CONQUERING HORIZONS
Open Your World

Omni

USER MANUAL



v.2.1

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Introduction

Congratulations on the purchase of your new powered wheelchair, **Omni**, manufactured by Conquering Horizons. We hope that you will enjoy many years of use as well as the additional freedom and enhancements to your lifestyle and the independence that this product offers.

This manual contains all the information you will need to ensure the safe use and maintenance of Omni and contains important information on:

- Setup
- Operation
- Transport
- Maintenance

The information contained herein is subject to change without notice.

Please refer to the online User Manual for the most recent updates.

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Omni is the first of its kind and provides its users with unparalleled levels of mobility, functionality, and reliability. The device has been designed to accommodate users who have all limbs intact, and who possess sufficient upper body strength to support themselves without the need for additional upper body support or straps. If you do not meet these criteria please consult Conquering Horizons, and your Occupational Therapist for advice.

Use is restricted to persons who are mentally and physically able to control an input device (such as the joystick, mode selector, and buttons) to operate Omni and its functions in a safe way.

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.



Warning - MAXIMUM WEIGHT. The powered wheelchair has a maximum user weight limit of 130kg.

Omni is designed for daily use by an individual and is suitable for both indoor and outdoor use.

This user manual provides important information relating to the correct and safe use and care of the device and you are strongly encouraged to read this document in full. Please ensure that you understand all aspects of this manual before attempting to use Omni. If you have any questions, please contact Conquering Horizons who will be pleased to help.

Omni is a Class C device in accordance with EN12184 and a Class III Mobility Device in accordance with the UK Road Traffic Act. It can be legally used on the road as well as the pavement, noting the maximum allowable top speed for each. The correct mode should be selected to ensure compliance.

Omni must be configured to suit each individual user before it can be operated safely. See section *Setting up* for further details.

Please ensure that the maintenance activities described in *Maintenance* are conducted routinely, as described, and that any faults detected are rectified at the earliest opportunity. Any alteration, modification, un-authorised repair, or fitment of un-approved accessories may result in reduced safety and may also invalidate your warranty.

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What's in the box

Your new Omni wheelchair is ready to go and is delivered with the following items:

- Seat cushion
- 5mm Hex key (to check wheel fixings)
- 6mm Hex key (to move seat to access fuses if required)
- PRO-ACTIVE 300 battery charger, fitted with a UK type plug



Important - Before using Omni ensure you have read and understood the guidance contained herein. Please direct any questions to Conquering Horizons or an approved agent.

Use of this manual

This publication provides operating instructions for the Powered wheelchair, 'Omni', and details the location, function, and safety aspects of the controls, switches, and equipment.

The users of the device must read and understand the instructions covered in this manual before operating the device.

This publication contains warnings, cautions, important information boxes, and notes. This information is notated and should be interpreted in the following way:



Warning

A warning draws attention to the risk of injury or death.



Caution

A caution draws attention to the risk of damage to equipment.



Important

Important information boxes draw attention to critical aspects of a procedure.

Notes

Notes are added to give useful additional information.

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Definitions

The following definitions are used within this document:

RH	Right hand side when viewed by a seated user
LH	Left hand side when viewed by a seated user
Double-tap	Quick succession of two matching actions to enable the required action
Nm or ft-lb	Torque settings: Newton-metres or Foot-Pounds
mode	Omni has two operational modes – road and Pavement, each are described under 'Operation'

This document assumes Right Hand Drive; adapt instructions for Left Hand Drive configurations.

Declaration of conformance

As a Class I medical device, Omni has demonstrated compliance with the following:

- The Medical Devices Regulations 2002
  UK Statutory Instruments 2002 No. 168
  to include The Medical Devices (Amendment)(GB) Regulations 2023,
  UK Statutory Instruments 2023 No. 627

- BS EN 12184:2022
  Electrically powered wheelchairs, scooters and their chargers
  and references therein as applicable

The battery system has been tested to the following:

- U.N. Manual of Tests and Criteria, Sub-section 38.3
  Lithium-metal and lithium-ion batteries

Omni is classified by the UK DVLA as a UK Class 3 Powered wheelchair with a maximum speed of 4mph (pavement) and 8mph (road) and is required to be registered with the DVLA for use in the UK[1]. The device complies with The Road Vehicle Lighting Regulations 1989.

[1] Class 3 powered wheelchairs (capable of 8 mph, for road and pavement use) must be registered with the DVLA using form V55/MV. Registration is free, but requires proof of "newness" and vehicle details. Submit the form to DVLA, Swansea, SA99 1BE. Reference https://www.gov.uk/mobility-scooters-and-powered-wheelchairs-rules/vehicle-tax-registration-and-insurance
Conquering Horizons provide the required documents and will assist with this process.

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Safety



Important - The user must read and understand the following Safety information before operating the device. If you are in any doubt or have questions about any of the following safety information, do not hesitate to contact Conquering Horizons before attempting to operate the device.

The user of the device is responsible for understanding and complying with the applicable local safety regulations and guidelines.

The device has moving and rotating parts under power. Contact with the moving parts by the user, other people including children, or animals may result in serious injury or damage to the device.

The user must adhere to the following whilst operating the device:

Do not wear baggy or loose clothing that could become trapped in any mechanism or wheel of the device (with the seat and footrest in any position).

Do not carry bags or other loose items that could become trapped in any mechanism or wheel of the device (with the seat and footrest in any position).

Do not operate the device under the influence of alcohol or non-prescription drugs.

Do not operate the device if under the influence of any medication that could affect your ability to operate the device safely.

Do not operate the device with more than one person. No more than one person is to be seated in the device at any time.

Do not allow children to operate the device unsupervised.

Do not allow children to ride on or play on or around the device.

Extreme care must be taken when manoeuvring the device if the seat height is above the minimum, especially when at height. The stability of the device can be compromised when elevated. **Only operate on smooth and level ground.**

Do not operate the device if you have poor eyesight.

Avoid physical contact with hot components on the device. The motors can reach high temperatures during continuous prolonged use. If the device is exposed to direct sunlight for extended periods of time, some parts, such as the seat, seatbelt buckles, backrest and the armrests, may become hot, potentially causing burns.

Risk of crushing or entrapment. Care must be taken when raising, lowering or tilting the seat as there is an increased risk of crushing or entrapment. The user must ensure the areas are clear before operation.

Incident reporting

Omni is a Class I medical device. Please report any fault or perceived fault to Conquering Horizons without delay to allow us to make any necessary changes or improvements for yourself and others. Refer to Contact section in this document for details.

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Warranty

THE GUARANTEE FOR THIS DEVICE DOES NOT AFFECT YOUR STATUTORY LEGAL RIGHTS IN ANY WAY.

Conquering Horizons provide a guarantee, as set out in the following warranty conditions, for the powered wheelchair 'Omni'.

Warranty conditions

Should a part or parts of the device require repair or replacement as a result of a manufacturing and/or material fault within 24 months or for frame and cross-braces within 5 years after delivery to the customer, then the affected part or parts will be repaired or replaced free of charge. The warranty will only cover manufacturing defects.

To claim under the warranty, please contact Conquering Horizons with the exact details of the nature of the issue.

For parts which have been repaired or exchanged within the scope of this warranty, Conquering Horizons provide a warranty in accordance with these warranty conditions for the remaining warranty period for the device.

For original spare parts which have been fitted at the customer's expense, these will have a 12-month guarantee (following the fitting), in accordance with these warranty conditions.

Claims from this warranty shall not arise if a repair or replacement of a device or a part is required for the following reasons:

- Normal wear and tear, which include batteries, armrest covers, upholstery, tyres, brakes shoes, etc.
- Any overloading of the product, please check the EC label for maximum user weight.
- The product or part has not been maintained or serviced in accordance with the manufacturer's recommendations as shown in the user instructions and/or the service instructions.
- Accessories have been used which are not specified as original accessories.
- The device or part having been damaged by neglect, accident or improper use.
- Changes/modifications have been made to the device or parts, which deviate from the manufacturer's specifications.
- Repairs have been carried out, before our Customer Service has been informed of the circumstances.

This guarantee is subject to the law of the country in which the product was purchased from Conquering Horizons.

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Environment

Omni is designed for an assumed lifespan of five operational years, although this is heavily influenced by the amount of use that the device is subjected to.

If your device has become superfluous or needs to be replaced, it can usually be taken back by Conquering Horizons in consultation. If this is not possible, please ask your local authority about the possibilities for recycling or environmentally friendly disposal of the materials. Various plastics and metals were used in the manufacture of the device.

Furthermore, the device contains electronic components that should be disposed of as electronic waste. The batteries should be disposed of as chemical waste. A disposal fee is not applied to the device.

Accessories and modifications

Certain accessories may be available for Omni. Please contact Conquering Horizons for further details of those currently available, or if you have a specific requirement.

No unauthorised modifications should be carried out on your device without written consent of Conquering Horizons. Any modifications completed without consent may invalidate your warranty and may also result in reduced performance, functionality, and safety.

Electromagnetic interference

The device has been successfully tested to show compliance to the Electromagnetic Interference regulations in accordance with the relevant international Standards. However, electromagnetic fields are presented by many other devices which could influence the behaviour of the powered wheelchair, therefore please observe the following precautions.



Caution - Electromagnetic Interference may cause unintentional behaviour of the device. If the powered wheelchair should exhibit unintentional behaviour, switch it off immediately.

- Do not switch on or operate portable transceivers or communication devices (such as radio transceivers or mobile telephones) whilst the powered wheelchair is switched on.
- Avoid getting too close to strong emissions such as those from radio and television transmitters or electronic article surveillance systems.
- The addition of electrical accessories or modification of the device may make it susceptible to electromagnetic interference and damage.
- Any occurrence of unintentional behaviour should be reported to the manufacturer.

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Setting up

This section covers adjustment of Omni to achieve the greatest level of comfort & support for the user.

Omni is designed to be adjustable for a wide range of users:

- The seat pad is adjustable in width and length.
- The rear pads can be angled, bought forwards, adjusted to the spinal profile of the user and are adjustable in width.
- The footrest is adjustable in height and footplate rake.
- The armrests are adjustable in height, width, length, side-to-side rotation and tilt.
- The armrest covers are adjustable in tilt.
- The arm controls are reversable for left or right handed use (during build).
- The shoulder pad can be angled, bought forwards, adjusted to the spinal profile of the user and is adjustable in width.
- The headrest pad is adjustable in height, angle and tilt and can be folded back into the seat when not required.

The configuration is individual-specific and should be set in accordance with the user's assessed clinical and postural requirements. Initial setup should be performed in collaboration with a qualified Occupational Therapist (OT) to ensure appropriate fit, postural alignment, pressure distribution, and functional performance.

Subsequent adjustments may be required in response to changes in the user's clinical condition, functional capacity, or mobility status.

Additional examples of adjustable parameters include, but are not limited to:

- Forward spacing of the seat back to accommodate user anthropometry
- Provision of enhanced lateral support through side shells and pads
- Adjustment of headrest size, position, and contour



Caution – All fixings must be securely tightened after adjustment.

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Tool kit

The tools required for setting up and general maintenance of Omni are described below.

- 4mm Hex key
- 5mm Hex key
- 6mm Hex key
- Plastic pry bar
- Torque wrench and hex key bits, range 10nm to 30nm

Seat backrest adjustment

The seating system allows for optimum support of the body and can be adjusted in the following ways:

- The seat back can be adjusted for rake angle.
- The backrest slats can be adjusted for width.
- All backrest slats can be adjusted fore and aft.
- All backrest slats can be adjusted for angle

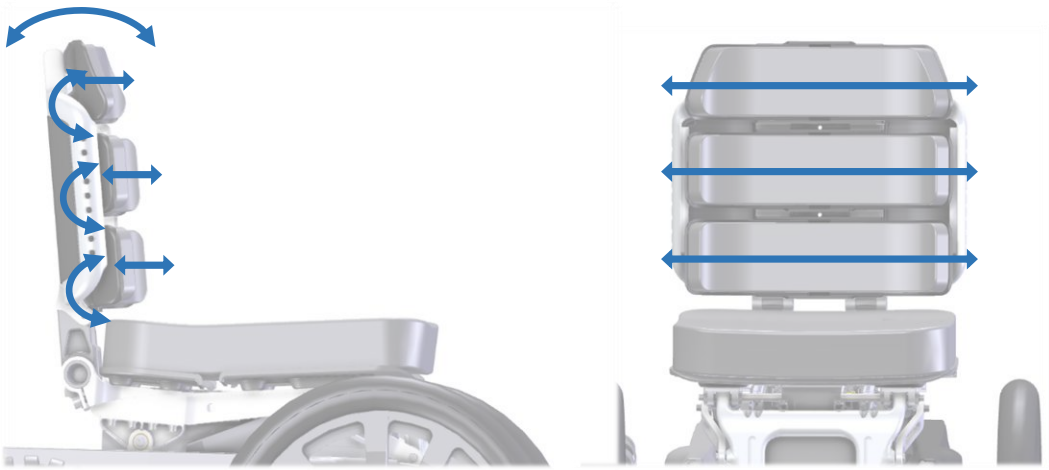


Figure 1 Seat backrest adjustments (arms removed)

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Backrest rake adjustment

1. Ensure that the backrest is fully unfolded back and that the two backrest securing thumbscrews are tight.
2. Whilst supporting the backrest, slacken the four M10 bolts (1) using a 7 mm Hex key.
3. Move the backrest to the desired angle.
4. Progressively retighten the four bolts (a) to 30 Nm / 22 ft-lb.

