



R-Net Control System

Instructions for Use





IF YOU ARE VISUALLY IMPAIRED, THIS DOCUMENT CAN BE VIEWED IN PDF FORMAT AT WWW.SUNRISEMEDICAL.COM

Thank you for choosing a Quickie R-Net System. We want to hear your questions or comments about this manual, the safety and reliability of your system, and the service you receive from your authorized dealer. Please feel free to write or call us at the address and telephone number below:

Sunrise Medical (US) LLC
Customer Service Department
12002 Volunteer Blvd.
Mount Juliet, TN 37122, USA
(800) 333-4000



www.SunriseMedical.com/register

Be sure to return your warranty card, and let us know if you change your address. This will allow us to keep you up to date with information about safety, new products, and options to increase your use and enjoyment of this system.

You may also register your R-Net Control at: www.SunriseMedical.com/register or use the quick response code.

FOR ANSWERS TO YOUR QUESTIONS

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

Dealer: _____

Address: _____

Telephone: _____

Serial #: _____ Date/Purchased: _____

R-Net Control System

We at Sunrise Medical want you to get the best out of your wheelchair. This Owner's Manual will familiarize you with the R-Net controls 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 R-Net control system will reach you in excellent condition having been personally inspected before leaving our factory. Following the guidelines for maintenance and cleaning will maintain its first class condition and give you complete satisfaction.

Your controller is set up with a comprehensive drive profile(s) and is ready for your use. There are a wide range of drive profiles, modules and adjustments available on the R-Net system. For further information about these you should contact your Sunrise Medical authorized dealer.

The R-Net control system has been designed to be efficient, flexible and easy to use. If you are new to the system, it is important to practice driving and using the controls in a safe environment to familiarize yourself with its operation. If you are in any doubt as to the suitability of the control system, contact your local Sunrise Medical authorized dealer for advice, prior to commencing use in public places.

The R-Net system is fully programmable, which means that the control system can be adapted via programming, to suit a wide range of requirements.

It is very important to read the owner's manual before making any minor adjustments. Contact your local Sunrise Medical authorized dealer for more complex adjustments.

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

Sunrise Medical is ISO 9001 certified, which ensures quality at all stages of the development and production of this system.



DISPOSAL AND RECYCLING INFORMATION

When this product reaches the end of its life, please take it to an approved collection or recycling point designated by your local or state government. This product is manufactured using a variety of materials. Your product should not be disposed of as ordinary household waste. You should dispose of your system properly, according to local laws and regulations. Most materials that are used in the construction of this product are fully recyclable. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is disposed in a manner that protects the environment.

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

User Warning

WARNING:

Attention R-Net system users, do not operate this device without first reading this owner's manual. If you do not understand the instructions and warnings of this owner's manual please contact your Authorized Dealer before operating this R-Net system. Failure to do so may result in damage and/or injury.

Dealer/Technician Warning

WARNING:

Attention dealers and qualified technicians, do not operate or service this R-Net system without first reading this owner's manual. If you do not understand the instructions and warnings of this owner's manual please contact the Quickie Technical Service Department before operating and/or servicing this R-Net system. Failure to do so may result in damage and/or injury.

Electrostatic Discharge

WARNING:



Power wheelchairs have printed circuit boards. Careful attention should be given to printed circuit board handling techniques to avoid damaging the control, and/or drive electronics of the system, this could create a safety hazard. Do not expose or remove printed circuit boards. Contact your Authorized Dealer for help with any electronics issues.

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1.0 Intended Use

Quickie® and Zippie® power wheelchairs are battery operated devices with wheels that are intended for medical purposes to provide mobility to persons restricted to a sitting position. The Zippie power wheelchairs are specifically for people who are slightly smaller in stature—including children.

2.0 User information

Power wheelchairs are exclusively for a user who is unable to walk or has limited mobility, for their own personal use indoors and out.

When an Attendant Control Module is fitted, the Power Wheelchair may be operated by an assistant on behalf of the user.

When a Dual Control Module is fitted the Power Wheelchair may be operated by the user, or control may be switched to an assistant to operate on behalf of the user.

The maximum weight limit includes both the user and any weight of accessories fitted to the wheelchair.

WARNING:

Exceeding the weight capacity could lead to injury and/or permanent damage to the equipment.

NOTE- Exceeding the weight limit will void the warranty.

The intended lifetime of the wheelchair is 5 years. Please DO NOT use or fit any third party components to the wheelchair unless they are officially approved by Sunrise Medical. Doing so may void the warranty.

2.1 Choose the right chair and safety options

Sunrise provides a choice of many power wheelchair styles, sizes and adjustments to meet the needs of the user. However, final selection of a wheelchair and control system rests solely with the user and their healthcare professional. Choosing the best system for the user depends on such things as:

1. User's size, disability, strength, balance and coordination.
2. User's intended use, and level of activity.
3. The types of hazards the user must overcome in daily use (in areas where the chair is most likely to be used).
4. The need for options for user's safety and comfort (such as positioning belts or special seating systems).

2.2 Adjust chair to user ability

The user needs to work with their doctor, nurse or therapist, and their Authorized Dealer, to fit their chair and adjust the controller settings for their level of function and ability.

NOTE:

- Please keep a note of your local authorized dealer's address and telephone number in the space provided. In the event of a breakdown, contact them and try to give all relevant details so they can help you quickly.
- The wheelchairs shown and described in this user guide may not correspond in every detail exactly to your own model. However, all instructions are still entirely relevant, irrespective of detail differences.
- The manufacturer reserves the right to alter without notice any weights, measurements or other technical data shown in this manual. All figures, measurements and capacities shown in this manual are approximate and do not constitute specifications.

2.3 Review this manual often

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



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



Sunrise Medical declares under its sole responsibility that this product is in conformity with the requirements of the directive 93/42/EEC amended by 2007/47/EEC."

Sunrise Medical declares that this product fulfills the performance requirements for a "Crash Test" to ISO 7176-19: 2008.

2.4 Definitions of words used in this manual

Word	Definition
 DANGER!	Denotes a potential risk of serious injury or death if the advice is not followed.
 WARNING!	Denotes a potential risk of injury if the advice is not followed.
 CAUTION!	Denotes that potential damage to equipment may occur if the advice is not followed.
NOTE:	General advice or best practice
	Reference To Additional Documentation

**AUTHORIZED
DEALER DETAILS and
CONTACT PHONE
NUMBERS**

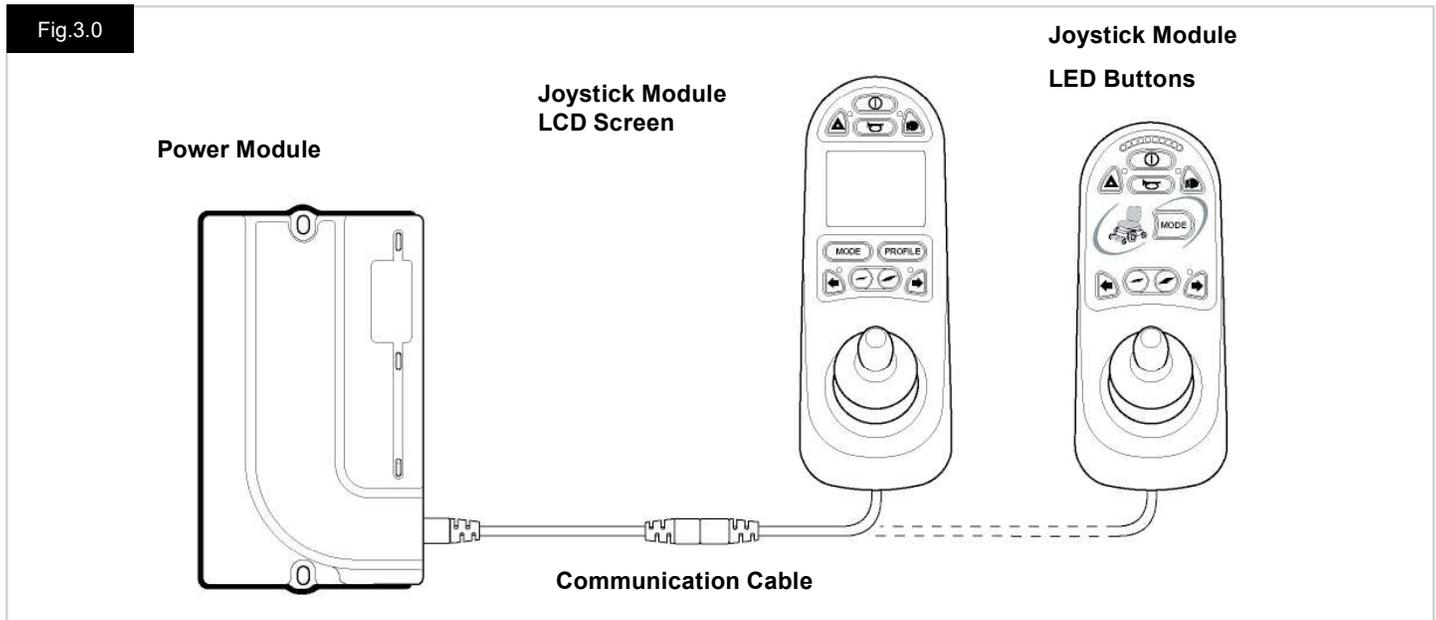




LED & CJSM1

3.0 The R-Net Control System

Fig.3.0



3.1 Introduction

The operation of the R-Net wheelchair control system is simple and easy to understand. The control system incorporates state-of-the-art electronics, the result of many years of research, to provide you with ease of use and a very high level of safety. In common with other electronic equipment, correct handling and operation of the unit will ensure maximum reliability.

Please read this chapter carefully - it will help you to keep your wheelchair reliable and safe.

An R-Net control system comprises a minimum of two modules - Joystick Module and Power Module. Because of the modular design, the depth of the control system can be greatly increased. Fig 3.0 shows an example of a basic set up.

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 disconnect the Communication Cables hold the connector housing firmly, pull the connectors apart.

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

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

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

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

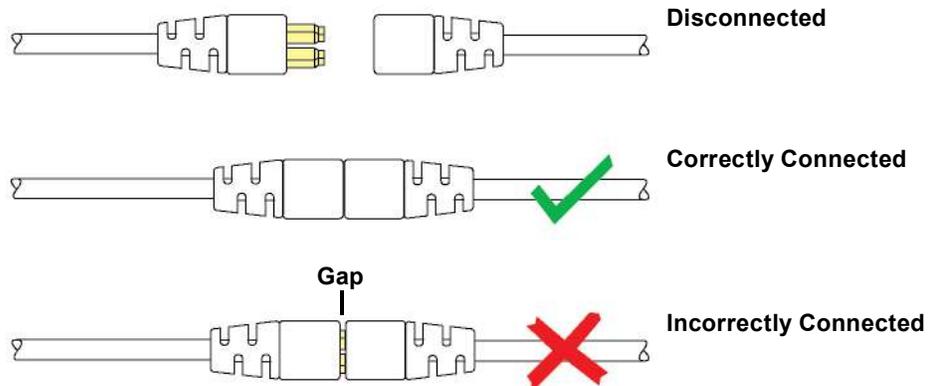
Never use abrasive or spirit-based cleaners.

⚠ WARNING:

Before cleaning, ensure the control system is switched off and the communication cable is disconnected (see Fig 3.1).

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

Fig.3.1



3.2 R-Net Joystick Modules

The R-Net control system has two versions of Joystick Module with LCD Screen (Fig 3.3) and with LED buttons (Fig 3.5). Most of the controls are common to both, however there are variations between the two. Each of the controls is explained within this section.

3.3 Joystick Module LCD Screen (Fig 3.3)

On/off button

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

Horn Button

The Horn will sound while this button is depressed.

Speed Decrease Button

This button decreases the maximum speed setting.

Speed Increase Button

This button increases the maximum speed setting.

Mode Button

The Mode button allows the user to navigate through the available operating Modes for the control system. The available modes are dependent on programming and the range of auxiliary output devices connected to the control system.

Profile Button

The Profile button allows the user to navigate through the available Profiles for the control system. The number of available Profiles is dependent on how the control system is programmed.

Hazard Warning Button and LED

This button activates and de-activates the wheelchair's hazard lights. Depress the button to turn the hazards on and depress the button again to turn them off. When activated the hazard LED and the indicator LEDs will flash in sync with the wheelchair's indicator(s).

Lights Button and LED

This button activates and de-activates the wheelchair's lights. Depress the button to turn the lights on and depress the button again to turn them off. When activated the lights LED will illuminate.

Left Indicator Button and LED

This button activates and de-activates the wheelchair's left indicator. Depress the button to turn the indicator on and depress the button again to turn it off.

When activated the left indicator LED will flash in sync with the wheelchair's indicator(s).

Right Indicator Button and LED

This button activates and de-activates the wheelchair's right indicator. Depress the button to turn the indicator on and depress the button again to turn it off. When activated the right indicator LED will flash in sync with the wheelchair's indicator(s).

External On/Off Switch Jack

This mono jack port allows the user to turn the control system on and off using an external device, such as a buddy button.

External Profile Switch Jack (Fig 3.2 and 3.4)

This is a stereo jack socket that allows the connection, via a suitable adapter, of two external switches or buttons. The function of these switches or buttons is assignable via programming. Please contact your authorized dealer.

The connection details for the mating stereo plug are shown below.

If the control system is set to latched drive or actuator operation, then the polarity of External Profile Jack 1 will be inverted to effect a fail-safe connection for an emergency stop button.

The Joystick Module is supplied with rubber plugs that must be inserted into the Jack Sockets when no external device is connected.

For full details of LCD Screen functions please refer to Chapter 4.0

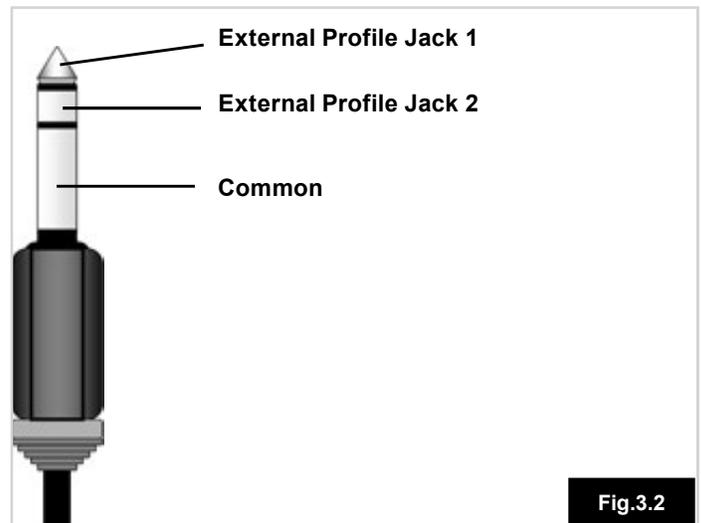


Fig.3.3

Joystick Module With LCD Screen

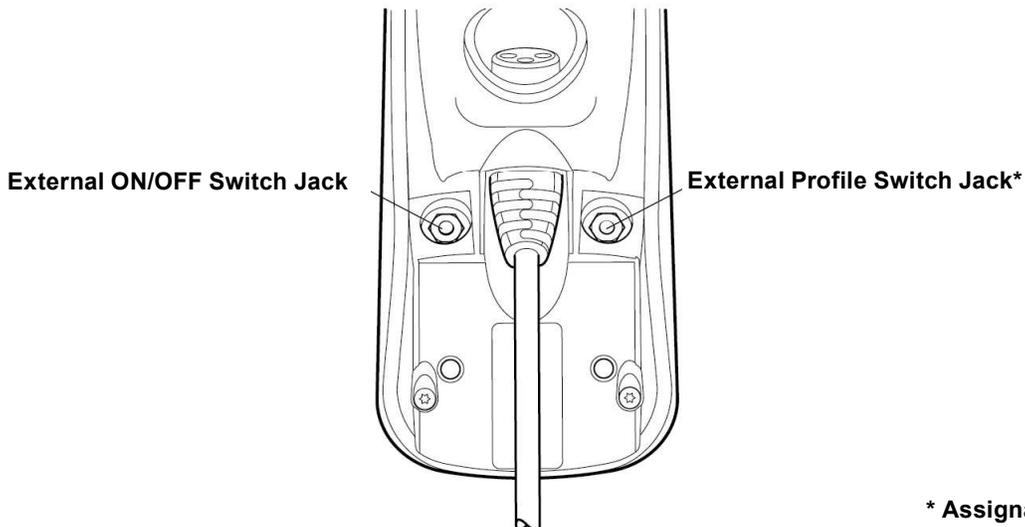
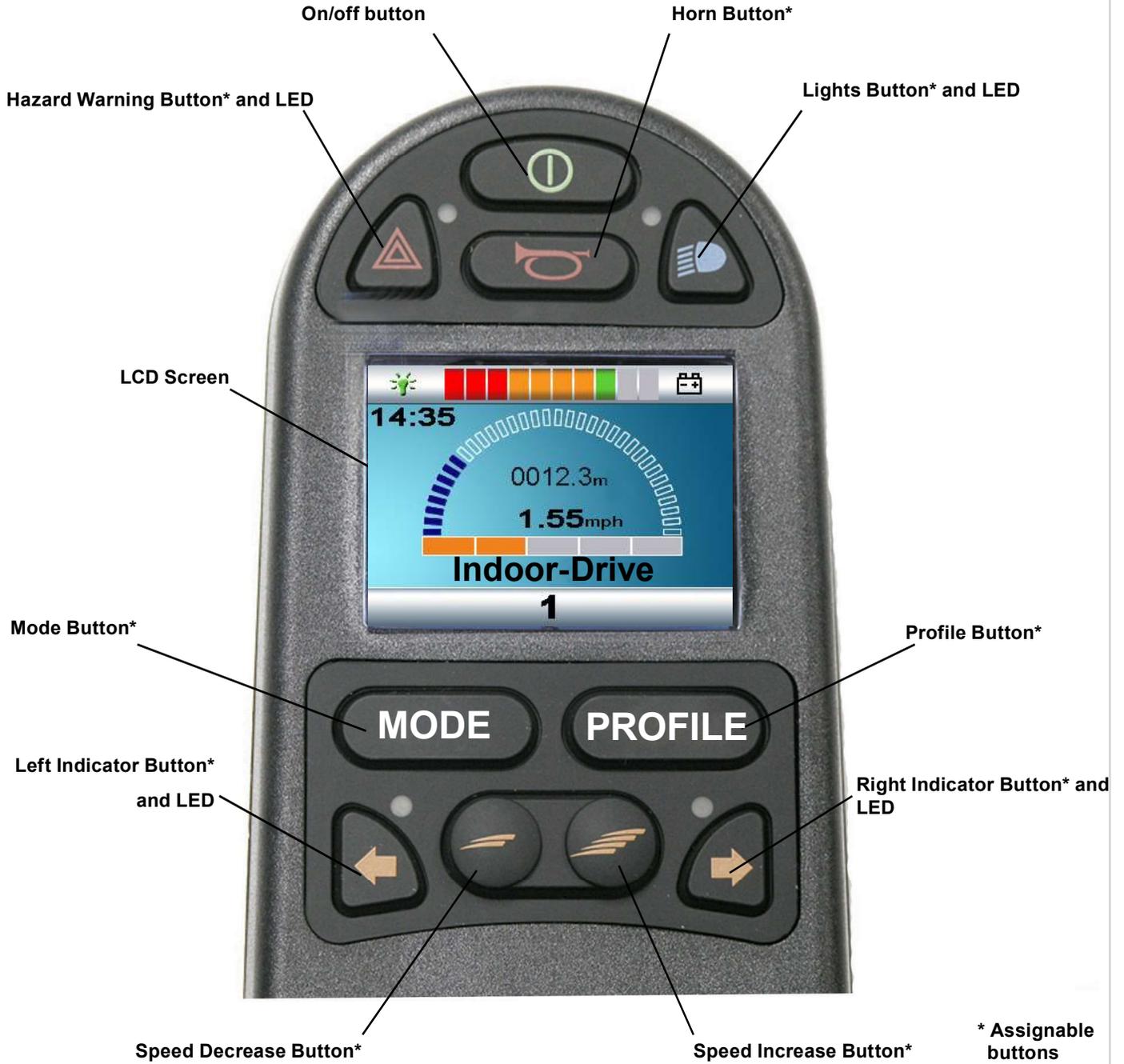


Fig.3.4

* Assignable stereo jack

3.4 Joystick Module With LED Buttons (Fig 3.5)

Battery Gauge

The battery gauge shows you that the wheelchair is switched on. It also indicates the operating status of the wheelchair. Details are given in section 5.0.

If the battery gauge shows red, yellow and green, the batteries are charged. (LED's 1 – 10)

If the battery gauge shows just red and yellow, then you should charge the batteries as soon as you can. (LED's 1 – 7)

If the battery gauge shows just red, either steady or flashing slowly, then you should charge the batteries immediately. (LED's 1 – 3)

Do not operate the control system if the battery is nearly discharged. Failure to comply with this condition may leave you stranded in an unsafe position, such as in the middle of a road. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.

Refer to section 5.0 for details.

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, refer to section 5.21.

Maximum Speed Indicator

When programmed to display speeds, this gauge shows the maximum speed setting of the wheelchair. There are five speed settings – step 1 (1 LED, is the lowest speed) and step 5 (5 LED's) is the highest speed.

Profile Indicator

When programmed to display profiles, this indicator shows the selected drive profile. There may be up to five drive profiles available; this depends on the programming of the control system. Drive profiles can be programmed into the controller. A Control System utilizing an JSM-LED should only be programmed with five Profiles enabled. For programming information, please contact your authorized dealer.

Speed / Profile Decrease Button

Pressing 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

Pressing this button increases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a higher drive profile.

Mode Button

The Mode button allows the user to navigate through the available operating Modes for the control system. The available modes are dependent on programming and the range of auxiliary output devices connected to the control system. When in any Mode other than Drive and Setting the Speed and Actuator LED's are all extinguished.

Actuator Indicator

This LED set displays which Actuator channel is currently being controlled when the Control System is in Actuator Mode. Actuator selection and operation is achieved using the Joystick. Motions to the Left or Right select different actuator channels. Motions Forward and Backwards move the actuator(s) selected.

Charger Socket (Fig 3.6)

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

Refer to section 9.0 for more details on charging.

This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the electromagnetic compatibility (EMC) performance of the wheelchair.

The control system warranty will be voided if any device other than the manufacturer approved battery charger is connected to this socket.

Assignable Buttons

Via programming, it is possible to change the function of most of the buttons. This includes assigning the function of another button or making the button act as a shortcut to a particular action, such as moving a seating function. Additionally, a button can be assigned a second function, which is accessed by depressing the button for a length of time.

For more information on changing the function of a button and assigning a second function, please contact your authorized dealer.

Fig.3.5



Charger Socket, (underneath)

Fig.3.6

3.5 Locking the Joystick Module (Fig 3.7 - 3.10)

To lock the wheelchair:

- While the control system is switched on (Fig 3.7) depress and hold the On/Off button.
- After 1 second the control system will beep and the screen will go blank (Fig 3.8). 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.
- The following icon will be displayed (Fig 3.9) the next time the Control System is switched on.
- If an LED Joystick Module is fitted the Speed Indicator LEDs will ripple from left to right.

To unlock the wheelchair:

- If the control system has switched off, press the On/Off button. The “Locked “ symbol is displayed (Fig 3.9).
- 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 and the screen will illuminate (Fig 3.10).
- The wheelchair is now unlocked.



4.0 The R-Net LCD Screen Joystick Module

4.1 LCD Screen (Fig 4.0)

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

The color LCD screen is split into three areas of information. The Top Bar, the Base Bar and the Main Screen Area.

Each area is covered separately within this section.

Top Bar (A)

Battery level indicator and On-board diagnostics display bar.

Battery Indicator (Fig 4.1)

This displays the charge available in the battery and can be used to alert the user to the status of the battery.

- Steady: This indicates that all is well.
- Flashing Slowly: The control system is functioning correctly, but you should charge the battery as soon as possible.
- Stepping 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.

Refer to section 8.1 for a description of how to read the Battery Gauge.

Focus (Fig 4.2)

When the control system contains more than one method of direct control, such as a secondary Joystick Module or a Dual Attendant Module, then the Module that has control of the wheelchair will display the In Focus symbol.

Base Bar (C)

Current Profile (Fig 4.3)

The currently selected Profile is shown in numeric form.

Motor Temperature (Fig 4.4)

This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.

Control System Temperature (Fig 4.5)

This symbol is displayed when the control system has intentionally reduced its own power in order to protect itself against heat damage.



