accessories or other equipment.
- Inappropriate adjustments or modifications to the wheelchair.

In some cases these issues are further compounded by the effects of the local environment such as:

- Door thresholds Hills, Slopes, Ramps, Sloping pavements, Dropped kerbs.

Furthermore different body proportions of a wheelchair user affect stability for example:

- Lower limb wasting or amputation,
- Obesity
- Increased upper torso mass, Upper torso height

4.22 Wheels & Tyres

⚠WARNING!

- Inspect all tyres before use for signs of wear.
- Ensure that there are no objects in your path that could possibly become lodged in your wheelchair mechanism or in the hubs of the wheels. This could cause the wheelchair to come to a sudden stop.
- Riding over drains or grids could cause the wheelchair castors or wheels to become trapped, causing the wheelchair to come to a sudden stop.

4.23 Swing away tray

⚠WARNING!

- The maximum weight the tray can hold is 2.5kg.
- Do not overload the tray, this could cause the tray to break or could cause the wheelchair to become unstable.
- Do not leave lit cigarettes or other heat sources on the tray as this could cause the tray to deform and mark.
- Ensure that all extremities and clothing are free when positioning the tray for use.

4.23.1 Mounting a low kerb or step

⚠WARNING!

- Approach the kerb at a 90° angle and stop the wheelchair as soon as the castor wheels touch the kerb.
- Apply sufficient power to the motors to lift the front of the wheelchair up onto the kerb (or step) and then apply slightly more power and speed so that the drive wheels climb the kerb (or step) smoothly and without hesitation and the rear castor wheels come up as well.
- As far as possible, keep the joystick in the straight forward position, (Fig.4.4 - 4.6).

NOTE: In accordance to the ground clearance, the maximum obstacle height possible to climb is 5.0 cm.

Please ensure that the limitations of the Hula performance are understood before any outdoor use, by reading this Owners' Manual carefully.

Fig. 4.4

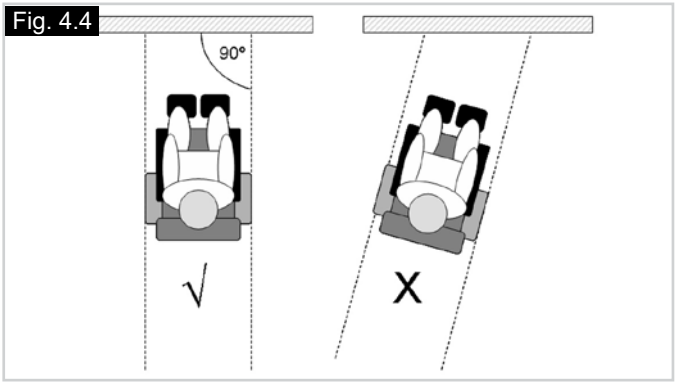


Fig. 4.5

Fig. 4.6

⚠WARNINGS!

1. Please show the utmost consideration for the other traffic on the road. Remember that the last thing a car or lorry driver expects to see is a wheelchair backing off the kerb into the road. If in any doubt, do not risk crossing the road until you are certain that it is safe.

2. Always cross the road as quickly as possible; there may be other traffic.

3. Do not attempt to go up or down more than a 5.0 cm (2") high kerb.

4. Do not attempt to climb a series of steps.

5. Do not attempt kerbs if on steep slopes or cambers.

6. Do not attempt any kerbs in the vicinity of drain covers, uneven or gritty road surfaces.

7. You should not attempt to dismount a kerb any higher than 5.0 cm (2") in any direction.

8. Do not mount or dismount kerbs at an angle other than straight on (90 degrees) to the edge of the kerb.

9. Prior to climbing ensure your legrests will clear the kerb.

⚠WARNING!

This wheelchair is designed to be repaired and assembled by a Sunrise Medical authorised dealer and not the user. Information on disassembly and assembly of the wheelchair for storage is shown in section 5.1-5.2.

4.24 Anterior Pelvic Support

The Anterior Pelvic Support kit. (Fig. 4.7).

Fastening the anterior pelvic support:
Insert the 3 prong male buckle into the female buckle until a click is heard (Fig. 4.8)

To fit the anterior pelvic support.

- Place the strap loosely across the seat with the buckle closed.. (Fig. 4.9)
- Pass the other ends of the strap through the gap between the backrest posts and the backrest upholstery as shown. (Fig. 4.10)
- Ensure that the adjusters & buckles can be accessed & the strap is not twisted. Fit the eyelets over the rearmost bolts. Fit the plain washer, sprung washer & nut. Tighten with a 13.0mm spanner. (Fig. 4.11)
- Ensure that the anterior pelvic support is tight enough to provide comfortable support. A simple measure is to keep a hands thickness between the body andanterior pelvic support. For safety, check the tension on the anterior pelvic support at least once day. (Fig. 4.12)
- Generally, the Anterior Pelvic Support should be fixed so that the straps sit at an angle of approximately 45° (Fig. 4.13), and when correctly adjusted should not allow the user to slip down in the seat.

⚠WARNING!

- Ensure that the Anterior Pelvic Support is secured and correctly adjusted before use.
- An incorrectly fitted/adjusted Anterior Pelvic Support could allow the user to slip down, potentially causing serious injury.
- Inspect the Anterior Pelvic Support at regular intervals for any signs of fray or damage and replace as necessary.
- When servicing, check for correct operation of the release buckle and for any signs of wear on the material or plastic brackets.

Fig. 4.7

Fig. 4.8

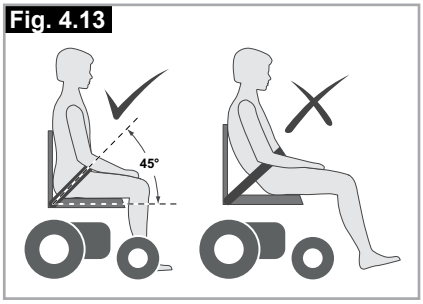
Fig. 4.9

Fig. 4.10

Fig. 4.11

Fig. 4.12

Fig. 4.13



4.25 VR2 Controller (Fig. 4.14)

Fig. 4.14

⚠WARNING!

- Avoid knocking your control system and especially the joystick.
- Be careful not to strike obstacles with the control system or joystick when you drive.
- Never drop the control system.
- When transporting your wheelchair, make sure that the control system is well protected.
- Avoid damage to cables.
- To improve the reliability of the control system keep exposure to extreme conditions to a minimum.
- Do not expose your control system or its components to damp for prolonged periods.
- If your control system becomes contaminated with food or drink clean it off as soon as possible.

⚠DANGER!

- In the event of the wheelchair moving in an unexpected way RELEASE THE JOYSTICK. This action will stop the wheelchair under any circumstances
- Do not operate the control system if the wheelchair behaves erratically or shows abnormal signs of heating, sparks or smoke. Turn the control system off at once and consult your Sunrise Medical authorised dealer.

5.0 Preparing your wheelchair for use

5.1 Handling the wheelchair

NOTE: To dismantle the wheelchair for storage no tools are required.
The following parts can be removed:

1 pair of swing-away legrests.
1 backrest.
1 drive unit with seat frame

5.2 Preparation for every day storage

- Remove the swing-away legrests, (Fig.5.0).
- Leave the armrests in the fold down position. (Fig.5.1).
- Remove the Backrest by undoing the two lever screws at the base of the Backrest, (Fig.5.2).
- Lay the backrest on the seat or store it separately, (Fig.5.3).

Now you can store the wheelchair.

NOTE: For long term storage, please see section 12.10.


Fig. 5.0

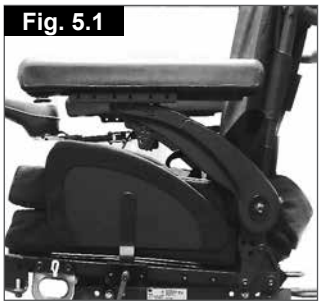


Fig. 5.1

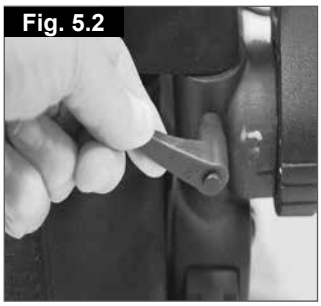


Fig. 5.2


Fig. 5.3

⚠WARNINGS!

- Make sure that when the wheelchair is stored the controller is switched off and the freewheel mechanisms are engaged, (in Drive).
- Do not lift the wheelchair by any of the plastic shrouds.
- Caution should be taken while the wheelchair is in freewheel.

To remove the control pod/joystick:

- Loosen the adjustment screw on the control arm and slide the arm out of the bracket, (Fig 5.4).
- Disconnect the control loom plug located under the seat, (Fig.5.5)
- Place the controller and arm in a safe place until required.
- To reconnect the hand control just repeat the process in reverse.

5.3 Re-Assembling

- Place the backrest into the receivers and tighten the lever screws carefully.
- If required reconnect the control pod joystick.
- Attach the swing-away leg rests.
- Make sure your freewheel mechanisms are engaged, (in DRIVE).

⚠WARNING!

- Never lift the wheelchair by the armrests, leg rests or any of the shrouds, since they are detachable and harm could be done to the user or to the wheelchair.
- The wheelchair is not designed for use with a hoist, (Fig.5.6)

5.4 Brake release (Fig.5.7 - 5.9)

There are two brake release, (freewheel), levers located under the seat by the battery cover.

- Ensure the controller is switched off before you engage the release levers – Failure to do so will increase the force needed to push the wheelchair.
- Push the levers forward towards the front of the wheelchair to engage DRIVE.
- Pull the levers backwards towards the rear of the wheelchair to disengage drive, FREEWHEEL.
- There is a label located next to each lever to explain the operation of the levers.

⚠DANGER!

- The Brake release is only to be used in an emergency power breakdown situation e.g. When the wheelchair has to be moved manually to get the user into a safe environment. It is not intended for permanent use or to push the wheelchair up/down a slope with the user sitting in it.
- The wheelchair's automatic braking system will not work unless the brake release levers are in the "DRIVE" position.
- Brake release, can also be used if a complete and catastrophic loss of power such as control system failure or battery failure has occurred.
- Brake release, should not be habitually used as a means of transporting the user as if in a manual wheelchair.
- When the power wheelchair is functioning normally, the brake release should only be used to park or store the unoccupied wheelchair.
- Never push the occupied power wheelchair up or down a slope with the Brake release in freewheel.
- Never attempt to disengage the brake release mechanism whilst sitting in the wheelchair, especially on a slope.
- Always ensure the Brake release levers are in the drive position before using the wheelchair.

Fig.5.4

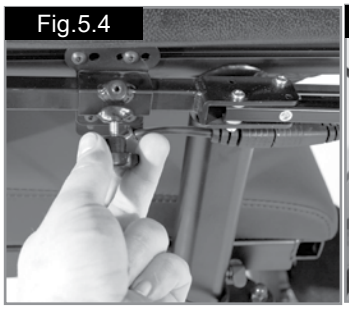


Fig.5.5

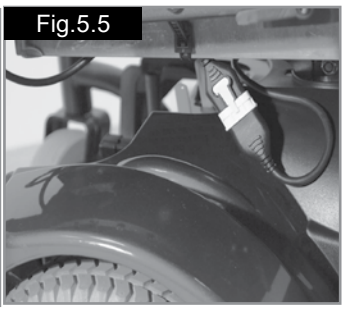


Fig. 5.6

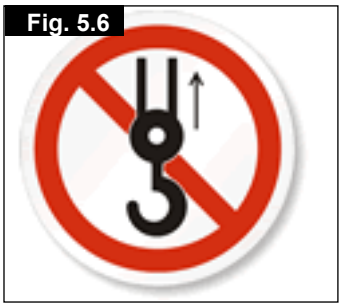


Fig.5.7

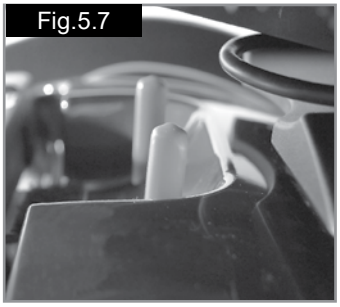


Fig. 5.8

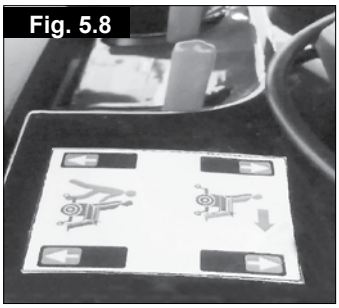
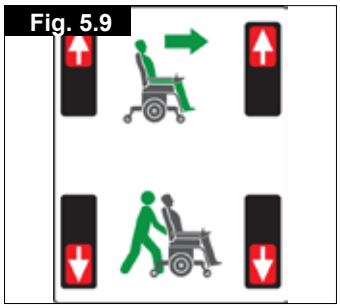


Fig. 5.9



5.5 Control pod joystick unit position


Fig. 5.10

⚠**WARNING!**

- Make sure that the control pod/joystick is mounted securely and that the joystick position is correct.
- The hand or limb you use to operate the joystick should be supported, for example by the arm pad.
- Do not use the joystick as the sole support for your hand or limb - wheelchair movements and bumps could upset your control of the joystick.

The control pod/joystick is mounted on a sliding mechanism which enables the control to be moved forwards and backwards.

- Undo the locking screw, (Fig.5.4).
- Slide the control arm either out or to it's new position, (Fig 5.10).
- When the most comfortable position has been selected, secure the slider by tightening the locking screw.

⚠**WARNING!**

Ensure the locking screw is fully tightened prior to use, especially when transporting your wheelchair.

5.6 Getting ready to drive

- Operate the on/off switch. The battery gauge will blink then remain on after a second
- Check that the maximum speed is set to a level which suits you.
- Push the joystick to control the speed and direction of the wheelchair

5.7 Armrests

5.7.1 Armrests-flip up

The armrests on both sides of the wheelchair can be flipped up to allow side transfer, (Fig. 5.11-5.12).

For side transfer flip the armrest all the way up until it goes into its mechanical stop. This frees your space for side transfer.
To bring the armrests back into their position flip it all the way down until it sits on its mechanical stop. Guide it in its downward movement and do not let it fall on its own.


Fig. 5.11

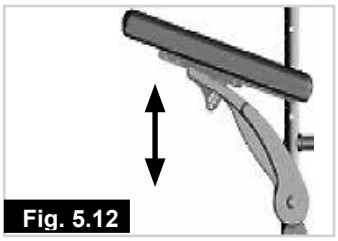


Fig. 5.12

5.7.2 Armrest Height Adjustment

The following section outlines armrest height adjustment. In the case of either fine or coarse adjustment, it is a two-part process:

PART I: Adjust the armrest height through rotation
PART 2: Adjust arm pad angle.