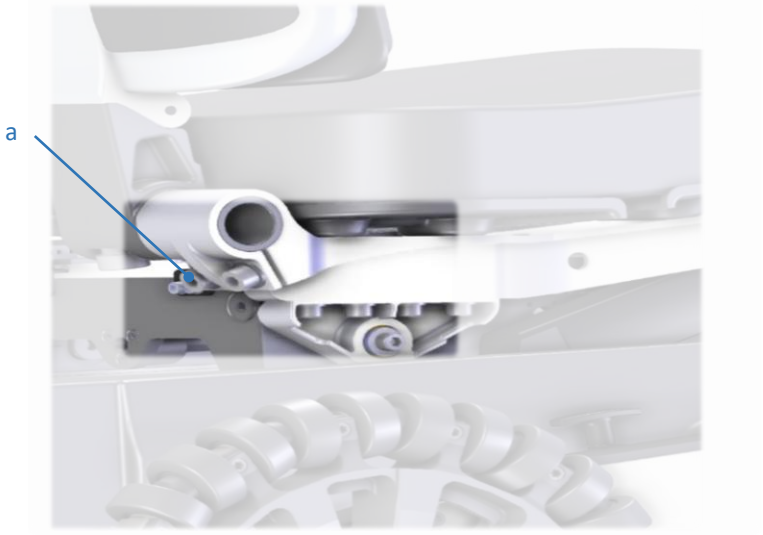


Figure 2 Backrest rake adjustment (RH side shown)

Backrest slat width adjustment

1. Remove the fasteners for the appropriate slat(s).
2. Reposition slats to desired width.
3. Refit and retighten fasteners (do not overtighten).

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Backrest slat fore and aft adjustment

1. Remove the fasteners for the appropriate slat(s).
2. Fit or remove shims as required (equal quantity on both sides).
3. Reposition slats to desired width where applicable.
4. Refit fasteners.
5. Adjust to desired angle.
6. Retighten fasteners (do not overtighten).

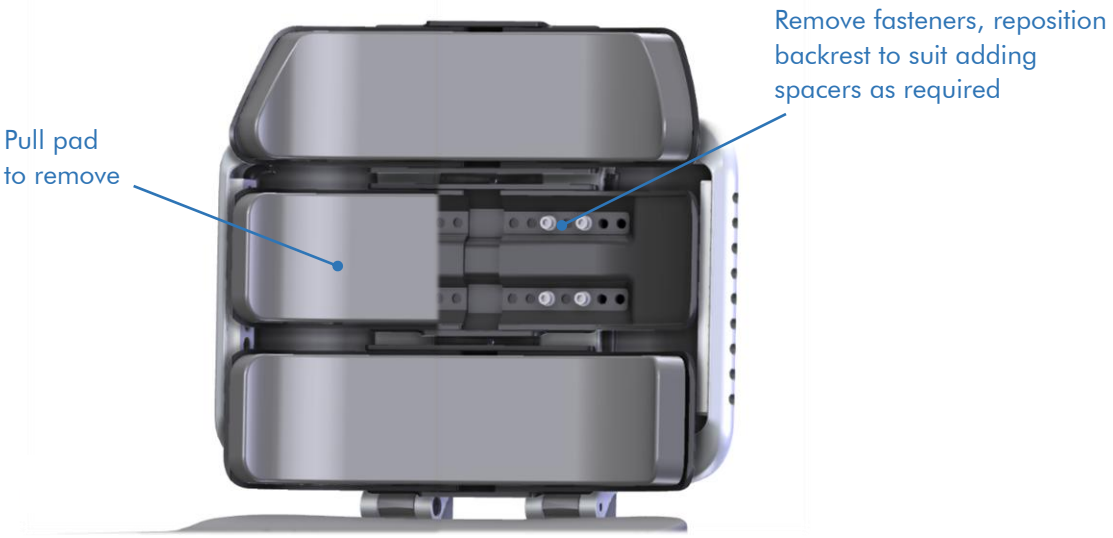


Figure 3 Backrest slat width and fore / aft adjustment

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Backrest slat angle adjustment

1. Using spacers between the slat and the seat upright, the slats can be adjusted to suit the curvature of the users back or provide support as required.
2. Remove the appropriate fastener(s).
3. Add spacer washers between the slat and seat upright to create the desired angle.
4. Replace and retighten the fasteners (do not overtighten).



Figure 4 Backrest slat angle adjustment

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Armrest adjustment

The armrest system allows for optimum support and can be adjusted in the following ways:

- Armrest height
- Armrest side-to-side rotation
- Armrest length
- Armrest angle (see User Settings)
- Armrest cover tilt
- Armrest width

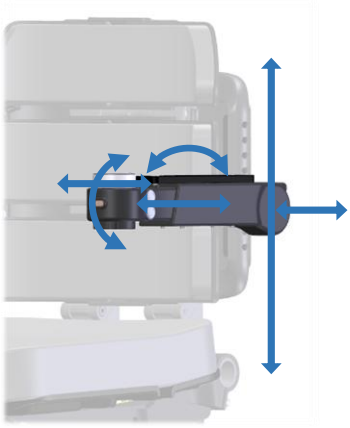


Figure 5 Armrest adjustments

Adjustments are detailed in subsequent sections of the document.

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Armrest height, side-to-side rotation and width adjustment

1. Determine the ideal height, side-to-side rotation and width position for the armrests.
2. Carefully pry off the rear seat wing covers to allow access to the armrest attachment fasteners.
3. Whilst supporting the armrest, remove securing bolts (a).
4. Move the arm to the desired height, taking care not to stretch, cut or trap the wiring. Any spare cable can be pushed into the armrest or freed from the armrest to allow for movement.
5. Fit spacers (b) to desired width (contact Conquering Horizons for required components).
6. Re-fit (a) in the chosen position but do not fully tighten at this stage.
7. Adjust side-to-side rotation to suit.
8. Tighten securing bolts to 30 Nm / 22 ft-lb.
9. Repeat procedure for opposite armrest.
10. Re-fit seat wing covers.



Figure 6 Armrest height and side-to-side rotation adjustment

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Armrest length adjustment

1. Determine the ideal length of the armrest to ensure the user can use the joystick and display controller comfortably and provide the correct level of support to the users' arms.
2. Remove the upper armrest cover (a) screws.
3. Remove the upper armrest fixing screws and slide the forward section of the armrest to the desired position.
4. Re-affix the upper armrest fixing screws to the nearest position.
5. Re-affix the armrest upper cover.
6. Repeat procedure for the opposite armrest.

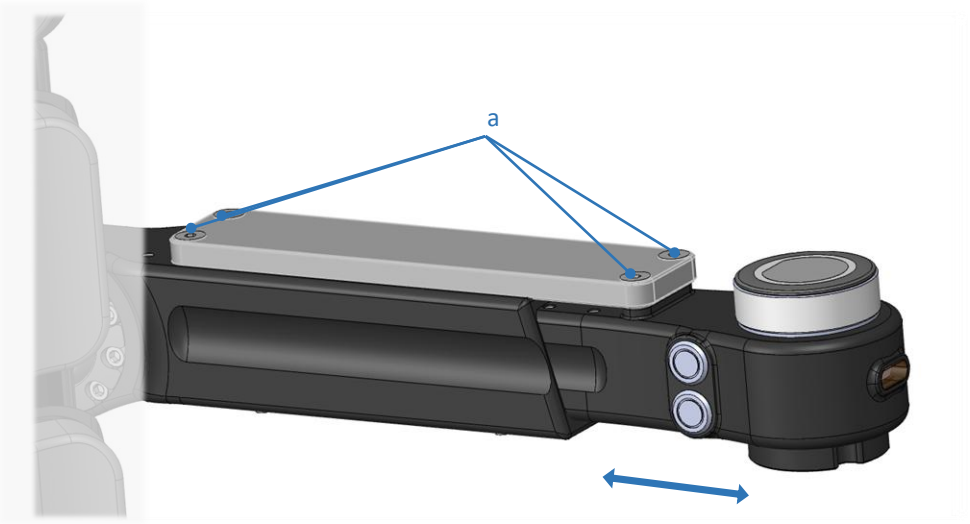


Figure 7 Armrest length adjustment

Armrest cover tilt adjustment

The armrest cover can be tilted to suit the individual user.

1. Remove the cover securing screws.
2. Add washers between the cover and arm on one side to achieve the desired tilt.
3. Replace the cover securing screws.

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Footrest adjustment

The footrest legs can be adjusted in the following way:

- Height in relation to the seat base
- Footplate angle



Figure 8 Footrest adjustments

Footrest height adjustment

1. Ensure that the device is parked on firm level ground and the footplate sits horizontally when deployed (adjust if required).
2. With the occupant sitting comfortably in the seat, place their feet on the footplate in the folded down position.
3. If the default footplate height is found to be ideal no further adjustment is required.
4. If the default footplate height is found not to be ideal, raise feet from footplate and allow the footplate to fold up.
5. Using an appropriate chocking method (which allows adjustment beneath the occupant's feet in increments of 10 mm), alter the foot position until the optimum height is found.
6. The occupant can now leave the seat.
7. Accurately measure the height of the top of the chock from the ground and record the value.
8. Fold the footplate down and measure from the upper surface of the footplate to the ground. Record this value.

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9. The difference between these two measurements represents the height adjustment required to achieve the optimum position for that user.

Note

Height adjustment is achievable in increments of 10 mm only.

10. To add or remove spacers, firstly remove the seat cushion pad to aid access and to remove the risk of damage.

11. Support the underside of the footplate and loosen the four M8 bolts (using a 6 mm Hex key) until the footplate and legs detach from the footrest upper bracket.

12. Select an appropriate number of additional spacers if spacers are to be added, or remove existing spacers as required. (Note: both footrest leg lengths must be equal. Ensure that there are an equal number of spacers used on both footrest legs).

13. Reassemble in the reverse order. (Note: tighten bolts in sequence, moving from one leg to the other. Hold or support the underside of the footrest to ensure that it is pulled up square.

14. Once all four bolts have been hand-tightened until a small amount of resistance is felt, further tighten each bolt incrementally, and in sequence, to a value of 24 Nm / 17.1 ft-lb.

15. Replace the seat cushion and confirm the new height setting with the user.



Figure 9 Footrest height adjustment

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Footplate angle adjustment

Once the height of the footrest has been set, the optimal angle for the footplate can be found.

1. Loosen the footplate angle fixings.
2. Sit the user in the seat.
3. Remove the footplate angle plates.
4. Fold the footplate down and place the users' feet upon it.
5. Manually alter the angle of the footplate until its comfortable for the user.
6. Once the ideal position is found re-affix the footplate angle plates to lock the angle adjustment closest point to the required position.
7. Tighten the footplate angle fixings to 10 Nm / 7.3 ft-lb.
8. This is the new default resting position for the deployed footplate. Release of the footplate will cause it to rotate upwards into a stowed position.
9. The footplate angle can be adjusted again at any time by following the procedure above.

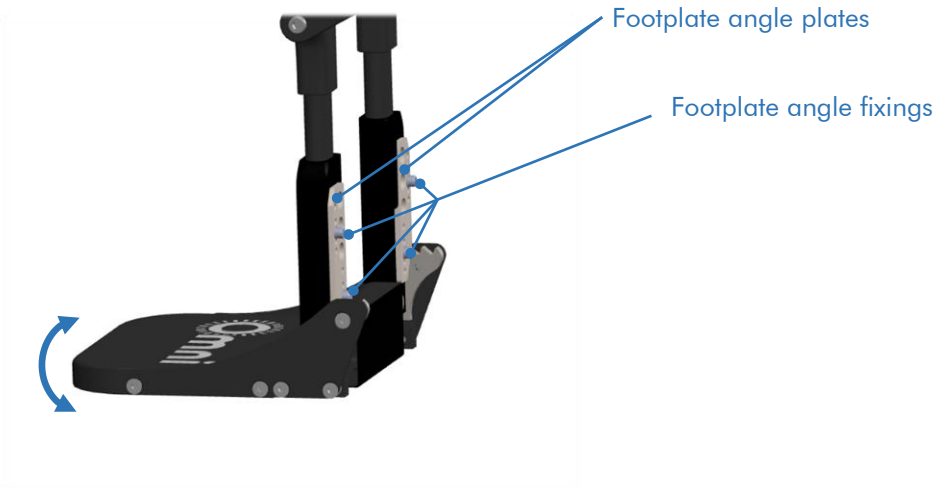


Figure 10 Footrest angle adjustment

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Shock absorbers

Omni uses three shock absorbers to dampen the ride for the user. Two are mounted to the rear of the device to provide drive damping, the third provides damping support to the seat lifting mechanism. The shock absorbers are factory set to a sag of 25% using a nominal user weight of 80kg.

They can be adjusted by Conquering Horizons, an authorised repair centre or by adding or removing air using a suitable bicycle suspension shock pump.



Caution - RISK OF DAMAGE. Incorrect shock setting may cause damage to the device and may result in an unstable or harsh ride.



Warning - ENTRAPMENT RISK. Working below a raised seat raises the risk of entrapment, ensure power is isolated before working under the seat.



Warning - BATTERY VOLTAGE. With covers removed, exposure to Battery voltage could result in serious injury or death.

The adjustment procedure is as follows:

1. Raise the seat, isolate power and remove the bodywork.
2. With the seat empty, position the shock indicator rings at the top of the shock shaft.
3. Add weight to the seat to simulate the required user weight.
4. Remove the weight and measure the shock sag – the gap between the indicator ring and top of the shock.
5. The sag should be between 10 and 15 mm.
6. Adjust as required by adding air (to reduce the sag) or removing air (to increase the sag) using a suitable cycle suspension shock pump.

   Note

   Minimum pressure: 60 psi (4.14 bar), maximum pressure: 300 psi (20.68 bar).
7. Repeat the above steps to ensure the setting are correct.
8. Refit the bodywork and lower the seat.

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Figure 11 Shock absorber (example)

Rear view mirror

The rear-view mirror can be fitted below either the left or right armrest. The mirror must be fitted when the device is used on the road.



Figure 12 Rear view mirror fixing

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Headrest and shoulder pad adjustments

The complete headrest and shoulder pad assembly is removeable from the device.

The shoulder pad can be adjusted in the following ways, please refer to section 'Seat backrest adjustment' for details.

- Angle
- Width
- Forwards/backwards

The headrest can be adjusted in the following ways:

- Vertical height, relative to the seat base.
- Horizontal depth, where the headrest can be moved closer to or further away from the back of the user's head.
- Headrest stowage.
- Pad tilt angle, where the cushion can be tilted.