Fig.4.0

- A. Top Bar
- B. Main Screen Area
- C. Main Screen

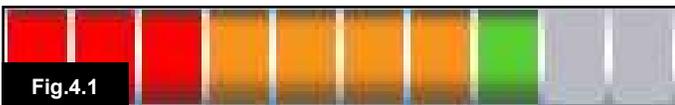


Fig.4.1



Fig.4.2



Fig.4.3



Fig.4.4

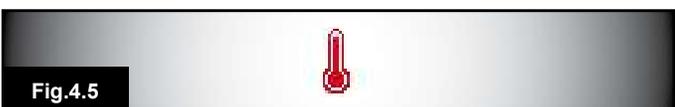


Fig.4.5

Indoor-Drive

Fig.4.6



Fig.4.7

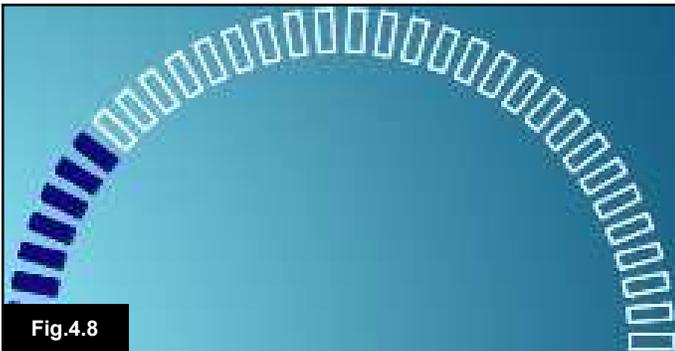


Fig.4.8



Fig.4.9



Fig.4.10



Fig.4.11

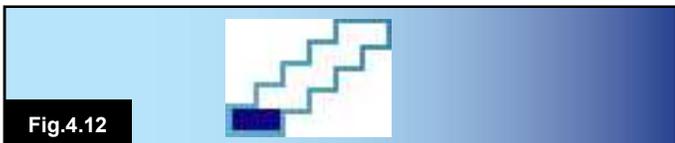


Fig.4.12

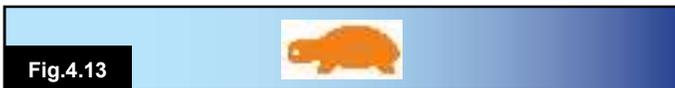


Fig.4.13



Fig.4.14

4.2 Main Screen Area: The Drive Screen

Profile Name (Fig 4.6)

This is text string that displays the name of the currently selected Profile.

Clock (Fig 4.7)

This displays the current time in a numeric format. The clock is user adjustable. Adjustable options are:

- Visibility, whether the clock is displayed on screen.
- The display format, 12 or 24 hour.
- The time, you can adjust the time.

These adjustments are made within the Settings Menu. Refer to Chapter 7.0 for details.

Speed Display (Fig 4.8)

This gives a proportional display of the wheelchair's speed. The Arc begins at 0% and has a maximum 100%.

Maximum Speed Indicator (Fig 4.9)

This displays the current maximum speed setting.

Digital Speed Display (Fig 4.10)

This displays the actual speed of the wheelchair derived from the motors. The display can be set to mph or km/h.

Odometer (Fig 4.11)

This displays the distance driven by the wheelchair. The display can show either the total distance or the trip distance, in miles or kilometers. The Settings Menu contains an option that sets whether the trip or total distance is displayed, as well as a facility to reset the trip distance.

If latched operation is active, then that symbol will take priority over the odometer.

Latched (Fig 4.12)

When the control system is operating in a latched condition this symbol will be displayed.

Inhibit (Fig 4.13 and 4.14)

If the speed of the wheelchair is being limited, for example, by a raised seat, then this orange symbol will be displayed.

If the wheelchair is being inhibited from driving, then this red symbol will be flashing.



4.3 Main Screen Area: Mode Screens

Pressing the MODE button enables you to access various functions. Typical examples are Drive Mode, Seating Control Mode and Bluetooth Mode. The user can select the required Mode with the Mode Button on the JSM. Note: it will only be possible to select a Mode if there is a Module that will support that Mode connected into the system. For example, if there is no Mouse Module connected, then the user will not be able to select that Mode.

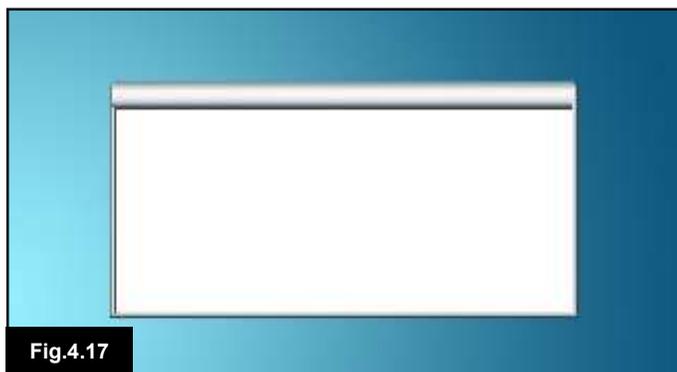
Seating Control Mode (Fig 4.15)

Displays the sections of the chair currently selected for movement, the name given to the selection and a direction arrow showing what sort of movement is available.



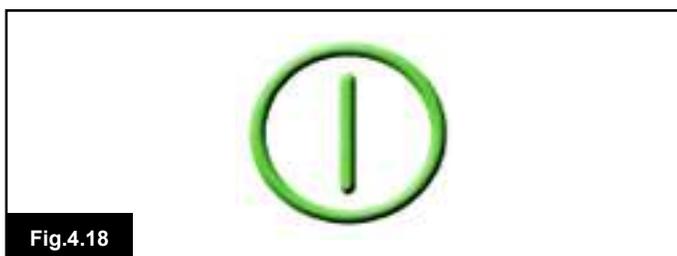
Bluetooth Mode, Mouse (Fig 4.16)

When Bluetooth Mode is entered, the following screen will be displayed.



Message Window (Fig 4.17)

The R-Net displays warning icons and informational messages in a dedicated message window.



Restart (Fig 4.18)

When the control system requires a reboot (e.g., after a module re-configuration), this symbol will be flashed.



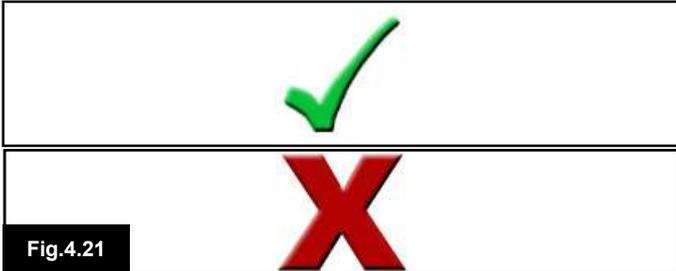
Timer (Fig 4.19)

This symbol is displayed when the control system is changing between different states. An example would be entering into Programming Mode. The symbol is animated to show the sands falling.



Sleep (Fig 4.20)

This symbol will be displayed for a short time before the R-Net enters into a sleep state.



Cross and Check (Fig 4.21)

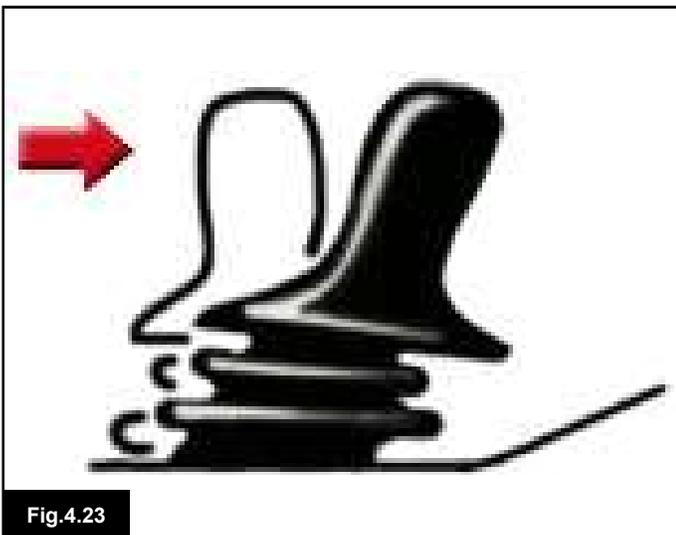
These symbols will be displayed during configuration procedures.

1. Process completed correctly.
2. Process not completed correctly.



E-stop (Fig 4.22)

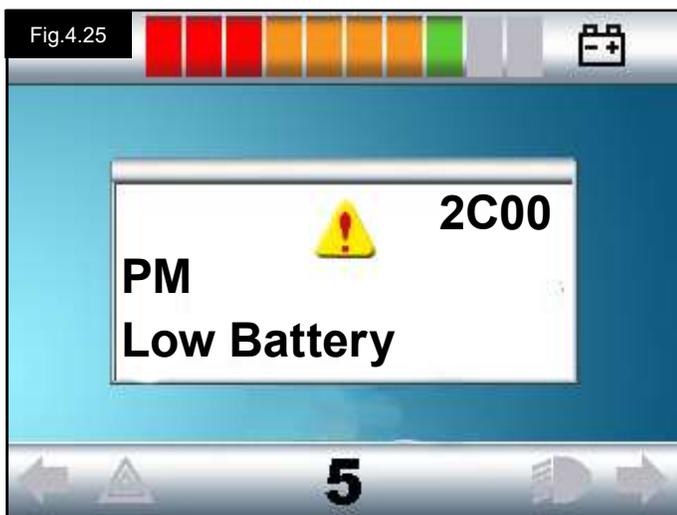
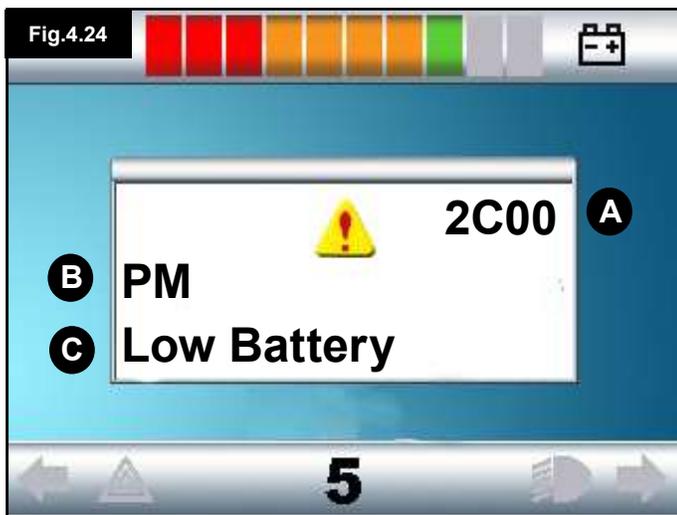
If the External Profile Switch is activated during drive or actuator operation, this symbol will be displayed.



Joystick Displaced (Fig 4.23)

If you operate the Joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen.

You must release and center the Joystick to resume normal operation. If you do not release the Joystick within five seconds the wheelchair will not be able to move, even if you release the Joystick and operate it again. The screen will display a diagnostic screen at this time. You can reset this condition by switching the control system off and on again.



4.4 LCD Joystick Diagnostic Guide

When the control system safety circuits have operated and the control system has been prevented from moving the wheelchair, a diagnostics screen will be displayed. This indicates a system trip e.g., the R-Net has detected a problem somewhere in the wheelchair's electrical system. If the error is in a non-active module (e.g., in the Intelligent Seating Module) but with a drive Profile selected, then drive will still be possible. However, the diagnostic screen will appear intermittently.

Screen Area (Fig 4.24)

A. Trip Code

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

B. Identified Module

This identifies which module of the control system has registered the problem, such as:

- PM = Power Module
- JSM = Joystick Module
- ISM = Intelligent Seating / Lighting Module

C. Trip Text

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

Diagnostic Procedure (Fig 4.25) (example)

Identified Module (PM): = The Power Module
 Trip Text: = Low Battery
 Trip Code: = 2C00

This indicates the battery needs charging or there is a bad connection.

Check the connections to the battery. If the connections are good, try charging the battery.

Please follow this procedure:

1. Read and note the Trip Text displayed, the identified module and the Trip Code.
2. Switch off the control system.
3. Make sure that all connectors on the listed Module and the wheelchair are mated securely.
4. Check the condition of the battery.
5. Note the Trip Text description.
6. Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair.
7. Contact your authorized dealer.



Fig.4.27

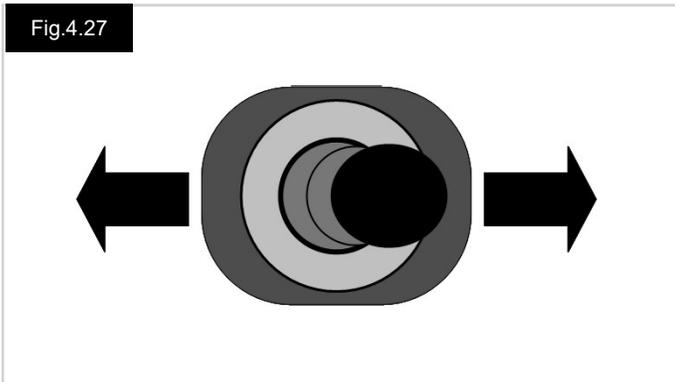
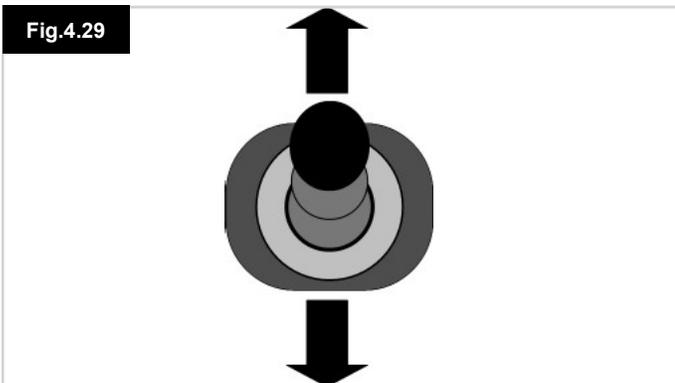


Fig.4.29



4.5 Actuator Selection Screen (Seating)

This is accessed through the MODE button.

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

Press the Mode Button to scroll through the Mode screens until you reach the actuator screen (Fig 4.26).

Actuator adjustment is achieved as follows.

1. Move the Joystick sideways to the left or right to select the desired axis (Fig 4.27). The axis is indicated by the section of the wheelchair that is highlighted (Fig 4.28).
2. Move the joystick forwards or backwards to move the selected actuator correspondingly (Fig 4.29).
3. Repeat these steps for each actuator that requires adjustment.
4. To drive again, depress the Mode button until the Drive screen is reached or, in the case of the LED joystick module, until the Speed Indicator returns to its normal state.

5.0 The R-Net LED Joystick Module

5.1 LED Control System Status Indication

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

With the help of this chapter it is possible to diagnose problems that may appear drastic at first, but may have a very simple and easy to fix cause.

Battery Gauge is Steady (Fig 5.0)

This indicates that all is well.

Battery Gauge Flashes Slowly (Fig 5.1)

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

Battery Gauge Steps Up (Fig 5.2)

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) (Fig 5.3)

The control system safety circuits have operated and the control system has been prevented from moving the wheelchair.

This indicates a system trip (e.g., the R-Net has detected a problem somewhere in the wheelchair's electrical system). Please follow this procedure:

- Switch off the control system.
- Make sure that all connectors on the wheelchair and the control system are mated securely.
- Check the condition of the battery.
- If you can't find the problem, try using the self-help guide on the next page, Section 5.2.
- Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair.
- Contact your authorized dealer.

Speed Indicator Ripples Outwards From Center (Fig 5.4)

In this instance the LEDs make a ripple motion starting with the middle LED and then stepping outwards on both sides. The Control System has detected that a new module has been added and is re-configuring. Please allow a few seconds for this to complete

Speed Indicator LEDs 2 and 4 Flash (Fig 5.5)

When the control system requires a reboot, for example, after a module re-configuration, the second and fourth speed indicator LEDs will flash.

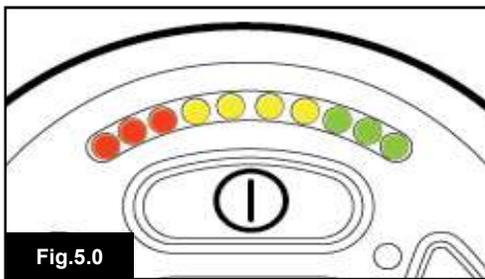


Fig.5.0

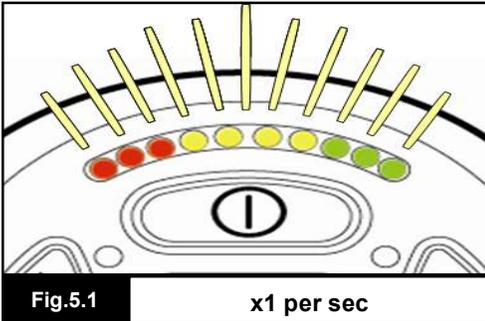


Fig.5.1

x1 per sec

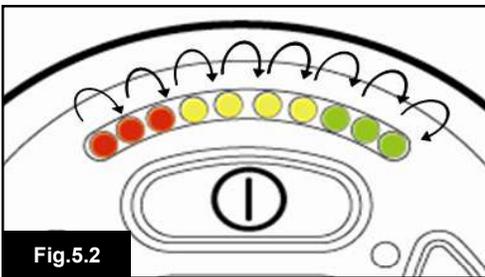


Fig.5.2

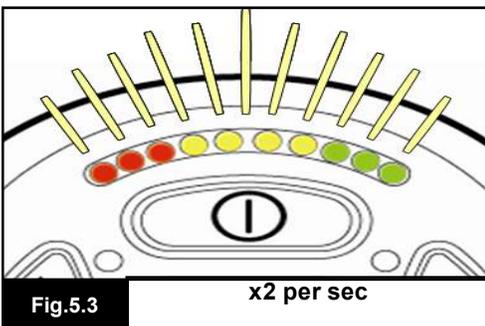


Fig.5.3

x2 per sec

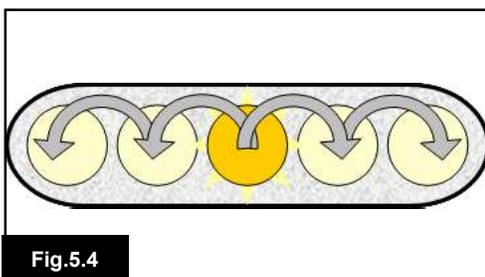


Fig.5.4

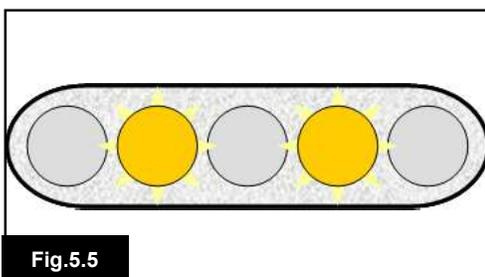


Fig.5.5

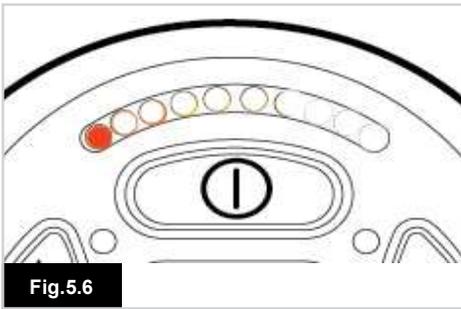


Fig. 5.6

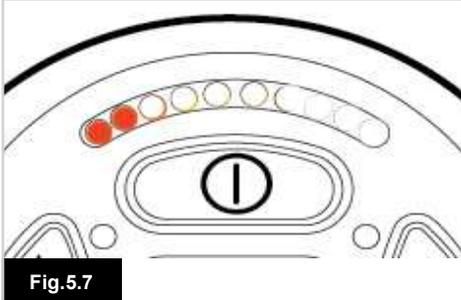


Fig. 5.7

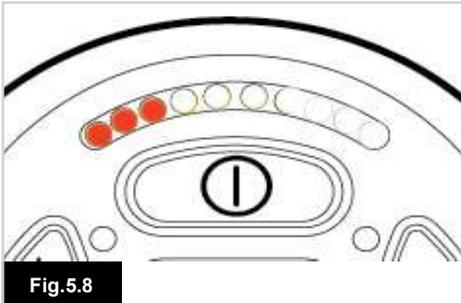


Fig. 5.8

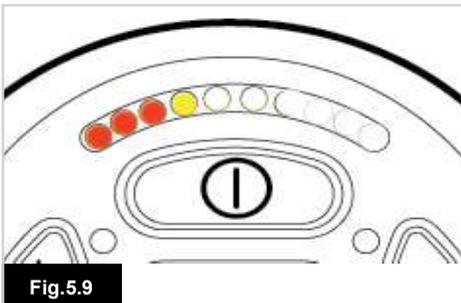


Fig. 5.9

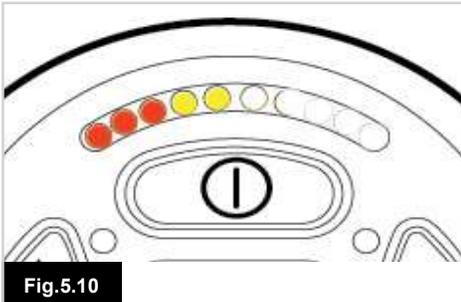


Fig. 5.10

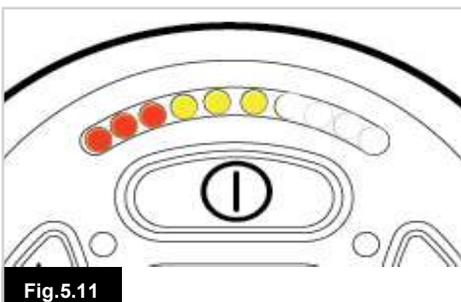


Fig. 5.11

5.2 LED Joystick Diagnostic Guide

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

Below is a list of self-help actions. Try to use this list before you contact your authorized dealer. Go to the number in the list which matches the number of flashing LEDs and follow the instructions.

If the problem persists after you have made the checks described below contact your authorized dealer.

1 LED (Fig 5.6)

The battery needs charging or there is a bad connection to the battery. Check the connections to the battery. If the connections are good, try charging the battery.

2 LED (Fig 5.7)

The left hand motor* has a bad connection. Check the connections to the left hand motor.

3 LED (Fig 5.8)

The left hand motor* has a short circuit to a battery connection. Contact your authorized dealer.

4 LED (Fig 5.9)

The right hand motor* has a bad connection. Check the connections to the right hand motor.

5 LED (Fig 5.10)

The right hand motor* has a short circuit to a battery connection. Contact your authorized dealer.

6 LED (Fig 5.11)

The wheelchair is being prevented from driving by an external signal. The exact cause will depend on the type of wheelchair you have; one possibility is the battery charger is connected.

7 LED (Fig 5.12)

A joystick fault is indicated. Make sure that the joystick is in the center position before switching on the control system.

8 LED (Fig 5.13)

A possible Control System fault is indicated. Make sure that all connections are secure.

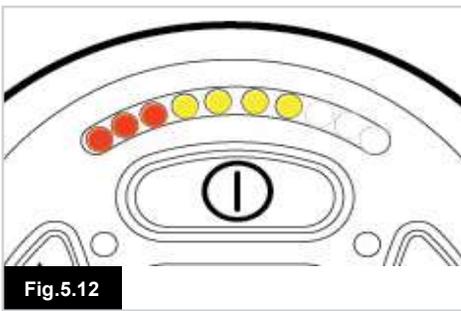


Fig.5.12

9 LED (Fig 5.14)

The parking brakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.

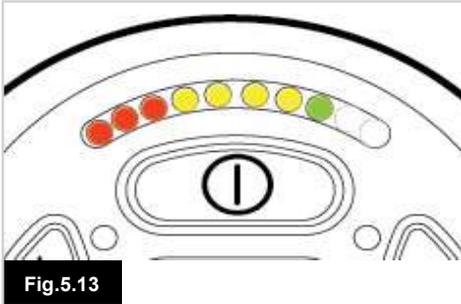


Fig.5.13

10 LED (Fig 5.15)

An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery connections.

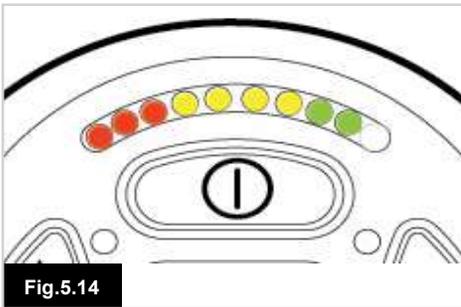


Fig.5.14

7 LED + Speed LED's (Fig 5.16)

A communication fault is indicated. Make sure that the joystick cable is securely connected and not damaged.