1.Basic fine adjustment.

PART 1 (fig. 5.13 & 5.14)
Up to one inch of armrest height adjustment can be achieved using the 5mm fine height adjustment screw to fine tune the armrest's height.

1. Loosen the 6mm rotation bolts on both armrests (A).
2. Turn the adjustment screws (B) counter-clockwise to raise the armrest or clockwise to lower.
3. Retighten both rotation bolts (A).

Tighten (A) 20 Nm or 177lbf/in of torque.

PART 2 (fig. 5.15 & 5.16)
1. Loosen the 4mm armpad angle pivot bolts (A) on both armrests. Remove the 4mm angle index bolts (B) on both armrests.
2. Tilt both arm pads down (or up in the case of a lowered armrest) until the arm pads are in the preferred angle. Check to see if the height is correct.
3. Retighten both armpad angle pivot bolts (A). Replace both armpad angle index bolts (B).

Tighten (B) to 10 Nm or 88.5lbf/in of torque for both sets of bolts.

Fig. 5.13


Fig. 5.14

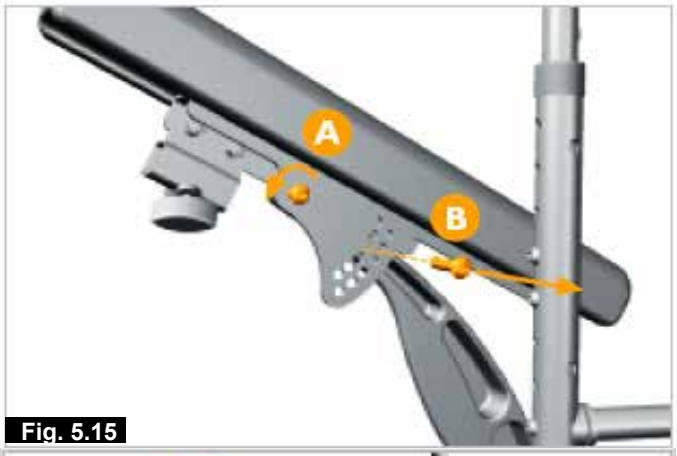


Fig. 5.15


Fig. 5.16

2.Basic coarse adjustment.

PART 1

1. To achieve more than one inch of adjustment, remove the 6mm armrest rotation bolts on both sides of the seat, (Fig.5.17).
2. Remove both armrest assemblies. (Fig.5.18)
3. Remove both sets of 4mm armrest adjustment ring bolts.(Fig.5.19)
4. Rotate the armrest height adjustment rings, (Fig.5.20) to match the desired height designated in the Configuration Chart, (Fig.5.29), on page 23.
5. Replace both sets of armrest adjustment ring bolts according to the configuration chart. (Fig.5.21)
6. Tighten the arm rest height adjustment rings to10 Nm or 88.5lbf/in of torque.
7. Replace both armrest assemblies. (Fig.5.22)
8. Replace the armrest pivot bolts on both sides of the seat, but do not tighten completely. (Fig.5.23)

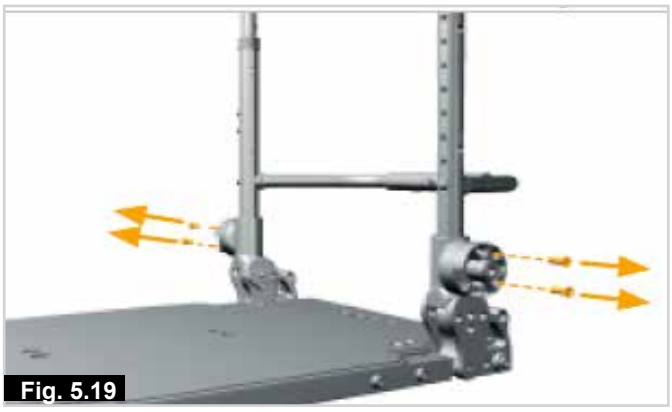


Fig. 5.19


Fig. 5.20

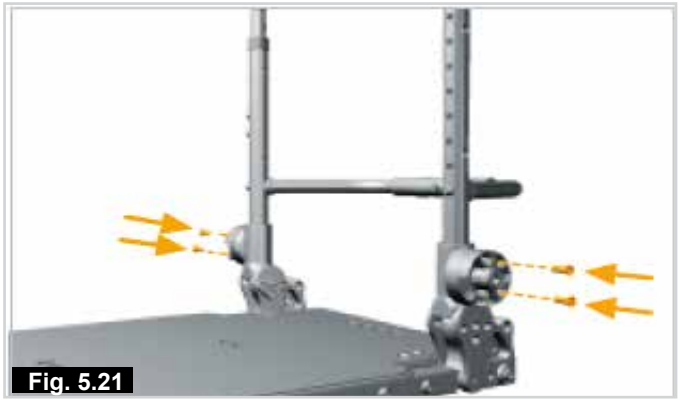


Fig. 5.21


Fig. 5.17


Fig. 5.22


Fig. 5.18


Fig. 5.23

PART 2

Loosen the 4mm arm pad angle pivot bolts (A) on both armrests. Remove the 4mm angle index bolts (B) on both armrests, (Fig.5.24).

Use the 5mm fine height adjustment screw (B) to finish fine tuning the height. Turn counter-clockwise to increase height or clockwise to lower, (Fig.5.25).

Tilt both arm pads down, (or up in the case of a lowered armrest), until the arm pads are in the preferred angle. Check to see if the height is correct, (Fig.5.26).

Refer to 2 for fine adjustment.

Retighten both armrest pivot bolts to Use 20 Nm or 177lbf/in of torque. (Fig.5.27).

Retighten both arm pad angle pivot bolts “A”. Replace both arm pad angle index bolts “B” to 10 Nm or 88.5lbf/in of torque for both sets of bolts, (Fig.5.28).

Fig. 5.25


Fig. 5.26


Fig. 5.27

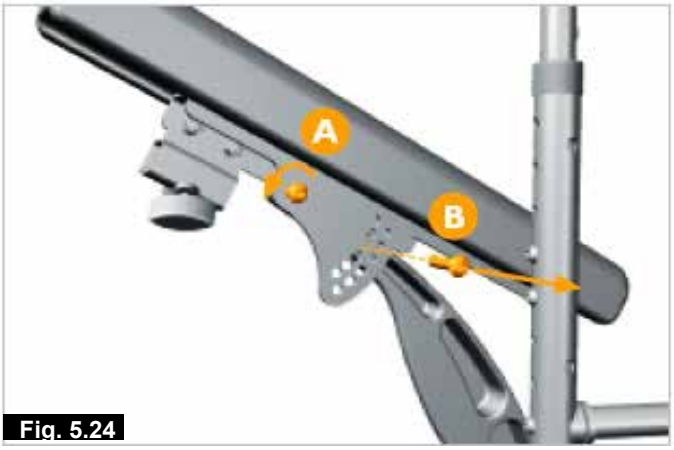


Fig. 5.24

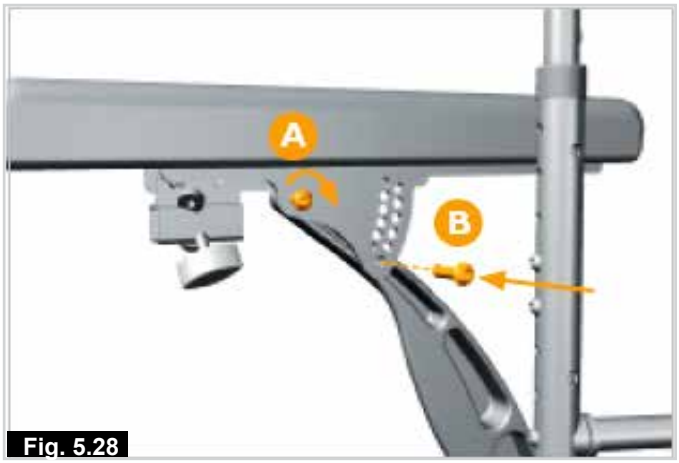
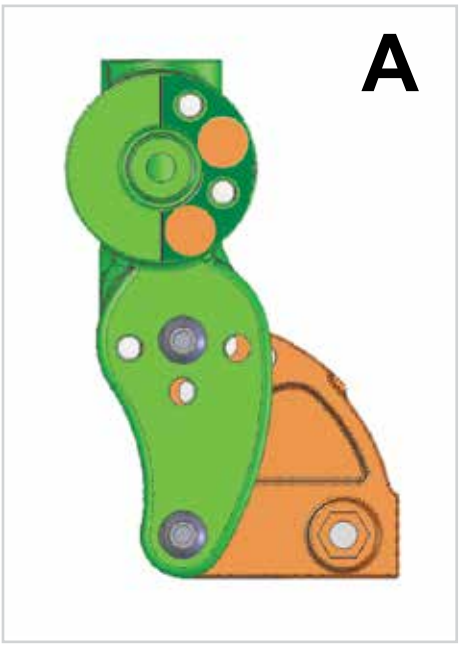
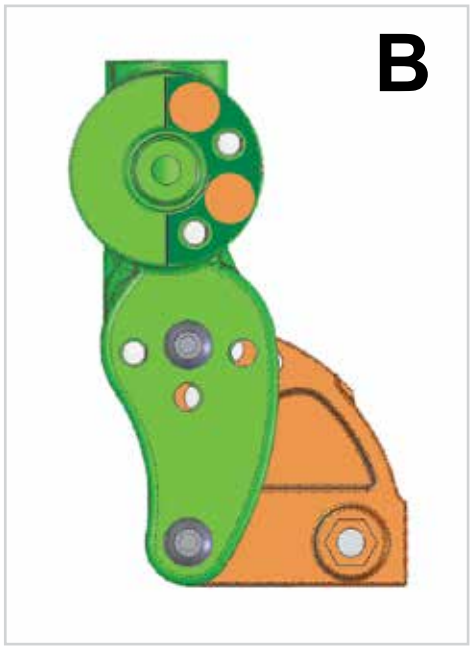
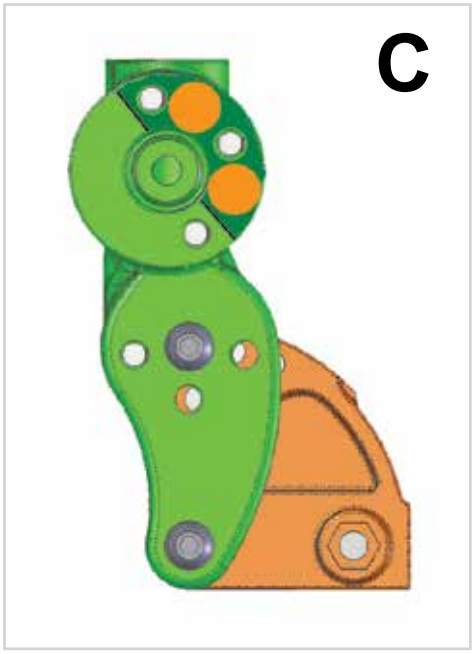


Fig. 5.28

Table Showing Backrest Angle - Arm Rest Height and Corresponding Setting Ring Position







	STANDARD CONFIGURATION CHART	
BACKREST ANGLE (Degrees)	**ARMREST HEIGHT (mm)**	**SETTING RING POSITION**
-4	305 - 254	A
-4	252 - 229	B
0	305 - 254	A
0	252 - 229	B
4	305 - 267	A
4	279 - 229	B
8	305 - 229	B
12	305 - 229	B
12	248 - 229	C

Fig. 5.29

5.7.3 Arm pad Position Adjustment
(Fig.5.30-5.33)

Fine arm pad position adjustments (2.5cm-5.0cm, 1”-2”) are possible by loosening the 4mm arm pad adjustment bolts (E) and sliding the arm pad forward or backward as required, (Fig.5.30, 5.31). Access to the rear adjustment bolt may require pivoting the arm pad

Retighten both adjustment bolts (E). Use 10 Nm or 88.5lbf/in of torque, (Fig.5.32).

NOTE: If more than one to two inches of adjustment is required, refer to chart below, (Fig.5.33).

For larger adjustments, remove both sets of arm pad adjustment bolts. Slide both arm pads to the next set of attachment holes (refer to the chart). Retighten both sets of arm pad adjustment bolts, (Fig.5.30 - 5.33). Use 10 Nm or 88.5lbf/in of torque.