Headrest and shoulder pad assembly removal

The headrest and shoulder pad assembly is secured to the device using two locating pins.

1. To remove the assembly, lift it vertically upwards from beneath the centre of the shoulder pad.
2. To refit, align the pins with the holes at the top of the seat-back frame and press the assembly vertically downwards until fully seated. Ensure it is locked firmly in place before use.

Headrest vertical height adjustment

1. Loosen the two headrest height fixings using a 5mm hex key.
2. Slide the headrest to the required height.
3. Re-tighten the fixings to 10 Nm / 7.3 ft-lb.

Headrest horizontal depth

1. Loosen the two side headrest fixings by lifting each lock arm fully to release the lock, allowing the clip to loosen.

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2. Set the horizontal depth by rotating the headrest forwards or backwards against the toothed locator.
3. Re-tighten the side fixings.

Headrest stowage

1. Loosen the two side headrest fixings.
2. Stow the headrest against the shoulder pad by rotating it backwards on the toothed locator.
3. Re-tighten the side fixings.
4. To reinstate the headrest, repeat the process, rotating it forwards to the desired position.

Headrest pad angle

1. To adjust the tilt of the headrest pad, loosen the fixing screw using a 4mm hex key.
2. Adjust to the desired angle.
3. Retighten the screw (hand tight).

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User adjustments

In addition to the user-specific 'Initial Setup', there are adjustments that can be performed by the user (either with or without help from an assistant) to tailor the device.

Tilt-in-space

Whilst the device is in pavement mode and at ride height, the user can tilt the seat back by up to 30° to alleviate pressure. The footrest rake always remains relative to the seat base.



Warning - RISK OF CRUSHING. Be aware of potential finger traps when tilting the seat.

1. Whilst seated in the device, double-tap the Tilt-in-Space icon from the display controller main dashboard.



Note
If the device is not in the correct mode, or the seat is at an incorrect height, the option is not selectable.

2. Using the rotary bezel on the display controller, adjust the tilt, as described on the screen, to the desired angle.



Note
Take care to avoid obstacles and be aware of finger traps.

3. To return to the previous dashboard screen, double-tap the screen anywhere.

4. The user can return to the Tilt-in-Space screen to adjust the tilt as required.

Note
If the user changes mode, the seat will automatically return to the normal tilt level.

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Footplate return-to-stowed

The footplate features a sprung return mechanism which, when pressure is not applied by an occupants' feet, automatically returns it to an upright stowed position. This feature allows the user to safely access and exit the device.

The return-to-stowed position is not adjustable.

Armrest angle

The vertical resting position of each armrest can be adjusted and set by the occupant by rotating the thumb wheel on the underside of either arm clockwise or counter-clockwise until the ideal position is found.

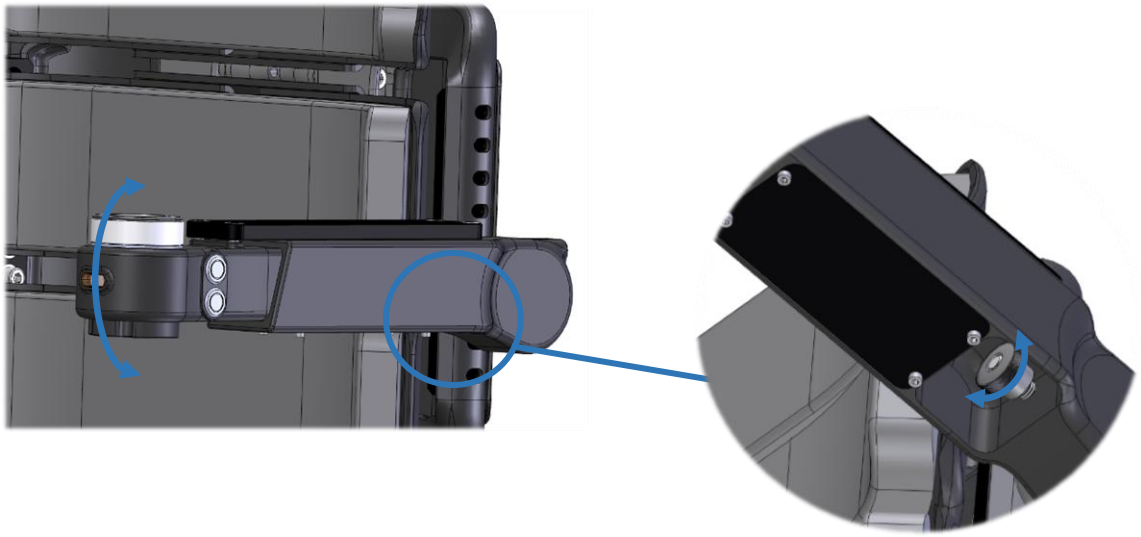


Figure 13 Armrest angle adjustment

Seatpad removal / replacement

The seat pads are covered in a durable breathable, washable fabric, and are attached to the chair with 'hook-and-loop' quick fastening material enabling swift removal and fitment.

The integral breathable foam pad material is of a specialist type intended for long-term use in medical devices and has been selected for to its ability to reduce the likelihood of discomfort and pressure sores occurring.

The covers can be removed from each seat pad, for cleaning, by unzipping them. It is recommended that the covers are washed in a laundry bag to protect them during a washing cycle.

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Operation

Omni is designed to be operated by a single user, sat on the device. The user should be able to operate all aspects of the device from a seated position.

If the user requires a lap strap to support them whilst seated, please contact Conquering Horizons who will advise which belt to use and how to fit.

Getting in and out of the seat



Warning - RISK OF TIPPING THE DEVICE. DO NOT stand on the foot plate to access or exit the device as this may result in tipping of the device and subsequent injury to the occupant and bystanders.

Getting in and out of the device seat may be different for some users with differing levels of mobility. However, there are some basic guidelines which will help to make this activity as safe as possible for all.

Sitting in the seat

1. Before entering the seat ensure that power is off, that the static brakes are engaged (downwards position), that the footplate is in the stowed (folded up) position and the armrests are lowered against their stops.
2. If necessary, adjust the height of the seat to achieve a suitable position.
3. Whilst standing, turn so that your back is towards the seat, with feet close together in front of the footrest.
4. Slowly sit back into the seat, whilst supporting your weight on the arms if able to do so.
5. Shuffle yourself into a comfortable position, and if intending to move the device, secure the lap strap if required.

Getting out of the seat

1. When you are ready to leave the seat, stop the device and press the OFF button.
2. Adjust the seat height to a suitable position.
3. Release the lap strap if fitted.
4. With the help of an assistant if required, raise your feet off the footplate and allow it to fold up into a stowed position.
5. Place your feet on the ground.

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6. Using your arms to push against the armrests where possible, with the help of an assistant where needed lean forwards and raise yourself from the seat, transferring to another chair or device as required.

Pre-use and post-use checks

As the operator of the device, you are responsible for ensuring that both the device and you, yourself, are suitably prepared to travel safely to avoid injury or damage to yourself and others.

It is strongly recommended that the following checks are undertaken:

- Visually inspect the device for any obvious signs of incorrect adjustment, wear, damage or loose items before sitting on, and before operating the device.
- Check the tyre condition and pressures regularly (once-weekly is recommended).
- Check the remaining battery capacity prior to use, and particularly before undertaking manoeuvres that involve crossing roads or climbing and descending slopes.
- After each use, and especially before storing the device, ensure that it is clean and that any damage or failed/worn components have been identified and actions put in place to rectify any issues.
- When the device is not in use, it should be stored in a safe place away from direct sunlight, and in an area not exposed to weather or high levels of humidity.

Driving considerations

Omni is intended to provide unprecedented levels of performance and comfort in a range of conditions. However, it should be noted that there are limits to the mobility of any device that provides transportation.

Powered chairs are exclusively intended for a user who is unable to walk or has limited mobility, for their own personal use indoors and outdoors.

In general terms, the route that is safest and offers the least risk to becoming stuck or toppling over should always be taken. Please see warning regarding transit through standing water, sand and other loose and potentially damaging terrain.

Driving the device requires a user to have cognitive, physical and visual skills.

The user must be able to estimate and correct the results of actions taken when operating the device.

Do not use the device for pushing and / or towing objects. Do not use the footrest for opening doors.

The powered chair's identification number and other important information can be found on the identification plate under the seat pad.

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Caution - RISK OF DAMAGE. The device is not designed to be used in water >50mm in depth.



Caution - RISK OF DAMAGE. The device is not designed to be used in soft sand.



Caution – Due to the nature of the Omni wheels, the device may slew sideways if crossing a slope.

Range and general usage

As with any battery powered device, the available range and performance will vary widely and can be influenced by several factors. The following list is not exhaustive but provides an indication of the factors which can affect overall range:

- State of charge before travelling.
- General state of battery health (SOH). Please see 'Batteries and Charging' section relating to battery charging regimes and condition for guidance on how to care for the on-board batteries to maximise their life.
- Operating modes and usage. A device which has a more demanding usage profile than one which sees lighter use will not achieve the same range from the same amount of charge. It is recommended that each user considers the intended usage and discusses this with Conquering Horizons to ensure that the device can meet their expectations.
- General care. Intentionally ignoring guidance relating to battery State of Charge and battery charging regimes will reduce the health of the batteries, and in doing so reduce their operational life and ability to provide optimal performance.

Familiarity

It is strongly recommended that you become used to operating all available functions before using the device in busy places and around other people and vehicles.

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Do not drive beyond your own ability, or beyond what the conditions allow. Acceleration, braking & change of direction.

The severity of acceleration, braking and turning is controlled by the user. Rapid and erratic driving is discouraged to avoid accidents and particularly when driving on lower friction surfaces. A steady and progressive driving style is recommended for the safety of the user, as well as others, and to increase the operational life of the device.

Wet or rainy conditions

Pavement, road and other similar surfaces are often slippery when wet. Reduce travelling speed and leave a greater amount of space between yourselves and others to allow for larger stopping distances.

Parking

Park on firm level ground whenever possible. Do not park on significant slopes unless it is unavoidable. In this situation, ensure that an assistant is available to steady the device whilst the occupant leaves, or sits in the chair.

If it is only possible to park on a slight slope, it is recommended that the chair is parked facing down the slope, and not sideways, or facing up hill.

Park the device in view of others wherever possible and take your belongings with you.

Do not leave the chair where it might be exposed to rain or direct sunlight as fabrics may get wet or surfaces may get hot.

Carrying cargo

Whilst Omni is not intended to be a payload carrying device, it is recognised that some users may need to carry additional medical equipment, such as an oxygen cylinder, or small amounts of groceries. Please consider the warnings given in this user manual regarding maximum loading and load positioning regarding tipping.

Terrain



Warning - RISK OF OVERTURN. Operating over uneven terrain must only be undertaken with the seat at the lowest possible height setting to avoid the device becoming unstable.



Warning - RISK OF OVERTURN. Operating on slopes increases the risk of overturning.



Warning - RISK OF OVERTURN. Avoid crossing a slope as this increases the risk of overturning. Operating on slopes increases the risk of overturning.

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Warning - RISK OF OVERTURN. To ensure clear visibility and stability reversing manoeuvres should only be undertaken with the seat at a low level.

Omni features permanent Four-Wheel drive and as such can travel over moderately rough terrain such as tracks, gravel and firm sand.

Always assess the terrain before traversing to evaluate the likelihood of completing your chosen route before attempting it. If in doubt alter the route or turn back before becoming stranded.

Where possible, drive on paved roads, pavements, footpaths and bicycle paths.

When operating on unpaved surfaces, adjust your speed accordingly, lower the seat height and always consider the stability of the device.

Note

The operating range of the device may be considerably reduced when operating on rough or soft terrain, due to increased power consumption and drain on the battery.

If the device exceeds 20° of tilt in the forward/backward plane or left/right plane, an audible alarm will sound, and the user must level out the device to avoid the risk of overturning.

When crossing a slope ensure the tip angles are not exceeded and maintain a steady speed to ensure the device does not turn into the slope as the omni wheels are designed to rotate sideways as well as forwards.

Driving on carriageways

Omni is a Class 3 mobility device, in accordance with UK Legislation, and can therefore be legally driven on certain public highways, including dual carriageways with restricted speed limits not exceeding 50 mph, once the device has been correctly prepared.

Refer to the Highway Code for more information on Class 3 mobility devices and operation on the public highway.

Travel on a dual carriageway with an unrestricted speed limit, or on a motorway is not permitted.

It is a legal requirement to display a correctly positioned and illuminated high level flashing amber beacon (not hazard lights) when travelling on a dual carriageway with restricted maximum speed and is recommended when travelling on any other public road.