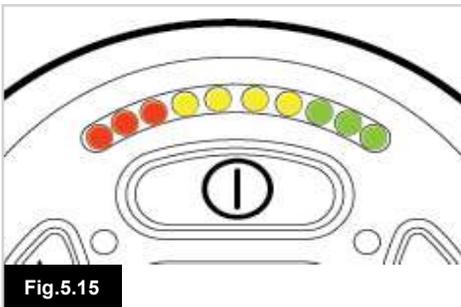


Fig.5.15

Actuator LED's Flash (Fig 5.17)

An Actuator trip is indicated. If more than one actuator is fitted, check which actuator is not working correctly. Check the actuator wiring.

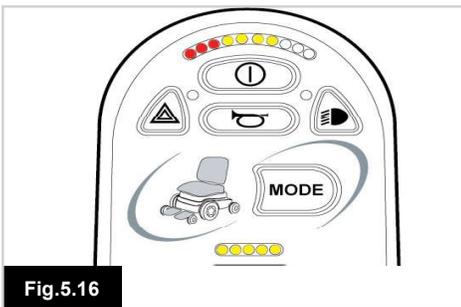


Fig.5.16

Slow or sluggish movement / Maximum Speed / Profile Indicator Flashes

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.



Fig.5.17

If your speed indicator is flashing, your chair is in an inhibit. Bring all power seating options to the upright position and lower seat if elevated. If your speed indicator continues to flash, contact your authorized dealer for service.

Speed Indication LED's

An increasing number of LED's illuminated shows the maximum speed setting. For example, if the setting is speed level 4, then the four left hand LED's will be illuminated.

Profile Indication LED's

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

Maximum Speed / Profile Indicator Ripples Up and Down

This indicates the control system is locked; refer to Chapter 15.15 for details.

6.0 Getting Ready To Drive

6.1 Getting Ready to Drive

- Operate the On/Off switch. The screen will go through an initializing process then show the base screen (Fig 6.0).
- In the case of the JSM-LED the battery gauge will blink and then remain on after a few seconds.
- Check that the Speed Setting is at a level that suits you.
- Push the joystick to control the speed and direction of the wheelchair.

WARNING:

- If you push the joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen (Fig 6.1).
- You must release and center the joystick to resume normal operation. If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and push it again.
- The screen will display the diagnostic screen at this time. You can reset this condition by switching the control system off and on again.



Fig.6.1

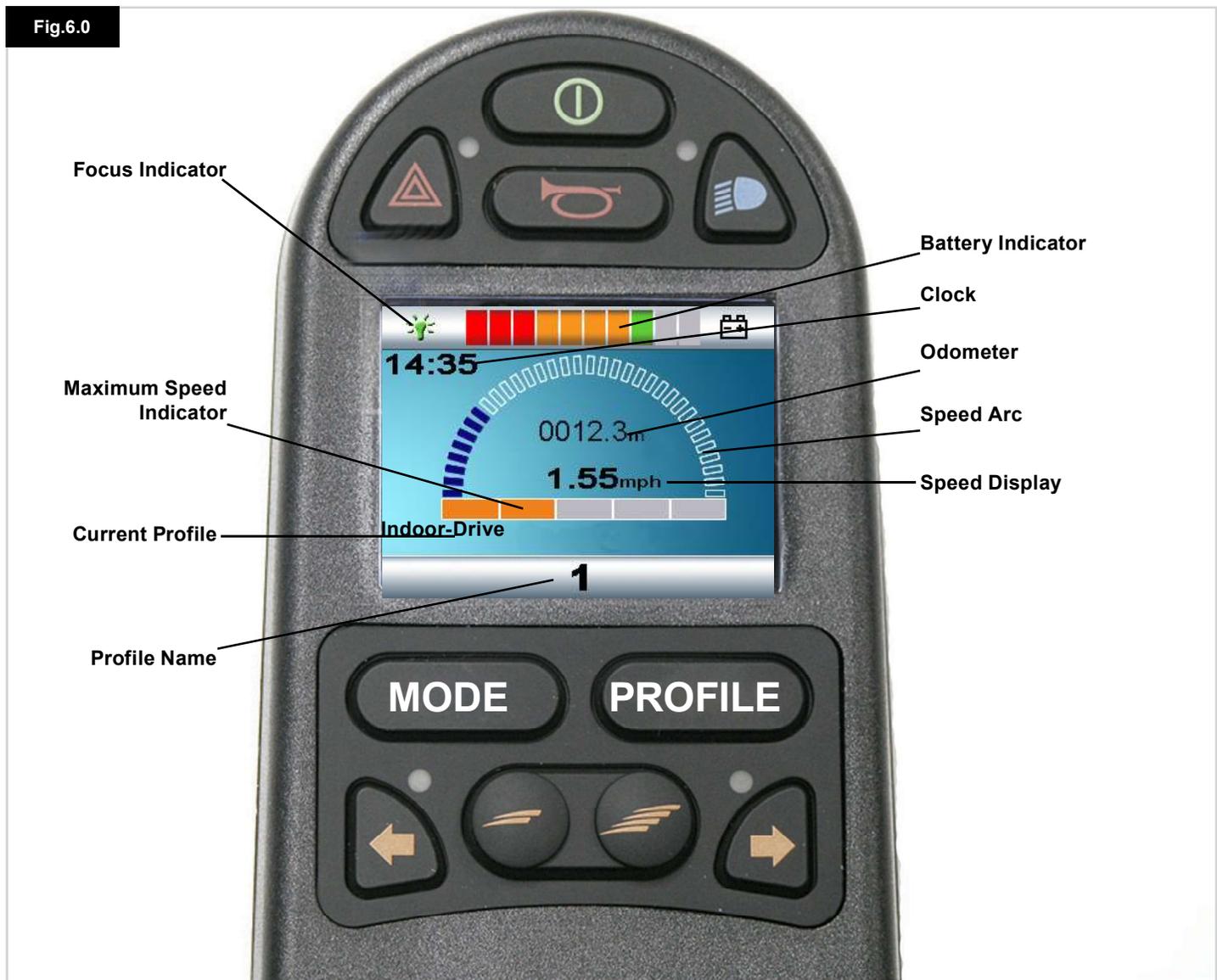


Fig.6.0



Fig.6.2

6.2 Using Your Control System

Make sure that the control system is mounted securely and that the joystick position is correct (Fig 6.2). The hand or limb you use to operate the joystick should be supported, for example by the wheelchair arm pad. Do not use the joystick as the sole support for your hand or limb - wheelchair movements and bumps could upset your control.

Driving Technique

The control system interprets your joystick movements and produces appropriate movements of your wheelchair. It is easy and simple to control the wheelchair as the system uses proportional control, which is especially useful if you are inexperienced. One popular technique is to simply point the joystick in the direction you want to go (Fig 6.3). The wheelchair will “home-in” on the direction you push the joystick.

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

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

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 (Fig 6.4). If adjusting the speed setting does not remedy the problem then it's possible there may be a non-hazardous fault. Contact your authorized dealer.

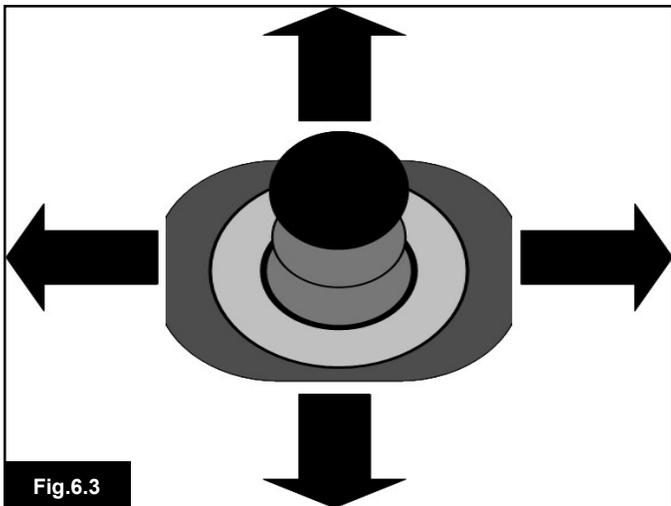


Fig.6.3

WARNING:

- You must be capable of driving a wheelchair safely. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.
- If you are in any doubt, please consult your healthcare professional who can provide you with further information and advice.

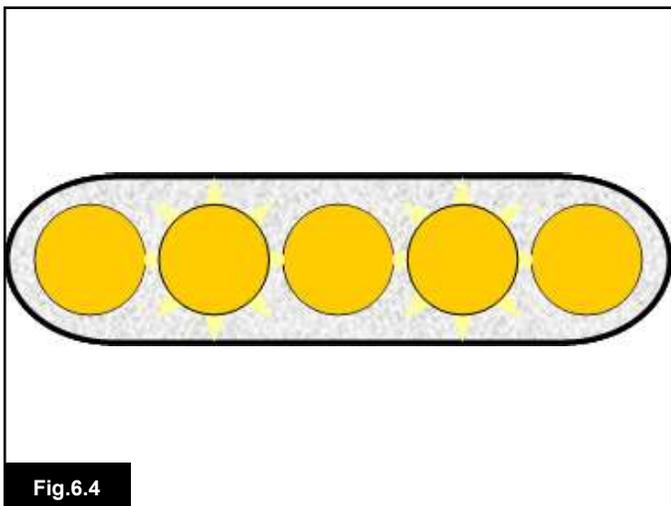
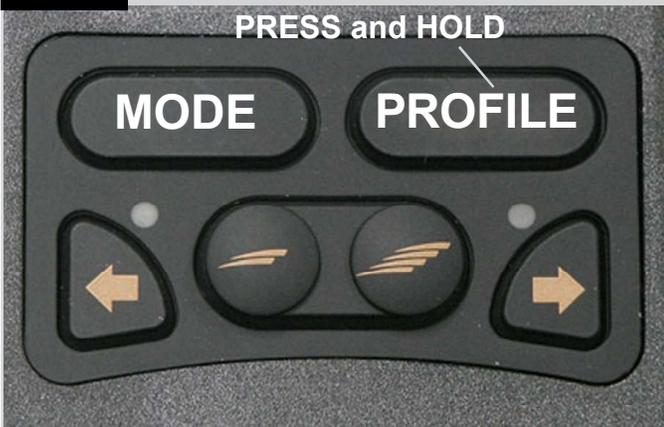


Fig.6.4

 For comprehensive instructions and advice on driving techniques for your wheelchair and more, please consult your wheelchair Owners Manual.

Fig.7.0



7.0 Settings Menu

7.1 Settings Menu

The Settings Menu allows you to adjust the LCD display in terms of clock adjustment and display format, the brightness of the backlight, the background color and the behavior of the odometer. The menu is accessed by depressing and holding the Profile Button (Fig 7.0).

A Settings Menu display example is shown in Fig 7.1.

Each of the menu items are described in the following sections:

7.2 Set Time

- Deflecting the joystick to the right will enter the clock adjustment screen (Fig 7.2).
- Six adjustable parameters are displayed on the clock adjustment screen:
 - Year, Month, Date, Day, Hours and Minutes. The Exit option is also displayed (Fig 7.2).
 - Deflecting the joystick forwards will increase the selected parameter, deflecting the joystick backwards decreases the selected parameter.
 - Deflecting the joystick to the right selects the next parameter, deflecting the joystick to the left selects the previous parameter.
- When the date/time is set, a final deflection to the right to select Exit, then forwards or backwards, exits the clock adjustment screen.

Fig.7.1

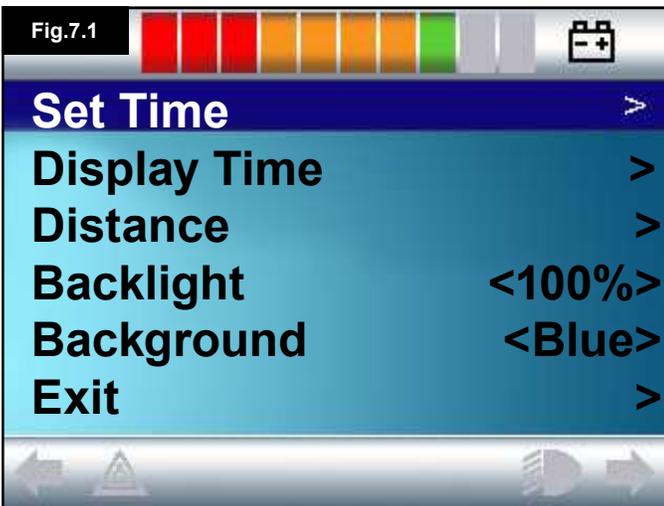


Fig.7.2

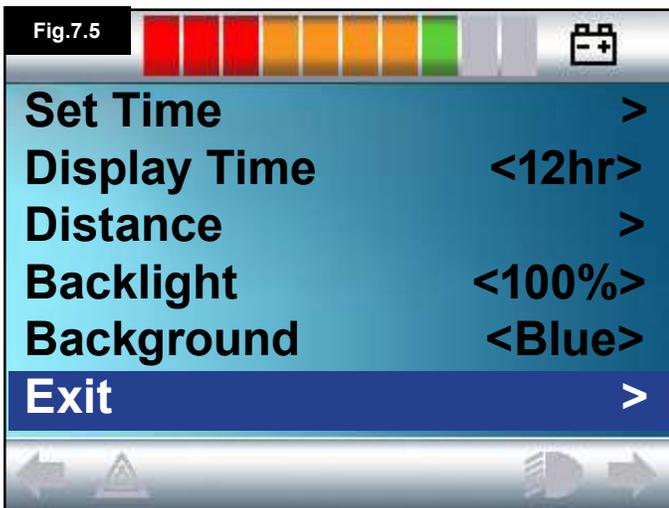




7.3 Display Time

This sets the format of the time display or turns it off. The options are 12hr, 24hr or Off. Left and right joystick deflections are used to change between the options.

- Deflect the joystick Backwards to select "Display Time" (Fig 7.3).
- Deflect the joystick to the left to select 12hr, to the left again to select 24hr, to the left again to select Off (Fig 7.4).
- Move the joystick forwards or backwards to enter your choice and exit Display Time simultaneously.
- Deflect the joystick backwards to select "Exit" (Fig 7.5).
- Deflect the joystick to the right to exit back to Drive Screen.





7.4 Distance

This sets the functionality of the odometer. To select the distance option:

- Deflect the joystick backwards until “Distance” is highlighted (Fig 7.6).
- Deflect the joystick to the right to select the option.
- The next screen appears (Fig 7.7).

Total Distance.

This is a value held in the Power Module and relates to the total distance driven using that Power Module.

Trip Distance

This is a value held in the joystick module and relates to the total distance driven since the last reset.

Display Distance

Sets whether Total Distance or Trip Distance appears as the odometer display on the LCD Screen.

- Move the joystick backwards until “Display Distance” is highlighted.
- Deflect the joystick to the right to select “Total” or “Trip”.
- Move the joystick backwards or forwards to exit “Display Distance”.

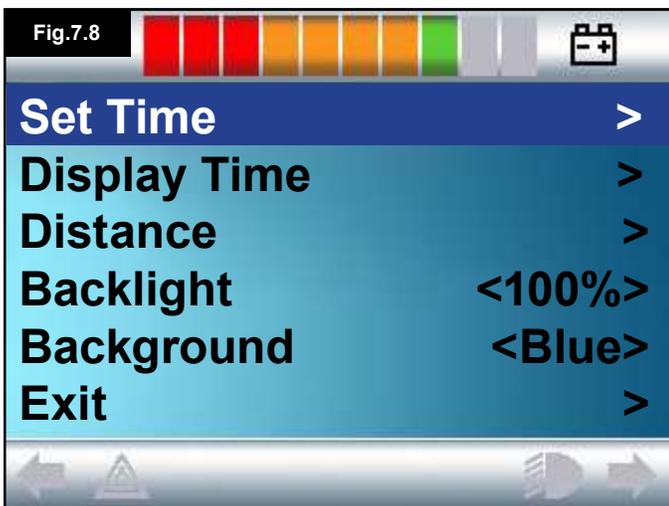
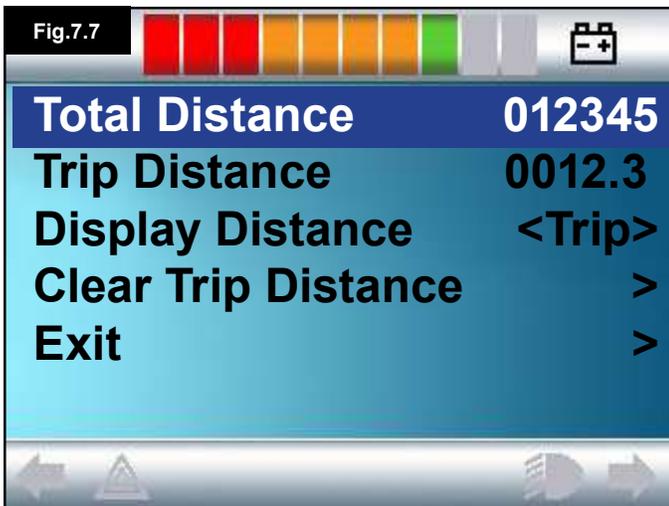
Clear Trip Distance

To clear the Trip Distance value:

- Deflect the joystick backwards until “Clear Trip Distance” is highlighted.
- Move the joystick to the right to clear the displayed value.
- Deflect the joystick backwards or forwards to exit the “Clear Trip Distance”.

Exit

Move the joystick backwards until “Exit” is highlighted. A right joystick deflection will return to the Settings Menu (Fig 7.8).





7.5 Display Settings

Backlight (Fig 7.9)

This sets the intensity of the LCD backlight. The adjustable range is 0% to 100% in steps of 10%.

- Move the joystick backwards until “Backlight” is highlighted.
- Deflect the joystick to the right to increase the value.
- Deflect the joystick to the left to decrease the value.
- Move the joystick backwards or forwards to go back to the Settings screen.

Background (Fig 7.10)

This sets the color of the screen background. Blue is the standard, but in very bright sunlight then a white background will make the display more visible (Fig 7.11).

The options are Blue, White and Auto.

- Deflect the joystick backwards until “Background” is highlighted.
- Move the joystick to the right to select, “Blue, White or Auto”.
- Deflect the joystick backwards or forwards to exit “Background”.

Blue means the background will be blue in all Profiles. White means the background will be white in all Profiles. Auto means the color will be set by the installed program. For example, blue could be for the slower Profiles that are for indoor use and white for the faster Profiles intended for outdoor use. For more details of this parameter, please contact your authorized dealer.

Exit

- Move the joystick backwards until “Exit” is highlighted.
- A right joystick deflection will return to the Settings Menu (Fig 7.8).





Fig.8.0

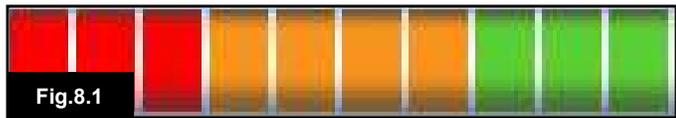


Fig.8.1

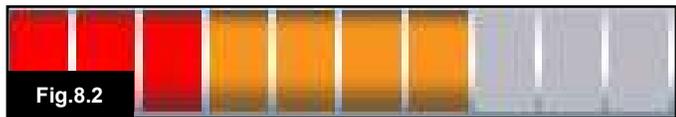


Fig.8.2



Fig.8.3

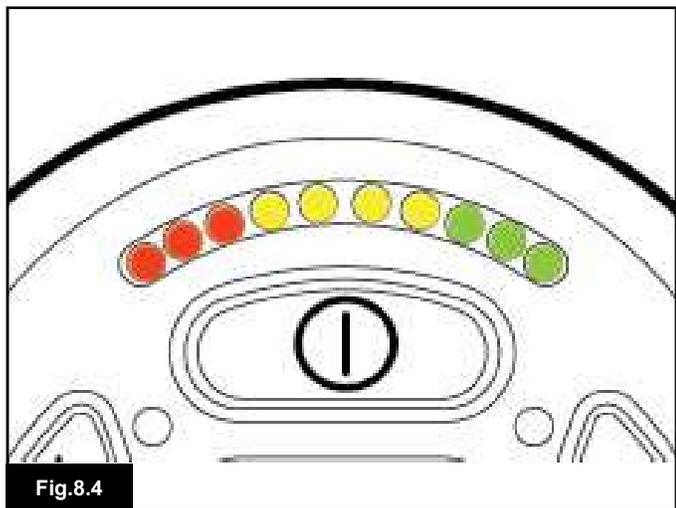


Fig.8.4

8.0 The Battery Gauge

The battery gauge is included to let you know how much charge is left in your batteries. The best way for you to use the gauge is to learn how it behaves as you drive the wheelchair. Like the fuel gauge in a car, it is not completely accurate, but it will help you avoid running out of “fuel” (Fig 8.0).

The battery gauge works in the following way:

When you switch on the control system, the battery gauge shows an estimate of the remaining battery charge.

The battery gauge gives you a more accurate reading about a minute after you start driving the wheelchair.

When you replace worn out batteries, fit the type recommended by Sunrise Medical. If you use another type the battery gauge may be inaccurate.

The amount of charge in your batteries depends on a number of factors, including the way you use your wheelchair, the temperature of the batteries, their age and the way they are made. These factors will affect the distance you can travel in your wheelchair. All wheelchair batteries will gradually lose their capacity as they age.

The most important factor that reduces the life of your batteries is the amount of charge you take from the batteries before you recharge them. Battery life is also reduced by the number of times you charge and discharge the batteries.

To make your batteries last longer, do not allow them to become completely flat. Always recharge your batteries promptly after they are discharged.

If your battery gauge reading seems to fall more quickly than usual, your batteries may be worn out.

Please consult your authorized dealer.

8.1 How to Read a Battery Gauge

If the battery gauge shows red, yellow and green, the batteries are charged. (Fig 8.1)

If the battery gauge shows just red and yellow, then you should fully charge the batteries as soon as you can (Fig 8.2).

If the battery gauge shows just red, either steady or flashing slowly, then you should fully charge the batteries immediately (Fig 8.3).

On LED Button joystick modules the colored LED's correspond to the colored bars on the LCD version (Fig 8.4).

WARNING:

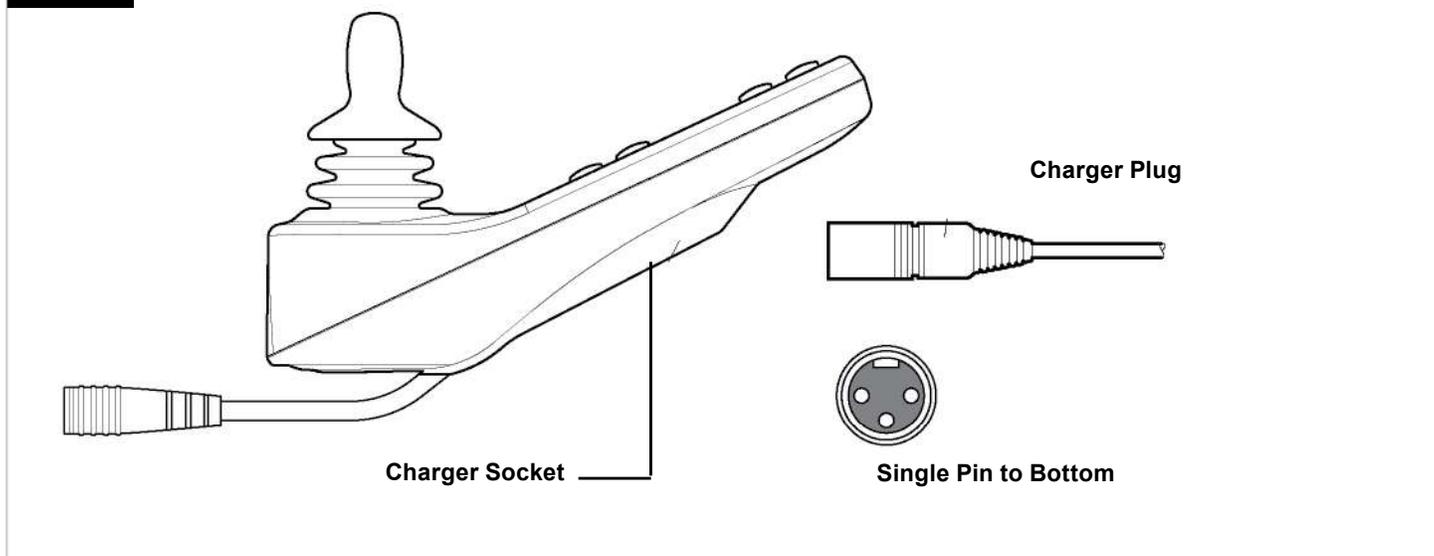
Do not operate the control system if the battery is nearly discharged. Failure to comply with this condition may leave you stranded in an unsafe position, such as in the middle of a road. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.