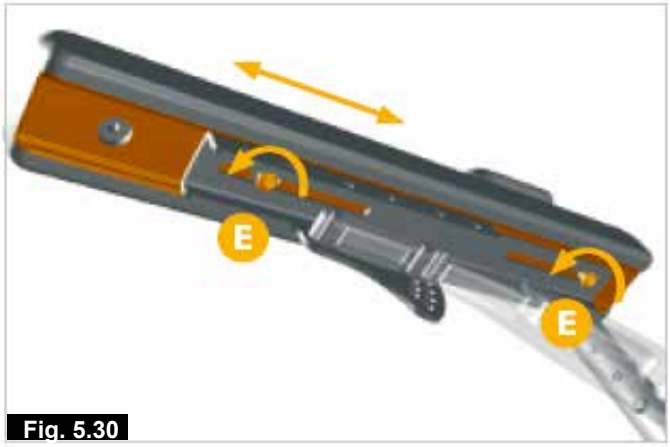


Fig. 5.30

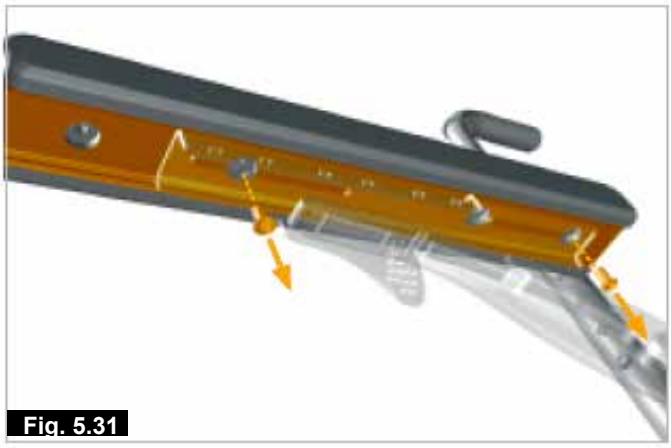


Fig. 5.31

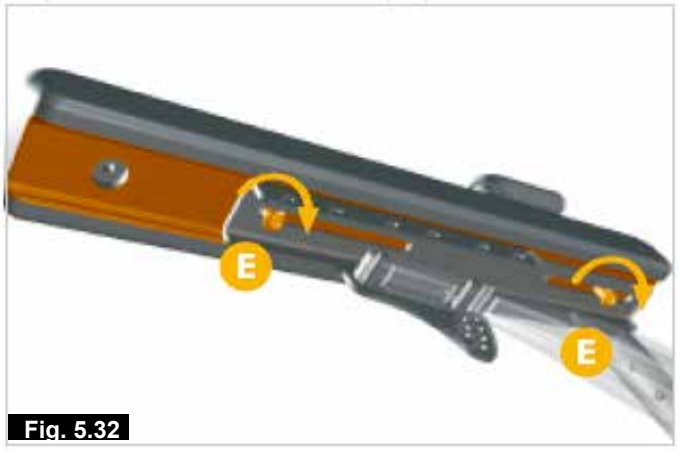
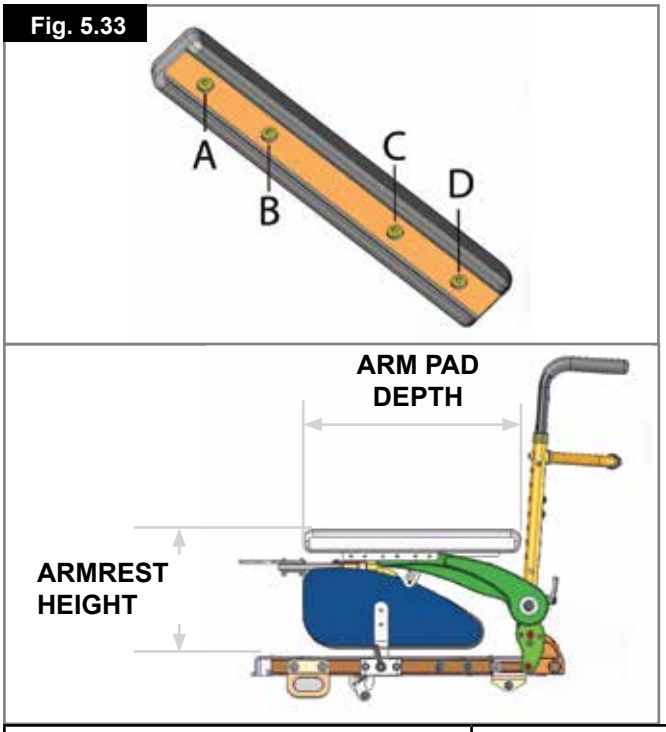


Fig. 5.32

Fig. 5.33



ARM PAD DEPTH (mm)	ARMREST HEIGHT RANGE (mm)	ARM PAD SETTING POSITION
305	305 - 229	A & C
330	305 - 229	A & C
356	305 - 229	B & C
381	305 - 229	B & C
406	305 - 229	B & D

5.8 Leg Rests

WARNING!

- Be aware of your environment to make sure you do not injure your legs when Leg Rests are extended.
- Always ensure that the Leg Rests or foot plates do not come into contact with the castors before driving the wheelchair.
- Leg Rests are not to be used for lifting or carrying the wheelchair under any circumstances.
- As with all moving parts be careful not to trap your fingers.

5.8.1 Leg rest removal

To swing away / remove the leg rest:

- Push the retaining catch and swing the leg rest out, (Fig.5.33-5.34).
- Lift the leg rest up and off if removal is required, (Fig.5.35).

To refit:

Reverse the above process.

5.8.1 Seat Hanger depth adjustment

- Remove both sets of Front Crash Test tie down brackets using a 5.0mm Alan Key, (Fig.5.36).
- Remove the forward nut and bolt on the side guards, (the one closest to the front of the wheelchair). Use a 10.0mm spanner and 5.0mm Alan Key. (Fig.5.37).
- Slide the footrest hanger frame to the desired position, or remove it if required, (Fig.5.38).
- Replace the studs and bolts and tighten them.
- The hanger is now in the new position.


Fig. 5.33


Fig. 5.34

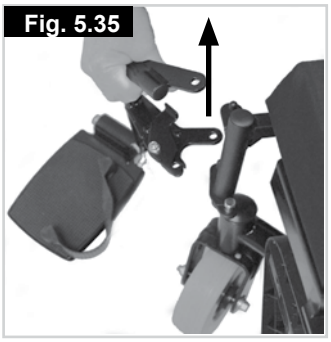


Fig. 5.35


Fig. 5.36


Fig. 5.37

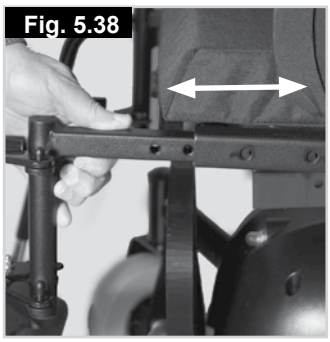


Fig. 5.38

5.8.2 Foot plates
The foot plates may be flipped up to aid entry and exit from the wheelchair.

WARNING!

Do not use the foot plates to stand on as the full weight of your body may cause the wheelchair to tip forwards. This could result in injury and could damage the foot rests.

5.8.3 Adjusting the foot rest length

To adjust the foot rest length:
- Loosen the bolt on the foot rest stem, (Fig. 5.39).
- Adjust the length to suit, (Fig.5.40).
- Ensure the bolt is firmly located and tightened prior to use.

5.8.3 Manual Articulating / Elevating Leg rest
(Fig.5.41-5.43)

To elevate:
- Press and hold the actuator lever down, (Fig.5.42).
- Pull the leg rest upwards, (Fig.5.43).
- Stop at the desired height.
- Let the actuator lever go.
- The leg rest will lock into place.

To lower:
- Press and hold the actuator lever down, (Fig.5.42).
- Push the leg rest downwards, (Fig.5.43).
- Stop at the desired height.
- Let the actuator lever go.
- The leg rest will lock into place.

WARNING!

- Keep hands clear of the adjustment mechanism between the frame and the movable parts of the leg rest while elevating or lowering the leg rest.
- Do not stand on the Elevating Leg Rest.

5.8.4 Centre Mount Leg Rest (Fig.5.44-5.45).

To Use:
- Sit in the wheelchair.
- Grab the top of the foot rest.
- Flip it down until it is level with the ground.
- Grab the front of the foot rest and flip it back up before leaving the wheelchair.

WARNING!

- Do not stand on the Centre mount Leg Rest.

Fig. 5.39

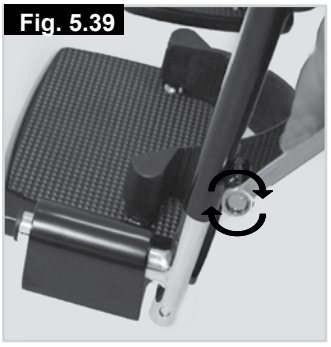


Fig. 5.40

Fig. 5.41

Fig. 5.42

Fig. 5.43

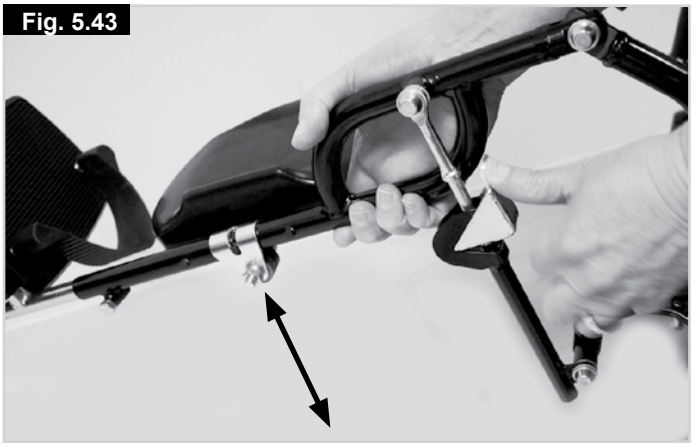


Fig. 5.44

Fig. 5.45

6.0 Seating

6.1 Firm seat board
The firm seat board is designed to allow pressure relief cushions such as Jay to be used, (Fig.6.1).

6.2 Seat cushions
Seat cushions supplied by Sunrise Medical will have Velcro® strips that correspond to patches on the seat, (Fig.6.2).

⚠WARNING!

You must ensure these are aligned prior to using the wheelchair. Other cushions used should also have Velcro® strips in a similar position to ensure the cushion does not slip off the seat.

NOTE: All seat cushions, supplied by Sunrise Medical all have removable covers.

6.3 Removable seat covers
The seat covers are all fully removable using zips or Velcro®. Once brackets are removed seat covers can be removed. The zip for the backrest is located on the underside of the cushion.

6.4 Backrest upholstery
Hula is supplied with optima backrest upholstery, which can be adjusted in tension to the individual's requirements.

Tension adjustable back:
To change the shape and/or tension of the 'Optima' backrest, remove the padded cover from the rear of the backrest and expose the tension straps. Loosen or tighten the straps to suit. (The most comfortable and supportive position is achieved with the wheelchair user seated in the wheelchair). Ensure the straps are securely fastened and replace the padded cover prior to use, (Fig.6.3).

6.5 JAY backrests
The rehab backrest assembly will allow the fitting of a JAY backrest, which is available as an optional extra.

6.6 Seat width adjustment
1. Remove the 5mm width adjustment bolts (A) and the 4mm towel bar adjustment bolt (B), (Fig.6.5) .
2. Move the left side seat rail, armrest and backrest assembly to the desired position. See seat width position settings (C), (Fig.6.6). Refit bolts and tighten to 10Nm, (A-B)

Fig. 6.1

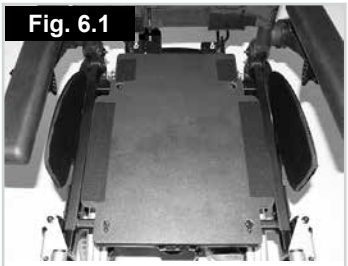


Fig. 6.2

Fig. 6.3

Fig. 6.4

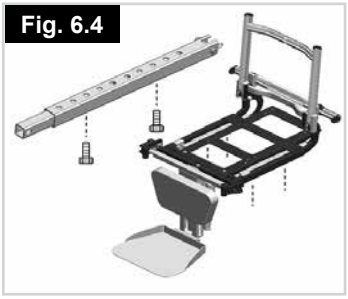


Fig. 6.5

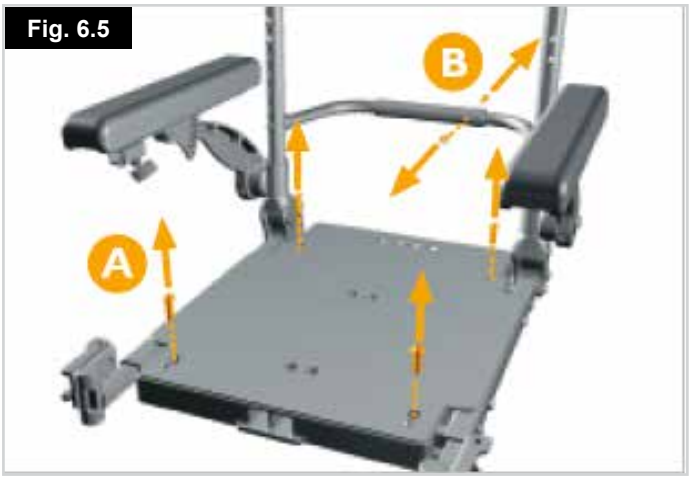
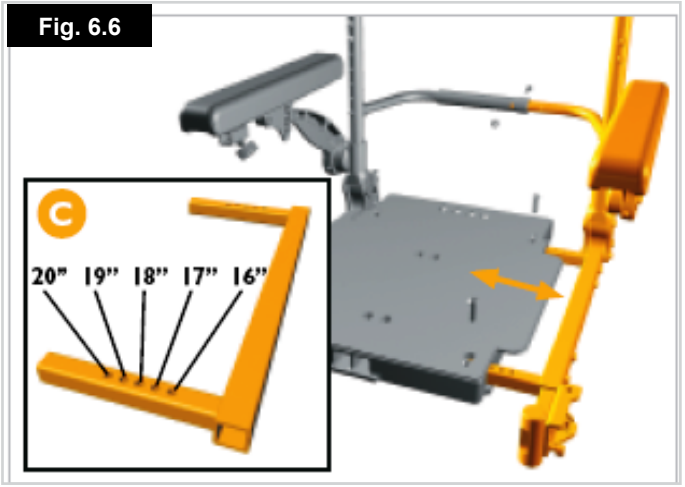


Fig. 6.6



6.7 Seat height adjustment/removal

⚠CAUTION!

Specialist tools are required for this task.

⚠WARNING!

- Sunrise Medical strongly recommends that the seat height adjustment is carried out by qualified/ experienced personnel.
- If you are unsure about carrying out this task, please ask your authorised Sunrise Medical dealer to do it for you.
- Ensure that the seat frame does not trap your fingers or any other part of your body.
- Ask someone who has sufficient strength to assist you by holding the seat steady during adjustment.
- When the seat stem bolt is removed the seat can move unexpectedly and may cause injury by entrapment.

To change the seat height/remove the seat:

- Remove the Backrest for easier handling, (Section 5.2).
- Undo the control pod/joystick from the armrest and place it on the seat, (Section 5.5).
- If the seat is to be removed, undo the controller loom plug.
- The seat stem is located under the seat between the battery shroud and the controller shroud, (Fig.6.7).
- The seat stem has a single bolt for the low setting and a double bolt for the high setting, (fig.6.7).
- Use two, 13.0mm socket wrenches with extensions to undo the seat stem bolt, (Fig. 6.8 - 6.9).
- Have an assistant ready to steady the seat assembly by taking it's weight.
- Carefully withdraw the bolt.
- Have the assistant remove the seat, or move it to the desired height, (Fig.6.10).
- Refit the nut and bolt.
- Tighten the nut and bolt to the correct torque, (see Torque Table).
- Refit the control pod/joystick.
- Refit the backrest.

⚠WARNING!

The seat assembly is heavy. Two people are required to lift it if removing from the wheelchair.