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Device overview

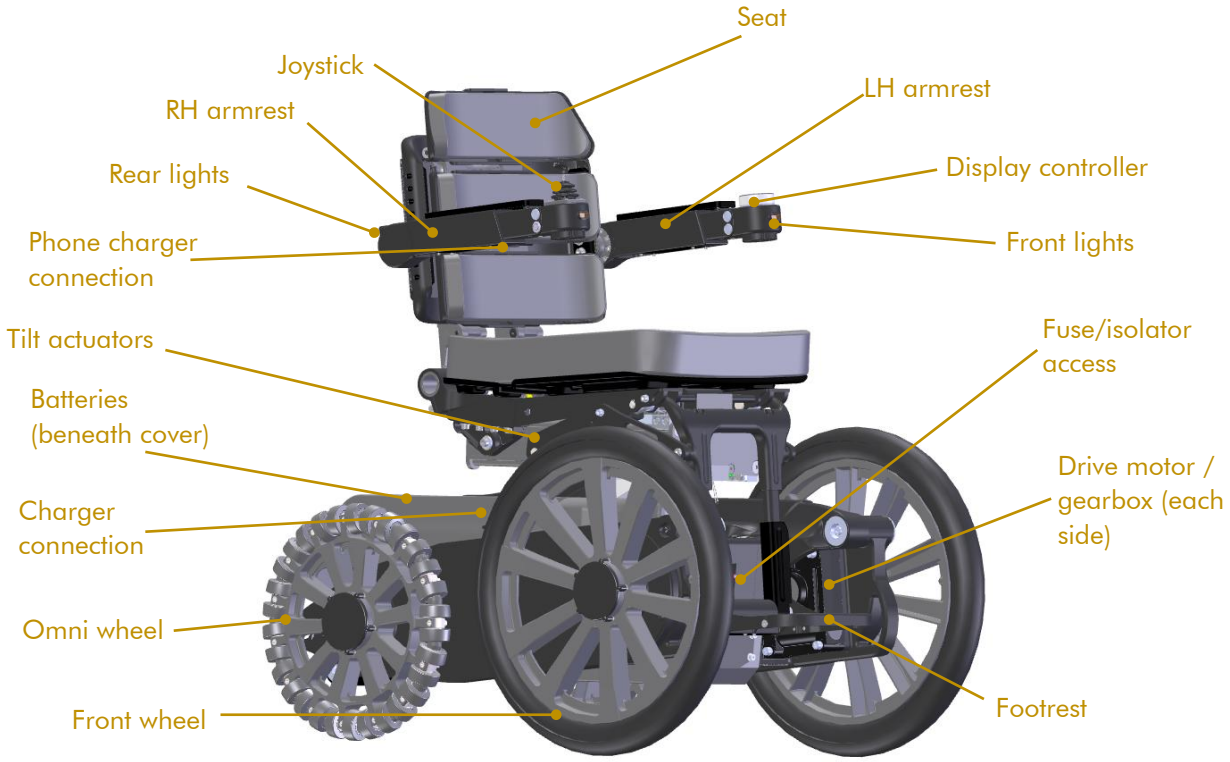


Figure 14 Device Overview

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Modes and heights summary

Status	Available functions
Pavement Mode	Maximum speed 8mph Tilt-in-space Seat elevation
Road Mode	Maximum speed 4mph Indicators Brake lights
Park height (seat at lowest setting)	Pavement or road mode selectable Seat elevation
Ride height (seat above park height)	Pavement or road mode selectable Tilt-in-space
Kerb climb (seat in forward position)	Pavement Mode
Elevated (seat above ride height)	Pavement Mode

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Controls and user interface

The controls and switches for Omni are mounted to the left-hand and right-hand armrests, and the functions are shown in the following Illustrations (RHD configuration).

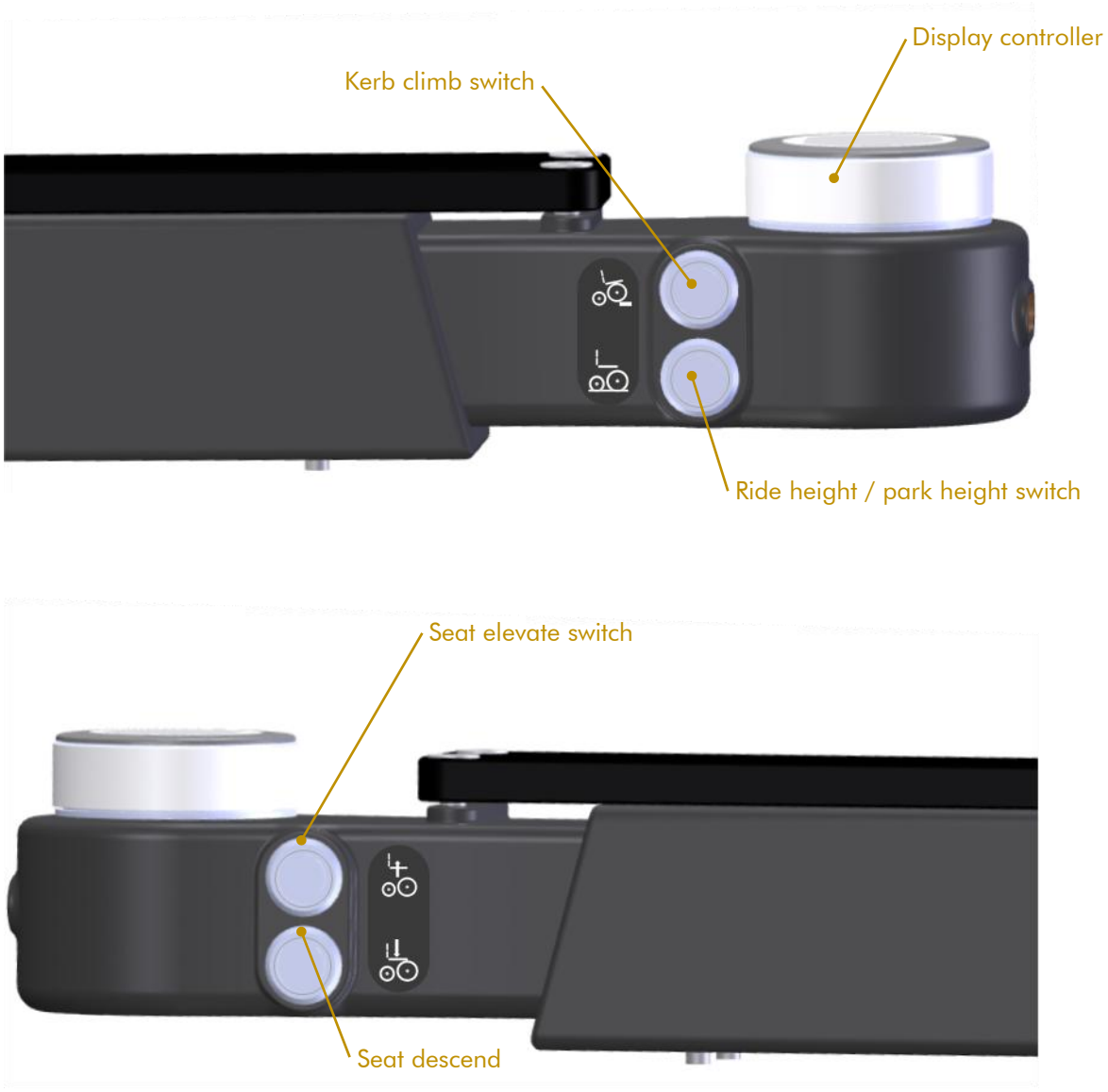


Figure 15 Left hand armrest controls

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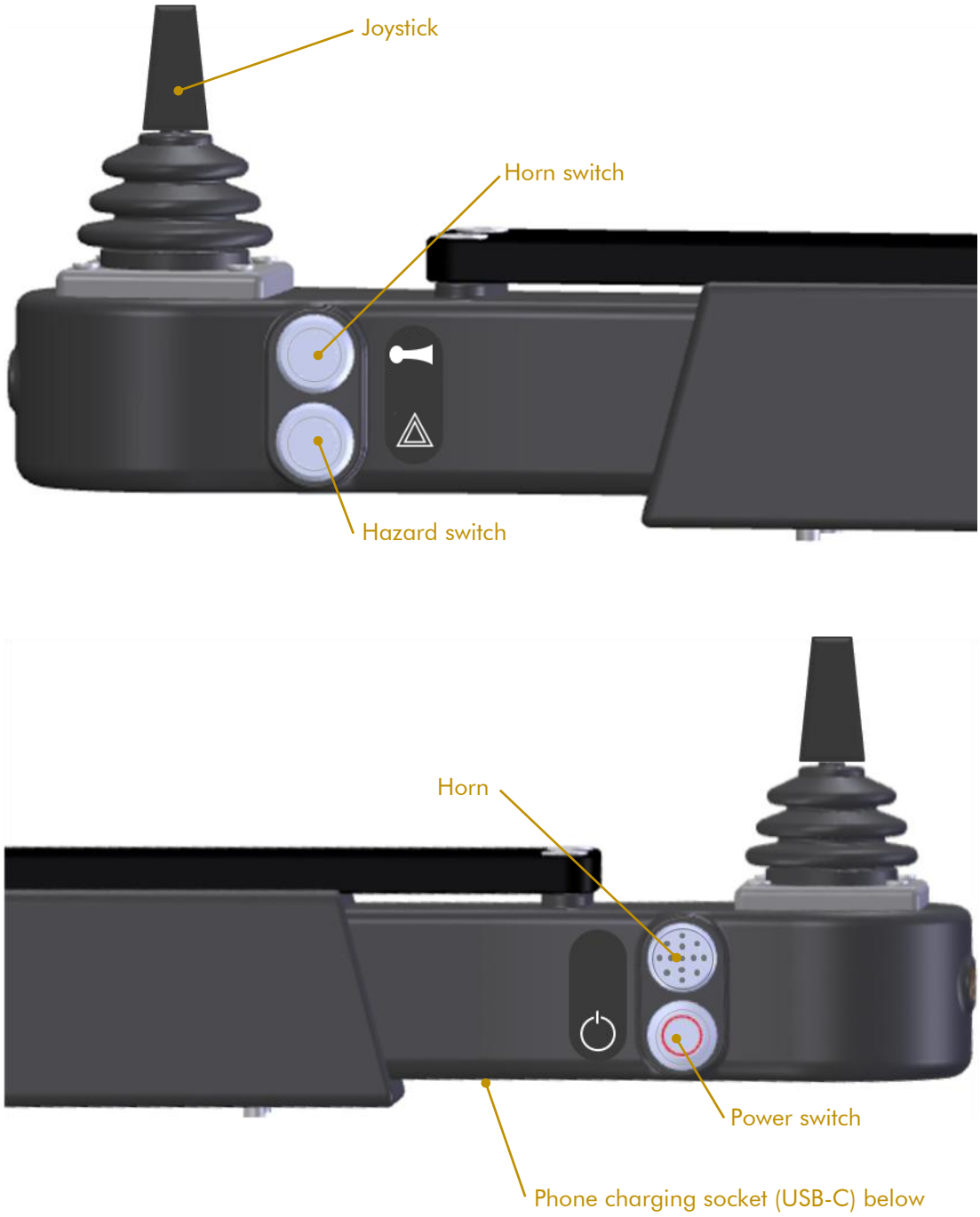


Figure 16 Right hand armrest controls

Power

The electrical power for the device is turned on and off by depressing the power button.

- Depress once to turn power on.
- Depress once more to turn power off.

On power-up, the device will perform a short self-test routine. Any errors will be highlighted on the display controller. The startup process should take <3 seconds.

Note

Before turning the device ON, ensure that the Battery Isolator is in the ON (Live) position.



Caution - ABRUPT STOP. Turning the power off while the device is moving will cause it to stop immediately.



Caution - ABRUPT STOP. Sudden release of the joystick will cause the chair to stop abruptly. This action should only be carried out when there is a definite need to do so, such as someone walking out in front of the chair.



Caution - LOSS OF TRACTION. Although the brakes can hold the device on a considerable gradient, Omni cannot account for the ground conditions beneath the tyres, it is the responsibility of the user to assess whether the device is likely to slide when the brakes are applied.

Hazard lights

The hazard lights are turned on and off by depressing the hazard button. Hazard lights cannot be used when the device power is isolated.

- Depress once to turn the hazard lights on.
- Depress once more to turn the hazard lights off.

The indicator icon will flash alternatively green/white to show the hazards are in operation.

Seat elevate

Press and hold to elevate the seat to required height whilst in Pavement Mode. Release to stop elevation.

A double press will elevate the seat to full height. Pressing any of the seat control buttons during this activity will cease the automated movement. The user should ensure that automated seat movement is conducted safely.

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Warning - RISK OF TRAPPING. Be aware of potential finger and body parts traps when seat is ascending.

Seat descend

Press and hold to descend the seat to required height whilst in Pavement Mode. Release to stop descend.



Warning - RISK OF TRAPPING. Be aware of potential finger and body parts traps when seat is descending.

Kerb climb

From the ride height position, press to set seat to a forward position for climbing a kerb. Press again to stop action.



Warning - RISK OF TRAPPING. Be aware of potential finger and body parts traps when seat is moving.

Ride height/park

Press to move directly to Ride Height position. Seat will automatically move to ride height from a parked or elevated position.

Double press the ride height button when elevated to automatically move the seat to ride height. The user must ensure it is safe to automatically move the seat.



Warning - RISK OF TRAPPING. Be aware of potential finger and body parts traps when seat is descending.

Horn

Press and hold to activate horn.

Display controller

The LH armrest is fitted with a display controller that incorporates a touch sensitive display and rotary bezel which enables the user to control the various modes and functions.

- Double-tap the applicable icon to select the required function.
- Rotate the outside of the dial to set the maximum speed of the device or to adjust the Tilt-in-Space angle of the seat.

General Information on the status of the device is displayed as a default setting 'dashboard'.

When a function is selected, information relating to that selection will be displayed until that function is de-selected.

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Regardless of whether a function has been selected, any warnings that appear will be displayed and will take precedent over other information displayed until the warning is acknowledged by the user.