For comprehensive instructions and advice on Batteries and Battery Charging, please consult your wheelchair Owner's Manual and the Owner's Manual supplied with the Battery Charger.

9.0 The Charger Socket

Fig.9.0



9.1 Battery Charging

To charge the wheelchair batteries:

- Connect the charger plug into the battery charger socket on the R-Net JSM.
- You will not be able to drive the wheelchair when the charger is connected.
- To connect the charger plug, ensure the single pin is at the bottom, as shown in Fig 9.0, then offer the charger plug to the R-Net in a horizontal orientation.
- The molded guide on the R-Net will help you to locate the plug. Ensure the plug is pushed fully in position.

WARNING:

- Do not exceed the maximum charging current of 12A-rms. Always use an off-board charger fitted with a Neutrik NC3MX plug. Failure to observe these conditions could result in poor contact resistance in the charger connector resulting in overheating of the charger plug. This presents a potential burn hazard for the user. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.
- Do not disconnect batteries or open-circuit the circuit breaker while charging is in progress. Failure to observe this condition could result in a burns hazard or fire hazard.
- Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.

WARNING:

- Battery chargers are only intended to charge 24V; Group 22, Group 24, and Group 34; Lead Acid or Gel style batteries.
- Only use the battery charger that has been supplied with your wheelchair.
- The use of incorrect chargers could damage the batteries, wheelchair, control system or charger itself, or may result in parts overheating creating the potential for burns or even fire.
- Sunrise Medical accepts no liability for losses of any kind if the charger used is incompatible with the control system or any other part of the wheelchair system.

DANGER:

- When charging the battery charger can become hot and could potentially cause a burn.



For comprehensive instructions and advice on Batteries and Battery Charging, please consult your wheelchair Owner's Manual and the Owner's Manual supplied with the Battery Charger.

10.0 Dual Attendant Control Module



NOTE: Chapters 10.1 - 10.9 Refer to Fig 10.0

10.1 Joystick

This controls the speed and direction of the wheelchair. Push the joystick in the direction you wish to go. The further you push it, the faster the speed. Releasing the joystick stops the wheelchair and automatically applies the brakes.

When in actuator control mode, pushing the joystick left or right will toggle selection between the available actuators. Operating the joystick in the forward and reverse directions will adjust the selected actuator.

10.2 Maximum Speed Indicator

This is a gauge which shows the maximum speed setting for the wheelchair.

This gauge also indicates if the speed of the wheelchair is being limited or if the control system is locked, refer to section 5.21.

There are five speed settings – step 1 (1 LED) is the lowest speed and step 5 (5 LED's) is the highest speed.

10.3 Speed Increase / Decrease Button

Pressing this button increases or decreases the maximum speed setting.

10.4 Mode Button

The Mode button allows the user to navigate through the available operating Modes for the control system. The available modes are dependent on programming and the range of auxiliary output devices connected to the control system. When in any Mode other than Drive and Setting the Speed and Actuator LEDs (user module) are all extinguished.

10.5 Control Indicator

This shows where the User or the Attendant has control. If the red wheelchair light is on, the user's input device has control. If the green attendant light is on, the Attendant Module has control.

10.6 Control Switch

This transfers drive control of the wheelchair between the User Input Device and the Attendant Module.

10.7 Care

1. Avoid knocking your control system, especially the joystick.
2. When transporting your wheelchair ensure the control system is well protected.
3. To prolong the life of the control system, keep exposure to extreme conditions to a minimum. Always clean your control system if it becomes contaminated with food or drink.
4. Use a damp cloth and cleaner mixed with water. Do not use abrasive or spirit based cleaning agents.

10.8 Daily Checks

Joystick:

With the control system switched off, check that the joystick is not bent or damaged and that it returns to center when you release it. If there is a problem do not use your wheelchair and contact your authorized dealer.

10.9 Weekly Checks

Electrical Brakes:

This test should be carried out on a level floor with at least one meter (3 feet) clear space around the wheelchair.

1. Switch on the control system.
2. Check that after 1 second the battery gauge remains on or flashes slowly.
3. Push the joystick slowly forwards until you hear the electrical brakes operate. The chair may start to move.
4. Immediately release the joystick. You must be able to hear each electrical brake operate within a few seconds.
5. Repeat the test three times, pushing the joystick backwards, left and right respectively.

Lights and Actuators:

If your wheelchair is fitted with lights, turn indicators or seat adjustment actuator, check the operation of these.

Connectors:

Check all connectors are secure, properly mated and free from damage.

Cables:

Check condition of all cables for damage.

Joystick Gaiter:

Check the thin rubber gaiter around the base of the joystick for damage or splitting. Check visually only, do not handle the gaiter.

Mounting:

Make sure the controller is securely fixed to your wheelchair. Do not over tighten any screws.

11.0 Precautions for Use

WARNING:

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

11.1 WARNINGS:

- Do not drive the wheelchair beyond restrictions indicated in your wheelchair user manual, for example maximum inclines, curb height etc.
- Do not drive the wheelchair in places or on surfaces where a loss of wheel grip could be hazardous, for example on wet grassy slopes.
- Do not drive the wheelchair if you know that the control system or other crucial components require repair.
- Although the R-Net control system is designed to be extremely reliable and each unit is rigorously tested during manufacture, the possibility of a system malfunction always exists (however small the probability). Under some conditions of system malfunction, the control system must (for safety reasons) stop the chair instantaneously. If there is any possibility that you could fall out of the chair as a result of a sudden braking action, it is imperative that a restraining device, such as a seat belt supplied with the wheelchair, is in use at all times when the wheelchair is in motion. Sunrise Medical accepts no liability for losses of any kind arising from the unexpected stopping of the wheelchair, or arising from the improper use of the wheelchair or control system.
- Do not operate the control system if the chair behaves erratically, or shows abnormal signs of heating, sparks or smoke. Turn the control system off at once and consult your authorized dealer. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.
- Electronic equipment can be affected by Electro Magnetic Interference (EMI). Such interference may be generated by radio stations, TV stations, other radio transmitters and mobile phones. If the chair exhibits erratic behavior due to EMI, turn the control system off immediately and consult your authorized dealer. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.
- The wheelchair user must comply with all wheelchair safety warnings. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.



Your wheelchair complies with appropriate National and International EMC legislation. For comprehensive instructions and advice on EMC and EMI conformity, please consult your wheelchair Owner's Manual.

11.2 Safety Checks

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

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

Daily Checks

Joystick:

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

Weekly Checks

Parking brake:

This test should be carried out on a level floor within a clear and safe area around the wheelchair.

1. Switch on the control system.
2. Check that the Screen/ Battery Gauge remains on after initialization and that the battery gauge is displaying a reasonable amount of charge.
3. Push the joystick slowly forwards until you hear the parking brakes operate. The chair may start to move.
4. Immediately release the joystick. You must be able to hear each parking brake operate within a few seconds.
5. Repeat the test a further three times, pushing the joystick slowly backwards, left and right.

Connectors:

Make sure that all connectors are securely mated.

Cables:

Check the condition of all cables and connectors for damage.

Joystick gaiter:

Check the thin rubber gaiter or boot, around the base of the joystick shaft, for damage or splitting.

Check visually only, do not handle the gaiter.

Mounting:

Make sure that all the components of the control system are securely mounted. Do not overtighten any securing screws.

11.3 Servicing

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

**AUTHORIZED
DEALER DETAILS and
CONTACT PHONE
NUMBERS**





Omni2

12.0 R-Net Omni2 Introduction

⚠ CAUTION:

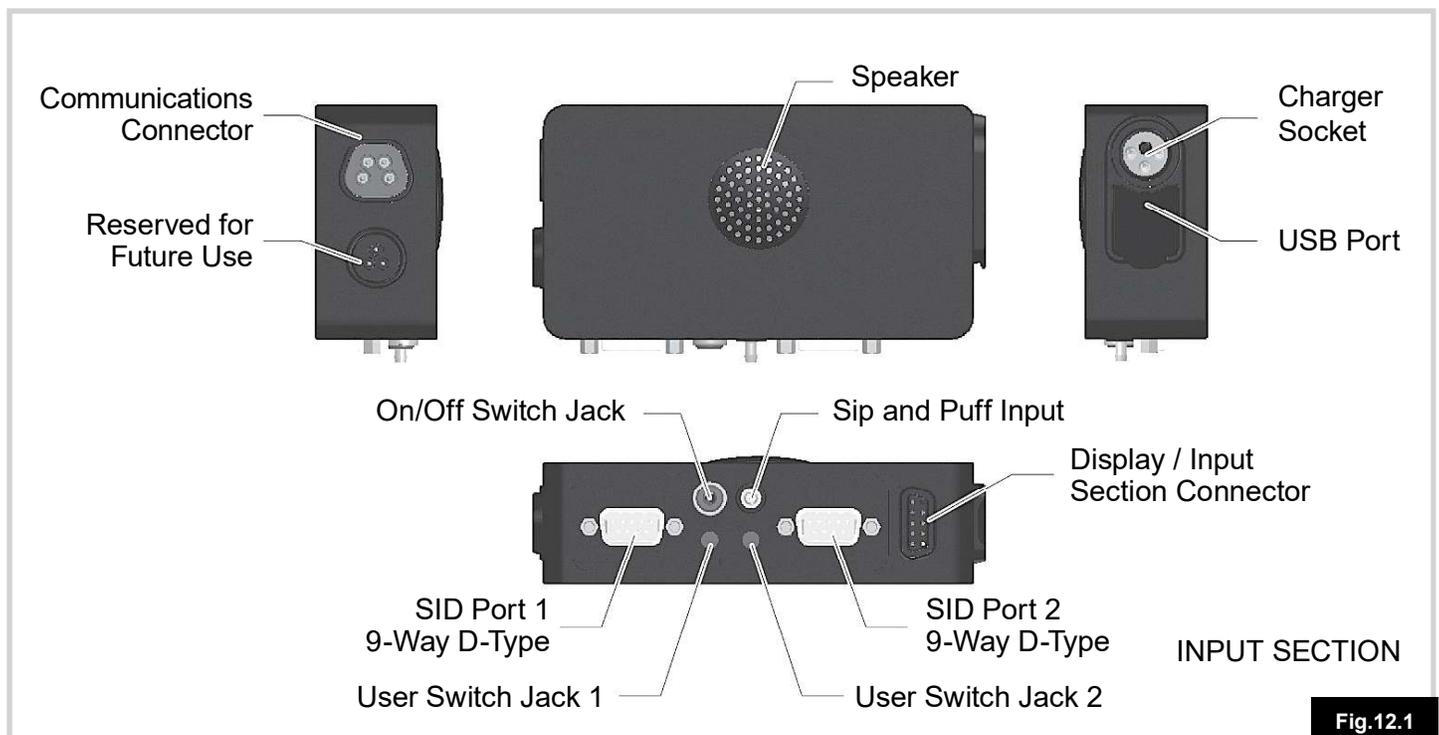
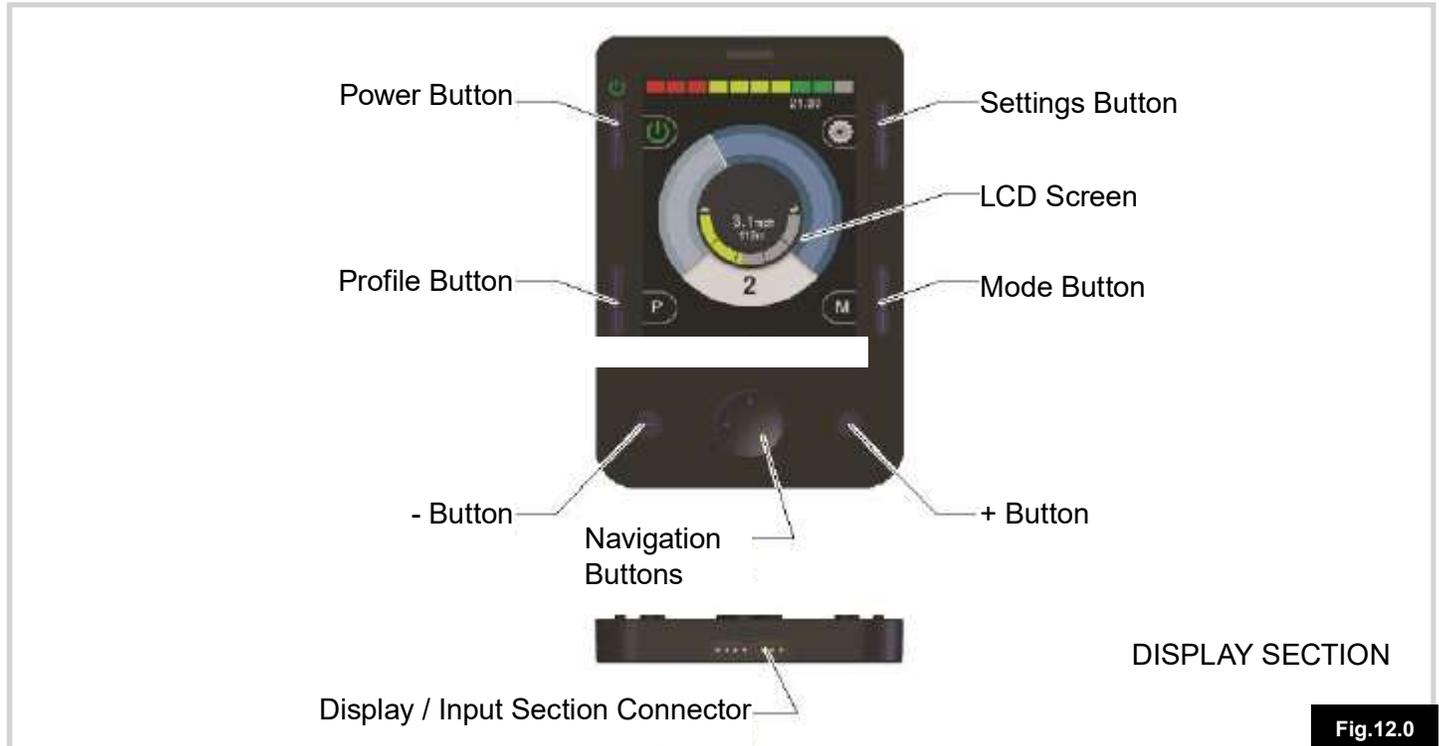
12.1 Introduction

The Omni2 is a universal specialty controls interface that accepts signals from many different types of Specialty Input Devices, (SIDs) and translates them into commands compatible with the R-Net control system.

Programming and diagnostics should only be conducted by healthcare professionals with in-depth knowledge of R-Net electronic control systems. Incorrect programming could result in non optimized driving. Sunrise Medical accepts no liability for any losses of any kind if the programming of the control system is altered from the factory preset values.

12.2 Controls and Connections

The following diagrams show the Omni2 controls and connections (Fig 12.0, 12.1).



LCD Screen (Fig 12.0)

A full color, backlit LCD screen that can show Omni2 configuration details and operating information to the installer and user. Further details of actual displays are given in the LCD Screen Details Section and throughout this manual.

Power Button (Fig 12.0)

The Power button provides a complete power-down of the control system electronics. In addition to the button mounted on the Display Section, there is facility for an optional, externally-mounted user switch on the Input Section. Refer to the External On/Off Switch Jack paragraph for further details.

Settings Button (Fig 12.0)

The Settings button launches the Settings Menu screen. Refer to the Settings Menu section for further details.

Mode Button (Fig 12.0)

The Mode button allows you to change between the available Modes.

Profile Button (Fig 12.0)

The Profile button allows you to change between the available Drive Profiles.

Navigation Buttons (Fig 12.0)

The array of 4 Navigation buttons allows the function screens to be navigated.

- / + Buttons (Fig 12.0)

These buttons make adjustments to speed and highlighted parameters.

Display/Input Section Connectors (Fig 12.0)

This connector is used to link the Display Section to the Input Section.



Use only supplied cable.

Charger Socket (Fig 12.1)

This 3-pin socket can be used to charge the power chair batteries and, dependent on system programming, to lock the power chair. For details of battery charging, refer to the supplied battery charger owner's manual.

USB Port (Fig 12.1)

This 'Type A' USB socket can be used to charge devices such as mobile phones.

Communications Connector (Fig 12.1)

This connector is used to link the Omni2 to the R-Net system.

9-Way D-Type Specialty Input Device (SID) Connectors (Fig 12.1)

These provide connections to analogue or digital SIDs. There is a facility to detect if a mating connector is in place; and provision of a low current 12V supply.

User Switch Jacks (Fig 12.1)

There are two stereo 1/8" (3.5mm) mono jacks which provide connection to the User Switches. Full details of User Switches can be found in the Connection of SIDs section.

External On/Off Switch Jack (Fig 12.1)

This is a 1/8" (3.5mm) mono jack which provides connection to a user operated On/Off button. This connection is optional and the Omni2 will function normally without it.

Sip and Puff Input (Fig 12.1)

This input will accept a 1/8" (3.5mm) pipe/tube connected to a Sip and Puff mouthpiece.

Display/Input Section Connectors (Fig 12.1)

This connector is used to link the Input Section to the Display Section.



Use only supplied cable.

13.0 Specialty Input Devices (SIDs)

13.1 Installing the SID onto a Power Chair

WARNING!

The SID should be fitted to the powerchair in accordance with the instructions of both the SID and power chair manufacturers.

Because of the wide variety of SIDs available and the constantly changing specifications, it is not practical to provide a definitive list of SID classifications in this manual.

You, your health care professional, and wheelchair provider will determine the exact classification of the chosen type of SID. Further details on each SID type are given in the following sections.

In addition to the SID for controlling the power chair functions, the Omni2 has facility for the connection of an optional, user operated Power button. The function of this is identical to the Power button on the Omin2's front panel.

13.2 Connection of SID (Fig 13.0)

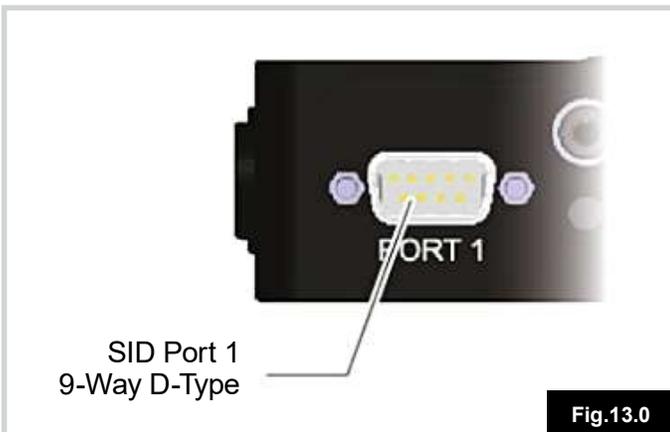
For single SID operation, always connect the SID to Port 1.

Port 1 comprises:

- A 1/8" (3.5mm) mono jack for the User Switch.
- A 9-way input connector with a TRACE standard pin-out.
- A Sip and Puff input.

Make sure that all SID connections to the Omni2 are securely mated.

Route and secure all cables and tubes in such a way as to prevent damage by crushing, cutting, or snagging.



13.3 D-Type Connector

Ensure the connector is correctly inserted and if there are locking screws, ensure they are fully tightened.

Some SIDs will have a 'detect-link' fitted. This link enables the Omni2 to detect if the D-type connector has become disconnected. The Omni2 will need to be programmed to look for a 'detect-link'. Refer to the 9-way Detect section in the Programming chapter for further details.

To enhance the system safety and to ease diagnostics, it is recommended that this feature be used if the SID has such a link. If this feature is used and the Omni2 detects the SID is disconnected, a screen as in Fig 13.1 will appear.



13.4 Sip and Puff Input

Ensure the tube from the Sip and Puff Device is of the correct diameter and that it is securely routed.

13.5 Examples of Types of SIDs used with Omni2

The Omni2 is compatible with six types of SID.

1. Joystick and User Switch
2. Five Switch and User Switch
3. Three axis proportional and User Switch
4. Three axis switch and User Switch
5. Sip and Puff device and User Switch
6. Single switch scanner

The User Switch provides a means of changing Profiles and Modes, an emergency stop function and a means of putting the Omni2 to sleep. It is also possible to use most of the SID types without a User Switch.

The Omni2 parameter that sets the SID compatibility is SID. This can be set to one of the following options that correspond to each SID type as shown in the table.

SID Setting	SID Type
Proportional	Joystick and User Switch
Switch	Five Switch and User Switch
3-Axis Proportional	Three-Axis Proportional and User Switch
3-Axis Switch	Three-Axis Switch and User Switch
Sip Puff	Sip and Puff Device and User Switch
Scanner	Single Switch Scanner

WARNING:

Sunrise Medical recommends that, whenever possible, a normally closed user switch should be used. If no user switch or a normally open switch is used the responsibility for that decision lies with the healthcare professional. Sunrise Medical accept no liability for any losses resulting from the use of no user switch, or a non-normally closed User Switch.

13.6 Joystick and User Switch (Fig 13.2)

Typical applications are chin control, foot control or heavy/light operating force joysticks.

A typical example would be a PG Drives Technology inductive joystick e.g. D50064 connected to the Omni2 via the 9-way D-type connector. In addition, a User Switch is required and connects to the Omni2 via the 1/8" (3.5mm) mono jack.

Fig.13.2



13.7 Five Switch and User Switch (Fig 13.3)

Typical applications are Tash Penta switches or Buddy Buttons, or products from ASL and Switch-It.

The device comprises of 4 direction switches and one User switch connected to the Omni2 via the 9-way D-type connector. In addition, a normally closed User Switch should be connected to the Omni2 via the 1/8" (3.5mm) mono jack. This switch, although functionally identical to the fifth switch input on the 9-way D-type connector, is required to provide a fail-safe emergency stop system.

13.8 Three Axis Proportional and User Switch (Fig 13.4)

Typical applications are head control mechanisms fitted with a joystick.

The device comprises of an inductive joystick connected to the Omni2 via the 9-way D-type connector. In addition, a normally-closed User Switch should be connected to the Omni2 via the 1/8" (3.5mm) mono jack.

Fig.13.3

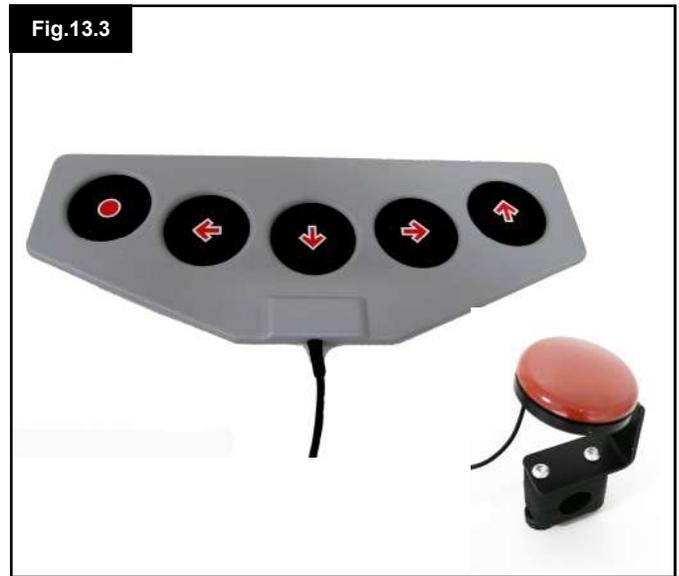


Fig.13.4



13.9 Three Axis Switch and User Switch (Fig 13.5)

Typical applications are head control systems.

The device comprises of three or four direction switches and a User Switch connected to the Omni2 via the 9-way D-type connector. In addition, a normally closed User Switch should be connected to the Omni2 via the 1/8" (3.5mm) mono jack. This switch, although functionally identical to the switch input on the 9-way D-type connector, is required to provide a fail-safe emergency stop system.

13.10 Sip and Puff Device and User Switch (Fig 13.6)

A sip and puff mouthpiece is connected to the Omni2 via the pneumatic input. In addition, a User Switch should be connected to the Omni2 via the 1/8" (3.5mm) mono jack. This switch is required to provide a fail-safe emergency stop system.



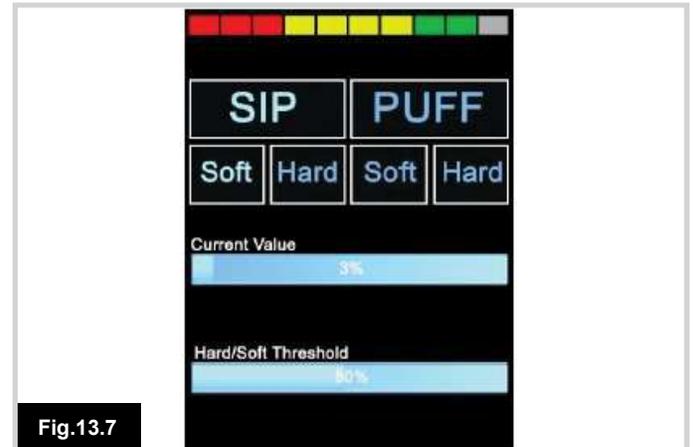
13.11 Sip and Puff Calibration (Fig 13.7)

If a new Sip and Puff SID is fitted, then the following calibration procedure must be performed to match the Omni2 to the user's operating capabilities.