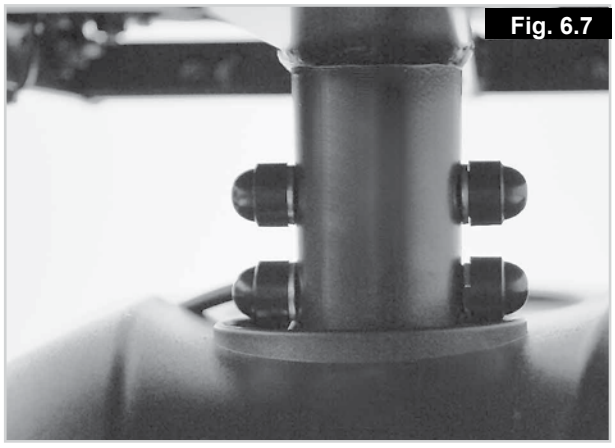


Fig. 6.7

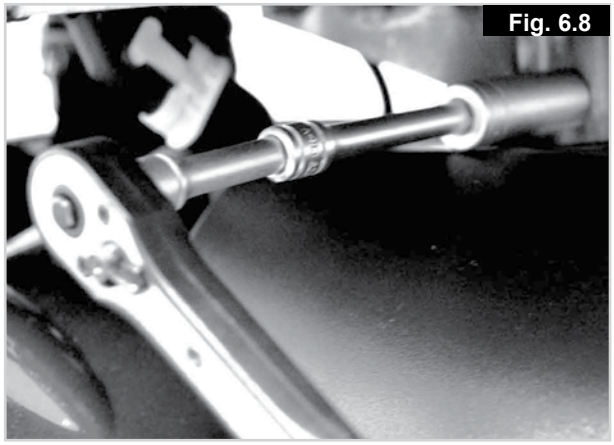


Fig. 6.8

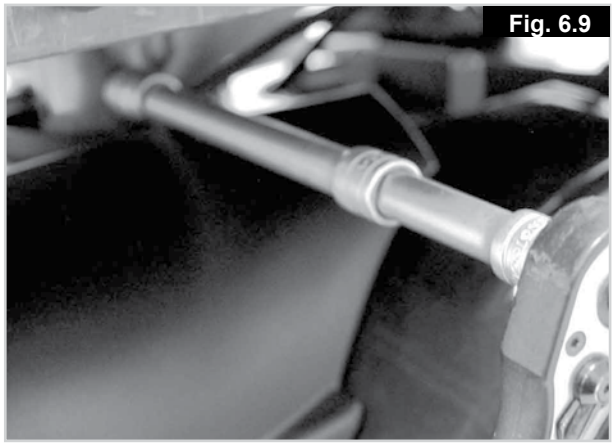


Fig. 6.9


Fig. 6.10

6.8 Standard Seat Depth Adjustment

1. Remove the 5mm depth adjustment bolts from both sides of the seat, (Fig.6.11).
2. Slide the rear backrest and armrests into the desired seat depth position. Reference seat depth position patterns (A), (Fig.6.12).
3. Replace both sets of depth adjustment bolts.
4. Use 20 Nm or 177lbf/in of torque, (Fig.6.13).

NOTE: Depending on the seat depth, the side guard position may have to be moved, (see section 5.8.1-Fig.5.37).

Fig. 6.11

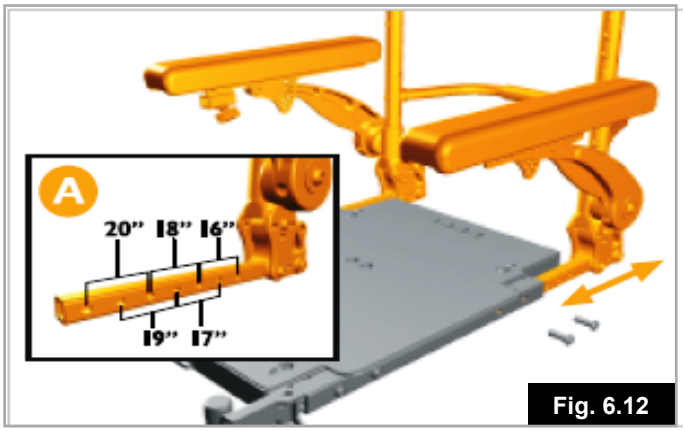


Fig. 6.12

Fig. 6.13

6.9 Backrest Angle Adjustment -4° to +12°

1. Remove the 5mm backrest bracket index bolts (A) on both sides of the backrest. Loosen the 5mm backrest bracket pivot bolts (B) on both sides of the backrest.

NOTE: The index bolt (A) may be in a different starting position than shown below in Fig.6.14.

NOTE: Maximum recline angle on your Quickie Hula is 12 degrees. A feature has been added to the backrest recline bracket to limit the maximum recline to 12 degrees, (Fig.6.14.1).

⚠DANGER!

Do not remove the factory fitted recline limitation stud. Removing the stud could allow an unsafe backrest set up leading to possible instability of the powerchair which may in turn lead to injury or death.

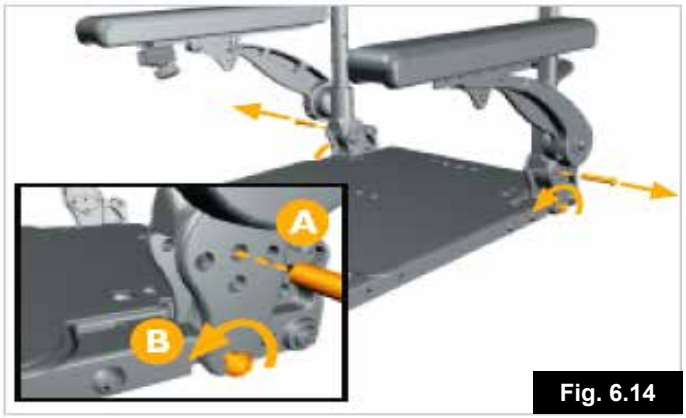


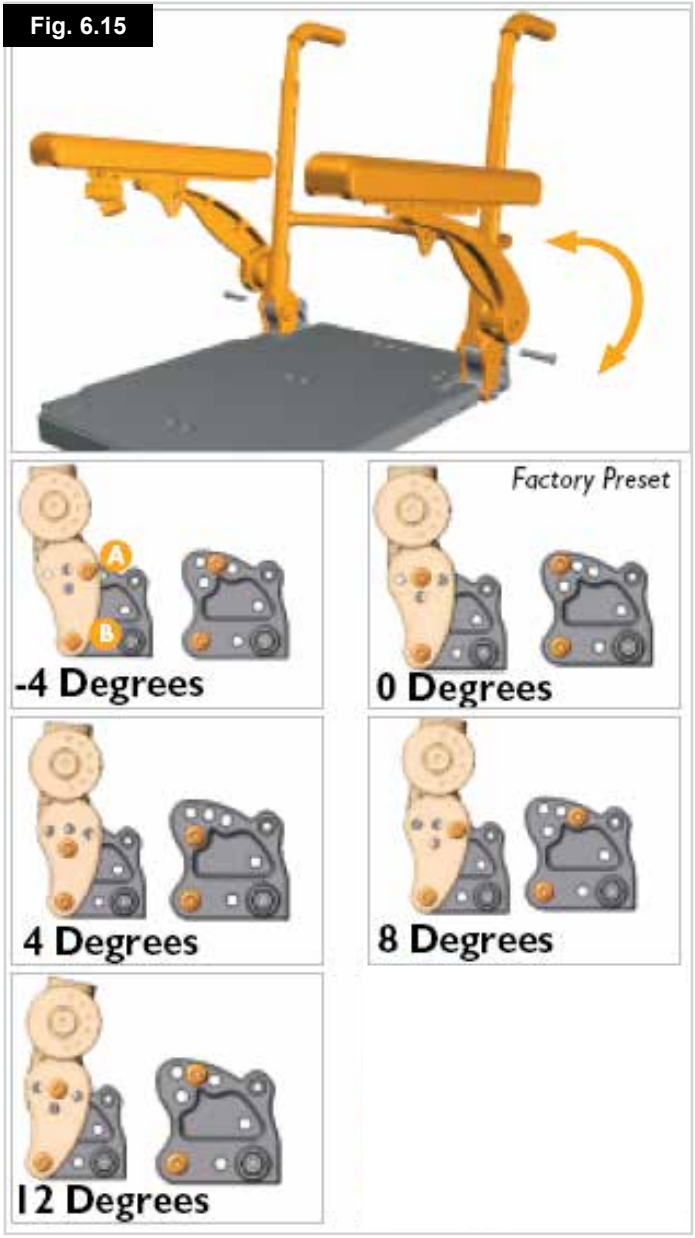
Fig. 6.14

Fig. 6.14.1

2. Tilt the backrest assembly forward or backward to the desired angle.

NOTE: See angle configurations on next page, (Fig.6.15).

Fig. 6.15



3. Reinsert and tighten both backrest bracket index bolts and bracket bolts (A & B). Use 20 Nm or 177lbf/in of torque, (Fig.6.16).

NOTE: The figures below represent the 8°angle.

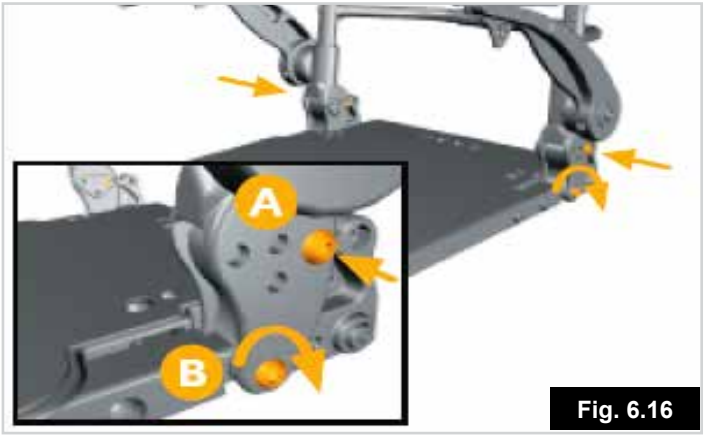


Fig. 6.16

6.10 Back Height Adjustment

1. Begin by removing the upholstery cover, (Fig.6.17).

Fig. 6.17

2. Loosen the upholstery straps. It is not necessary to remove the upholstery, (Fig.6.18).

Fig. 6.18

3. Remove the top upholstery screws. The upholstery can now be moved and vertically compressed to provide access to the hidden cross-head bolts, (Fig.6.19).

Fig. 6.19

4. Remove the 4mm towel bar bolts and the towel bar, (Fig.6.20).

NOTE: This step is not necessary in every case. If the push handles are high enough, the towel bar bolts might not thread into the push handle tubes. To test, skip this step and move to Numbers 5 and 6. If the towel bar does not impede movement of the push handles, the towel bar may be left intact.

Fig. 6.20

5. Remove the 4mm back post adjustment bolts, (Fig.621).

Fig. 6.21

6. Move both back posts to the desired height, (Fig.6.22).

Fig. 6.22

7. Replace the backpost adjustment screws. Use 10 Nm or 88.5lbf/in of torque, (Fig.6.23).

Fig. 6.23

8. If removed in Number 4, replace the towel bar and the towel bar bolts. Use 10 Nm or 88.5lbf/in of torque, (Fig.6.24).

NOTE: The towel bar may be repositioned at this point as well.

Fig. 6.24

9. Replace both top upholstery bolts. Ensure the bolts thread through the top upholstery eyelets (A), (Fig.6.25).

Fig. 6.25

Fig. 6.26

Fig. 6.27

Fig. 6.28

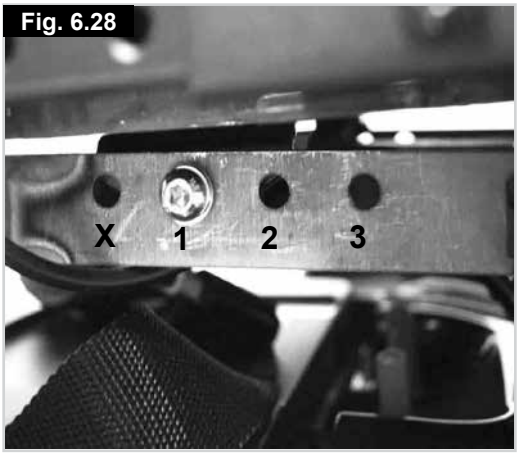
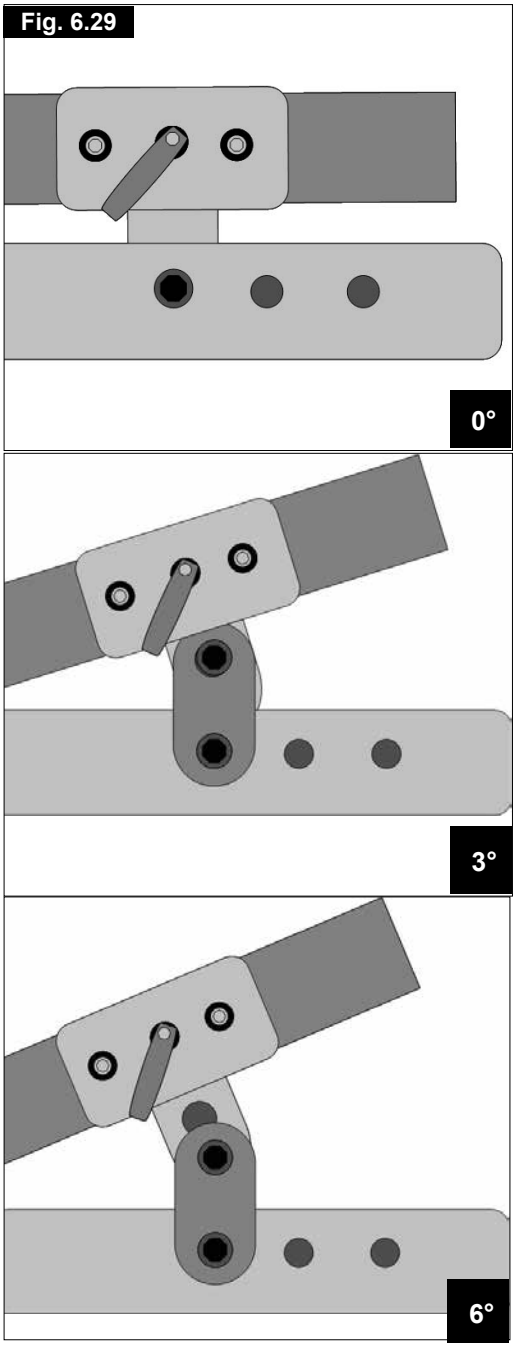


Fig. 6.29



6.11 Mechanical Seat Tilt

To set the seat tilt angle, (Fig.6.29):

- 0º is given by bolting lower hole on seat bracket directly to the interface
- 3º is given by fitting tilt bracket between interface and upper hole on seat bracket
- 6º is given by fitting tilt bracket between interface and lower hole on seat bracket.

6.12 Centre Of Gravity (COG).

The seat can be moved forwards and backwards to accommodate different seat depths, (Fig.6.28).

- Position X - Do not use
- Position 1 – for seat depths 16-18”
- Position 2 – for seat depth 19”
- Position 3 – for seat depth 20”

6.13 JAY backrests
The standard backrest assembly will allow the fitting of a JAY backrest, which is available as an optional extra.