The display controller provides important information on the status of the device whilst also displaying supplementary information, auditory alarms and allowing the selection and control of functions. The icons and associated states are as follows:

Symbols

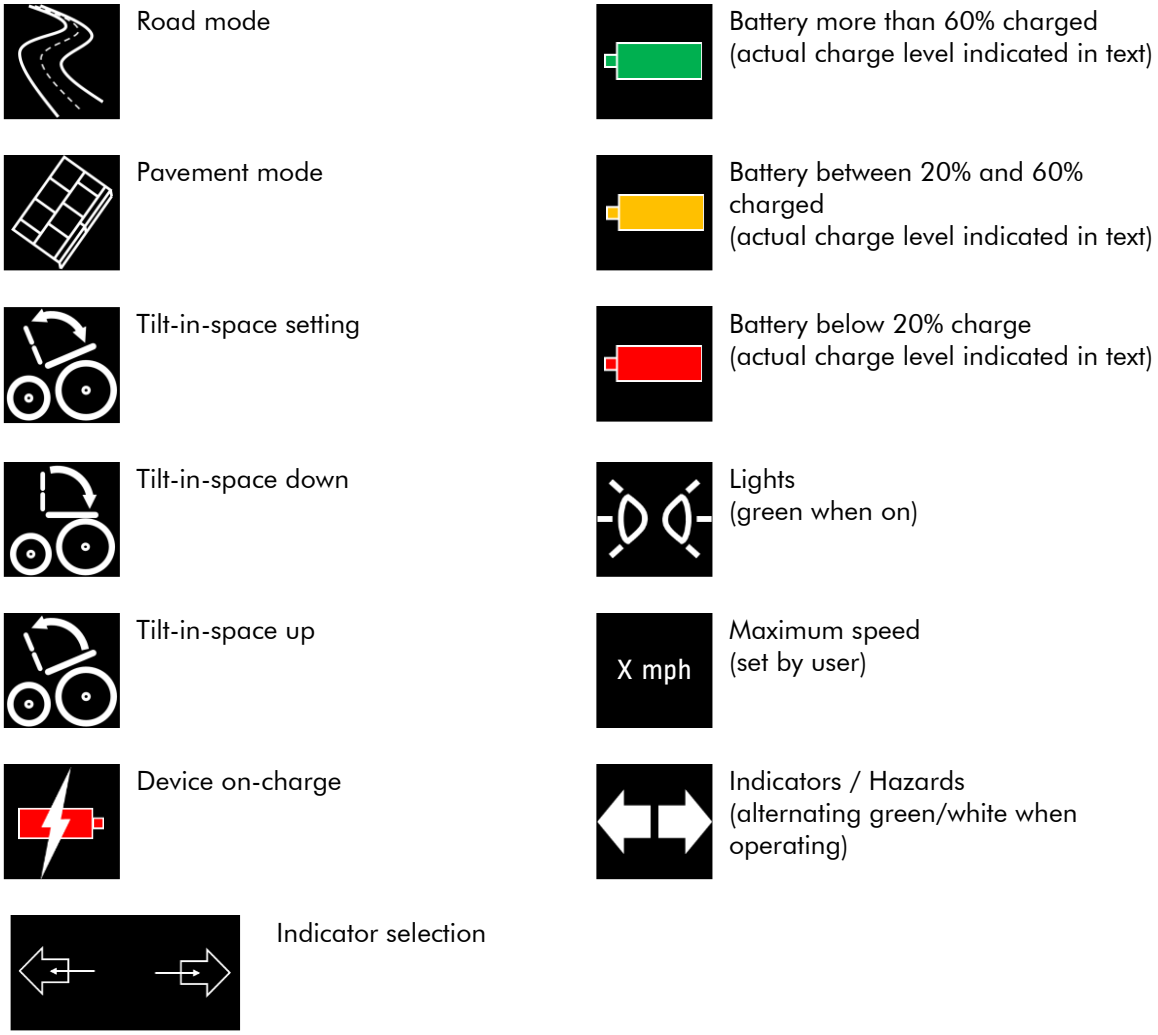


Figure 17 Symbology

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Start-up screen



- Displayed whilst performing power-on self-test
- Information displayed: Copyright claim and software version
- No user features

Pavement mode screen



- Displayed whilst in Pavement Mode.
- User features:
  - Mode selection (double-tap icon)
  - Tilt-in-Space selection (double-tap icon)
  - Lights control (double-tap icon)
  - Set maximum speed (rotate bezel)
- Information displayed:
  - Current mode
  - Indicator/Hazard light status
  - Lights status
  - Battery State of Charge
  - Seat in Kerb Climb position (red border arc)
- Maximum speed setting

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Road mode screen



- Displayed whilst in Road Mode.
- User features:
  - Mode selection (double-tap icon)
  - Indicator controls (touch and swipe along required direction)
  - Lights control (double-tap icon)
  - Set maximum speed (rotate bezel)
- Information displayed:
  - Current mode
  - Indicator/Hazard light status
  - Lights status
  - Battery State of Charge
  - Maximum speed setting
  - Seat in Kerb Climb position (red border arc)

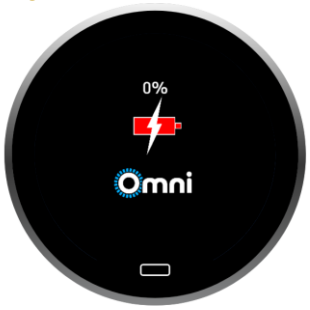
Tilt-in-space screen



- Accessed via the Pavement Mode dashboard screen
- Use the bezel to adjust the Tilt-in-Space seat angle
- Double-tap the screen to return to the previous dashboard

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On-charge screen



- Displayed while the device is plugged in to the external charger
- Battery State of Charge displayed
- No user features
- Clears if charger is disconnected

Joystick error screen



- Displayed if the joystick is off-centre at switch on OR if a joystick error is detected
- No user features
- Clears if joystick is centred and power is cycled OR valid data resumes

Note

If this screen is displayed frequently or permanently, please contact Conquering Horizons.

Brake warning screen



- Displayed if the freewheel brakes are manually disengaged
- No user features
- Clears if the brakes are re-engaged and the power is cycled

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Static brake

Omni is fitted with a 'Static Brake' system which applies brakes automatically when the joystick is in the centre (Neutral) position. In other words, when the device is stationary the static brake is automatically applied and automatically released when the joystick is moved from the neutral position.

Static brake override

Warning - LOSS OF CONTROL OF THE DEVICE. Do not override the Static Brakes unless it is safe to do so on level ground unless another means of controlling movement is in place.

Warning - LOSS OF CONTROL OF THE DEVICE. Do Not override the Static Brakes during normal operation of the device or with the occupant on board the device.

Warning - The drive system should be re-engaged before an occupant is left unattended or attempts to operate the wheelchair.

Omni is fitted with a manual Static Brake override which can be operated by the user in certain circumstances.

If the device needed to be pushed, for example, the Static Brake will need to be overridden to allow the device to roll freely.

Pulling up the levers, one each side of the device, will override the automatic Static Brakes, allowing the chair to 'freewheel'. A warning will be shown on the display controller.

To reactivate the Static Brakes, push both levers downwards firmly until they stop. A power cycle will clear the warning display.

The device can be pushed at a speed of up to 1.5mph, beyond which the device will apply a level of braking to the device to ensure it cannot run out of control.

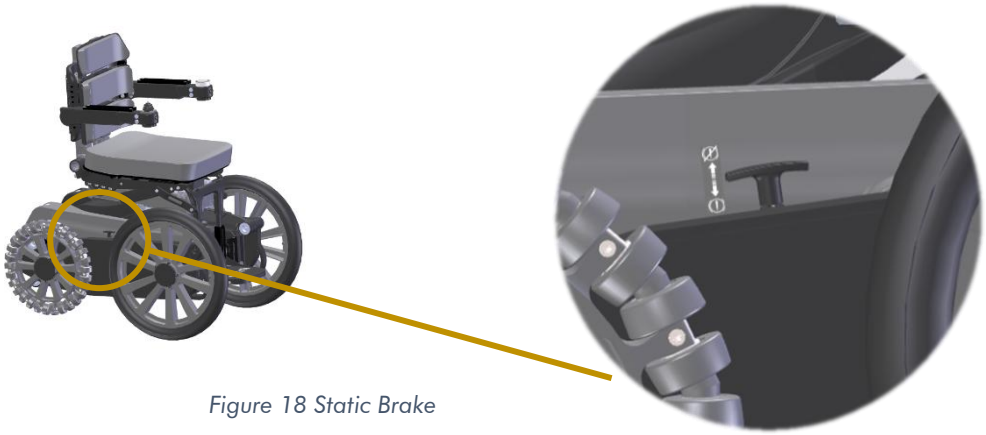


Figure 18 Static Brake

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Joystick

Movement of Omni in a forward, backward, left or right direction, or any combination of these movements is achieved simply by tilting the joystick in the desired direction.



Warning - RISK OF COLLISION OR OVERTURN. Abrupt turns at higher speeds could result in collisions or overturn of the device.



Caution - RISK OF ABRUPT STOP. Sudden release of the joystick will cause the chair to stop abruptly.



Caution - RISK OF EXTENDED STOPPING DISTANCE. When braking on a slope the stopping distance can be extended.



Caution - RISK OF COLLISION. When turning on the spot, the rear of the wheelchair swings outward.
Make sure there is enough space behind you and that no people, children, animals, or objects are in the path of the rear wheels.

Move the joystick slowly and smoothly to avoid sudden movements.

Pushing the joystick forward moves the wheelchair forward; pulling it backward moves it backward. The further you push, the faster the wheelchair travels (unless climbing a steep gradient where additional speed isn't possible). Moving the joystick back toward the neutral position slows the wheelchair. The rate of deceleration depends on how quickly the joystick is returned, within pre-defined limits.

To turn while moving, tilt the joystick forward or backward and gently move it left or right. The severity of the turn depends on how far the joystick is moved laterally.

In confined spaces, use more left or right movement and less forward or backward movement.

To turn on the spot (contra-rotate), move the joystick left or right only. This works best on smooth, low-friction surfaces. On high-friction surfaces, turn while moving slightly forward or backward.

Releasing the joystick returns it to the central neutral position and stops movement.

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Speed

Omni has two operating modes with respective available maximum speeds as follows:

- Pavement Mode: 4mph
- Road Mode: 8mph

When operating on a pavement or other public space Pavement Mode must be used. Road Mode should only be used when operating on roads, open tracks and in other open areas where a higher speed is achievable without risk of meeting pedestrians or oncoming vehicles, where it would be necessary to reduce speed or change direction rapidly.



Warning - RISK OF INJURY. Use of a higher speed whilst elevated could cause loss of balance.



Important - LEGAL REQUIREMENT. It is a legal requirement that speed is restricted when the device is used on the pavement.

The maximum speed within either Pavement Mode or Road Mode is adjustable by turning the display controller bezel when the respective dashboard is displayed. The maximum speed setting is shown to the user.

Indicators

Omni is fitted with directional indicators which are operable in Road Mode by swiping across the screen between the indicator icons, in the direction of indication.

It is a legal requirement to adhere to the Highway Code when operating on a public highway. Warning should be given ahead of any change in direction, or lane in which you are travelling, through use of the direction indicators as appropriate.

The indicators will flash for a period of 6 seconds when requested. The display controller icon will flash alternatively green/white whilst the indicators are in operation.



Figure 19 Indicator controls

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Lights

Omni is fitted with the following LED lights:

- Forwards positional lights
- Rear positional lights
- Rear brake lights

The positional lights should be illuminated whenever light or visibility is reduced. If operating on the road, follow the guidance given within the Highway Code.

The front and rear driving lights are manually operated and are turned on and off via the display controller by double-tapping the lights icon.

The status of the lights is given on the display (white – off, green – on).

The brake lights are automatically illuminated when the device slows beyond a predetermined rate of deceleration.

Note

The previous light settings are not retained after the device has been powered OFF and ON again. The lights will default to an OFF setting.

Hazard lights

Omni is fitted with Hazard Warning lights at the front and the rear of the device.

The Hazard Warning lights should only be used in the following circumstances:

- In hazardous situations when on a road and in accordance with the Highway Code.
- In hazardous situations involving other pedestrians when on a pavement or in another public area.

The hazard lights are activated by pressing the button on the side of the arm.

The hazard lights will continue to flash until the same button is pressed again, cancelling this function.

When 'active' the indicator warning icon will flash on the display controller.

Note

The hazard lights can be used with the wheelchair powered up or down but not whilst power is isolated.

Horn

Omni is fitted with a Horn which is operated using the button located on the armrest.

The horn is activated by pressing the button. Releasing the button will deactivate the horn.

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The horn should only be used when necessary, and in accordance with the Highway Code.

Phone charger connector

Omni is fitted with a USB-C socket for charging a mobile phone. The connection can be found under the Joystick armrest.

Tilt-in-space

Whilst the device is in pavement mode and at ride height, the user can tilt the seat back by up to 30° to alleviate pressure. The footrest rake always remains relative to the seat base.

Whilst seated in the device, double-tap Tilt-in-Space icon from the display controller main dashboard.

Note

If the device is not in the correct mode or the seat is at an incorrect height this option is not selectable.



Figure 20 Tilt-in-space

Using the display controller rotary bezel, adjust the tilt, as described on the screen, to the desired angle.

Note

Take care to avoid obstacles and be aware of finger traps.

Warning - RISK OF TRAPPING. Be aware of potential finger traps when tilting the seat.

To return to the previous dashboard screen, double-tap the screen anywhere.

The user can return to the Tilt-in-Space screen to adjust the tilt as required.

Note

If the user changes mode, the seat will automatically return to ride height level.

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Seat height adjustment

The seat is mounted to the lifting arm, which in turn is connected to the device's chassis via a damped air spring. Working in conjunction with the devices wheel suspension arrangement, the damped seat lift actuation further isolates the user from shocks and vibrations transmitted from the wheels.

The seat can be raised or lowered by the user whilst in the seat.

A key feature of Omni is its' ability to raise the occupant to a height where it is possible to hold a face-to-face conversation with another person of an average height.

The seat can set in the following positions:

- Parked – where the seat is sat on the end stops and the suspension is effectively de-activated.
- Ride-Height – where the seat is in the optimum position for normal use.
- At height – where the seat has been elevated to the users' desired position.



Warning - RISK OF INJURY. Before adjusting the height of the seat check that there is sufficient room to do so above the occupants' head, knees and hands.



Warning - RISK OF INJURY. Raising or lowering of the seat presents a significant trap hazard should a person or object be trapped by the mechanism. Before adjusting the seat, ensure that no person or object can become trapped.



Warning - RISK OF INJURY. Use of a higher speed whilst elevated could cause loss of stability.



Warning - RISK OF INJURY. Do not drive on slopes with the seat in a raised position.



Warning - RISK OF INJURY. Do not lean out of the seat when raised.

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Warning - RISK OF INJURY. Do not use on rough terrain when the seat is raised.



Warning - RISK OF OVERTURN. DO NOT attempt to climb or descend a kerb higher than 127 mm (5 inches).



Warning - RISK OF OVERTURN. DO NOT take a run up or hit the kerb at speed as the device could become unstable. The wheels, tyres and axles could be damaged if the device hits the step at speed.