To begin, contact your authorized dealer so they can access the programming menu. From there, follow the path detailed below, using the right navigation button on the front of the Omni2:

Omni – Global – Sip and Puff – Calibrate

A screen like the one shown below should appear (Fig 13.7).



Soft Sip

Soft Sip will be highlighted first. You must now make a series of soft sips. After each sip, a live readout of the current pressure will be displayed on the screen in the form of a line within the 0 - 100 scale. Repeated soft sips will produce a 'band' of values. During this process it may be beneficial for the user to look away from the screen. This prevents 'false' values where the user may be trying to attain earlier levels. Once you are satisfied that you can produce a soft sip consistently within this band, your healthcare professional or authorized dealer will save that range and move on to highlight Hard Sip.

Hard Sip

You must now make a series of hard sips to produce a new Hard Sip band. Ideally there should be as much difference as possible between the Soft Sip and Hard Sip values. To aid the Omni2's differentiation between these pressures, the healthcare professional or authorized dealer should move the Threshold Marker (shown in Fig 13.8 opposite page), to the middle of the gap between the hardest soft command and the softest hard command. This is done via the +/- buttons on the front of the Omni2. Once a suitable threshold is set, use the right navigate button on the front of the Omni2 to highlight Soft Puff.

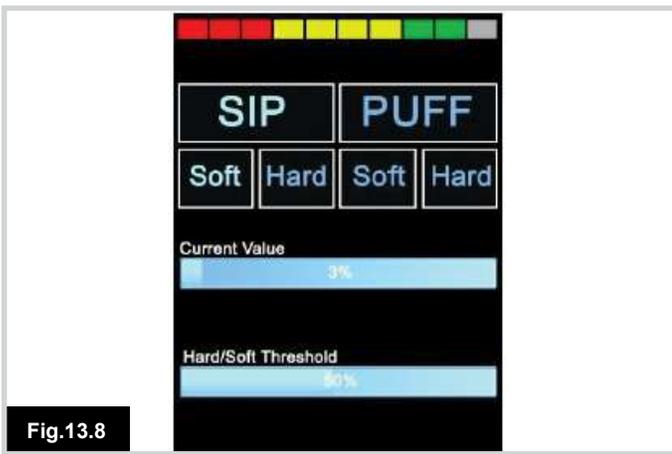


Fig.13.8

Now repeat the sequence of instructions for both soft and hard puffs including the Threshold setting. Once calibration has been performed, your healthcare professional or authorized dealer will save your settings.

Please note that all values must be greater than the Deadband setting, for calibration to be performed successfully.

13.12 Single Switch Scanner

A single User Switch is connected to the Omni2 via one of the 1/8" (3.5mm) mono jacks.

If the Omni2 is configured to operate with a Single Switch Scanner Type SID, the scan rate can be programmed to suit the user. Refer to your healthcare professional or authorized dealer for programming this parameter.

13.13 User Switch

With the exception of scanner operation the User Switch provides the following functionality.

A short operation while not driving will select the different wheelchair functions. See section 13.15. (Fig 13.9)

A short operation while driving or making a seating adjustment will stop all movement, i.e. an emergency stop function.

A long operation while not driving will put the Omni2 to sleep. To wake the Omni2, a short operation of the User Switch is required.

The time of a long operation is preset to 1 Second, but it is programmable from 0.25 to 5.0 seconds via the parameter Switch Long. Refer to your healthcare professional or authorized dealer for programming this parameter.

13.14 Using the Omni2 without a User Switch

With the exception of scanner operation it is possible to use the Omni2 without a User Switch. This can be achieved by setting the Omni2 parameter Timeout to Menu. This function will mean that the User Menu will automatically be entered after a period of SID inactivity. Once in the User Menu, the SID's direction commands can be used to select the menu options.

In this scenario, the Omni2 can be put to sleep by selecting that option in the User Menu. To awake the Omni2, the following SID sequence is required: Left, Right, Left, Right. Note, this waking method only works if the Omni2 has been put to sleep via the User Menu.

Because the User Switch provides a method of emergency stopping, then a method of emergency stopping will not exist. The decision not to utilize the User Switch lies with the healthcare professional who is commissioning the powerchair.

13.15 Accessing Wheelchair Functions

The Omni2 can be programmed to access all the available wheelchair functions in two ways – by Menu or by Sequence. The programmable parameter that sets the access method is User Control. The Menu method is where an activation of the User Switch while in Drive Mode will bring up an on-screen User Menu as shown in Fig 13.9. SID direction commands are then used to navigate the menu and select functions.

Should you wish to change this function to "Sequence", please consult your healthcare professional or authorized dealer. The Sequence method is where successive activations of the User Switch will sequentially access all the wheelchair functions.

WARNING:

It is not advisable to program the menu options, 'speed adjust' or 'profile select' if the Sequence method is being used with scanning operation. Refer to your healthcare professional or authorized dealer.



Fig.13.9

14.0 Omni2 Operating Principles

14.1 Omni2 Driving Characteristics

The Omni2 has been programmed to suit the SID, the powerchair drive performance has been programmed to suit your needs. The powerchair speeds, acceleration rates and braking rates can be adjusted to meet exact requirements. Refer to your healthcare professional or authorized dealer.

Before test driving the system ensure there is sufficient space in which to drive the wheelchair, and that you understand how to stop the wheelchair quickly.

First, refer to the operating instructions for the type of SID in use. Ensure that you fully understand each SID command.

It is advisable to initially select the lowest speed setting and allow yourself to become familiar with the controls before increasing the setting.

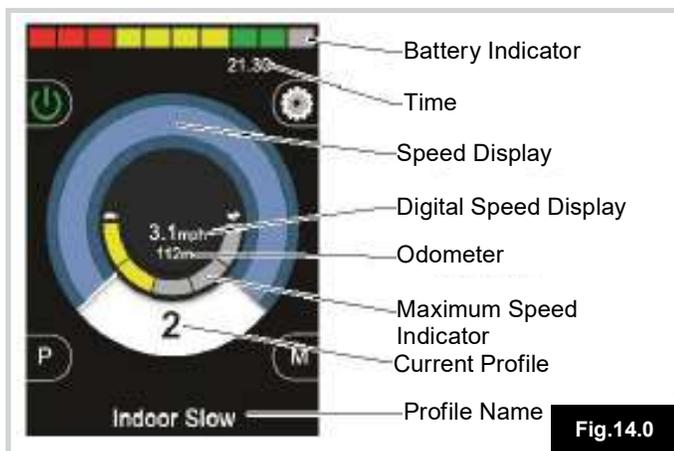
The Omni2 also contains a training function, whereby any of the SID's directional commands can be disabled. For example, the left and right commands could be disabled, in order to allow you to become familiar with driving forwards. Refer to your healthcare professional or authorized dealer to ensure these values are comfortable and safe.

WARNING:

Sunrise Medical accepts no liability for any losses resulting from unsuitable values.

14.2 General Operating Principles

When the Omni2 is powered-up or awoken, then a screen like Fig 14.0 will appear. Power-up can be via the power button on the Display Section or via a switch connected into the External On/Off Switch Jack; while Wake-Up can be via the User Switch or a particular SID sequence if a User Switch is not fitted. See the Using the Omni2 without a User Switch section for details of this sequence.



This is a typical screen. Depending on SID type, programming or system configuration and status, there may be additional icons.

The wheelchair can now be driven with the SID. While driving, the speed of the wheelchair will be indicated by the numeric display and the graphical display.

14.3 User Menu

With the Menu method of control, an operation of the User Switch will initiate the User Menu. A typical User Menu is shown below (Fig 14.1).



Forward and Reverse SID commands will change the highlighted line on the menu. It is also possible to program an automatic scanning sequence, which will highlight each line in turn. Refer to your healthcare professional or authorized dealer.

At the right hand end of each line, there will be either a > or a number surrounded by < >, i.e. < 3 >

A > symbol indicates that a Right SID command (or a User Switch operation when using a Single Switch Scanner Type SID) will enter that function.

A <3> display indicates that Left and Right SID commands (or a User Switch operation when using a Single Switch Scanner Type SID) will change the selection for that function.

The User Menu can provide the following functions.

Please see opposite page (Fig 14.2).

Drive*	>	Will enter Drive Mode in the currently selected Profile
x Profile x**	>	Will enter Drive Mode in the indicated Profile
Profile	<X>	Sets the Profile that is used the next time Drive Mode is entered
Seating*	>	Will enter Seating Mode
Seating* 2	>	Will enter a second Seating Profile. E.g. if non-latched and latched operation is required
Seating*	<X>	Sets the Seating Profile that is used the next time Seating Mode is entered
Speed Adjust	<X>	Adjusts the maximum speed setting
Mode x* to Mode y*	>	All other available system Modes, e.g. Mouse 1, IR Mode etc.
Sleep	>	Will put the Omni2 to sleep
Lights	>	Will enter Lighting Control Mode
Exit	>	Will exit the Menu and enter the Drive Mode in the presently selected Profile
Settings	>	Allows access to user settings such as backlight and clock adjustment

* The text will reflect the setting of the standard R-Net parameter Mode Name.

** The text will reflect the setting of the standard R-Net parameter Profile Name.

14.4 Operation with Joystick Type SIDs (Fig 13.2)

Driving is via the SID's joystick and the User Switch is used to enter the User Menu or to sequence through the other functions of the wheelchair.

There are several standard R-Net programming features that may be useful when using this SID type. These include joystick throw, joystick orientation and joystick deadband. Refer to your healthcare professional or authorized dealer.

Standard control of seating movement is via Forward and Reverse commands, and Left and Right commands will select a different seat axis for movement.

Please refer to Section 14.6.

If required, it is possible to re-program the Omni2 to control the seating movement in alternative ways. Refer to your healthcare professional or authorized dealer.

For latched operation using this SID type, refer to section Latched Operation.

14.5 Operation with Switch Type SIDs (Fig 13.3)

Driving is via the SID's Forward, Reverse, Left and Right switches, and the fifth switch or User Switch is used to enter the User Menu or to sequence through the other functions of the wheelchair.

There are several standard R-Net programming features that may be useful when using this SID type. These include joystick orientation. Refer to your healthcare professional or authorized dealer.

Standard control of seating movement is via Forward and Reverse buttons, and Left and Right buttons will select a different seat axis for movement.

Please refer to Section 14.6.

If required, it is possible to re-program the Omni2 to control the seating movement in alternative ways. Refer to your healthcare professional or authorized dealer.

For latched operation using this SID type, refer to section Latched Operation.

14.6 Operation with 3-axis Proportional and Switch Type SIDs (Head Arrays) (Fig 13.5)

These types of SID contain a Forward/Reverse command, and Left and Right commands, as well as a User Switch(es)*. Driving is via the Forward/Reverse, Left and Right commands.

* Depending on the installation, as well as a normally closed User Switch, there may be a user switch integrated into the head array. This switch would connect to the Omni2 via the fifth switch pin on the D-type connector.

User switch commands are then used to change drive direction and to enter the User Menu or to sequence through the other functions on the wheelchair.

There are 3 ways to program the Omni2 to provide this functionality.

14.6.1 Double Click Change

A single User Switch operation toggles the direction, while a double operation of the User Switch will enter the User Menu or sequence the other functions.

This method is selected by setting parameter, Fwd/Rev Auto Toggle to Off.

There is programmability associated with the timing of the double operations. Refer to your healthcare professional or authorized dealer.

14.6.2 Auto Toggle Change

A direction change will occur if a Forward/Reverse command is operated and released. A further operation of the Forward/Reverse command will result in drive in the newly selected direction.

This sequence must be completed within a given time period, typically 2 seconds. However, the parameter Auto Toggle Time, can be adjusted to give a different time period. Refer to your healthcare professional or authorized dealer.

If the sequence is not completed within the time period, the selected direction will automatically revert to its previous state.

This method is selected by setting parameter, Fwd/Rev Auto Toggle to On.

The User Switch is used to enter the User Menu or sequence through the other functions of the wheelchair. Refer to your healthcare professional or authorized dealer.

14.6.3 Switch Medium Change

A direction change occurs at the instant the User Switch is operated, provided the parameter Double Click has been set to 0. If the User Switch is released and a Forward/Reverse command is entered, then drive will commence in the newly selected direction.

If the User Switch is not released and is held for time period set by the programmable parameter, Switch Medium, then this is interpreted as a conventional User Switch operation, i.e. the User Menu will be entered or the other wheelchair functions would be sequenced. There will be no direction toggle in this instance.

Fwd/Rev Auto Toggle should be set to Off.

As with the other two methods, if the User Switch is operated for a period greater than the time set by the programmable parameter, Switch Long, then the Omni2 will go to sleep.

14.6.4 Seating Control

Standard control of seating movement is via the Forward/Reverse command, and Left and Right commands will select a different seat axis for movement. The direction of movement is selected in the same way as that for changing drive direction. Please refer to Section 14.6.

As is often required in head array situations, it is possible to reprogram the Omni2 to control the seating movement in alternative ways. Refer to your healthcare professional or authorized dealer.

14.6.5 Associated Programming

There are several standard R-Net programming features that may be useful when using this SID type. These include joystick throw, joystick orientation and joystick deadband.

Refer to your healthcare professional or authorized dealer. For latched operation using this SID type, refer to section Latched Operation.

It is possible to set up the Omni2 so that the functions can be navigated audibly. This can be useful if the user cannot easily always see the Omni2 screen. Refer to your healthcare professional or authorized dealer.

14.7 Operation with Sip and Puff Type SIDs (Fig 13.6)

SIP and PUFF COMMAND		DIRECTION
	Hard Puff	Forward
	Hard Sip	Reverse
	Soft Sip	Left
Fig.14.3	Soft Puff	Right

Driving is via a tube connected to the Omni2's pneumatic input and the User Switch is used to enter the User Menu or to sequence through the other functions of the wheelchair.

For this type of SID, you may want to consider using a pneumatic user switch. Contact your authorized dealer.

There are four sip and puff commands, each of which relate to a drive direction. The table Fig 14.3 shows the relationships.

In addition, the Omni2 can be programmed so that two pneumatic operations, made within the period set by the parameter Double Click Time, will mimic a short operation of the User Switch in Standby.

Refer to your healthcare professional or authorized dealer.

The standard R-Net programming parameter Joystick Orientation may also be useful when using this type of SID.

Refer to your healthcare professional or authorized dealer.

Standard control of seating movements is via a Hard Puff or Sip and a Soft Puff or Sip will select a different seat axis for movement.

If required, it is possible to re-program the Omni2 to control the seating movement in alternative ways.

Refer to your healthcare professional or authorized dealer.

For latched operation using this SID type, refer to Latched Operation.

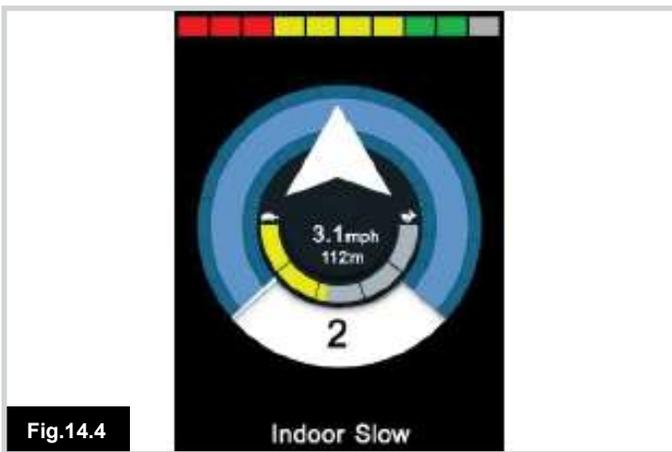


Fig.14.4

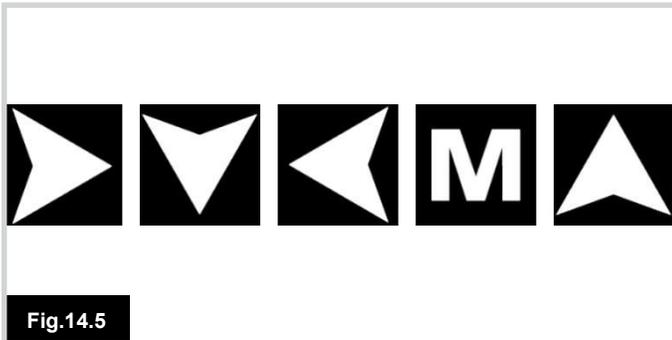


Fig.14.5

14.8 Operation with Single Switch Scanner Type SIDs

All functions, including drive, can be accessed via a single switch connected to one of the Omni2's 'User Switch' jack sockets. For details of installation and connections, please refer to sections 13.2, 13.3 and 13.13.

14.8.1 Drive

The scanning rate in drive mode can be programmed to suit the user. Refer to your healthcare professional or authorized dealer. When the Omni2 is switched on, a screen like the one shown in Fig 14.4 will appear:

The Omni2 will scan through the following icons: Fig 14.5

- Drive Right
- Drive Backwards
- Drive Left
- MODE (User Menu)
- Drive Forward

The method of driving is dependent on whether the R-Net system is configured for 'momentary' or 'latched' operation.

14.8.2 Momentary Operation

In momentary operation, continuously depressing the User Switch while one of the 'arrow' icons is shown will cause the power chair to drive in that direction until the switch is released. If the User Switch is depressed when the 'M' icon is shown, the Omni2 will enter the User Menu.

14.8.3 Latched operation

In latched operation, a single depression of the User Switch while one of the 'arrow' icons is shown will cause the power chair to drive in that direction for a period of time set by the R-Net power module parameter, "Latched Timeout". Refer to your healthcare professional or authorized dealer.

To ease control of the chair while driving forwards, the scan sequence will change to:

Forward, Right, Reverse, Left, Reverse, Right, Reverse, Left, Reverse, Right, Forward.

Depress the User Switch to select the new direction displayed.

If the R-Net system is configured for latched operation in reverse as well as forwards, the scan sequence will change when driving in reverse to:

Reverse, Right, Forward, Left, Forward, Right, Forward, Left, Forward, Right, Reverse.

Depress the User Switch to select the new direction displayed.



14.8.4 Seating Control

Seating mode can be entered from the User Menu via an operation of the User Switch. The Omni2 will sequentially scan through each available actuator 'axis' and then finish with an 'Exit' option to return to Drive, the User Menu or the next sequential function. If the User Switch is operated when one of the actuator axes are shown, a new scanning sequence will begin. The Omni2 will step through, 'up', 'down', and 'exit' choices. Each option can then be selected with an operation of the User Switch.

The scanning rate of the actuator axes is set to approximately 1 second and cannot be altered through programming.

14.8.5 Associated Programming

It is possible to set up the Omni2 so that the functions can be navigated audibly. This can be useful if the user cannot easily always see the Omni2's screen.

Refer to your healthcare professional or authorized dealer.

WARNING:

It is not advisable to program the Switch to Standby parameter in the R-Net power module when using Single Switch Scanner Type SIDs.

Refer to your healthcare professional or authorized dealer.

14.9 Speed Adjust Mode

A Speed Adjust Mode screen as shown in Fig 14.6 will appear if the User Control parameter has been set to Sequence (Refer to section 13.15).

Left and Right SID commands will adjust the maximum speed setting.

The User Switch exits to the next available menu entry.

WARNING:

It is not advisable to program the menu option, "speed adjust" if the Sequence method is being used with a Single Switch Scanner Type SID. Refer to your healthcare professional or authorized dealer.



Fig.14.7

14.10 Lighting Control Mode

While in Lighting Control Mode, a screen as in Fig 14.7 will appear. Forward and Reverse SID commands will select each lighting function. A Left or Right SID command will switch on the function. Another Left or Right SID command will switch the function off.

An operation of the User Switch or a Right SID command while Exit is highlighted exits to the point set by the parameter, Return To.

Refer to your healthcare professional or authorized dealer.

If User Control is set to Sequence, then selecting the Exit option will sequence to the next available menu entry.

14.11 Latched Operation

The latched operation parameters are now contained within the standard R-Net programming, rather than in the Omni2.

Within the standard R-Net programming, the relevant parameters are: Latched Drive, Latched Actuators, Latched Timeout and Latched Time out Beep.

Please refer to your healthcare professional or authorized dealer.

15.0 Omni2 LCD Screen

15.1 LCD Screen Details (Fig 15.0)

Some of the information in this section will have been covered earlier, however, the following provides a complete description of all the LCD screen graphics.

The screen is split into four areas of information: Battery Indicator, Information Bar, Main Area and Text Bar. Each area is detailed separately in the following sections.

15.2 Battery Indicator (Fig 15.1)

This displays the charge available in the battery and can be used to alert the user to the status of the battery.

Steady: This indicates that all is well.

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

Stepping 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.

15.3 Information Bar (Fig 15.0)

This area contains information and warning symbols, as well as a clock.

15.3.1 Focus (Fig 15.2)

When the control system contains more than one method of direct control, such as a secondary SID, Joystick Module, or a Dual Attendant Module, then the Module that has control of the wheelchair will display the Focus symbol.

15.3.2 Bluetooth Signal Icon (Fig 15.3)

This symbol appears when Bluetooth is enabled. If the symbol is white, the system is not paired to an external Bluetooth device. If the symbol is blue, the system is paired to an external Bluetooth device. When the system has been placed into Discovery Mode, the icon will flash blue.

15.3.3 Motor Temperature (Fig 15.4)

This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.

15.3.4 Control System Temperature (Fig 15.5)

This symbol is displayed when the control system has intentionally reduced its own power, in order to protect itself against heat damage.

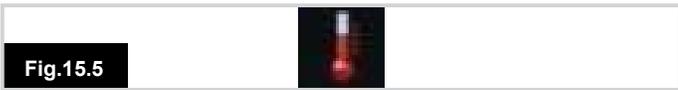
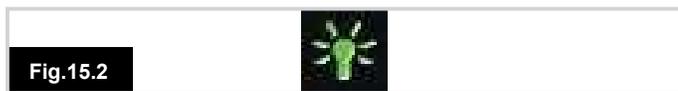
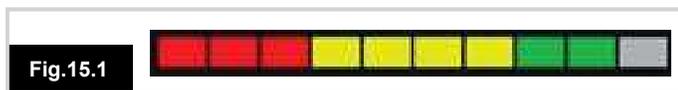
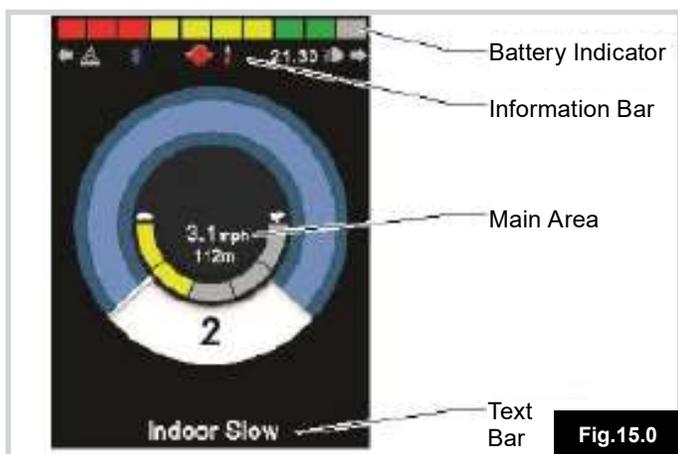
15.3.5 Clock (Fig 15.6)

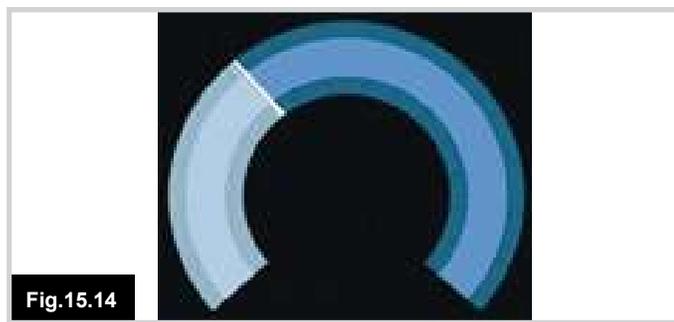
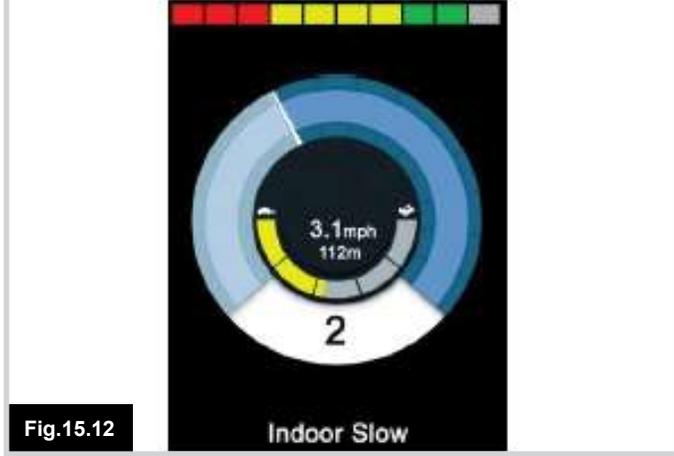
This displays the current time in a numeric format. The clock is user adjustable.