6.14 Headrest
To fit the Standard headrest, fit the location bracket to the push handles, using the screws and nuts supplied, ensuring that they are fully tightened.

Adjusting the Headrest.
The headrest height is changed by loosening the adjustment knob and sliding the inner vertical tube to the desired position and tightening the knob. The headrest to seat depth is adjusted by loosening the 6mm Allen screws and moving the hinge to the desired position and then tightening the screws securely. To adjust the headrest angle, loosen the screws at the headrest upholstery, position the headrest as required and tighten the screws securely. (Fig.6.30)


Fig. 6.30

7.0 Control System
7.1 VR2 control system information (Fig.7.1)

On/off button:

The on/off button applies power to the control system electronics, which in turn supply power to the wheelchairs motors.

⚠ CAUTION!

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)

Battery gauge:

The battery gauge shows you that the wheelchair is switched on. It also indicates the status of the wheelchair. Refer to chapter 8.

Locking/unlocking the wheelchair:
The VR2 control system can be locked to prevent unauthorised use. The locking method is via a sequence of key presses and joystick movements as detailed below.

To lock the wheelchair:
- While the control system is switched on, depress and hold the on/off button
- After 1 second the control system will beep. Now release 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 locked

To unlock the wheelchair:
- Use the on/off button to switch the control system on. The maximum speed/profile indicator will be rippling up and down
- 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

Operating the control joystick:

When engaging the main On/Off button, allow a few seconds prior to moving the joystick. This allows the system to self check. If you move the joystick too soon, the battery level indicator display will not illuminate until the joystick is released.
If it is off centre for more than 5 seconds a system error will occur. Whilst this is not harmful to your wheelchair, you will need to switch off and then back on to clear the system.

NOTE: This is a safety feature to prevent unintended movement.

Proportional control summary

- To steer, move the joystick in the direction you wish to go.
- The further you move the joystick, the faster you will go.
- When the joystick is released the the electrical braking system will automatically slow the wheelchair down, bringing it to a controlled stop.

⚠WARNING!

- New users should use slower speeds until they feel confident when driving the wheelchair.
- It is important that the wheelchair is stationary when changing direction from reverse to forward.
- Always switch off before getting into or out of the wheelchair.

Maximum speed/profile indicator:

This is a gauge which shows the maximum speed setting for the wheelchair or if the control system is programmed for drive profile operation, the selected drive profile. This gauge also indicates if the speed of the wheelchair is being limited or if the control system is locked.

The horn button:
The horn will sound while this button is depressed.

Speed / Profile decrease button:
This button decreases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a lower drive profile.

Speed / Profile increase button:
This button increases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a higher drive profile.

Actuator button and LEDs (Optional):
Depending on whether your wheelchair is fitted with one or two actuators the operation of these buttons will differ.

Wheelchairs with one actuator (Optional)
Depressing either actuator button will enter actuator adjustment mode. This will be indicated by the illumination of both actuator LED's. Actuator adjustment can then be made by deflecting the joystick forwards or backwards. To re enter drive mode, depress either actuator button

Wheelchairs with two actuators (Optional)
Depressing either actuator button will enter actuator adjustment mode.
If the left button is depressed the associated LED will be illuminated, and deflection of the joystick will adjust the actuator motor connected to that channel.
If the right button is depressed the associated LED will be illuminated, and deflection of the joystick will adjust the actuator motor connected to the other channel.

To re enter drive mode, depress the selected actuator button, as indicated by the associated LED
It is also possible to select the other actuator by left or right movements of the joystick

Charging and programming socket:

⚠**WARNING!**

This socket should only be used for programming and charging the wheelchair.

⚠**WARNING!**

This socket should not be used as a power supply for any other device. Connection of other electrical devices may damage the control system or affect the EMC performance of the wheelchair
See section 11 about charging.

The programming socket will enable an approved Sunrise Medical authorised dealer to re-programme your wheelchair and also gain useful information when tracing any faults. When the wheelchair leaves the factory, the parameters of the controller are set to default.
To programme the controller, a special programming device (handheld or PC software), is required

⚠**DANGER!**

Programming the controller of the wheelchair should be carried out by an authorised Sunrise Medical dealer. Incorrect controller settings could cause driving outside the safe limits and could result in damage, injury or death.

⚠**WARNING!**

SUNRISE MEDICAL does not accept responsibility for damages which result from unexpected stopping of the wheelchair or inappropriate programming or unauthorised use of the wheelchair.

7.2 VR2 Dual control unit (Optional)

Control button and indicator:
This shows which joystick has control. If the red wheelchair light is on the wheelchair occupants joystick has control. If the green attendant light is on the dual attendant systems joystick has control. The button is used to transfer control between the user and attendant.

Actuator button and LED:
All VR2 dual attendant systems have an actuator button fitted as standard.

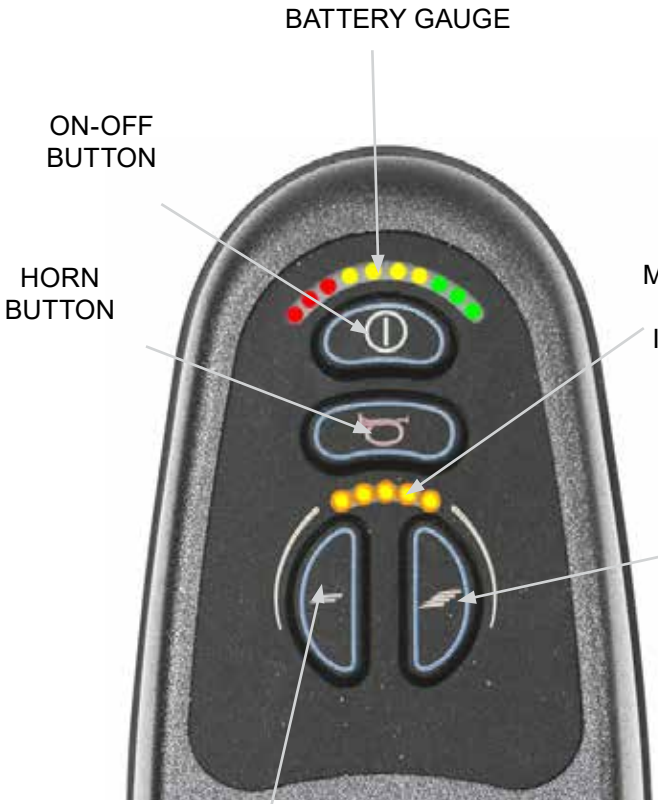
NOTE: If the VR2 is programmed with no actuators then this button has no function.

Maximum speed button and indicator:
This shows the maximum speed setting for the wheelchair when the dual attendant system has control. There are five settings - setting 1 is the slowest speed and setting 5 is the highest speed. The speed setting is changed with the speed button.

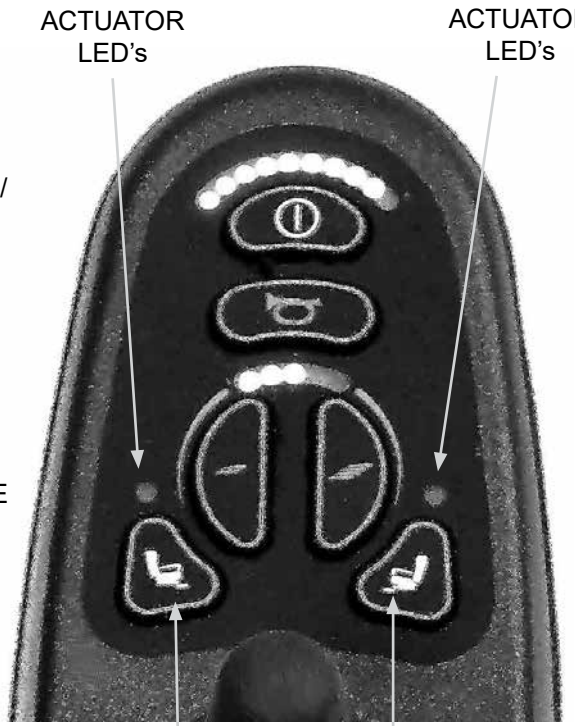
NOTE: If the control system is programmed for drive profile operation, then the dual attendant system speed adjuster will only adjust the speed within the selected profile.

NOTE: Changing between drive profiles can only be achieved using the VR2 joystick.

Fig.7.1



VR2 CONTROL PANEL LAYOUT



VR2-L CONTROL PANEL LAYOUT

VR2 DUAL CONTROL UNIT (Optional)

8.0 Troubleshooting using the VR2 Hand Control

⚠**WARNING!**

Always consult your Sunrise Medical authorised dealer when a fault has appeared on your joystick.

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

Battery Gauge is steady:
This indicates that everything is OK.

Battery Gauge flashes slowly:
The control system is functioning correctly but the batteries need charging as soon as possible.

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.

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 wheelchairs electrical system.

- 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 the self help guide given over the page, (Fig.8.1)
- Switch on the control system again and try to drive the wheelchair.

⚠**WARNING!**

If the safety circuits operate again, switch off and do not try to use the wheelchair.
Contact your Sunrise Medical Authorised Dealer.

Self help guide: (Fig.8.1, overleaf).
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.
Go to the number on the list which matches the number of flashing bars and follow the instructions.

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.
Consult your Sunrise Medical Authorised Dealer.

Speed / Profile Indicator ripples up and down:
This indicates the control system is locked, refer to section 7.1. for details on how to unlock the control system.

Self Help Guide, (Fig.8.1).

Fault code	Possible cause	Fig.8.1
	The batteries need charging, or there is a bad connection to the battery. Check the connections to the battery. If the connections are good, try charging the batteries	
	The left hand motor has a bad connection. Check the connections to the left hand motor.	
	The left hand motor has a short circuit to a battery connection. Contact your Sunrise Medical Authorised Dealer	
	The right hand motor has a bad connection. Check the connections to the right hand motor.	
	The right hand motor has a short circuit to a battery connection. Contact your Sunrise Medical Authorised Dealer	
	The wheelchair is being prevented from driving by an external signal. One possibility is that the battery charger is plugged in.	
	A joystick fault is indicated. Make sure that the joystick is in the centre position before switching on the control system	
	A control system fault is indicated. Make sure the control system connections are secure.	
	The motor brakes have a bad connection. Check the motor brake and the motor connections. Make sure that the control system connections are secure	
	An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery connections	
	+ S	S=Speed indicator LED's A communication fault is indicated. Make sure that the joystick cable is securely connected and not damaged
	+ A	A=Actuator LED's An actuator trip is indicated. If more than one actuator is fitted, check which actuator is not working. Check the actuator wiring.

9.0 Controller Mounts

9.1 General warnings:

⚠**WARNINGS!**

- Do not replace the joystick knob with any unauthorised item. It may cause hazardous operation and loss of control of the wheelchair.
- It is important that the joystick boot is replaced if it is torn or brittle; failure to do so could cause substance damage to the controller and unexpected movement of the wheelchair.
- Ensure that you always have comfortable access to the controls whilst the wheelchair is moving and make sure that the controller is fixed securely to the wheelchair.

9.2 Attendant control (Optional):

⚠**WARNINGS!**

Ensure that you set the speed of the attendant control to a speed that you can comfortably follow.
Always turn off the power to the controller when leaving the user in the wheelchair. (Fig.9.1).

9.3 Parallel swing-away control:

⚠**WARNINGS!**

- Before adjusting the swing-away arm, switch off the controller to avoid accidental displacement of the joystick which would cause unwanted movement of your wheelchair.
- Keep your fingers and clothing, etc. clear while operating the swing-away mechanism.
- Be aware that the width of your wheelchair has increased if the swing-away arm is out and you may not get between certain obstacles.
- Do not hang any items on or over the parallel swing-away remote assembly as this could damage the swing-away mechanism.
- When transferring to and from the wheelchair do not use the remote as a means of support.
- Ensure the power is switched off while adjusting the parallel swing-away arm.
- Only operate the wheelchair at low manoeuvring speed when the parallel swing-away is in use, (Fig.9.2).

Fig.9.1

Attendant control (Optional)

Fig.9.2

Parallel swing-away control

10.0 Batteries and charging

WARNING!

- Please read the owner's manual supplied with the battery charger carefully.
- Do not expose any part of the battery to direct heat (i.e. naked flame, gas fire).
- When charging always place your charger on a hard surface in a room with good ventilation.
- You should not charge your batteries in outdoor conditions.
- Do not wear conductive jewellery when handling batteries.
- Never smoke or use naked flames when handling batteries.
- Batteries are heavy, please use correct lifting techniques.
- If you are unsure about carrying out this task, consult your authorised Sunrise Medical Dealer.

10.1 Batteries (Fig.10.1-10.6)

The batteries are contained within the drive unit located under the battery shroud at the rear of the wheelchair.

To remove the batteries:

- The battery cover is secured using Velcro®
- Gently pull the battery cover upwards and towards you.
- Undo the Velcro strap that secures the two batteries.
- Lift the batteries out one at a time and place them on the floor. Be aware that the batteries are still connected.

To disconnect the battery looms:

- Disconnect each battery plug.
- Use a 10.0mm spanner to undo each battery terminal and remove the loom, (Fig.10.6).

To fit the batteries and looms please reverse the above procedure.

Fig.10.1

Fig.10.2

Fig.10.3

Fig.10.4

Fig.10.5

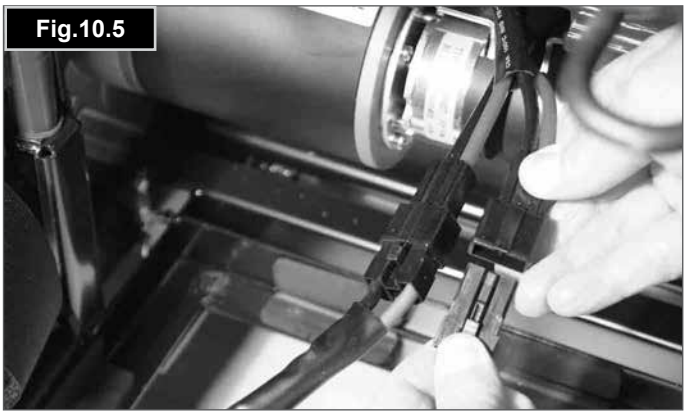


Fig.10.6

10.2 Safety cut-outs (Fuses)

In the event of a short circuit there are several safety systems built into your wheelchair to safeguard your electrical circuits.

- Fusible 80A links are connected into the fuse holders on the battery harnesses to protect the batteries and wiring.
- On some models a reset button is fitted on the front shroud. *

***NOTE:** This feature is not fitted on all models.

To replace any fuses please contact your Sunrise Medical authorised dealer, who will also diagnose the fault.