Warning - RISK OF OVERTURN. ALWAYS align the device so that it is positioned at right angles (90 °) to the kerb. NEVER attempt to climb or descend the kerb if the device is not correctly aligned - the device could become unstable.

Seat movements are controlled by the buttons on the left-hand arm as described below.

Note

As the seat is raised or lowered, it will also slide to maintain optimum stability.

Note

The device will automatically descend the seat if the user selects Road Mode from an elevated position.

Omni is capable of safely climbing or descending a kerb up to a maximum height of 127mm (5 inches).

- The device has optimum positions for climbing and descending kerbs, these must be activated prior to climbing or descending a kerb.
- Wait until the seat has finished adjusting before proceeding with the manoeuvre.
- Think through the kerb climb or descent before proceeding. Consider the following:
  - Assess the height of the kerb before proceeding. NEVER attempt to climb or descent a kerb higher than 100 mm as the device could become unstable and may become damaged.
  - Make sure there is room to complete the manoeuvre.

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- The kerb must only be climbed with the device at a right angle (90 °) to the kerb. The device must not approach the kerb at a different angle and must not change direction during the climb.
- Make sure there is enough space to safely enter and exit the climb or descent without turning. (Refer to Figure 25 Approaching a kerb)

Ride height

To move the seat to Ride Height from a parked position proceed as follows:

1. Momentarily press and release the Ride-Height button on the left-hand arm and the seat will move automatically up to Ride-Height.

To move the seat to Ride Height from an elevated position proceed as follows:

1. Double press the Ride-Height button on the left-hand arm and the seat will move automatically down to Ride-Height. The user needs to ensure it is safe to carry out this operation.

Elevate

To elevate the seat, proceed as follows:

1. Press and hold the Elevate button on the left-hand arm.
2. Release the button when the desired height is reached.

Note

The seat will stop when maximum height is reached.

OR

1. Double press the Elevate button on the left-hand arm to move automatically to the fully elevated position.
2. Press any of the seat activation buttons to cancel the automatic movement.

Descend

The seat should be descended to Ride-Height to descend a kerb. To descend the seat, proceed as follows:

1. Press and hold the Descend button on the left-hand arm.
2. Release the button when the desired height is reached.

Note

The seat will stop when Ride-Height is reached.

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Park

To park the seat, proceed as follows:

1. Press the Descend button on the left-hand arm momentarily when at Ride-Height and the seat will move automatically to the park position.

Kerb climb

To ensure the user is in the optimum position for climbing a kerb, the seat should be put into the Kerb Climb position as follows:

1. Press and hold the Kerb Climb button on the left-hand arm and the seat will move towards the optimum position.
2. Press the button again to automatically return to Ride Height position.

Note

The seat will stop when maximum forward position is reached.

OR

1. Double press the Kerb Climb button on the left-hand arm to move automatically to the fully elevated position.
2. Press any of the seat activation buttons to cancel the automatic movement.
3. Double press the Ride Height button to return to Ride Height position.

Kerb climb is indicated on the display controller by a red arc on the road and pavement dashboard screens. The arc is cleared when the seat is returned from a kerb climb position.



Figure 21 Kerb Climb indication

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Climbing and descending kerbs



Warning - RISK OF OVERTURN. DO NOT change direction part way through a kerb climb or ascend as it will de-stabilise the device.



Warning - RISK OF OVERTURN. Users must approach the kerb correctly – see diagram 'Approaching a kerb'.

To ensure safety of the user, negotiating kerbs should follow the procedure below:

1. Position the seat for kerb climbing as previously described by pressing the Kerb Climb, Descend or Ride-Height buttons on the left-hand arm.

   Note

   Wait until the seat has finished adjusting before proceeding with the manoeuvre.

2. Align the device so that the front wheels are at right angles (90 °) to the kerb. Drive the device gently forwards until BOTH front wheels are resting against or at the edge the kerb.

3. Drive slowly FORWARD - maintain pressure on the joystick. The front wheels will climb or descend the kerb. Continue to drive FORWARD slowly maintaining pressure on the joystick. The rear wheels will climb or descend the kerb.

4. Ensure the manoeuvre is smooth and progressive. Any sudden acceleration may de-stabilise the device.

5. Double press the Ride-Height button again to return to Ride-Height from Kerb Climb on completion.

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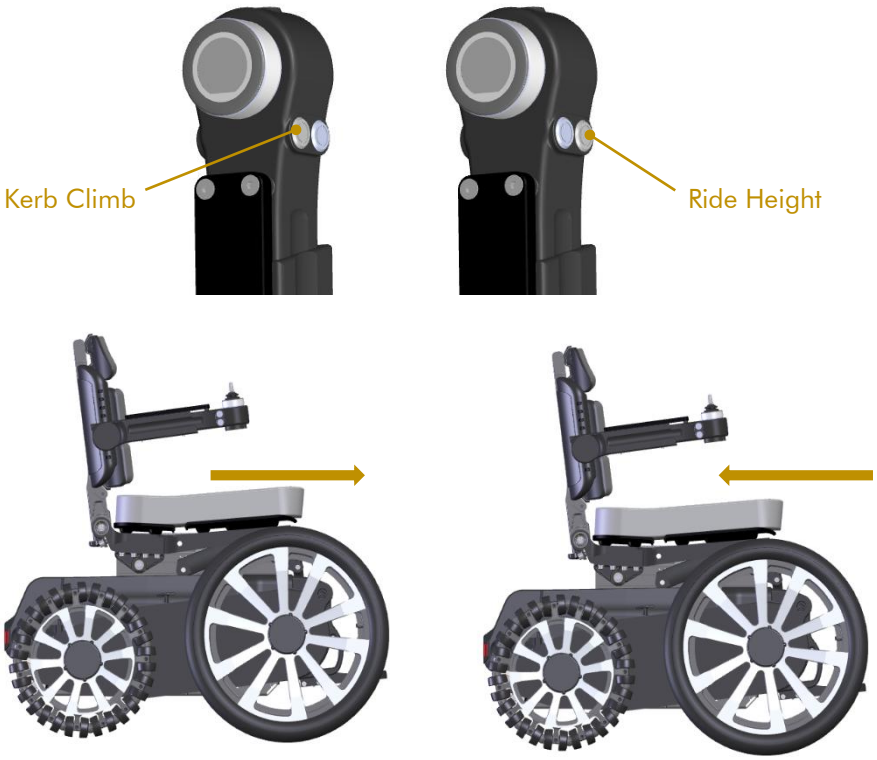


Figure 22 Kerb climb controls

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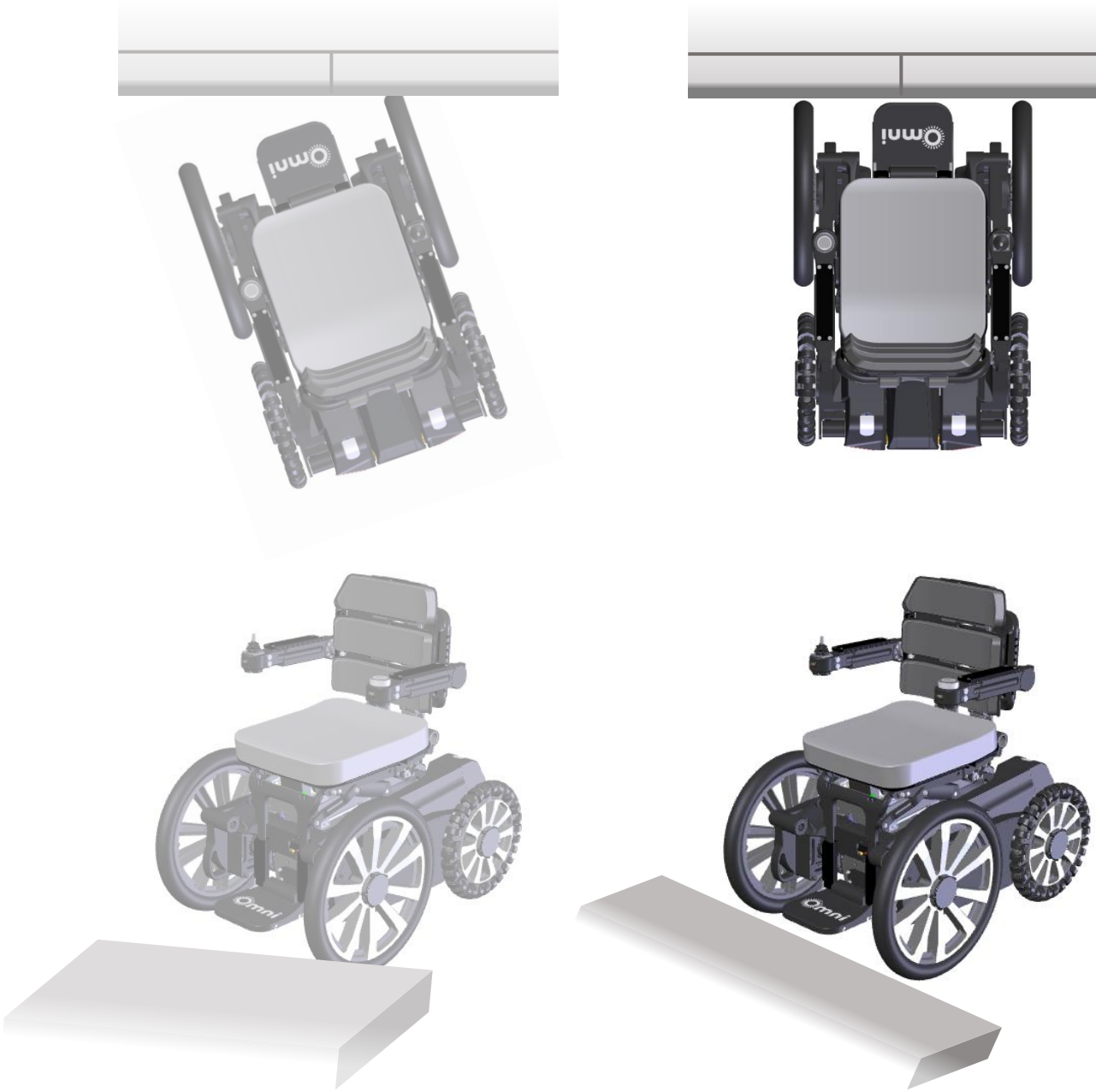


Figure 23 Approaching a kerb

After Use

Do not touch the drive motors after driving as they may be very hot. Ensure that your device's batteries are sufficiently charged for the next predicted journey.

Storage

When the device is not in use, it must be stored in a dry place where it will not be exposed to weather conditions.

The battery should be isolated when the device is stored – see section 'Isolating the battery'.

The battery condition should be checked monthly and charged as required.

Items should not be stored on the seat cushion as they may cause long term deformation of the cushion.

Batteries and charging

Omni is fitted with a sealed battery system that provides 48VDC from a set of managed Lithium-Ion cells.

The battery system is not a user serviceable part and requires no maintenance other than proper charging and storage.

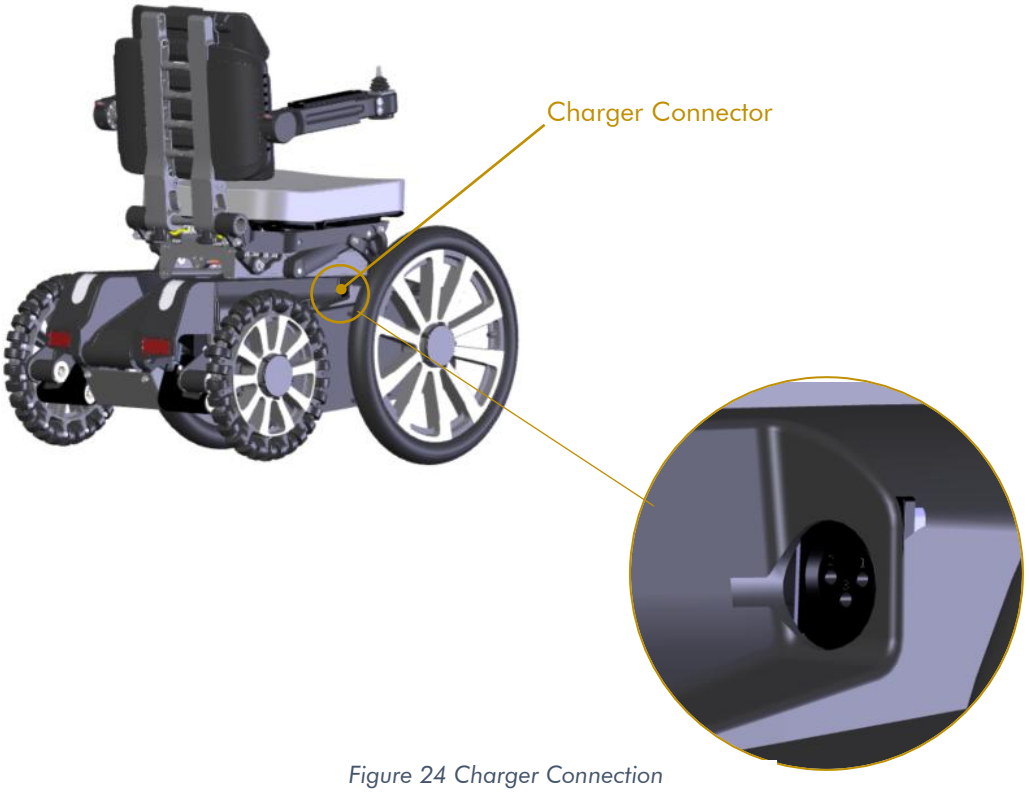


Figure 24 Charger Connection

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Caution - DO NOT attempt to remove or replace the battery pack. Contact Conquering Horizons for assistance.



Caution - DO NOT use the device If the Battery is leaking, excessively hot, smoking, or emitting unusual odour.



Caution - DO NOT submerge the battery pack.



Warning - BATTERY VOLTAGE. Exposure to Battery voltage could result in serious injury or death.



Warning - TOXIC SUBSTANCES. The batteries contain toxic substances. Do not attempt to open the batteries. Avoid contact with any substance that may have seeped from the batteries.



Caution - TOXIC SUBSTANCES. This product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.