Adjustable options are:

- The time, the user can adjust the time.
- Visibility, whether the clock is displayed on screen.
- The display format, 12 or 24 hour.

These adjustments are made within the Settings Menu. Refer to the Settings Menu section for further details.





15.3.6 Port Identifier (Fig 15.7)

If the Omni2 has been configured to accept two input devices the input device in command will be identified by either:

- 1 – Port 1
- 2 – Port 2

15.3.7 Indicator Icons (Fig 15.8)

The Indicator icons will flash when the respective indicators are active.

Note:

The Indicator icons will only be visible when an Intelligent Seating/Lighting Module is connected to the system.

15.3.8 Hazard Icon (Fig 15.9)

The Hazard and Indicator icons will flash when the 'Hazards' option is activated.

Note:

The Hazard and Indicator icons will only be visible when an Intelligent Seating/Lighting Module is connected to the system.

15.3.9 Lights Icon (Fig 15.10)

The Lights icon will be switched on when the lights have been activated.

Note:

The Lights icon will only be visible when an Intelligent Seating/Lighting Module is connected to the system.

15.4 Text Bar (Fig 15.11)

This area of the screen displays text relevant to the operating condition of the control system. Example text strings would be Profile Name, Mode Name, or Axis Name. These text strings are programmable.

Refer to your healthcare professional or authorized dealer.

15.5 Main Screen Area (Fig 15.0)

This area will contain different information dependent on the current operating Mode of the control system. The area is also used to display general system information, when necessary.

15.5.1 Drive Screen Mode (Fig 15.12)

Displays symbols relevant to the drive control of the power chair.

15.5.1.1 Current Profile (Fig 15.13)

This denotes the currently selected Profile, shown in numeric form.

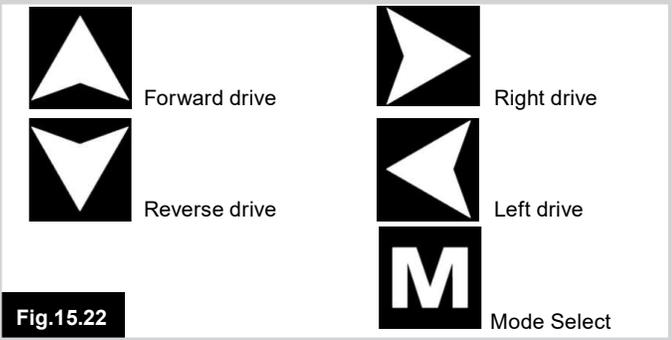
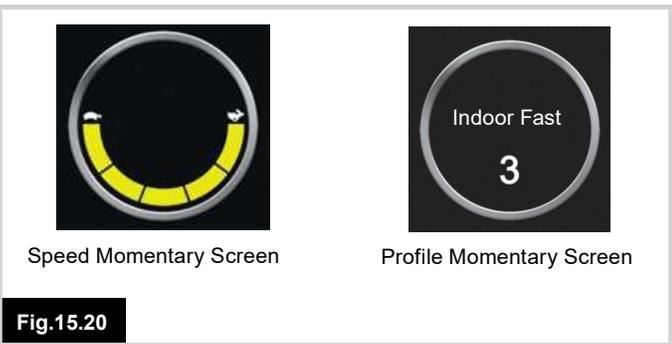
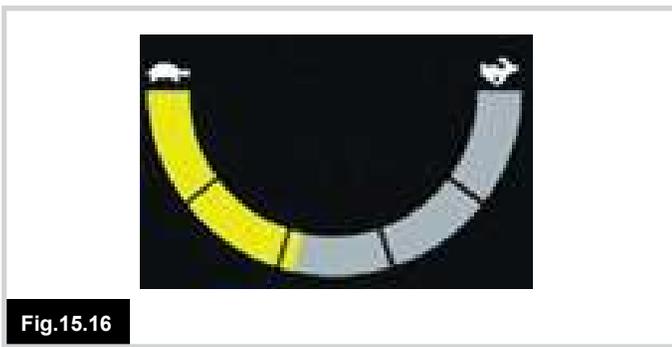
15.5.1.2 Speed Indicator (Fig 15.14)

This denotes the currently selected Profile, shown in visual form.

15.5.1.3 Digital Speed Display (Fig 15.15)

This displays the actual speed of the wheelchair in digital form.

The display can be set to mph or km/h, or can be turned off. These options are set by the programmable parameter, Display Speed.



15.5.1.4 Max Speed Indicator (Fig 15.16)

This displays the current maximum speed setting.

When the left-hand segment is illuminated, then the speed setting corresponds to the programmed minimum forward, reverse and turning speeds. The indicator will never show a lower setting, i.e. the left-hand segment will always be fully illuminated.

When all segments are fully illuminated, then the speed setting corresponds to the programmed maximum forward, reverse and turning speeds.

15.5.1.5 Odometer (Fig 15.17)

This displays the total distance the wheelchair has traveled or the trip distance since the last reset. This selection is made in the Settings Menu.

15.5.1.6 Inhibit (Fig 15.18)

If the wheelchair is being inhibited from driving, then the red symbol (turtle) will be flashing. If the speed of the wheelchair is being limited, for example, by a raised seat, then this orange symbol (turtle) will be displayed:

15.5.1.7 Latched Drive (Fig 15.19)

This symbol in Fig 15.19 will be displayed if the control system is set for latched drive operation.

15.5.1.8 Momentary Screens (Fig 15.20)

This area of the screen displays text relevant to the operating condition of the control system. Example text strings would be Profile Name, Mode Name, or Axis Name. These text strings are programmable.

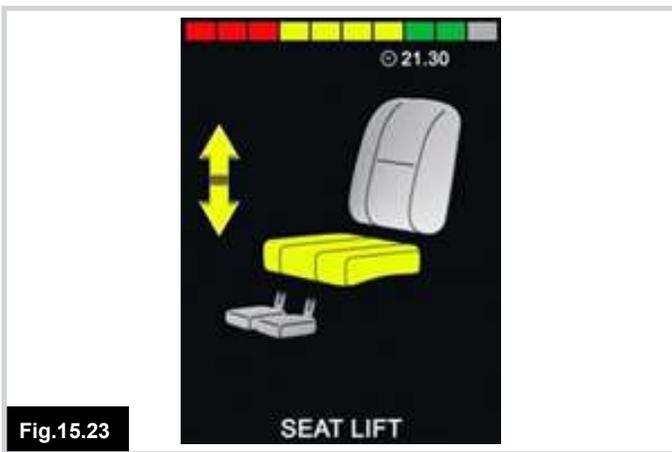
Refer to your healthcare professional or authorized dealer.

15.5.1.9 Selected Direction Indicator (Fig 15.21)

These symbols are only displayed if the Omni2 has been configured to use a 3-Axis SID. Refer to the Operation with 3-Axis Proportional and Switch type SIDs section for further details.

15.5.1.10 Scanner Drive Symbols (Fig 15.22)

If the Omni2 is programmed to operate with a Single Switch Scanner Type SID, these symbols will be displayed to indicate symbols shown.



15.6 Seating Mode Screen (Fig 15.23)

Displays symbols relevant to the seating control of the wheelchair.

Displays the sections of the chair currently selected for movement, the axis number, the name given to the selection and a direction arrow showing what sort of movement is available.

Typical seating adjustment is achieved as follows.

- Move the SID left or right to select the desired axis.
- Move the SID forwards or backwards to move the seat.

15.6.1 Latched Seating Control (Fig 15.24)

This symbol will be displayed if the control system is set for latched seating control operation.



15.6.2 Scanner Actuator Symbols (Fig 15.25)

If the Omni2 is programmed to operate with a Single Switch Scanner Type SID these symbols will be displayed to indicate.



15.6.3 Bluetooth Mode Screens

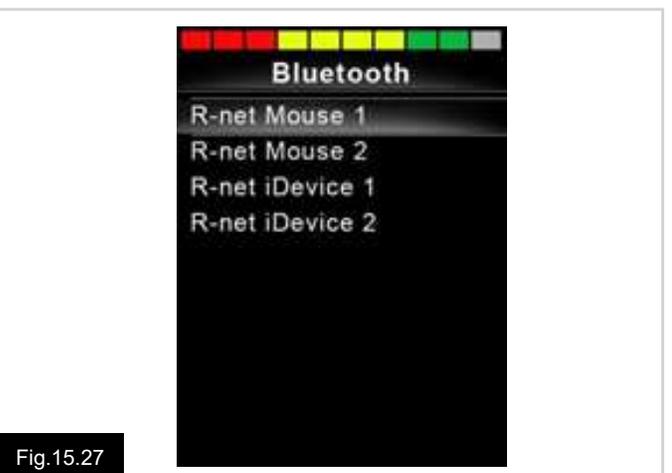
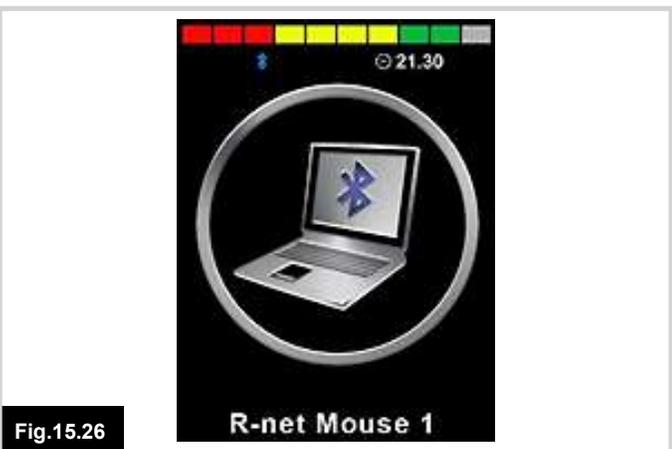
The initial Bluetooth Mode screen will be dependent on whether the Omni2 has been set-up to control one or more devices.

If set-up to control just one device, screen Fig 15.26 will appear.

If set-up to control more than one device, screen Fig 15.27 will appear.

The SID should then be used to navigate the menu and select the device to control. Forward and reverse deflections navigate the menu, while a right deflection selects the highlighted device.

Refer to your healthcare professional or authorized dealer.





15.6.3.1 Bluetooth Screen Programming

The text to describe each device can be set via the programmable parameter, Device Name.

The screen symbol for each device can be set via the programmable parameter, Screen Graphic.

Refer to your healthcare professional or authorized dealer.



15.6.3.2 Disconnecting a Bluetooth Device

Enter the Settings Menu and select Bluetooth. Set the device you wish to disconnect from On to Off.



15.6.3.3 Flight-safe Mode

It is common practice to disable wireless transmissions while on an aircraft. Enter the Settings Menu and select Bluetooth. Set all the devices to Off.



15.6.4 General Information Symbols



15.6.4.1 Limp (Fig 15.28)

Enter the Settings Menu and select Bluetooth. Set the device you wish to disconnect from On to Off.

15.6.4.2 Timer (Fig 15.29)

This symbol is displayed when the Omni2 is changing between different states. An example would be entering into module re-configuration.

15.6.4.3 Restart (Fig 15.30)

When the Omni2 requires a reboot; for example, after a module re-configuration, this symbol will be flashed.

15.6.4.4 Sleep (Fig 15.31)

This symbol will be displayed for a short time before the Omni2 enters into a sleep state.

15.6.4.5 Cross and Check (Fig 15.32)

These symbols will be displayed during configuration procedures.

15.6.4.6 E-Stop (Fig 15.33)

If the user switch is activated during drive, or actuator operation, this symbol will be displayed.

15.6.4.7 SID Displaced (Fig 15.34)

If the SID is operated before or just after you switch the control system on, the screen will flash the joystick displaced screen.

You must release and center (where applicable) the SID to resume normal operation. If you do not release the SID within five seconds the wheelchair will not be able to move, even if you release the SID and operate it again. The screen will display a diagnostic screen at this time. You can reset this condition by switching the Omni2 off and on again.

15.6.4.8 Locked (Fig 15.35)

This symbol is displayed if the Omni2 is locked.

To unlock the Omni2, turn the power on. When the padlock symbol appears, press and hold the top navigation button until you hear a beep and then press and hold the bottom navigation button until you hear a beep and then it is unlocked.



15.6.4.9 Diagnostic Screen (Fig 15.36)

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

This indicates a system trip, i.e. the R-Net has detected a problem somewhere in the wheelchair's electrical system. If the error is in a non-active module, for example in the ISM but Drive Mode is selected, then drive will still be possible, however, the diagnostic screen will appear intermittently.

Refer to your healthcare professional or authorized dealer.



Fig.15.36

16.0 Settings Menu (Fig 16.0)

The Settings Menu allows access to user-related adjustments. It can be accessed from the User Menu or by pressing the top right-hand soft-key on the Display Section after the Omni2 has been switched on. A typical Settings Menu display would be as shown in Fig 16.0.

Each of the menu items are described in the following sections.

SID forward and reverse movements are used to navigate up and down the screen.

16.1 Set Time

A right SID deflection will enter a sub-menu with the following Time related function options:

Set Time: Allows the user to set the current time and date.

Display Time: This sets the format of the time display or turns it off. The options are 12hr, 24hr or Off.

16.2 Distance

A right SID deflection will enter a sub-menu with the following odometer data and function options:

Total Distance:

This is a value held in the Power Module and relates to the total distance driven using that Power Module.

Trip Distance:

This is a value held in the Omni2 and relates to the total distance driven since the last reset.

Display Distance:

Sets whether Total Distance or Trip Distance appears as the odometer display on the Omni2.

Clear Trip Distance:

A right SID deflection will clear the Trip Distance value.

16.3 Backlight

A right SID deflection will enter a sub-menu with the following Backlight related function options:

Backlight:

This sets the intensity of the LCD backlight, adjustable range is 0% to 100%.

Auto Backlight:

The Omni2 Display Section contains an ambient light sensor to automatically adjust screen brightness. The programmable options are On or Off. If set to On, the display adjusts the screen brightness based on the light sensor reading. If set to Off, the screen brightness will not change with changes in light intensity.

Backlight Timeout:

This adjusts the period of time the backlight will remain active once no further instructions are received from a SID, adjustable between 0 and 240 seconds.

16.4 Bluetooth

A right SID deflection will enter a sub-menu to configure the Bluetooth Mode screen.

Refer to your healthcare professional or authorized dealer.

Fig.16.0



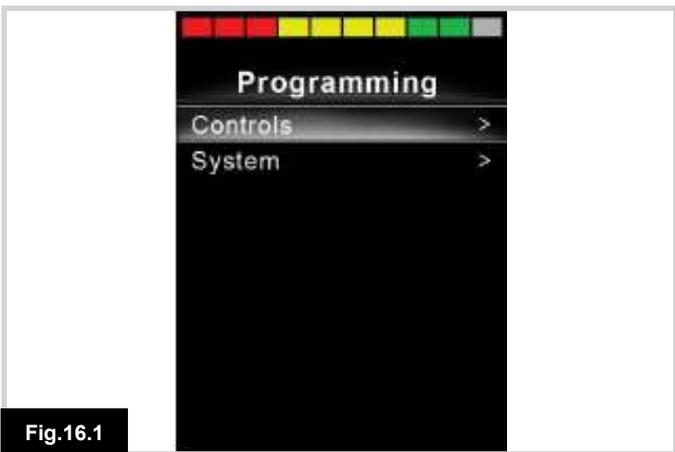


Fig.16.1

16.5 IR Set-Up

A right SID deflection will enter a sub-menu for learning and deleting IR codes. See page 56.

Refer to your healthcare professional or authorized dealer.

16.6 Programming (Fig 16.1)

A right SID deflection will enter a sub-menu for programming with access to two further sub-menus, Controls and System.

16.6.1 Controls (Fig 16.2)

A right SID deflection will enter a sub-menu for programming user experience functions as follows:

Profiled Controls>Sleep:

Sets the time after which the control system will go to sleep if a SID command is not received, in the selected profile.

Sounder Volume:

Sets the volume of the sounder used to indicate button presses.

Horn Volume:

Sets the volume of the horn when used.

Start-Up Beep:

Sets whether a short beep occurs when the Omni2 is turned on.

Momentary Screens:

Sets whether programmed Momentary Screens are displayed.

Display Speed:

Sets how the powerchair's speed is displayed; options are mph, km/h or off.

Displays:

Sets the format of the digital drive display; options are odometer, speed or both.

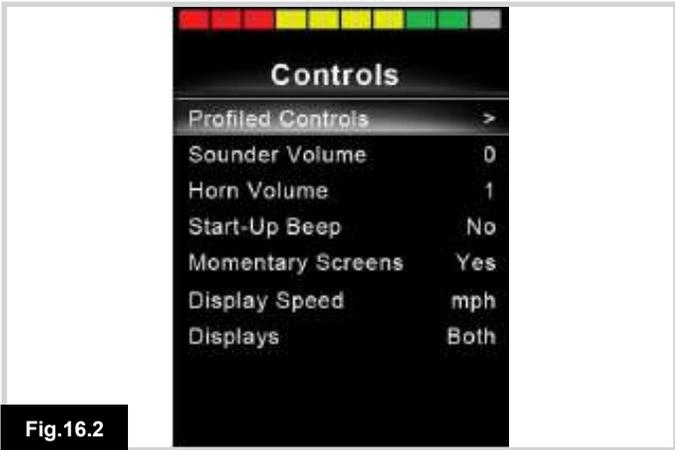


Fig.16.2

16.6.2 System (Fig 16.3)

A right SID deflection will enter a sub-menu displaying System information.

16.6.2.1 Diagnostics (Fig 16.4)

A right SID deflection will enter a sub-menu displaying System information. Allows the user to read diagnostic information from the control system.

16.6.2.2 Diagnostics Timers

A right SID deflection will enter a sub-menu displaying System information. Allows the user to read diagnostic information from the control system.

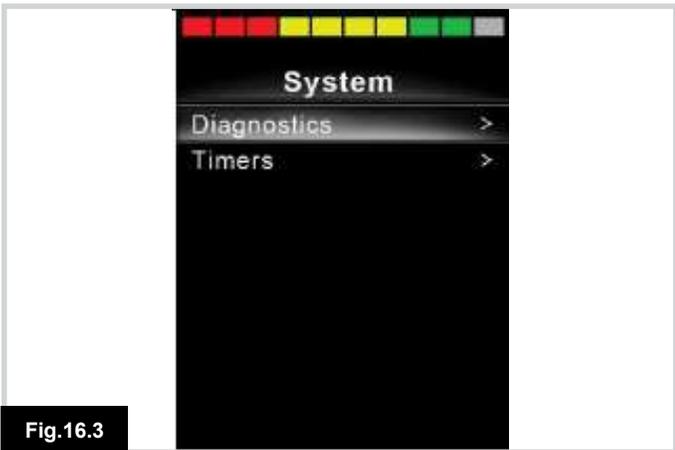


Fig.16.3

16.7 Exit

A right SID deflection will exit the Settings Menu and return to the User Menu.

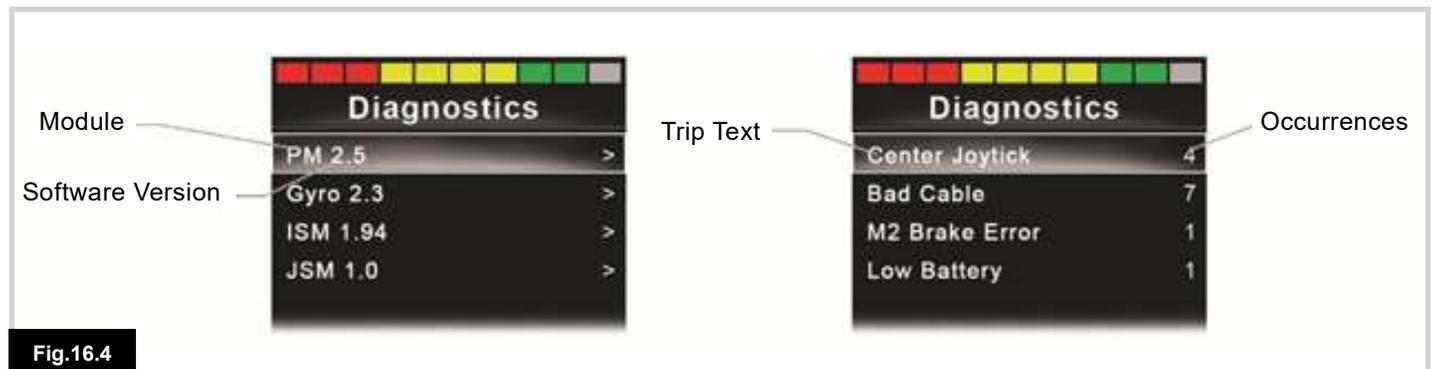


Fig.16.4

17.0 Omni2 Infra Red Control (IR) (Fig 17.0)

The Omni2 Display Section includes an IR transmitter and receiver that allows it to replicate commonly used IR devices, such as remote controls for TVs, DVDs, Cable/Satellite or environmental controls such as automatic door openers.

Once an Omni2 with IR Control is connected to an R-Net system, then IR Control can be from a conventional Joystick Module (or other Input Device) or from a Specialty Input Device that is connected to the Omni2.

17.1 User Menu (Fig 17.1)

IR Mode is accessed via the User Menu.

IR Mode will only be available if IR Codes have been stored in the Omni2. There are two ways to store IR Codes in the Omni2 – by 'learning' Codes from IR handsets or by programming from the PC-based IR Configuration Tool, refer to section 17.4 and (Fig 17.1-17.14) for respective details of each method.

On entering IR Mode, the user will be presented with a list of available IR Appliances.

Note:

When an Omni2 is dispatched from Sunrise Medical, it will contain a default menu. If required, the IR Configuration tool can be used to change this default menu.

The IR Mode Menu is navigated in the usual way:

Forward SID deflections will highlight the Appliance above.

Reverse SID deflections will highlight the Appliance below.

Left or Right SID deflections will enter the highlighted Appliance's sub-menu, which will contain all the IR Commands for that Appliance.

Left or Right SID deflections will then activate the highlighted IR Command.

For each Appliance there is a list of associated IR Commands. Using the TV example, Commands such as: On/Off, Channel Up, Channel Down, Volume Up and Volume Down may be displayed. When the Omni2 is transmitting the selected Command, it is highlighted with a red background, Fig 17.2.

When an IR Omni2 is dispatched from Sunrise Medical, it will contain a default menu. If required, the IR Configuration tool can be used to change this default menu.

Refer to your healthcare professional or authorized dealer for programming.



Fig.17.0

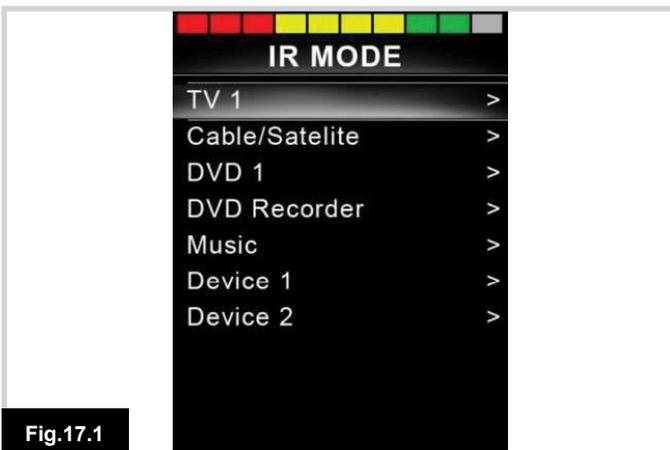


Fig.17.1



Fig.17.2



Fig.17.3

17.2 Accessing the IR Set Up Menu (Fig 17.3)

There are three methods of accessing IR Set-Up on the Omni2, via the Settings Menu.

Pressing the top right-hand soft-key on the Display Section, after the Omni2 has been switched on, will display the Settings Menu screen, Fig 17.3.

The Up/Down navigation keys on the front of the Display Section scroll up and down the menu. The Left/Right keys select the highlighted option.