10.3 General battery information

Over the years, battery technology has moved forward but, unfortunately, some of the advice given on battery care has not. This has resulted in a number of confused and at times contradictory instructions on the ‘best’ way to care for your batteries.
This section will help to dispel some of these myths and legends.
Batteries are the power source for almost all of the modern mobility products available today. The design of batteries used in mobility products is significantly different to the batteries used to start a car for example. Car batteries are designed to release a large amount of power over a short period of time, whilst mobility batteries (commonly called deep cycle batteries) release their power evenly, over a long period of time.
Two -12 volt batteries are used together in a mobility product, giving a total voltage of 24 volts. The size of the battery (e.g. its available power) is expressed in amps per hour e.g. 80amp/hr. The higher the number, the bigger the battery size, weight and, potentially, the greater the distance you can travel. Sunrise Medical only fit as standard maintenance free batteries into their wheelchairs.

10.4 Maintenance free batteries

This type of battery uses a method of carrying the electrolyte commonly referred to as ‘gel’, that is held within the battery case. As the name implies, no maintenance is required other than regular charging. You can safely transport this type of battery without fear of acid spilling. Furthermore, they are approved for transportation on aircraft, trains and ships.

10.5 Battery care

Below is set out a battery care plan for maintenance free batteries. This has been agreed between Sunrise Medical and the battery manufacturers, to enable you to get the best out of your batteries. If a different care plan is followed, this may result in lower than expected performance from your mobility vehicle.

10.6 Maintenance free battery care plan

⚠CAUTION!

- Only use an approved Sunrise Medical charger compatible with the vehicle to be charged.
- Charge your batteries every night, regardless of the amount of use your mobility device has had during the day.
- Do not interrupt the charging cycle.
- If your mobility device is not required for use, it should remain connected to the charger until required. This will not damage your batteries, as long as the mains socket/plug is left switched on. Turning the mains socket/plug off, but leaving the mains cable plugged in will eventually deplete your battery charge.
- If you intend to leave your vehicle for an extended period (more than 15 days) charge the batteries fully and then disconnect the main battery lead.

⚠CAUTION!

- Failure to allow for recharge will damage the batteries and can lead to shortened distances and premature failure.
- Do not top up the charge of your batteries during the day unless you can leave them on charge for at least 8 hours. Wait until the evening for a full overnight charge.

As a general rule, maintenance free batteries take longer to fully charge than other types of batteries.
The battery terminals need to be checked regularly for signs of corrosion. If any corrosion is apparent, then clean the terminals completely (a stiff brush is ideal) and re-grease the terminal using petroleum jelly, not ordinary grease. Ensure that the terminal nut and bolt, cable clip and exposed cable are completely covered with petroleum jelly.
Following all the points above should result in a healthier battery, greater range for the vehicle user and a longer life for your batteries.
Return the batteries back to Sunrise Medical or directly to the battery manufacturer for recycling, when they no longer hold charge, or take them to your local amenity recycling centre.

10.7 General charger information

The external charger has been designed to charge two 12V Gel/AGM type batteries connected in series (= 24 V). The charger supplied uses a 3 pin Neutrik connector. No other connector type is suitable.

Please read the owner's manual supplied with the battery charger carefully.

10.8 Charger safety features

The chargers have features which prevent hazards or accidents occurring as a result of connecting batteries the wrong way round, overheating caused by fault conditions or attempting to charge wrong voltage batteries.
The majority of charger sizes are electrically double insulated and no earth connection is required. Some larger sizes may be electrically earthed and this will be clearly stated on the label.
The 3 pin UK mains input plug contains a replaceable fuse. The rating of this fuse is shown on the charger label.

⚠WARNING!

- Always replace with the same type and size of fuse as specified. Fitting of different fuses can result in damage to the charger or failure of the charger to operate properly.

If your charger has been specified for use in Continental Europe it will contain a European two pin plug which does not have a fuse. In this case the fuse is located inside or on the fascia panel of the charger.

10.9 Connecting the charger and charging

The wheelchair can be charged via the charger socket at the front of the VR2 remote control. (Fig.10.7).
Connect the charger to the mains supply by means of the mains plug and switch on.

⚠CAUTION!

Do not leave the charger connected to the battery with the mains disconnected or switched off. This could result in damage to your battery being caused by deep discharge over a period of time.

⚠WARNING!

Always switch the battery charger off at the mains before connecting or disconnecting it to the wheelchair.

Fig.10.7

10.10 Charger safety and caution notes

⚠WARNING!

- The charger is designed for indoor use.
- Do not use outdoors or expose to rain, snow, spray or moisture.
- When buying replacement batteries or charger, always consult your Sunrise Medical service agent.
- The charger may be used with other brands of Gel type batteries, subject to written confirmation from the Technical Department of Sunrise Medical.

10.11 The range of your vehicle

Most manufacturers of mobility products state the range of their vehicles either in the sales literature or within the Owner's Manual. The range stated sometimes differs from manufacturer to manufacturer even though the battery size is the same. Sunrise Medical measure the range of their vehicles in a consistent and uniform manner, but variances still occur due to motor efficiencies and overall product load weight.
The range figures are calculated to I.S.O. Standard 7176. Part 4: Wheelchair Energy Consumption Theoretical Range

This test is carried out in controlled conditions with new, fully charged batteries, on a level test surface and a user weight of 100 kg.
The range figures stated should be seen as a theoretical maximum and could be reduced if any single, or combination, of the following circumstances occur:

- User weight heavier than 100 kg.
- Batteries whose age and condition are less than perfect.
- The terrain is difficult e.g. very hilly, sloping, muddy ground, gravel, grass, snow and ice.
- The vehicle climbs kerbs regularly.
- The ambient temperature is very hot or very cold.
- Incorrect tyre pressures in one or more tyres.
- Lots of start/stop driving.
- Also thick pile carpets within the home can affect range.
- Use of additional power consumption options (e.g. light, actuators, etc.)

The battery sizes available on each Sunrise Medical product should give sufficient range to cope with the majority of customer's lifestyles.

10.12 Battery warranty

Battery warranties are subject to periods set by the manufacturers. However, most of these warranties are subject to a wear and tear clause, and if you genuinely wear out your batteries in 6 months, it will not be possible to obtain a replacement under warranty.

⚠ WARNINGS!

- To reduce the risk of damage to electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.
- Make sure the cord is located so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.
- An extension cord should not be used unless absolutely necessary.
- Use of an improper extension cord could result in a risk of fire and electric shock.
- If any extension cord must be used, make sure the pins on the plug of the extension cord are the same number, size and shape as those of the plug on the charger; and that the extension cord is properly wired and in good electrical condition.
- Do not rest a battery on top of the charger.
- Do not stand the charger on a carpet or other soft surface. Always place it on a hard flat surface.
- Do not operate the charger if it has received a sharp blow, been dropped or otherwise damaged in any way. Take it to a qualified technician.
- Do not disassemble charger; only have it repaired by the manufacturers. Incorrect re-assembly may result in a risk of electric shock or fire.
- To reduce the risk of an electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning. Turning off the controls will not reduce the risk.
- Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
- Never smoke or allow a spark or flame in the vicinity of battery or charger.
- Be extra cautious to reduce the risk of dropping a metal tool onto the battery. It could spark or short circuit the battery or other electrical parts that may cause an explosion. Also take off all personal metal effects and dangling objects when working on the battery.
- Never charge a frozen battery. A fully charged battery will rarely freeze but the electrolyte of a discharged battery can freeze at -9° Centigrade.
- Any battery that is suspected of being frozen should be thawed completely before charging.
- Never sit with the charger on your lap when charging your batteries.
- The charger casing will get hot during its normal operation.

11.0 Transportation

A wheelchair secured in a vehicle will not provide the equivalent level of safety and security of a vehicle seating system. Sunrise Medical recommends that the user transfers to the vehicle seating and uses the vehicle-installed restraint system wherever possible. Sunrise Medical recognises that it is not always practical for the user to be transferred and in these circumstances, where the user must be transported whilst in the wheelchair, the following advice must be followed:

11.1 Transportation warnings:

⚠WARNINGS!

- The occupied wheelchair must be located in a forward facing position and secured by the wheelchair tie down and occupant restraint straps (WTORS), meeting the requirements of ISO 10542 or SAEJ2249 in accordance with the WTORS manufacturer's instructions. Refer to the section 'Tie Down Instructions' for further information on transporting your wheelchair.
- The wheelchair's use in other positions within a vehicle has not been tested e.g. transportation in a side facing position must not be carried out under any circumstances, (Fig 11.1).
- Wherever possible remove and stow safely away from the wheelchair, all auxiliary equipment, for example, Kerb climbers, Tray tables, Crutches & Loose cushions.

⚠WARNINGS!

- Alterations or substitutions must not be made to the wheelchair securement points or to structural and frame or components without consulting the manufacturer. Failure to do so will invalidate the ability of the wheelchair to be transported within a vehicle.
- The wheelchair should be inspected by a Sunrise Medical authorised dealer before re-use following involvement in any type of vehicle impact.

⚠WARNING!

- Both pelvic and upper torso restraint belts must be used to restrain the occupant to reduce the possibility of head and chest impacts with the vehicle components, (Fig 11.2).

⚠WARNINGS!

- This wheelchair has been successfully crash tested. Sunrise Medical recommends that you use a suitably positioned headrest when being transported in the wheelchair. However it is highly recommended that as a preference you transfer from your wheelchair to a seat within the motor vehicle.
- Postural supports (lap straps, Anterior Pelvic Supports) should not be used or relied on for occupant restraint in a moving vehicle unless they are labelled as meeting the requirements specified in ISO 7176-19:2008 or SAE J2249.
- Spill proof sealed batteries such as "gelled electrolyte" or "AGM" must be installed on powered wheelchairs when used in a motor vehicle.

Fig.11.1

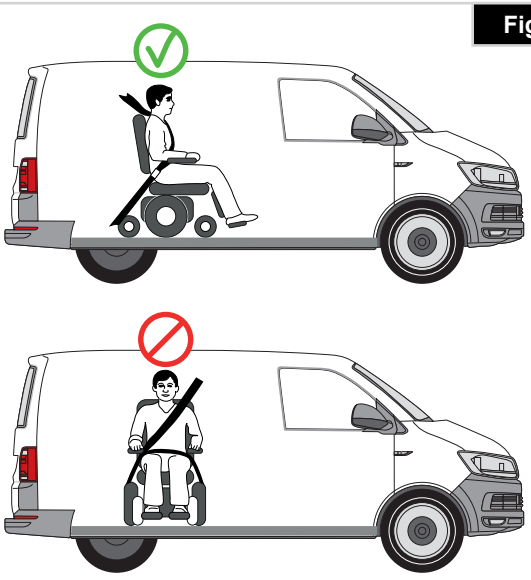
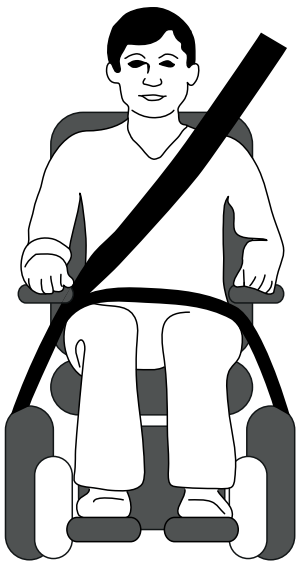


Fig.11.2



11.2 Occupant restraint instructions

⚠WARNINGS!

- The pelvic restraint belt must be worn low across the front of the pelvis (Fig 11.2) so that the angle of the pelvic belt is within the preferred zone of 30° to 75° to the horizontal, (Fig 11.3).
- A steeper (greater) angle within the preferred zone is desirable i.e. closer to, but never exceeding 75°.
- Restraint belts must not be held away from the body by wheelchair components or parts such as the armrests or wheels, (Fig 11.4).
- The upper torso restraint belt must fit over the shoulder and across the chest as illustrated, (Fig 11.5).
- Restraint belts must be adjusted as tightly as possible consistent with user comfort.
- Restraint belt webbing must not be twisted when in use.

⚠WARNINGS!

Restraints should not be held away from body by wheelchair components such as armrests or wheels.
Headrest should be positioned to support the back of the head fully and not rest in the nape of the neck.
Pelvic restraints should make full contact across the front of the body near the junction of the thigh and pelvis

11.3 Special shipping requirements:

The wheelchair may be transported by road, rail, sea or air and the batteries conform to IATA regulations.

⚠CAUTION!

Before you travel, please contact the appropriate carrier. The travel operator will be able to supply details of any special requirements/instructions.

- Ensure that any detachable parts are secured with your mobility aid or separately packed and labelled so they do not get lost during loading and unloading.
- Take this Owner's Manual with you.
- The carrier will need to refer to the following sections.
- How to lock/unlock the Joystick, (Section 7).
- How to disconnect the batteries, (Section 10).
- How to disconnect the drive, (Section 5).