Note – The battery should be charged at least every three months to maintain battery health.



Caution - Disconnect the supply before making or breaking connection to the wheelchair.

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Warning - Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging.

The battery pack should only be changed, if a fault develops, by Conquering Horizons or an approved service centre or dealer.

Omni is fitted with an isolator which is used to isolate the batteries from the device for, for example, maintenance, travel or storage.

The batteries must only be charged with the supplied charger as this is specifically configured for the device battery system.



Warning - RISK OF FIRE if incorrect battery charger is used.



Warning - RISK OF DAMAGE OR SHOCK. Ensure the charger connector pins are not touched or shorted in any way.



Warning - TRIP HAZARD. Do not leave the recharging cable trailing where it could cause a trip hazard, risk of entanglement or become damaged and therefore dangerous.

The charger is suitable for an input voltage range of 100VAC to 240VAC, 50/60Hz.

The supplied charger connector can only connect in one orientation to the device.

The charger has four status LEDs:

Charger LEDs:

- Power: solid red LED
- Full: solid green LED
- Charging: flashing amber LED
- Error: red LED

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On initial plug-in the charger LEDs will alternate between Full and Charging. When charging commences the Charging LED will illuminate, when charging is complete the Full LED will illuminate.

Whilst the device is on charge, controls are disabled, and the display controller will give the on-charge warning.

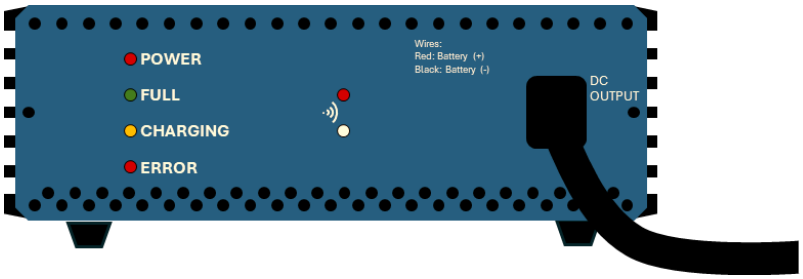


Figure 25 Battery Charger

For further details of the battery charger refer to the OEM:

https://exegon.com

Reference part : Pro-Active-300-24V-10A-Battery-Charger.pdf

Note - Study charger instructions before use.

Warning - The battery charger must be earthed.

Warning - Do not use charger if leads or connectors are damaged.

Warning - Charger to be used indoors only.

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Warning - Do not expose charger to rain or moisture.



Important - The charger contains no user serviceable parts – return unit for repair.

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Transport

Warning - RISK OF INJURY. Device unladen weight is 146.4kg / 322.7lbs.

Warning - RISK OF INJURY. DO NOT stand directly behind the device as it climbs the loading ramps, in case of toppling, or collapse of one or both ramps.

Warning - RISK OF INJURY. Ensure the tie down points are used correctly to secure the device.

Caution - DAMAGE TO THE DEVICE. Take care when strapping the device to ensure that only the designated strapping points are used.

Omni is intended to be transported by a range of means, including road, rail, sea and air.

Tie down points are provided to the front and rear of the device and are indicated by the symbol:

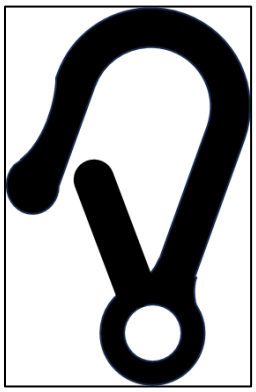


Figure 26 Tie down point label

The battery system is not removeable but can be isolated from the device – see section 'Isolating the battery'.

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Transportation by road

Omni is intended to be transported in a vehicle both with and without an occupant on board.



Important - Ensure the tie down points are used correctly to secure the device.

In either instance the device MUST be securely and safely attached to the vehicle using appropriate mounting points and tie-down straps.

When using the device as a seat in a vehicle the user MUST use the vehicle fitted restraint system. Belts are not to be routed over wheelchair components like armrests or wheels, which could reduce the effectiveness of the restraint system. It is recommended that a three-point restraint is used (where fitted) and worn over the torso and lap as shown.

The vehicle restraint system used must meet the requirements of ISO10542 or SAE J2249.

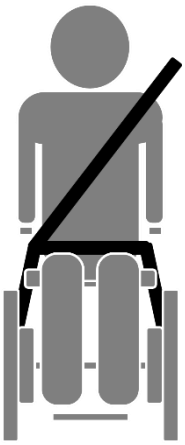


Figure 27 Vehicle 3-point restraint



Warning - RISK OF INJURY. Do not use the device lap strap in a vehicle.



Warning - RISK OF INJURY. Only use in a vehicle in a forward-facing direction.

Omni is designed so the seat back can be folded flat to reduce the overall height to assist with transport in a vehicle.

Unless the transporting vehicle is equipped with an integral loading platform, loading ramps with a sufficient rating will be required to enable the device to enter the vehicle.

To enable loading, unoccupied, the chair must be prepared correctly by following this procedure:

1. Lower the seat to the 'Parked' position.

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2. Rotate both armrests upwards until they reach their travel stops and remove the seat cushion.
3. Unscrew the two thumbscrews at the base of the seat back until the backrest securing pins disengage (rotate clockwise).
4. Apply gentle forwards force at the central point at the top of the backrest and rotate the seat's backrest forwards until it lies flat on top of the seat base.
5. The device can then be loaded manually by carefully driving into place.

Note

Any motion should be progressive. It may be necessary to manoeuvre the device when in the vehicle to achieve the best use of the space available.

6. Secure the device to the appropriate restraint facilities in the vehicle.

To remove the device from a vehicle, reverse the above process and ensure it is fully and correctly re-configured before attempting to use it.

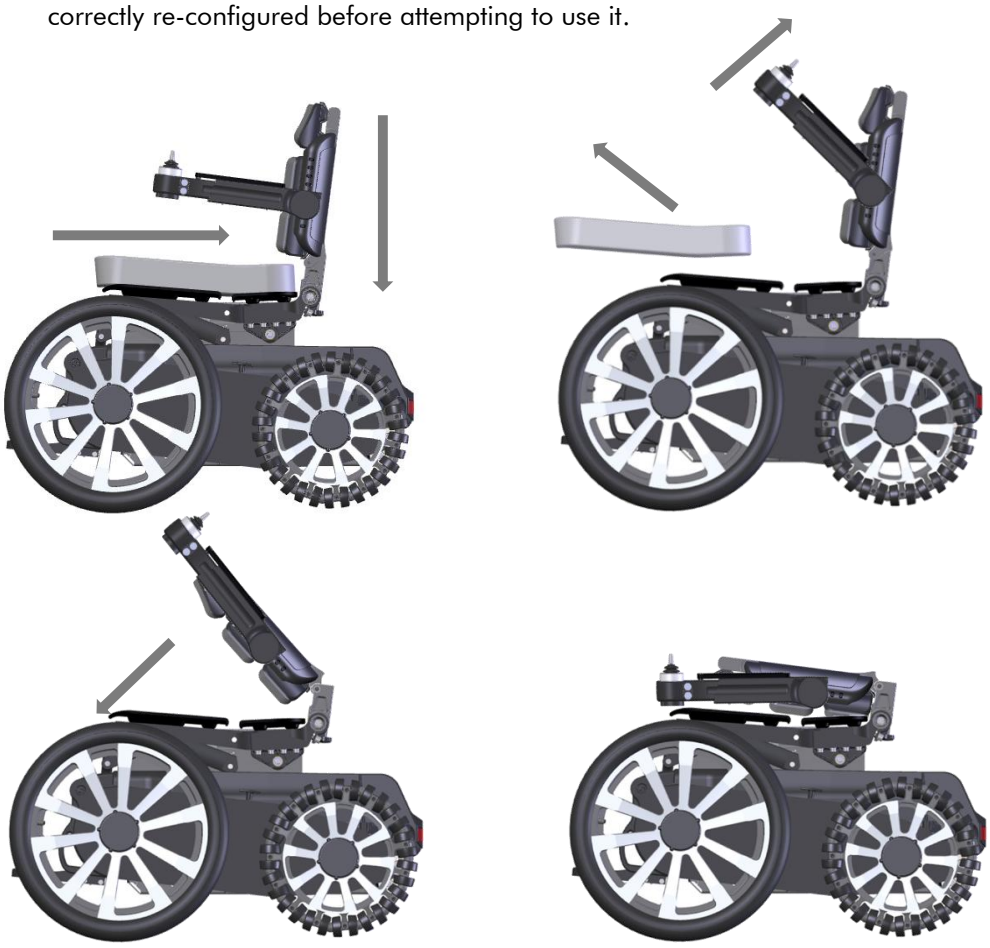


Figure 28 Seat folding process

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Tie down locations

Tie down locations can be found to the front and rear of the device, one on the left and one on the right at each end.



Figure 29 Tiedown locations

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Transportation by air, rail or sea

For transportation by air, rail or sea it is recommended that the device is packaged within a dedicated crate or case with sufficient internal restraint and padding to ensure that it is as well protected as possible from potential damage during transit.

The batteries must be isolated during transportation by the Battery Isolator.

Conquering Horizons do not recommend that the device is transported in the hold of an aircraft or other similar means of transport without external protection as there will be a very high probability of damage which may render the chair unusable at the destination.

Isolating the battery

Important - Battery must be isolated for transport.

Omni is fitted with a battery isolator that disconnects all circuits within the device from the battery when operated.

The device is isolated when the indicator flag is pointing downwards as shown below. To isolate the device, depress the red button; to re-connect the device, lift the flag up to the horizontal position.

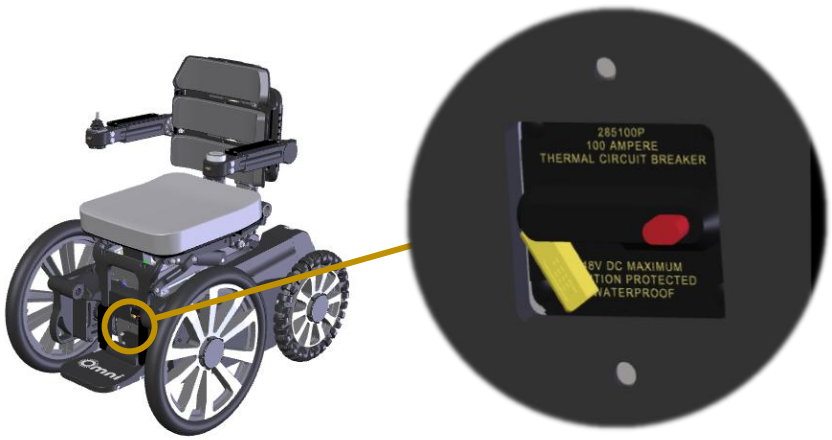


Figure 30 Isolator operation

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Maintenance

The routine maintenance requirements for Omni are intended to be minimal; however it is essential that basic checks and cleaning regimes are carried out regularly to ensure continuous safe operation. Refer to the Owner Maintenance Check and Cleaning List table, overleaf.

The front tyres are of a pneumatic type, and the pressures should be checked and adjusted as necessary at least once per week. Tyre pressures can fluctuate with extreme cold or heat therefore it is recommended that the pressures are checked when the device has been in a normal ambient temperature environment or around 20 degrees Celsius for at least 30 minutes.

Avoid checking the tyre pressures when the device has been parked in extreme cold (such as snow) or in direct sunlight wherever possible. It is important to the stability and control of the device that the pressure in both front tyres is the same.

Different tyres may require different pressures. The tyre size details can be found on the tyre's sidewall, and the corresponding pressures can be found in the Technical Data section.

The condition of the overall chair should be checked regularly to identify any damaged, loose or missing parts. Any such issues identified should be rectified as soon as possible, and certainly before the device is used in a public place or on a highway.

Over time it is expected that your device will acquire general scrapes and abrasion, and it is up to the individual whether to have such damage repaired by a specialist. Any damage other than general wear and tear, such as that which prevents safe and reliable operation of the device, should be discussed with Conquering Horizons or your authorised repair centre before the device is used again.

Scheduled servicing

As well as daily or weekly checks, the device requires routine servicing by an approved service centre or trained mobile technician.

It is important to have your device serviced on time so that any readjustment, repair or replacement of worn or damaged components can be undertaken, therefore enabling the device to continue to provide trouble-free and safe service.

Service and repair must only be undertaken by an authorised repair centre, or technician. Your guarantee may be invalidated it this advice is not followed.

Service intervals are agreed with the user at purchase.

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Owner maintenance check and cleaning list

Regular inspection should be conducted for all visible aspects of the device. This includes the following areas.		
Owner Check		
Task	**Description**	**Interval**
Front tyre pressure	Check and adjust as necessary	Weekly
Tyre condition	Check for tyre wear, cracks, slits, bulges	Weekly
Wheels	Check for: Objects or material caught in the wheels, especially in the rollers of the omni-wheels Damage to the edges of the rims Damage to omni-wheel tyres	Weekly
Bodywork	Check for signs of abrasion, impact damage, and cracks	Weekly
Fasteners and fittings	Check for loose or missing fittings	Weekly
Wiring	Check for loose, trapped, or chafed wires	Weekly
Lights	Check for inoperative lights including brake lights	Weekly
Seat	Check for cut or damaged seat coverings	Weekly
Lap belt (if fitted)	Check for trapped or damaged seat belt strap and buckle	Weekly
Footrest	Damaged footrest legs or footplate	Weekly
Owner Cleaning		
Task	**Description**	**Interval**
External bodywork	The external bodywork is constructed from ABS plastic with a protective and aesthetic paint finish. The bodywork, including wheel arches, can be cleaned using conventional car cleaning products such as “wash and wax” type shampoos. **Do not use high pressure sprays to wash and rinse the device. Avoid using corrosive cleaning products which may damage the surface finish.**	As Required
Seat coverings	The seat covers are machine washable (delicate wash cycle). The foam inserts can also be washed using a proprietary delicate cleaning solution, sponging down and leaving to air-dry.	As Required
Controls & display	The control switches and rotary encoder can be wiped clean with a slightly damp cloth and mild cleaning solution, or computer cleansing wipes as required.	As Required

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Owner repairs

Wheel removal and replacement

Should a wheel or pair of wheels need to be removed and refitted, either for a puncture repair, tyre replacement or wheel replacement the following procedure should be followed:

1. Ensure that the device is parked on firm level ground with sufficient space around it to work safely.
2. Ensure that the brakes are engaged (brake release handles depressed).
3. Remove the hub cap and, using an appropriate tool (5mm Hex key), loosen each wheel bolt approximately a quarter of a turn counter-clockwise.
4. Raise the front of the device sufficiently for the tyres to be just clear of the ground enabling wheel removal.
5. Remove the wheel bolts and the wheel.