It is also possible to access the Settings Menu and therefore the IR Set-Up Menu, via the User Menu.



Fig.17.4

17.3 IR Set Up Menu (Fig 17.4 and 17.5)

On entering the IR Set-Up menu, the default Appliances will appear. By selecting an Appliance, its Commands will be shown, Fig 17.4.

If a Command is checked, this means it has a stored IR Code. If there is not a check, then there is no stored IR Code for that Command, Fig 17.5.



Fig.17.5

17.4 Learning an IR Code (Fig 17.6)

IR Codes can be stored or deleted as detailed below.

Enter the IR Set-Up Menu and then select an Appliance, e.g. TV. The Commands for the Appliance will appear on the screen, Fig 17.6.

Select the command to be learned. In this example, TV > Channel Up.



Fig.17.6



Fig.17.7

Select Learn Code, by using the Right button while the Command is highlighted, Fig 17.7.

Point the TV remote control at the Omni2's Receiver and press the On/Off button twice, Fig 17.8.

A check denotes a successful learn operation. A cross denotes an unsuccessful learn operation, please retry, Fig 17.9.

Note:

The first time an IR Code has been learned, it is necessary to cycle the power to the Omni2. If other IR Codes are already learned, then this is not necessary.

17.4.1 Learning and IR Code - Sequence

Multiple IR Codes can be learned against one Command in the Omni2 IR Set-Up Menu. This enables multiple IR Codes to be transmitted through one Command in the Omni2 when in IR mode.

Examples:

1. The On/Off function for multiple appliances (the TV and the DVD for example) can be learned against one entry in the Omni2 menu. The Omni2 will then transmit the Codes for the learned Command in one burst. In this case turning the TV and the DVD recorder on or off, effectively simultaneously.
2. Previously selecting a TV channel required the user to select the individual channel's digits from a list. This could be quite cumbersome when trying to select a TV channel with multiple digits e.g. Channel 143. Now the individual Codes for "1", "4" and "3" can be learned against one Command in the Omni2 IR Set Up Menu. When this Command is selected in IR Mode, the IR Codes are transmitted effectively simultaneously.



Fig.17.8

To create a sequence:

- Select the Command to use as the Sequence initiator. In this example, TV > On/Off.
- Select Learn Code, by using the Right button while the Command is highlighted.
- Point the TV remote control at the Omni2's Receiver and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Point the DVD remote control at the Omni2's Receiver and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.

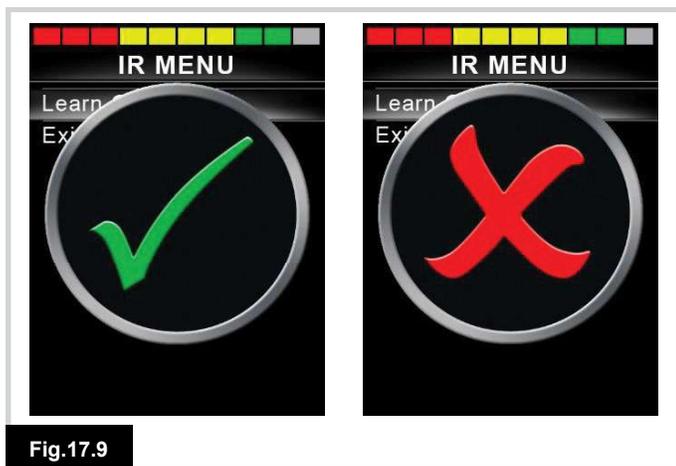


Fig.17.9

This time, the On/Off Command will have a Tick and three Dots beside it, showing a Learned Sequence. As displayed in Fig 17.10.

If you choose another appliance, after the first code you load, switch On and Off, then carry on loading the codes for the new appliance without interrupting the power.

17.4.2 Enabling and Disabling IR Codes (Fig 17.11)

IR Codes can be enabled or disabled in the IR Set-Up Menu. If a Code is disabled it will not transmit and will not appear in the User Menu.

To disable an IR Code, select the '-' key on the Display Section of the Omni2. Disabled IR Codes appear with an 'X' against the highlighted Command.

To enable an IR Code, select the '+' key on the Display Section of the Omni2. An enabled Code appears with a check against the highlighted Command.



Fig.17.10

17.4.3 Deleting IR Codes (Fig 17.12 to 17.14)

To delete an IR Code for a specific Command, highlight the specific Command in the Appliance menu and press the right button. Then select the Delete Code option, Fig 17.12.

To delete all IR Codes for an Appliance select Delete All Codes within that Appliance's sub-menu, Fig 17.13.

Note:

When deleting all learned Codes for a specific Appliance, the Omni2 must be power-cycled to actually delete the Codes.

To delete all IR Codes stored in the Omni2, select Delete All Codes within the IR Set-Up menu, Fig 17.14

Note:

If the Delete All Codes Command is selected, the Omni2 must be power-cycled to actually delete the Codes.

When deleting all learned codes for a specific appliance, the Omni2 must be power cycled (switch Off then On, to actually delete the codes).

To delete all IR Codes stored in the Omni2, select Delete All Codes within the IR Set Up menu.

If the Delete All Codes command is selected, the R-Net must be power cycled to actually delete the codes.



Fig.17.11

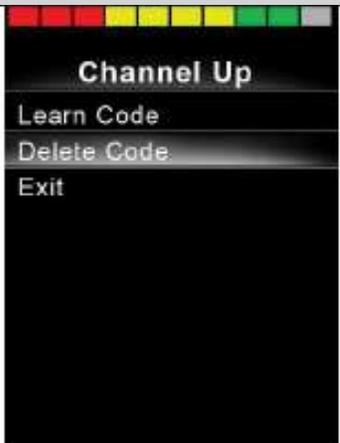


Fig.17.12

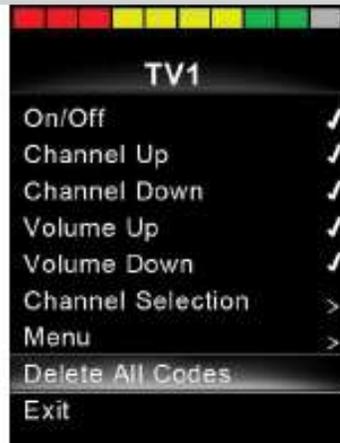


Fig.17.13



Fig.17.14

18.0 Pairing with a Bluetooth Device (Fig 18.0)

The Omni2 must first be put into Discovery Mode via the sequence below.

- Enter Bluetooth Mode and select the device you wish to pair with.
- Deflect the SID in the forward direction and hold until there is a beep. This will take approximately 10 seconds, then release.
- Deflect the SID in the reverse direction and hold until there is a beep. This will take approximately 10 seconds, then release.

A screen such as shown in Fig 18.0 will appear – the flashing blue icon confirming the Omni2 is in Discovery Mode.

Depending on which type of device is being paired with – a Windows PC, an Android device or an iDevice – refer to one of the following three sections.

18.1 Pairing with a Windows PC (Fig 18.1 to 18.4)

If the PC does not have integrated Bluetooth, then a receiver dongle must be used and its drivers installed. Curtiss-Wright recommends use of the following Bluetooth dongles:

- Trust BT-2400
- Linksys USBBT100-UK
- Belkin F8T012uk1 Version 1000

Once a Bluetooth connection is confirmed, the following process should be undertaken on the PC (based on Windows 10):

From the Start menu, select Settings, then Devices. A screen such as shown in Fig 18.1 should appear.

Click on the '+ Add Bluetooth or other device' section in the 'Bluetooth & other devices' menu and then select 'Bluetooth'. Fig 18.2.

The PC will now search for local Bluetooth devices. Select the name of the device to be paired, in this example, 'Tom's PC', Fig 18.3.

The PC will now attempt to connect. (If a passkey is requested use 1234). After a short time, a screen such as shown in Fig 18.4 should appear.

The blue icon on the Omni2 should have stopped flashing. If the process fails, click on 'Tom's PC', then 'Disconnect' and repeat the process.

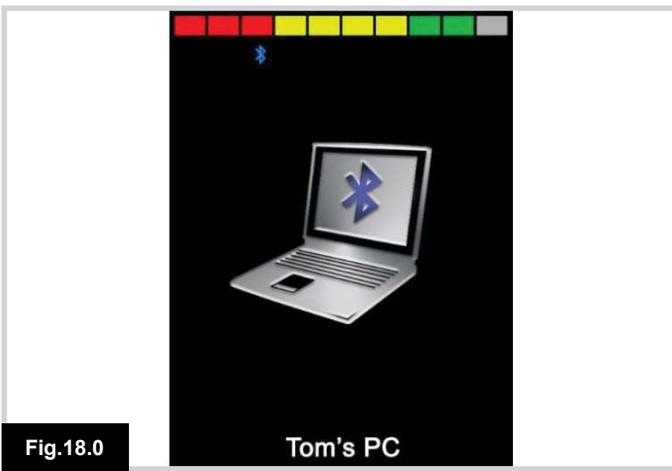


Fig.18.0

Tom's PC



Fig.18.1

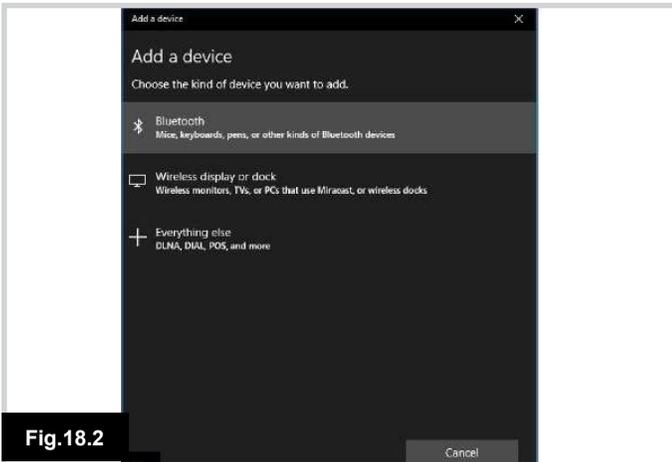


Fig.18.2

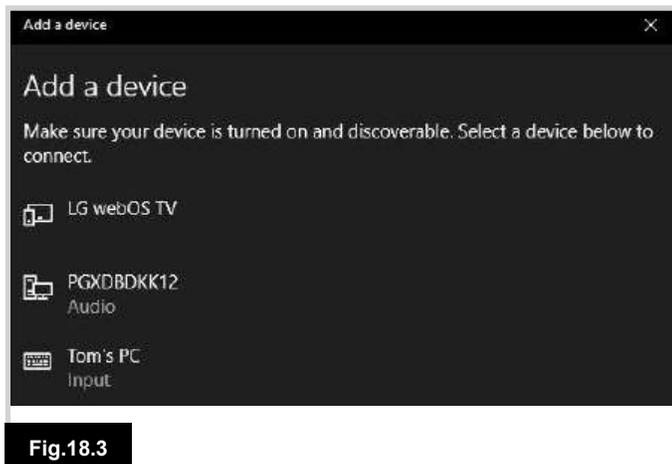


Fig.18.3

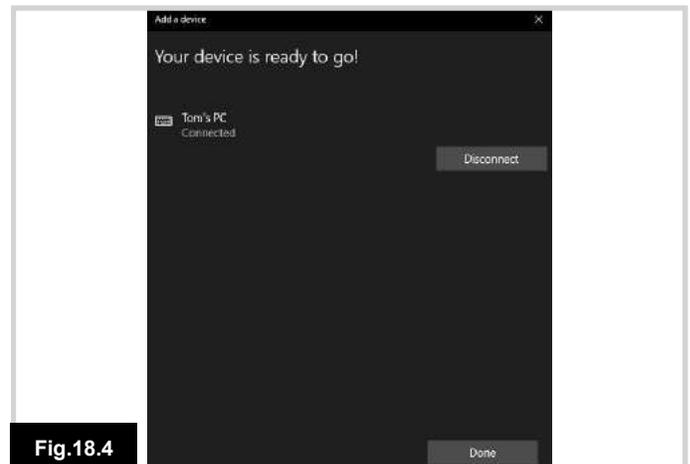


Fig.18.4

18.2 Pairing with an Android Device

The following process should be undertaken on the Android device:

- Select System Settings and set Bluetooth to On.
- Select 'Tom's Samsung' (for example), from the list of available devices.
- Enter the password 'PGDT' (this is only required the first time the device is connected) when prompted on the screen.
- Open the R-Net for Android App and select 'Connect'. This will present a list of available Bluetooth devices.
- Select 'Tom's Samsung' from the list of available devices.
- Enter the password '1234' when prompted on the screen.
- Tom's Samsung should appear as a paired device. In addition, the blue icon on the Omni2 should stop flashing.

18.3 Pairing with an iDevice

The following process should be undertaken on the iDevice:

- Select Settings and set Bluetooth to On.
- Select 'Tom's iPad' (for example), from the list of available devices.
- Tom's iPad should appear as a paired device. In addition, the blue icon on the Omni2 should stop flashing.

18.4 Updating the List of Devices

- The Omni2 will remember the Bluetooth ID of up to four devices. To replace an entry on the list of devices, one of the existing pairings must be terminated. This process is initiated from the paired device and will vary dependent on the type of device.
- Once the device is unpaired a new device can be added.

18.5 Operating a Windows PC

The default programming relates to the operations shown at below. There are programmable options for the timings and sensitivity of the operations. Refer to the Bluetooth Programming chapter for further information.

Refer to your healthcare professional or authorized dealer.

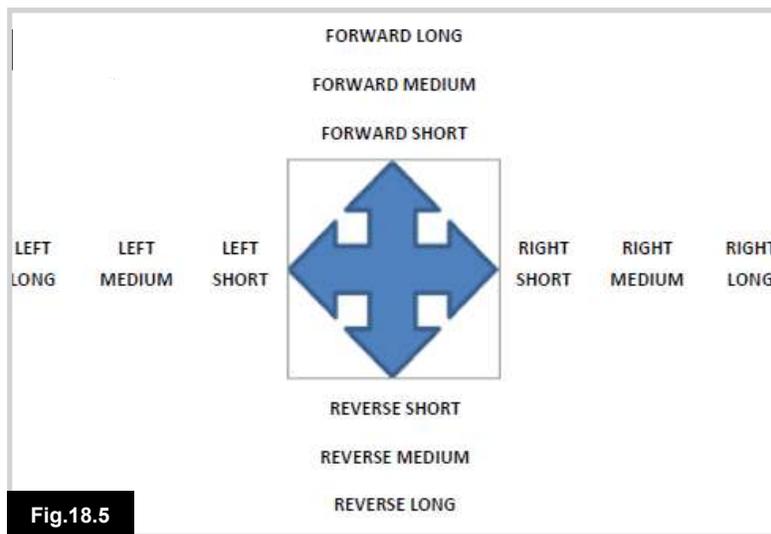
18.6 Operating an Android Device

The operating method is similar to that of a Windows PC and the same programmable options apply. Refer to the Bluetooth Programming chapter for further details.

Considerations:

- The Omni2 cannot switch an Android device on or off.
- The Sleep function of the Android device must be disabled.
- If the device does 'go to sleep', then a manual wake-up process will be needed.
- The default programming relates to the operations shown below. (Fig 18.5)

Refer to your healthcare professional or authorized dealer.



18.7 Operating an iDevice (Fig 18.6 - 18.8)

The Omni2 can control an iDevice in two ways:

- Using the iDevice's Switch Control functionality
- Using the iDevice's Switch Control functionality in conjunction with the iDevice's Voice Over functionality

These two methods will be referred to as Switch Control and Voice over respectively, and each is explained in the following sections.

Switch Control

The principle of Switch Control is that certain iDevice commands, such as the Home button or tapping the screen, can be assigned to commands received via Bluetooth from an external device such as the Omni2.

The process for assigning Omni2 commands to the iDevice commands is covered in section Switch Control Set-Up.

An example of Switch Control is given below. Please note, the screen navigation sequences are defined by the iDevice and not the Omni2.

NOTE:

Switch Control operates by highlighting sections within the application window. Various commands are then used to navigate the sections and to select individual applications (Fig 18.6).

iDevice command Next Item selects another highlighted area (Fig 18.7).

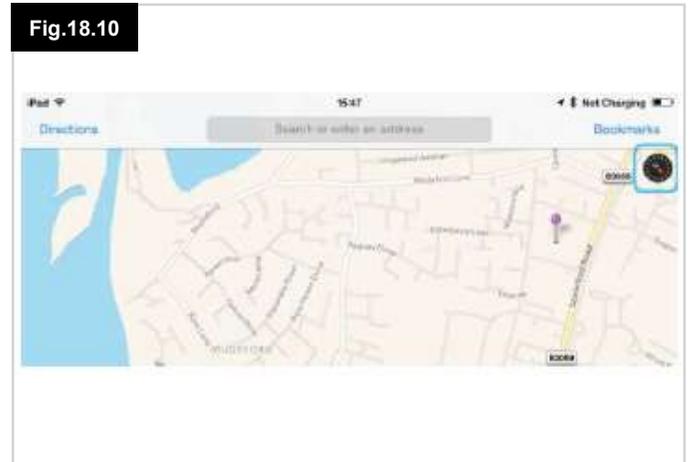
iDevice command Select Item enters the highlighted area (Fig 18.8).



iDevice commands Next Item and Previous Item are used to select individual icons within the highlighted area (Fig 18.9).

iDevice command Select Item opens the highlighted item. Depending on the nature of the application, areas of the screen will be highlighted and similar commands to the above can be used to navigate it (Fig 18.10).

iDevice command Home returns to the Home screen (Fig 18.11).



Voice Over

Voice Over operates in conjunction with Switch Control, but offers an alternative method of screen navigation. Examples are given (Fig 18.12 - 18.15). Please note, the screen navigation sequences are defined by the iDevice and not the CJS2-BT.

iDevice commands Cursor Right and Cursor Left select individual icons within a row (Fig 18.12 - 18.13).

The same iDevice commands also navigate the rows. Opening items and returning to the Home screen are effected in the same way as Switch Control (Fig 18.14 - 18.15).



Switch Control Setup

Certain Omni2 commands can be assigned to iDevice commands. The Omni2 commands are detailed below. Time related deflections (nudges) of the joystick in each of the four directions, Page 61.

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programmable. Refer to the Bluetooth Programming chapter for more information.

Set the R-Net programmable parameter Mode to Switch Control. Refer to the Bluetooth Programming chapter for more information.

Note:

Within Accessibility there are Auto Scanning and Auto Hide options. It is recommended that these options are turned off for the initial set up.

To enable Switch Control on the iDevice and assign commands:

- From the iDevice Settings menu, select General > Accessibility (Fig 18.16).
- Set Switch Control to ON (Fig 18.17).
- Select Switches (Fig 18.18).
- Select External (Fig 18.19).
- Select Add New Switch (Fig 18.20).
- This screen is displayed (Fig 18.21).
- Activate the Omni2 command you wish to assign to the iDevice; for example, a long reverse nudge.
- When the command has been received, this screen is displayed (Fig 18.22).
- Enter a convenient name – for example, long reverse – and then Save (Fig 18.23).
- This screen is displayed (Fig 18.24).
- Select the iDevice command you wish to assign; for example, Move To Next Item (Fig 18.24).
- This screen will appear and the process can be repeated to assign further commands (Fig 18.25).

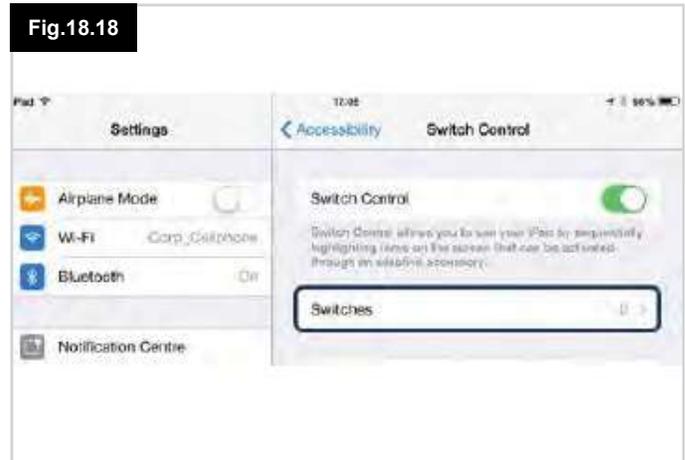
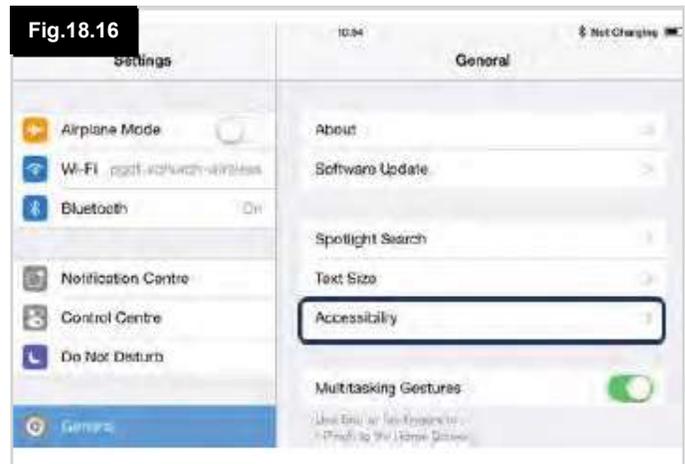


Fig.18.20



Fig.18.21



Fig.18.24

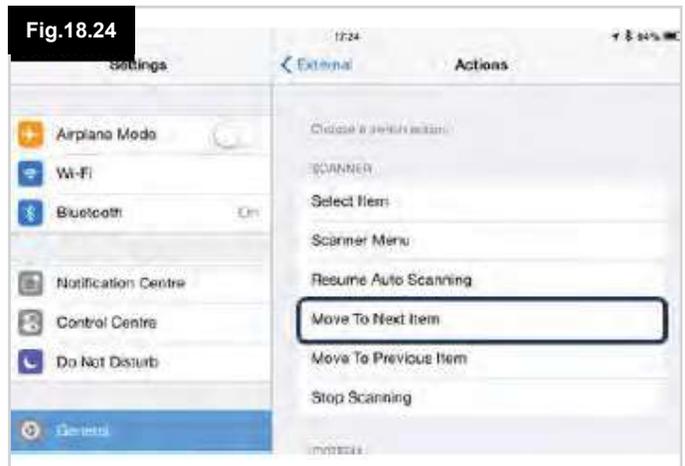


Fig.18.25

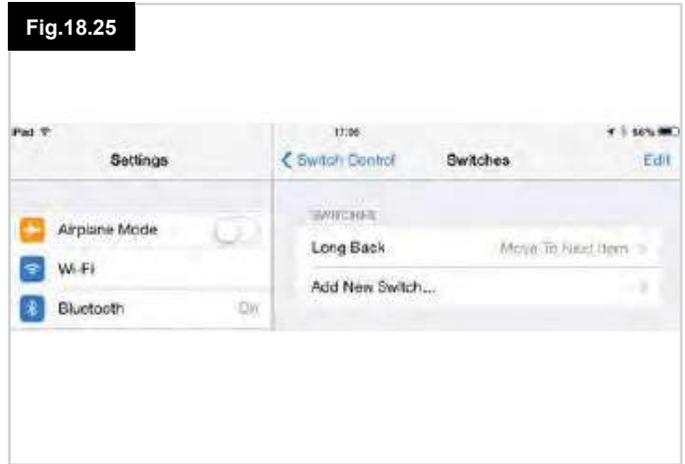
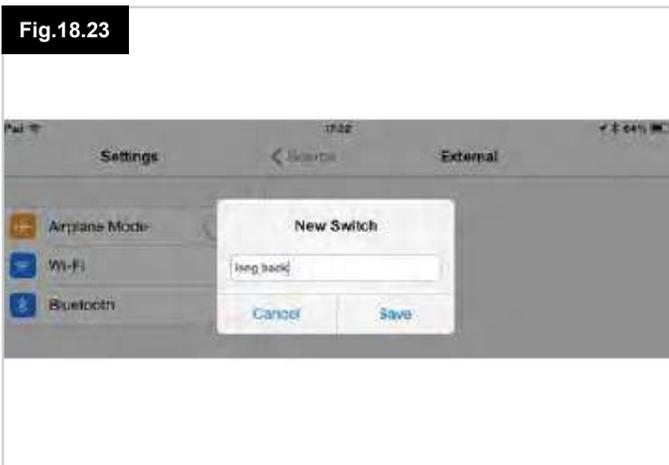


Fig.18.22



Fig.18.23



Voice Over Setup

Certain Omni2 commands can be assigned to iDevice commands. These are detailed below. Time related deflections (nudges) of the joystick in each of the four directions (Fig 18.26).

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programmable. Refer to the Bluetooth Programming chapter for more information.