Fig.11.4

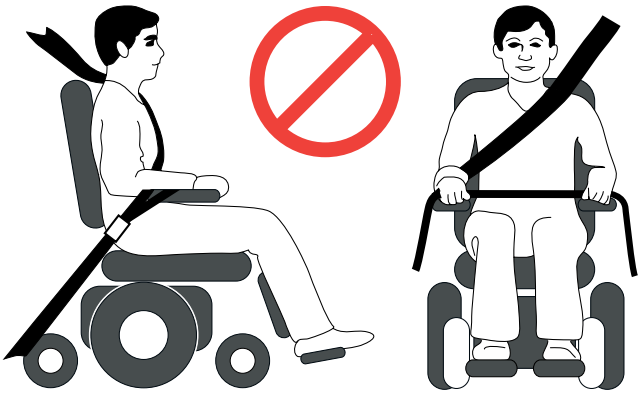


Fig.11.3

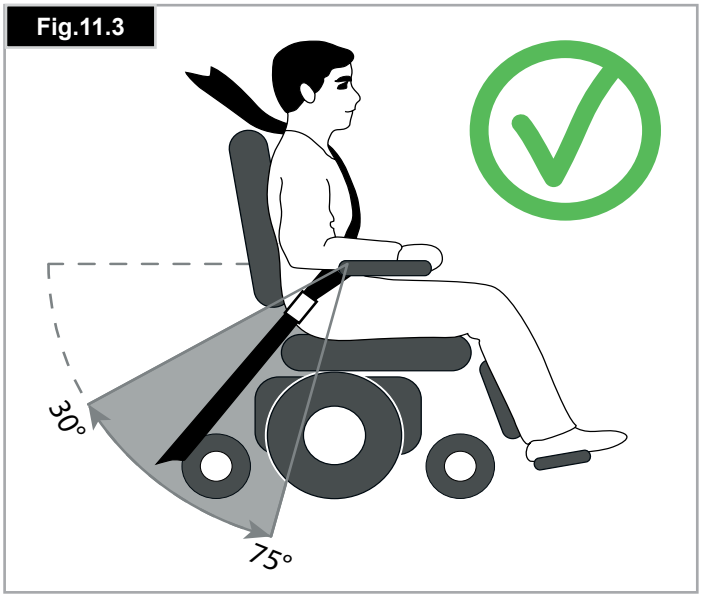
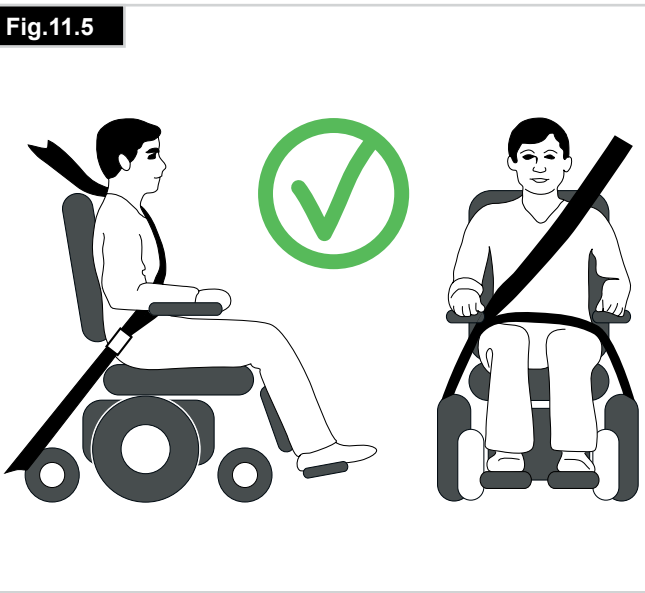


Fig.11.5



11.4 Crash testing on the Hula.

A representative Hula wheelchair has been tested in accordance with the dynamic performance requirements specified in ISO 7176-19:2001 “Wheeled Mobility Devices for use in Motor Vehicles” using an Unwins 4 point strap restraint system, (two at the front and two at the rear), that conforms to ISO 10542 or SAE J2249 and was used in accordance with the WTORS manufacturer’s instructions.

The Unwin restraint system was used for these tests. However other restraint systems can be used as long as they conform to ISO 10542 or SAE J2249 and are used in accordance with the WTORS manufacturer’s instructions. They must also be checked to make sure that they are sufficiently specified for the weight of the wheelchair and rider

⚠WARNINGS!

- All restraint systems must conform to ISO 10542 or SAE J2249.
- All restraint systems must be used in accordance with the WTORS manufacturer’s instructions.
- All restraint systems must be checked to make sure that they are sufficiently specified for the weight of the wheelchair and rider

11.5 The tie down label and strap placement

The label shown in Fig 11.6 is used to identify the tie down points on all wheelchair models.
Fig. 11.7 - 11.10 show the tie down label positions and the tie down strap placements.

Fig.11.6

Fig.11.7

Fig.11.8

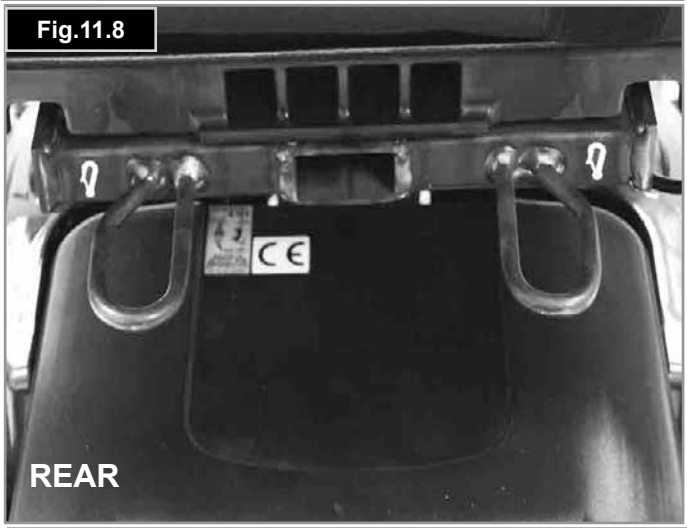
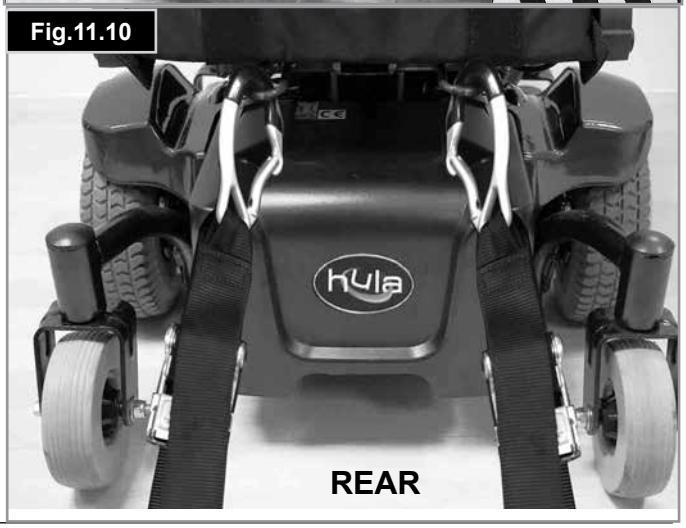


Fig.11.9

Fig.11.10



11.6 Securing the wheelchair into the vehicle (Fig. 11.7-11.10)

⚠WARNING!

All Hula wheelchairs require a four-point tie down system for transportation as shown in the photographs.

On the left rear side:
Use one of the rear tie down restraints, attach it as close as possible on the left rear mounting bracket to an angle of 45°, and tighten securely in accordance with the restraint manufacturers' instructions.

On the right rear side:
Repeat with the remaining strap and attach to the right rear mounting bracket.

At the front:
Attach one front strap to each front tie down point obtaining an angle as close to 45° as possible.

⚠WARNINGS!

- If fitted all electric seating options must be returned to the home position. The seat lift must be fully down.
- Always make sure that the wheelchair freewheel levers are in the DRIVE position and are not left in freewheel.

12.0 Maintenance and Cleaning

⚠CAUTION!

It is important that you follow the following cleaning and maintenance schedule in order to keep your wheelchair in tip top condition.

12.1 Tyre wear

⚠WARNING!

- Only solid tyres are fitted and these need to be checked before use.
- Bald or damaged tyres can cause reduced traction, these problems can lead to loss of control of the wheelchair.
- When inspecting the tyres for signs of wear, look for significant scuff marks, cuts and a diminished tyre tread.
- Tyres will need to be changed when damage is evident or if the tread cannot be seen over the complete surface of the tyre.

12.2 Drive wheel replacement

⚠WARNING!

Wheel removal and refitting is a safety critical task, please contact your Sunrise Medical authorized dealer should replacements be required.

To remove the Drive Wheel
- Ensure that the wheelchair brake release levers are in the DRIVE position.
- With the drive wheels still on the ground, use a 17.0mm socket wrench to partially loosen the centre nut, (Fig.12.1).
- Lift the wheel off the ground & secure the wheelchair with blocks or stands, (Fig.12.2).
- Remove the loosened centre nut, (Fig12.3).
- Lift the drive wheel off the axle, (Fig.12.4).
- Remove the Shaft Key and keep it in a safe place, (Fig.12.5).

To refit
- Slide the wheel onto the drive shaft.
- Align the square cut out on the drive shaft with the square cut out in the wheel hub, (Fig.12.6).
- Carefully slide the shaft key back into the square cut out, (Fig.12.7).
- Partially tighten the centre nut to hold the wheel in place.
- Remove the blocks and carefully lower the wheelchair on to the ground.
- Tighten the centre nut fully up to a torque of 25Nm.

Fig.12.1

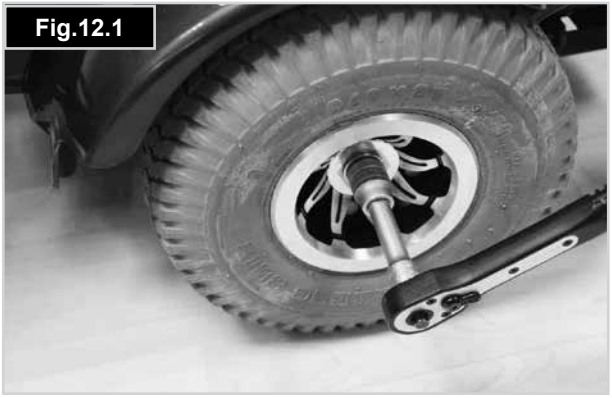


Fig.12.2

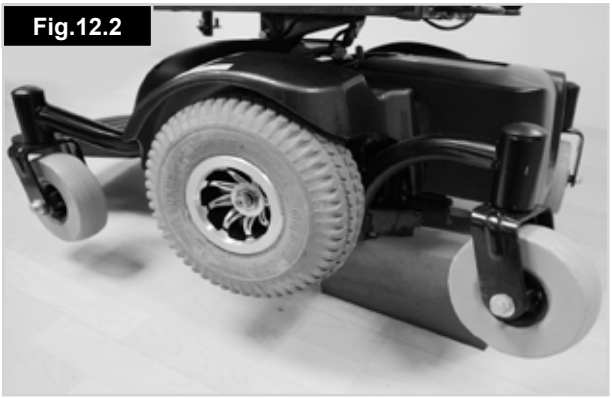


Fig.12.3

Fig.12.4

Fig.12.5

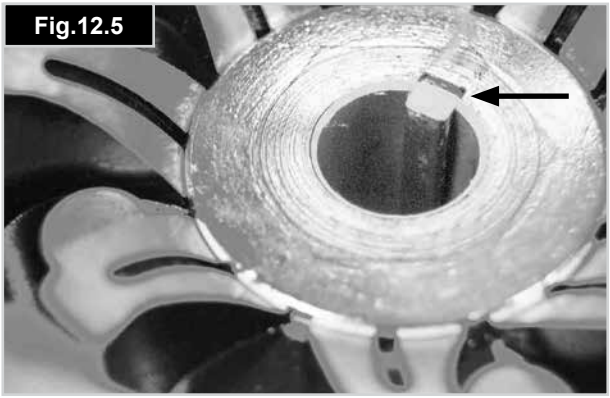


Fig.12.6

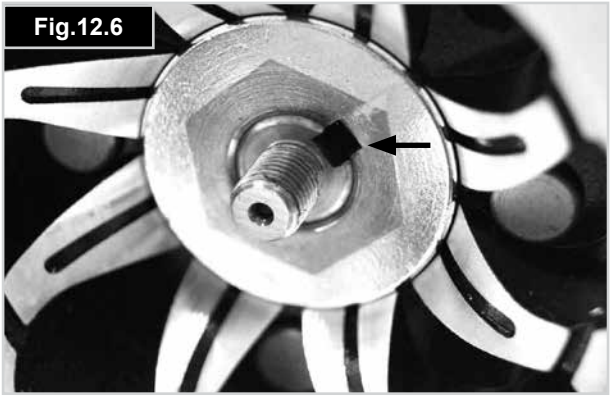


Fig.12.7

12.3 Castor wheel replacement

To remove the Castor Wheel

- Ensure that the wheelchair brake release levers are in the DRIVE position.
- With all wheels still on the ground, use a 17.0mm socket wrench to partially loosen the axle nuts, (Fig.12.8).
- Lift the wheel off the ground & secure the wheelchair with blocks or stands, (Fig.12.9).
- Withdraw the loosened axle stud, (Fig12.10).
- Note that there are spacers between the castor forks and wheel, (Fig.12.11).
- To refit, just reverse the above process.
- Tighten the castor axle stud to a torque of 15Nm.

Please see overleaf for (Fig.12.9-12.11).

Fig.12.8

Fig.12.9

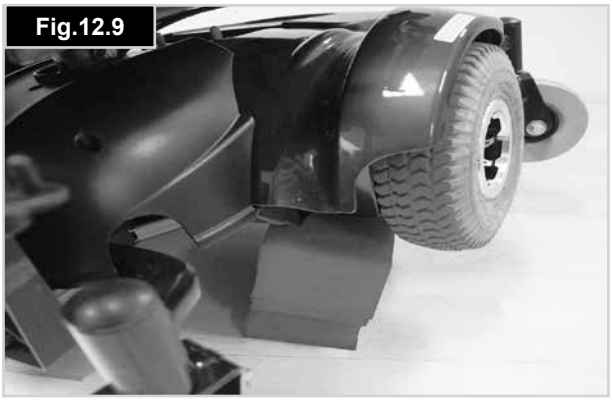


Fig.12.10

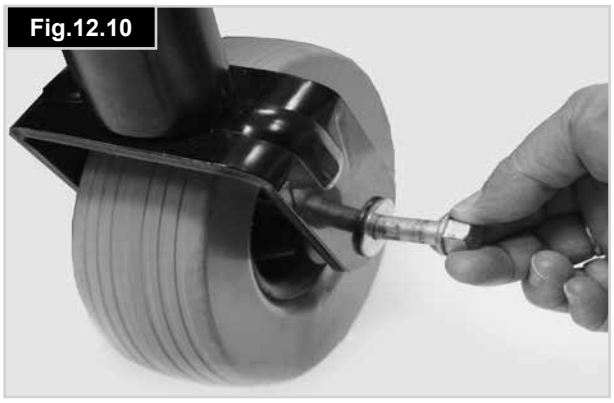


Fig.12.11

12.4 Cleaning your wheelchair

The wheelchair should be wiped over once per week with a slightly damp, not wet, cloth and any fluff or dust that has accumulated around the motors should be blown or dusted away.

Make sure that you dry all parts of your wheelchair if it becomes wet or damp after cleaning or if it is used in a wet or damp atmosphere.

⚠WARNING!

It is important that should the wheelchair be used by more than one person it is cleaned thoroughly to ensure there is no cross infection.

12.5 Inspection of the upholstery/seating

Tears, dents, wearing or slackening of upholstery particularly near to metal could result in poor posture or lower levels of comfort and pressure relief.

12.6 Cleaning seating

- You can wash all parts of the covers with a gentle-wash detergent at 40°C.
- You can spin-dry the covers.

⚠CAUTION!

Do not dry the covers in a dryer.

- You can remove all parts of the covers independently of each other and wash them separately.
- Take out the foam inlays prior to washing and close the Velcro fasteners.
- Where upholstery cannot be removed, clean regularly to prevent build up or soiling.
- Clean with a damp soapy cloth however disinfectants may be used in dilution as specified by their manufacturer. Ensure surfaces are rinsed well with clean water and dried thoroughly.