Warning - RISK OF INJURY. DO NOT raise the front of the device far enough to cause imbalance and risk of toppling.



Warning - RISK OF INJURY. The device weighs in excess of 140kg, care must be taken when moving and raising the device.

Wheel re-fitment

1. For wheel re-fitment, position the wheel on the hub ensuring that the drive lug features on the face of the hub engage with the features in the mating face of the wheel.
2. Holding the wheel in place, wind in each wheel bolt hand tight only.
3. Working in a diagonal pattern, tighten each wheel bolt using the appropriate tool until a small amount of resistance is felt.
4. If both wheels are to be refitted, carry out the same procedure on the opposite side.

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5. Lower the device back to the ground, then tighten each wheel bolt in a diagonal sequence to the specified torque (17 Nm / 12.5ft-lb). If a torque wrench is not available firmly tighten using the hand tool and tighten to the specified torque at the earliest opportunity.

Caution - DAMAGE TO THE DEVICE. Do not over-tighten the wheel bolts or damage to the wheel and hub may occur.

Caution - DAMAGE TO THE DEVICE. Do not exceed the maximum recommended tyre pressure shown on the tyres.



Figure 31 Wheel removal

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Puncture repair

If a puncture repair is required, the following procedure should be carried out:

1. Remove the affected wheel(s) as detailed in Wheel Removal and Replacement.
2. If the tyre is partially inflated depress the centre pin of the tyre valve and release all remaining air.
3. Using appropriate bicycle tyre levers remove the tyre bead from the wheel, then carefully withdraw the inner tube from the wheel and tyre.
4. Fully remove the tyre from the wheel and inspect for damage and cause of puncture. Remove any foreign object which may have caused the puncture. Replace tyre if required.
5. Inspect the wheel for damage. Replace wheel if required.

Note

If you are in any doubt regarding the need to replace the wheel or tyre, please consult Conquering Horizons or a reputable bicycle shop for advice.

Note

In the case where both tyres are worn, it is advisable to replace then as a matched pair.

6. Inspect the inner tube and identify the source of the puncture. Repair using a proprietary bicycle puncture repair kit or replace the inner tube if necessary.
7. Once repaired, the tyre and inner tube can be re-fitted to the wheel rim observing the tyre rotation direction (as some tyres may be directional).
8. Carefully feed the inner tube into the tyre and reinsert the valve into the wheel rims valve hole.
9. Carefully refit the remaining tyre bead to the wheel rim taking care not to pinch the inner tube.
10. Slowly re-inflate the inner tube working around the tyre as the tyre's beads are forced back into their seats, ensuring that the inner tube is not caught or pinched at any point.

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11. Once the tyre is correctly re-seated, and the valve is correctly aligned in its hole the tyre should be re-inflated to its correct pressure as specified within the Technical Data section.

12. Refit the wheel as described in Wheel Re-fitment.



Important – Ensure tyres are fitted correctly and follow the rotation indication correctly.

For further information refer to the tyre manufacturer's website.

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Fuse replacement



Caution - RISK OF FIRE. Use correct sized fuses.

The device is fitted with Mini Blade automotive fuses to project the electrical systems.

In the unlikely event that a fuse fails the device should be turned off and isolated, and then inspected to determine the source of the failure of that circuit. For example, look around the device to ensure that no electrical wiring has become trapped or damaged.

If there are no obvious signs that something is wrong the failed fuse can be replaced with a new fuse of the same type and rating.

Once installed, power the device up and activate each function in turn. If the fuse fails again, record which function appeared to cause the fuse to fail and then contact Conquering Horizons or your local service agent for further advice.

The fuse box is accessed via the panel located behind the footrest.

1. Power off and isolate the device.
2. If the seat is in a lowered position, it may be necessary to wind the seat forwards to access the fuse panel. Using the supplied 6mm hex key in the rear of the seat, wind the seat forward until access can be gained.
3. Remove the four panel retaining bolts using a 5mm Hex key, remove the panel and fuse box cover.
4. Fuse details can be found on the rear of the outer cover.
5. Refitting is the reversal of the above steps.

Lamp replacement

All lamps used throughout the device are of an LED type and require no maintenance beyond regular cleaning.

Weekly operational checks of all light units are recommended, particularly if the device is not used regularly in low-light conditions where the lights would normally be illuminated.

If a light unit fails to illuminate, please contact Conquering Horizons for assistance.

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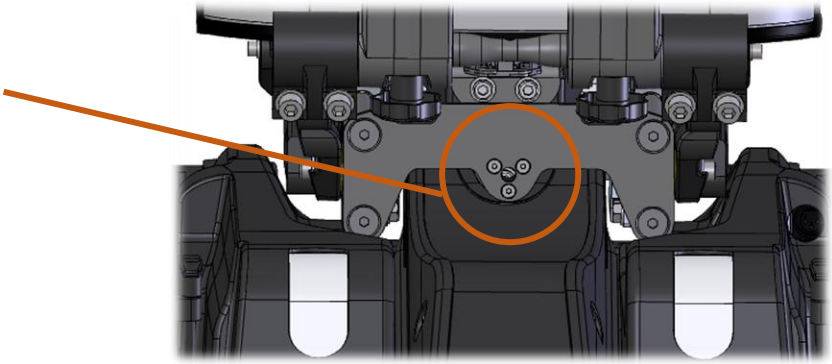
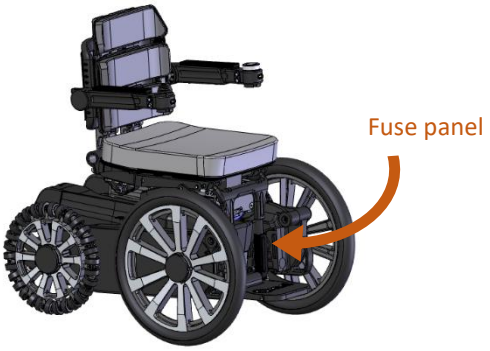


Figure 33 Manual seat slide





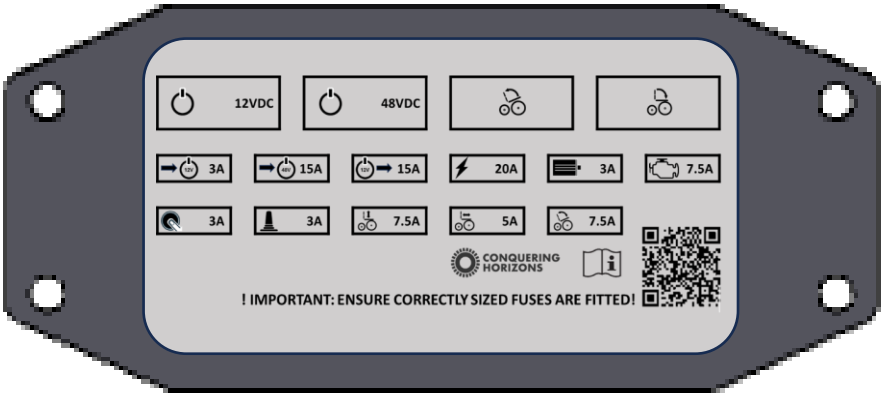


Figure 32 Fuse details

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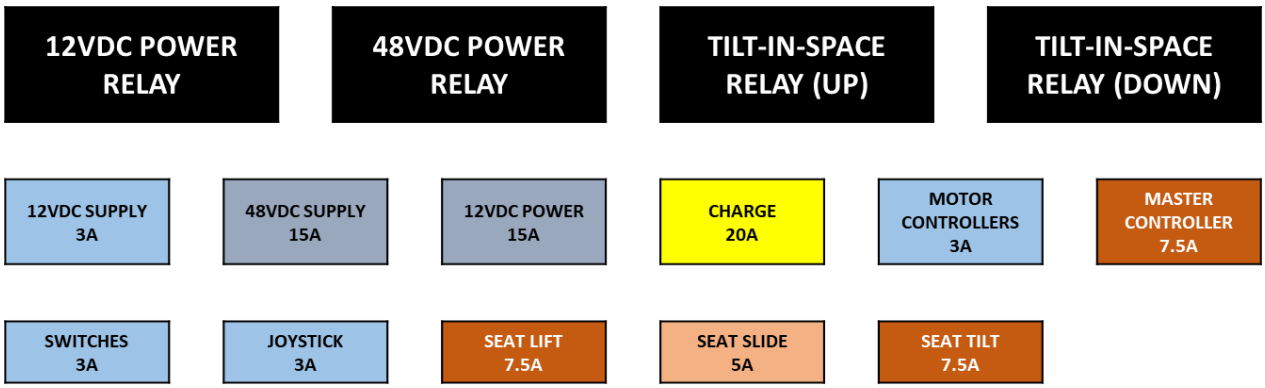


Figure 34 Fuses and relays by size and colour code

Troubleshooting

In the unlikely event that the chair should fail to respond to user controls please refer to respective sections within the User Manual. Additionally, the user may need to:

- Switch the device off, wait for 30 seconds and switch back on again.
- Push the device to a safe place by releasing the static brakes and by pushing on the seat back.

In all instances, please note, if possible, the failure and contact Conquering Horizons as soon as possible.



Warning - RISK OF INJURY. The device is heavy, only push for a short distance to a safe place.

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Technical Data

Testing disclosure

Omni has been tested to and is compliant with the following documents:

- BS EN 12184:2022
  Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods
- BS ISO 7176-1:2014
  Determination of static stability
- BS ISO 7176-2:2017
  Determination of dynamic stability of electrically powered wheelchairs
- BS ISO 7176-4:2008
  Energy consumption of electric wheelchairs and scooters for determination of theoretical distance range
- BS ISO 7176-5:2008
  Determination of dimensions, mass and manoeuvring space
- BS ISO 7176-6:2018
  Determination of maximum speed of electrically powered wheelchairs
- BS ISO 7176-8:2014
  Requirements and test methods for static, impact and fatigue strengths
- ISO 7176-9:2009
  Climatic tests for electric wheelchairs (not tested, OEM data read across)
- ISO 7176-10:2008
  Determination of obstacle-climbing ability of electrically powered wheelchairs
- BS ISO 7176-14:2022
  Power and control systems for electrically powered wheelchairs and scooters - Requirements and test methods
- BS ISO 7176-19:2022
  Wheelchairs for use as seats in motor vehicles
- BS ISO 7176-21:2009
  Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and scooters, and battery chargers
- ISO16840-10:2021
  Resistance to ignition of postural support devices - Requirements and test method (read across)

Device identification number

The Device Identification number (UID) can be found on the labels affixed to your device.

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Disclosure information

Manufacturer: Conquering Horizons Limited

Address: Taunton, Somerset UK TA3 5PX

Model: Omni

Class: C

Maximum occupant mass	130kg
Overall length with leg rest	970mm
Overall width	670mm
Folded length	970mm
Folded width	670mm
Folded height	658mm (Seatback folded down, cushion removed)
Total mass	146.4kg / 322.7lbs
Seat vertical movement range	300mm
Mass of heaviest part	n/a
Static stability downhill	25° (Ride-Height) 24° (Elevated)
Static stability uphill	25° (Ride-Height) 15° (Elevated)
Static stability sideways	25° (Ride-Height) 15° (Elevated)
Battery voltage	48V
Battery chemistry	Lithium-Ion
Battery capacity	44Ah / 2112 kWh
Operating temperature	2°C to 43°C
Range	43km / 28miles
Dynamic stability uphill	25° (Ride-Height) 15° (Elevated)
Obstacle climbing	127mm maximum
Ground Clearance	110mm

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Water traverse	50mm maximum
Maximum speed forwards	6.4kmh / 4mph (Pavement Mode) 12.8kmh / 8mph (Road Mode)
Minimum braking distance	2.2m from max speed (dry conditions)
Operating forces	Power button 2.5N Switches 3.5N Joystick 3N Display controller bezel 3N Static brake release 150N Isolator 25.8N (not used in normal operation)
Seat plane angle	-6° to -25°, user varied
Effective seat depth	460mm minimum
Effective seat width	410mm minimum
Seat surface height at front edge	590mm
Backrest angle	set for user
Backrest height	380mm
Footrest to seat distance	415mm minimum
Leg to seat surface angle	91°
Armrest to seat distance	set for user
Front location of armrest structure	set for user
Minimum turning radius	622mm

Measurements taken in accordance with the ISO 7176 series standards

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Maintenance information

Front wheel bolt torque	17 Nm / 12.5 ft-lb (Re-check after 5 miles)
Tyre pressure (Front)	60 psi / 4.1bar
Tyre size	60-406 / 20x2.35 Recommended tyre: Schwalbe Pick-up
Inner tube size	40/62-406
Fuse 1	3A Mini Blade Fuse
Fuse 2	15A Mini Blade Fuse
Fuse 3	15A Mini Blade Fuse
Fuse 4	20A Mini Blade Fuse
Fuse 5	3A Mini Blade Fuse
Fuse 6	7.5A Mini Blade Fuse
Fuse 7	3A Mini Blade Fuse
Fuse 8	3A Mini Blade Fuse
Fuse 9	7.5A Mini Blade Fuse
Fuse 10	5A Mini Blade Fuse
Fuse 11	7.5A Mini Blade Fuse

Fuse details

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Contact

Do you have a question or require support?

Please contact Conquering Horizons directly and we will be pleased to help.

UK Headquarters

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