⚠WARNING

Do not use a hose or a pressure washer to clean your wheelchair.

Some chemical colourings, e.g. ball point pen, food colourings or clothes dyes should be removed immediately to prevent long term staining.

⚠CAUTION!

Do not use solvents, bleaches, abrasives, synthetic detergents, wax polishes or aerosols. Disinfectants may be used in dilution as specified by their manufacturer. Ensure surfaces are then rinsed with clean water and dried thoroughly.

12.7 Cleaning controls

Clean the control system and the joystick with a cloth dampened with diluted detergent.

⚠WARNING!

- Ensure that the control system is turned off and the control pod/joystick loom plug is disconnected, (Section 5.2).
- Be careful when cleaning the joystick.
- Never use abrasive or spirit based cleaners

12.8 Electrical connections

When inspecting electrical connections, pay attention to the battery connections, the connection of batteries to power loom and plug in sockets for the joystick, control box and any powered actuators.

NOTE: All bus connectors, (including the joystick cable), must be secure and firmly mated together.

12.9 Main Controller access

To access the controller:

- Unplug the controller loom plug, (Fig.12.12)
- Remove the seat (Fig. 12.13 & Section 6.9).
- Using a cross head screw driver, undo the three screws located inside the holes in the front shroud, (Fig.12.14).
- Lift the shroud off, (Fig.12.15).
- The main controller is located on the wheelchair frame, (Fig.12.16).

⚠WARNING!

If you are unsure about carrying out this task, ask your authorised Sunrise Medical dealer to do it for you.

Fig.12.12

Fig.12.13

Fig.12.14

Fig.12.15

Fig.12.16

12.10 Shipping & Storage Requirements:
Storage temperature & humidity:
Storage Temperature: Min: -40ºC Max: 65ºC
Relative Humidity (non-condensing): Min:5% Max: 95%
Special shipping requirements:
The wheelchair may be transported by road, rail, sea or air and the batteries conform to IATA regulations.

⚠CAUTION !

Before you travel, please contact the appropriate carrier. The travel operator will be able to supply details of any special requirements/instructions.

- Ensure that any detachable parts are secured with your mobility aid or separately packed and labeled so they do not get lost during loading and unloading.
- Take this Owner's Manual with you.
- The carrier will need to refer to the following sections.
- How to lock/unlock the Joystick, (Section 7.0).
- How to disconnect the batteries, (Section 10.0 , Figs.10.1 - 10.5).
- How to disconnect the drive, (Section 5.0).

Medium to long term storage:
When storing your wheelchair for long periods of time (in excess of one week), follow these simple instructions:
Fully charge the wheelchair for at least 24 hours.
Disconnect the batteries or battery boxes.

⚠WARNING !

Never store your wheelchair;
- Outside.
- In direct sunlight, (plastic parts may discolour).
- Near a source of direct heat.
- In a damp environment.
- In a cold environment.
- With the batteries/battery boxes connected, (even if the controller is switched off).

Avoiding all of the above will minimise battery deep cycle discharge and extend battery lifetime.
When returning the wheelchair to use, please reconnect the batteries/battery boxes and charge the wheelchair for at least 24 hours before use.

12.11 Authorised Sunrise Medical service agents
The annual full service must be performed by an approved Sunrise Medical authorised dealer. For a list of approved authorised dealers in your area please contact Sunrise Medical Customer Service at the address in section 1.0.

12.12 Recommended maintenance routines
(Fig.12.18)

Tools required:
Battery charger, Stiff brush, Petroleum jelly,
Cleaning cloth and dilute disinfectant.

⚠WARNING!

If in any doubt about performing any maintenance on your wheelchair, contact your Sunrise Medical authorised dealer.

Daily checks:
With the control system switched off, check that the joystick is not bent or damaged and that it returns to the centre when you push and release it.

Weekly checks:

⚠CAUTION!

Parking brake:
This test should be carried out on a level floor with at least one metre clearance around the wheelchair.

- Switch on the control system.
- Check that the battery gauge remains on, or flashes slowly, after one second.
- Push the joystick slowly forwards until you hear the parking brakes operate. The wheelchair 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 3 times, pushing the joystick slowly backwards, left and right.

Connectors:

- Make sure that all connectors are securely mated.
- Check for physical damage, (cracks or burning), etc.

Cables:
Check the condition of the cables and connectors for damage, ensuring that no cables can snag or foul any moving parts.

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 components of the control system are securely mounted. Do not over-tighten any securing screws.

⚠CAUTION!

Please refer to the table below, (Fig.12.17), for any information about Torques.

Fastener Matrix	Torque Setting (Nm)
M3 Bolt / Stud	1
M4 Bolt / Stud	2.5 - 3
M5 Bolt / Stud	5 - 6
M6 Bolt / Stud	9 - 10
M8 Bolt / Stud	19 - 20 (15 Nm for all backrest screws)
M10 Bolt / Stud	30 Nm (5Nm on manual & electric backrest recline actuator)
M12 Bolt / Stud	47.5
M16 Bolt / Stud	54
No6 Screw	1.5
Castor fork nut & bolt	20
Castor wheel axle studs	15
Drive wheel hub studs	25

Fig.12.17

The table shown in Fig.12.17 contains generic, (and some specific), torque values set out as an industry standard. There will be specific torque setting required for some tasks. If specific torques are required, the value in each instance will be contained within the text description, title or clearly labelled within the photo.

NOTE: It will be necessary to use a torque wrench.

⚠WARNINGS!

- It is higly recommended that all specific instruction manuals and safety recommendations supplied with the torque wrench, should be read and understood before such equipment is used.
- It is recommended that all mandatory safety procedures are strictly adhered to.
- No responsibility is accepted by Sunrise Medical for any consequence, directly or indirectly, resulting from incorrect use of tools / equipment during any service procedure pertaining to this or other Technical / Workshop Manuals issued by Sunrise Medical.

12.13 Performance checks

After performing any maintenance or repairs on the wheelchair you must make sure that it is functioning correctly before it is used.

- Visually inspect the wheelchair to make sure the legrests, armrests etc are correctly positioned and attached to the wheelchair and all fasteners are sufficiently tightened.
- Make sure that the backrest is correctly fitted and adjusted.
- Make sure that all of the cushions are in place
- Switch on the hand control – Do the lights flash? This signifies that there is a fault in the electronic system. Refer to section 8 for basic troubleshooting.
- Perform the parking brake check.
- Operate all of the electric options, including lights and indicators (if fitted) to make sure that they work correctly.
- With the seating in an elevated position, drive the wheelchair to make sure that the 'creep' mode works which will slow the wheelchair.
- Drive the wheelchair in each of the drive profiles to make sure the wheelchair performs as it did before.

⚠CAUTION!

- If you are in any doubt about the performance requirements of your wheelchair contact your Sunrise Medical authorised dealer.
- 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 authorised Sunrise supplier.
- Frequent maintenance and servicing will improve performance, extend wheelchair life, and help prevent injuries.

Fig.12.18

Maintenance & Inspection Schedule	Daily *	Weekly	Quarterly	Annually
Check battery level indicator and charge if necessary	✵			
Check the joystick of the hand control is not bent or damaged	✵			
Ensure all parts and assemblies are securely fastened	✵			
Checkanterior pelvic support for wear and make sure the buckle is operational	✵			
Motor Brake Test	✵			
Check tyre condition and wheel fasteners.	✵			
Ensure lights and indicators, (where fitted), are operational and clean	✵			
Ensure all cables and connectors are sound and are tidy and out of the way	✵			
Check upholstery, seating, headrests, arm pads and calf pads for wear.	✵			
Inspect all nuts, bolts, studs and fasteners for damage and tightness. Contact your authorised dealer for service assistance.	✵			
Clean wheelchair upholstery		✵		
Check battery terminals for tightness etc.			✵	
Complete inspection, safety check and service should be made by a Sunrise Medical authorised dealer				✵

* Daily = Before each use of the wheelchair.

13.0 Specification sheets (EN 12184 & ISO 7176-15)

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Deutschland
Tel.: +49 (0) 7253/980-0
Fax: +49 (0) 7253/980-222
kundenservice@sunrisemedical.de
www.SunriseMedical.de

Operating temperature: - 25°C to 50°C
Storage temperature: -40°C to 65°C
Moisture resistance: IPx4
No restrictions on humidity and air pressure

Model: Quickie Hula

Maximum occupant mass (test dummy mass): 136 kg

The wheelchair Quickie Hula conforms to the following standards:

a) requirements and test methods for static, impact and fatigue strengths (ISO 7176-8)

b) power and control systems for electric wheelchairs requirements and test methods (ISO 7176-14)

c) climatic test in accordance with ISO 7176-9

d) requirements for resistance to ignition in accordance with ISO 7176-16

e) the product is specified as a Class A power wheelchair

ISO 7176-15	Min	Max	Comments
Overall length (with legrest)	970mm	1050mm	Min with C.M footplate / Max with 80º hangers
Overall width	630mm	670mm	
Folded length	770mm	N.A	Min. stowage length – CM footplate folded up, castors rotated in
Folded height	670mm	N.A	Min stowage height – backrest removed
Total mass (w/batteries)	-	82kg	
Mass of the heaviest part	-	56kg	Chassis minus all non-tool removable parts
Static stability downhill	10.2º	15º+	
Static stability uphill	6.5º	15º+	
Static stability sideways	11.5º	15º+	
Energy consumption (Max. range)	-	29.5 km	
Dynamic stability uphill	6º	-	Maximum Safe Slope
Obstacle climbing	-	50mm	
Maximum speed forward	-	6.5kph	
Min. braking distance from max. speed	1.2m	-	Dep. programming
Seat plane angle	0º	6º	
Effective seat depth	-	508mm	
Effective seat width	406mm	508mm	
Seat surface height at front edge	425mm	500mm	Not inc. cushion and is angle dependant
Backrest angle	-4°	12º	Measured at 0º tilt
Backrest height	460mm	508mm	
Footrest to seat distance	290mm	380mm	With C.M footplate
Leg to seat surface angle	84º	90º	With C.M footplate
Armrest to seat distance	229mm	305mm	No cushion fitted
Front location of armrest structure	410mm	510mm	
Minimum turning radius	575mm	-	With C.M footplate

14.0 Service History

This section is designed to assist you in keeping a record of any service and repairs to your wheelchair. Should you decide to sell or exchange your vehicle in the future, this will prove most helpful to you. Your Service Agent will also benefit from a documented record and this manual should accompany the wheelchair when service or repair work is carried out. The Service Agent will complete this section and return the manual to you. All our scooters, wheelchairs and power wheelchairs undergo rigorous tests to ensure that they meet our requirements of comfort, safety and durability.
Our success is based on the strong traditions of quality, value for money and genuinely caring for our customers. We pride ourselves not only on designing and building the most innovative products but also on our commitment to offer an excellent standard of customer service both during and after sale.

Model					Serial No				
Year	1	2	3	4	Year	1	2	3	4
Date					Date				
Controller					Chassis				
Horn					Tightness of All Fasteners				
On/Off switch					Condition				
Output plug					Steering				
Joystick					Upholstery				
Brakes					Seat				
Programme configuration					Backrest				
Batteries					Armrests				
Level					Electrics				
Connections					Condition of loom				
Discharge level					Connections				
Wheels					Test run				
Wear					Forwards				
Pressure*					Reverse				
Bearings					Emergency stop				
Wheel nuts					Left turn				
Motors					Right turn				
Wiring					Up/Down slope				
Connections					Over obstacles*				
Noise					Parking brake				
Brakes					Note: Only use Sunrise Medical parts for service and repairs				
Brushes									

* Where appropriate

15.0 Disposal/ Recycling

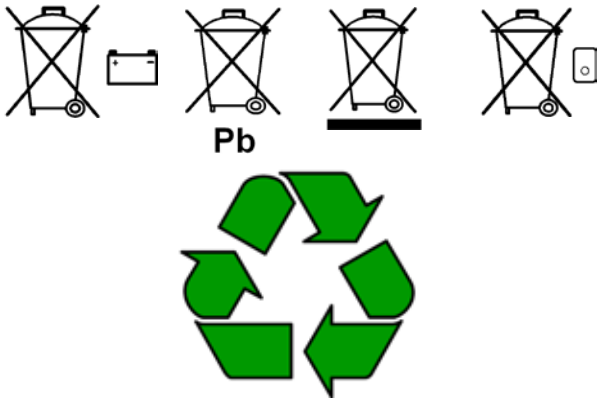
The symbols below mean that in accordance with local laws and regulations your product should be disposed of separately from household waste. When this product reaches the end of its life, take it to the local collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects the environment.

NOTE: Ensure you are the legal owner of the product prior to arranging for the product disposal in accordance with the above recommendations.

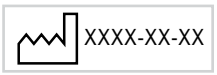
If the wheelchair has been supplied to you free of charge it may not belong to you. If it is no longer required, follow any instructions given by the organisation issuing the wheelchair in order that it may be returned to them.

The following information describes the materials used in the wheelchair in relation to their disposal or re-cycling of the wheelchair and its packaging.
Specific waste disposal or recycling regulations may be in force locally and these should take into consideration when disposal arrangements are made. (This may include the cleaning or de-contamination of the wheelchair before disposal.)

Aluminium: - Drive wheels, footplates, and armrest / backrest castings
Steel: - Chassis, seat and backrest tubing, forks, controller mount, leg rest tubing, seat interface and fasteners
Plastic: - Handgrips, tube plugs, seat pan, shrouds, centre mount footplate, castor wheels and tyres.
Packaging: - Low density polythene bag, cardboard box.
Upholstery: - Woven polyester with PVC coatings and expanded combustion modified foam.
Batteries: Do not attempt to open the batteries. They contain sulphuric acid.
The lead and plastic can be recycled. These should only be disposed of through a specific licensed waste disposal or recycling organisation. Alternatively they can be returned to your dealer for recycling.
Disposal or recycling should be done through a licensed agent or authorised place of disposal. Alternatively your wheelchair may be returned to your dealer for disposal.



16.0 Nameplate

Hula	Product Name/SKU Number.
	Maximum safe slope with anti-tip tubes fitted, Depends on wheelchair setting, posture and physical capabilities of the user.
	Maximum user weight.
	Load Maximum.
	Maximum speed.
	Maximum axle loading.
	CE Mark.
	User's Guide.
	Indicates electrical / electronic equipment must be disposed of in accordance with the WEEE regulation.
	Date of manufacture.
	Serial number.
	This symbol means Medical Device.
	Manufacturer's address.
ISO 7176-19:2008	Crash tested according to ISO 7176-19:2008.

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