Time related operations of two external profile jack switches.

The timings associated with the external switch operations are programmable.

Refer to the Bluetooth Programming chapter for more information, Section 23.0.

The Speed Down and Speed Up buttons.

The procedure to enable Voice Over on the iDevice and assign commands is as follows:

- From the iDevice Settings menu, select General > Accessibility and set Voice Over to On (Fig 18.26).

NOTE: The remainder of Voice Over set up is via the R-Net PC programmer, contact your authorized dealer for more information.

WARNING:

PC Programming must be done by trained and qualified personnel only. Please contact your Sunrise Medical authorized dealer.

- Set the parameter Voice Over and then use the relevant parameters to assign Omni2 to iDevice commands.
- Refer to the Bluetooth Programming chapter for more information, Section 23.0.



19.0 Precautions for Use

WARNING:

In the event of the wheelchair moving in an unexpected way **RELEASE THE SID JOYSTICK/BUTTON or PRESS and HOLD THE USER SWITCH.** This action will stop the wheelchair under any circumstances.

19.1 Hazards

Do not drive the wheelchair:

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

WARNING:

Although the R-Net control system is designed to be extremely reliable and each unit is rigorously tested during manufacture, the possibility of a system malfunction always exists (however the likelihood small). Under some conditions of system malfunction the control system must (for safety reasons) stop the chair instantaneously. If there is any possibility that you could fall out of the chair as a result of a sudden braking action, it is imperative that a restraining device, such as a positioning belt, supplied with the wheelchair, is in use at all times when the wheelchair is in motion. Sunrise Medical accepts no liability for losses of any kind arising from the unexpected stopping of the wheelchair, or arising from the improper use of the wheelchair or control system.

WARNING:

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

WARNING:

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

Your wheelchair complies with appropriate National and International EMC legislation.



For comprehensive instructions and advice on EMC and EMI conformity, please consult your wheelchair Owner's Manual.

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

19.2 Safety Checks

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

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

19.3 Daily Checks

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

19.4 Weekly Checks

This test should be carried out on a level floor within a clear and safe area around the wheelchair.

1. Switch on the control system.
2. Check that the Screen/Battery Gauge remains on after initialization and that the battery gauge is displaying a reasonable amount of charge.
3. Push the SID joystick slowly forwards or press the SID forwards button until you hear the parking brakes operate. The chair may start to move.
4. Immediately release the SID joystick/button. You must be able to hear each parking brake operate within a few seconds.
5. Repeat the test a further three times, pushing the SID joystick slowly backwards, left and right or pressing the related SID directional buttons.

WARNING:

If these tests are carried out in Latched Drive, be aware that the wheelchair will move in the direction of the chosen input signal. You will need to stop the wheelchair or allow enough space for the Latched Drive to terminate safely.

Do not attempt this test where space is restricted, or it is unsafe to do so.

19.5 Connectors

- Make sure that all connectors are securely mated.
- Check the condition of all cables and connectors for damage.
- 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.
- Check that the buttons are not contaminated with food or drink, or damaged in any way.
- Make sure that all the components of the control system are securely mounted. Do not overtighten any securing screws.

19.6 Servicing

To ensure continued satisfactory service, we suggest you have your wheelchair and control system inspected by your authorized dealer after a period of 1 year from commencement of service.

Contact your authorized dealer for details when the inspection is due.

20.0 R-Net Mouse Module

20.1 Introduction

The Mouse Module is used to enable you to control a PC mouse through the R-Net Control System, either through a Joystick or via an Input device connected to the R-Net Omni2.

20.2 Controls

The default controls have been programmed to operate with a Joystick Module fitted with lighting controls (Fig 20.0).



Fig.20.0

20.2.1 Other Controls (Omni2)

Any Input Device and most SIDs can be used to control a PC Mouse, but programming of the control system will be required. Operation of the R-Net Control System will vary depending on what Input Devices are connected.

If your wheelchair is already programmed to operate in "Mouse Mode", your healthcare professional or authorized dealer should have demonstrated this option.

If you wish to add the "Mouse Mode" option, or have any questions, please contact your healthcare professional or authorized dealer.

WARNING:

The Mouse Module does not support scanner functionality.

20.3 Operational Rules

The Mouse Module has the following requirements and restrictions:

- The Mouse Module has an operational range of 10m.
- The Mouse Module can retain ID's for up to 4 PC's.
- The Mouse Module and target PC will remain paired unless they are disconnected on the PC.
- Once the Mouse Module has successfully been paired with a PC it remembers the PC id. This means you can drive outside the 33' (10m) operating range, turn off the control system or the PC, and upon returning within range of the turned on PC the Bluetooth connection will be automatically reinstated.
- To pair the Mouse Module with multiple PC's see the Pairing section in Section 18.6 of this manual.

20.4 Bluetooth Receiver Dongle

To make the Mouse Module operate with a PC you will need a Bluetooth receiver dongle connected and with drivers installed.

Sunrise Medical recommends use of the following Bluetooth Dongles:

Trust BT-2400
Linksys USBBT100-UK
Belkin F8T012uk1 Version 1000

WARNING:

If your wheelchair was ordered with the Mouse function, then the system should be installed and set up for you to use and your healthcare professional or authorized dealer will have demonstrated its operation.

Should you wish to add the Mouse function to a wheelchair not already configured for this option, please contact your healthcare professional or authorized dealer.

WARNING:

Programming and diagnostics should only be conducted by health care professionals with in-depth knowledge of Sunrise Medical electronic Control Systems. Incorrect programming could result in an unsafe setup of a vehicle. Sunrise Medical accepts no liability for any losses of any kind if the programming of the Control System is altered from the factory-preset values.

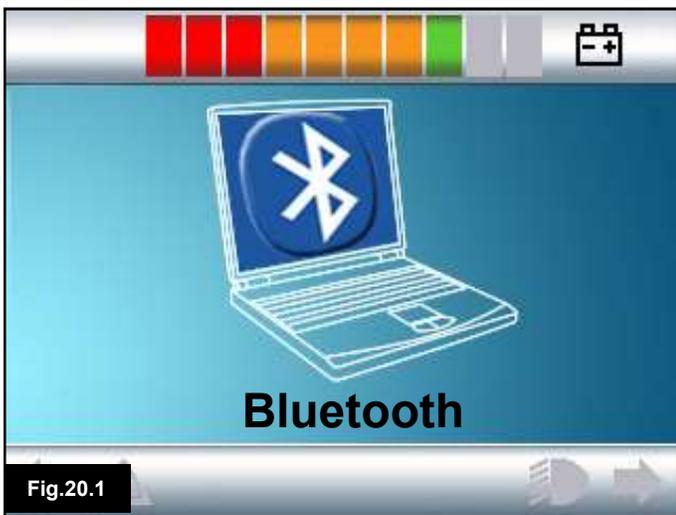


Fig.20.1

20.5 Pairing

This operation will be required if you change your PC or if you need to use another PC elsewhere.

Pairing is the term used to describe the initial set up of the Mouse Module and a particular PC.

Pairing involves carrying out a sequence of steps on the R-Net Control System and the PC to be used. Please see the following sections.

WARNING:

The R-Net Mouse Module should only be paired with one PC stationed within a 82' (25m) range. Where multiple pairings take place within an 82' (25m) range, Sunrise Medical accepts no liability for any losses of any kind due to the effectiveness of the R-Net Mouse Module.

20.6 Mouse Mode Configuration

The Mouse Module must be put into discovery mode. Please use the following procedure:

1. Press the 'Mode' button until the screen displaying a PC is shown (Mouse Mode, Fig 20.1).
2. Operate your Input Device in the forward direction and hold until it beeps, approximately 10 seconds. Then release (Fig 20.2 "A" or 18.5).
3. Operate your Input Device in the reverse direction and hold until it beeps, approximately 10 seconds. Then release (Fig 20.3 "B" or 20.4). (A short beep may be heard as the directions are changed).
4. The Mouse Module is now in discover mode and ready to be paired with a PC.

WARNING:

Initiating discovery will only be required once per PC setup.

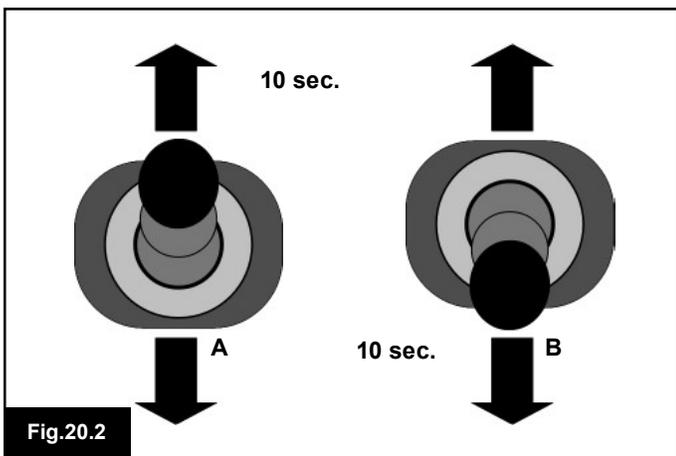


Fig.20.2

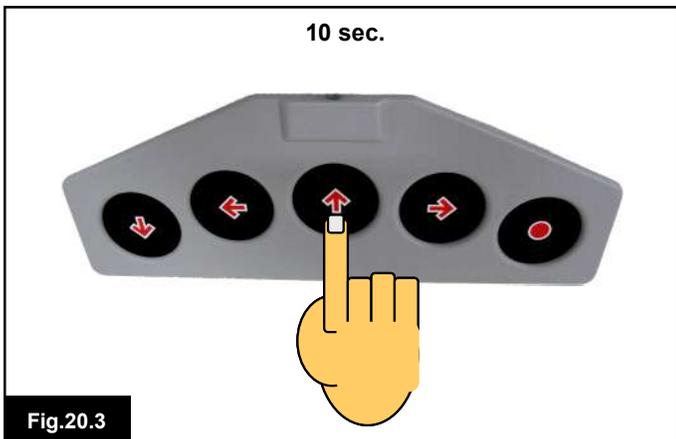


Fig.20.3

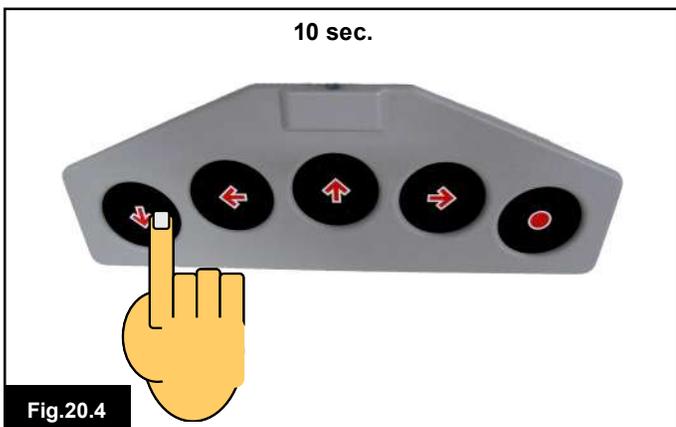
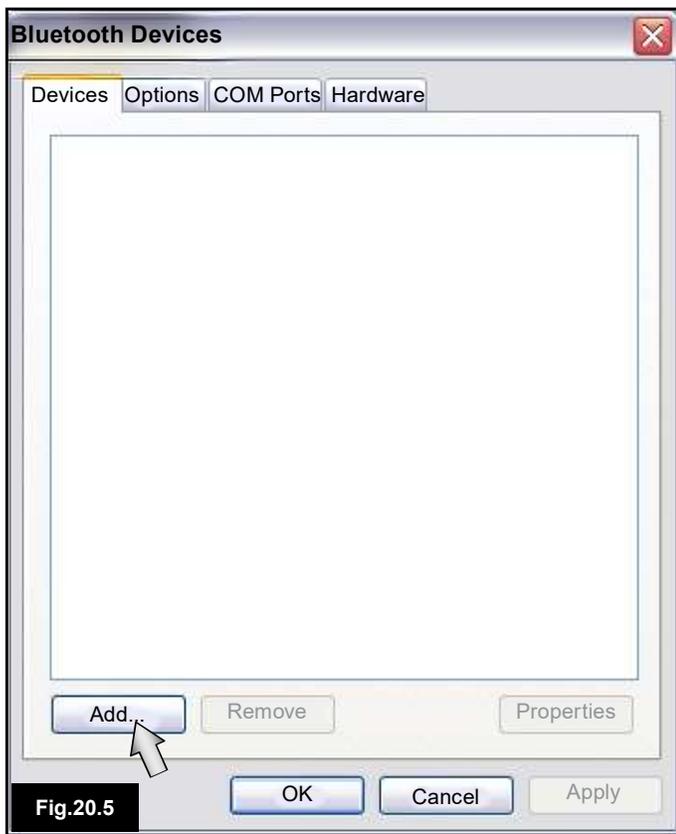


Fig.20.4



20.7 PC Pairing

The PC being used must have Bluetooth connectivity.

1. Enter my Bluetooth Devices on your PC.
2. The following window should appear (Fig 20.5).
3. Click on 'Add' (Fig 20.5).
4. The Bluetooth Device Wizard will open (Fig 20.6).
5. Tick the box marked "My device is set up and ready to be found" (Fig 20.6).
6. When highlighted, click "Next" (Fig 20.6).
7. The PC will search for local Bluetooth Devices, (Fig 20.7).
8. The following screen will appear and display the locally connectable Bluetooth devices (Fig 20.8).
9. Click on "R-Net Bluetooth Mouse Module" and then click on "Next" (Fig 20.8).









Fig.20.11

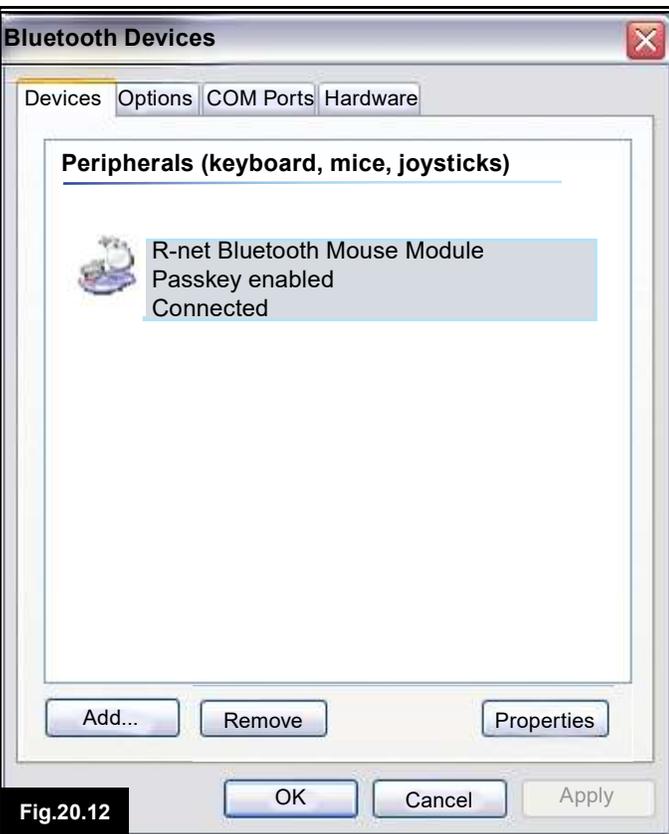


Fig.20.12

10. Click "Use the pass key found in documentation" (Fig 20.9)
11. Enter a pass key of "0000" then click "Next" (Fig 20.9).
12. The PC will connect with the Mouse Module and exchange (Fig 20.10).
13. Once connection is complete the Finish screen will be displayed (Fig 20.11).
14. Click on "Finish" (Fig 20.11).
15. The following window will be shown and the blue LED on the Bluetooth Module should be lit (Fig 20.12).
16. If the process fails, click on "R-Net Bluetooth Mouse Module" and then "Remove" (Fig 20.12). Start the process again from step 1.

20.8 Pairing Multiple PC's

When you are within range of the new PC requiring connection, follow steps 1 to 16, as described in Section 20.8.

WARNING:

The R-Net Mouse Module should only be paired with one PC stationed within a 82' (25m) range. Where multiple pairings take place within a 82' (25m) range, Sunrise Medical accepts no liability for any losses of any kind due to the effectiveness of the R-Net Mouse Module.



CJSM2

21.0 R-Net CJSM2 Control System

21.1 Introduction

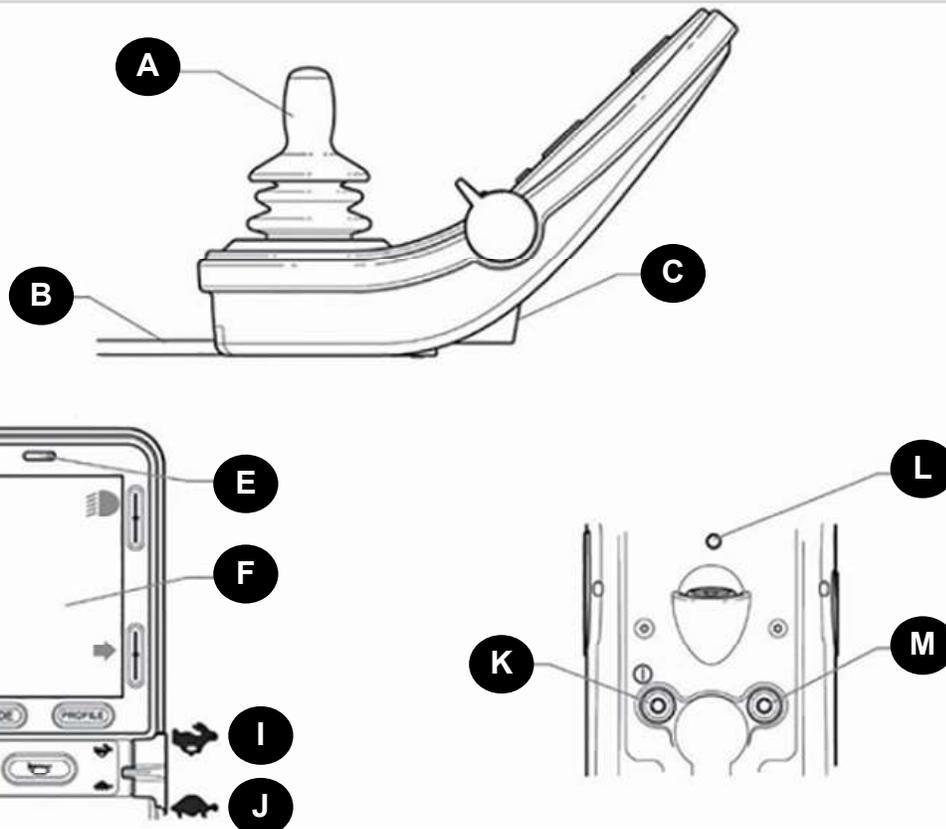
The operation of the R-Net wheelchair control system is simple and easy to understand. The control system incorporates state-of-the-art electronics, the result of many years of research, to provide you with ease of use and a very high level of safety. As with other electronic equipment, correct handling and operation of the unit will ensure maximum reliability.

Please read this chapter carefully - it will help you to keep your wheelchair reliable and safe.

Fig.21.1



Fig.21.2



21.2 Controls (Fig 21.1, Fig 21.2, Fig 21.3)

The Joystick Module is available with and without lighting control.

The controls are common to both; however, the lighting buttons symbols only appear on the lighting control version.

JOYSTICK

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

COMMUNICATION CABLE

The Communication Cable carries the electrical signals to and from the Power Module.

CHARGER SOCKET

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

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

⚠ CAUTION:

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

SCREEN BUTTONS

These buttons operate the lighting functions: 1. Hazards, 2. Lights, 3. Left Indicator and 4. Right Indicator. The function of each button is illustrated by an icon displayed on the LCD screen next to the button (Fig.19.3). Pressing the relative button activates and deactivates its function. Once the function is activated, the icon on the LCD will illuminate or flash depending on the function.

NOTE:

If no lighting system is fitted to the wheelchair, these buttons will be inactive. In all instances, the top left button, when held for a short time, will open the Settings Menu. Refer to section Settings Menu for more details.

NOTE:

When 2, 3, and 4 are held for a short time they can activate functions (e.g. lift, tilt, etc.). Depending on the chair options.

IR RECEIVER - LIGHT SENSOR - LCD DIAGNOSTIC LED

The IR receiver enables IR codes and signals to be inputted from external equipment. Refer to IR Setup and Operation. The Ambient Light Sensor automatically adjusts screen brightness. Refer to Settings Menu. The LCD Diagnostic LED is to indicate the control system is switched on in the event of an LCD screen failure.

LCD SCREEN

The status of the control system can be understood by observing the LCD screen. The control system is on when the screen is backlit. Refer to section Momentary Screens for details.

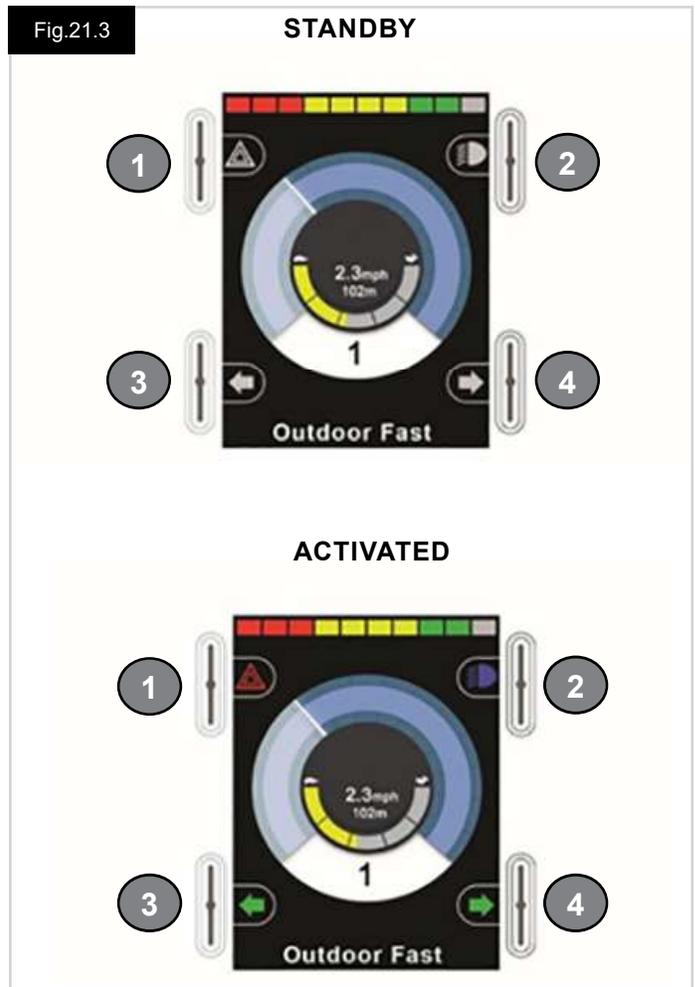
ON - OFF BUTTON (LEFT PADDLE)

The On/Off paddle switch is operated via forward deflections of the left paddle.

Operate the On/Off paddle. The screen will go through an initializing process then show the base screen (Fig 21.1).

- Check that the Speed Setting is at a level that suits you.
- Push the joystick to control the speed and direction of the wheelchair.

Fig.21.3



NOTE:

If you push the joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen (Fig 19.32, pg. 76). You must release and center the joystick to resume normal operation. If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and push it again. The screen will display the diagnostic screen at this time. You can reset this condition by switching the control system off and on again.

NOTE:

If you do not push the joystick as you switch the wheelchair on and the diagnostic screen is displayed (Fig 21.35, pg. 77) then the R-Net has detected a problem somewhere in the wheelchair's electrical system.

PROFILE - MODE BUTTON (LEFT PADDLE)

The Profile/Mode paddle switch allows the user to select the available drive Profiles and operating Modes for the control system. The selection sequence is through each of the available Profiles and then each of the available Modes.

Depending on the way the control system has been programmed a momentary screen may be displayed when a new Profile is selected. Refer to section Momentary Screens for details.

The available Profiles and Modes are dependent on how the control system has been programmed and the output devices that are connected.

The Profile/Mode paddle switch is operated via reverse deflections of the left paddle.

INCREASE SPEED (RIGHT PADDLE)

DECREASE SPEED (RIGHT PADDLE)

The Speed Paddle allows adjustment of the control system's speed setting.

Depending on the way the control system has been programmed a momentary screen may be displayed when the paddle is operated. Refer to section Momentary Screens for details.

The default operation of the Speed paddle is momentary, i.e. the speed setting will be increased upon forward deflections of the paddle and decreased upon reverse deflections of the paddle.

The unit may be programmed to alter the timing and operation of the Speed paddle, as well as changing it to operate continuously, i.e. in a similar way to a rotary potentiometer (also available).

EXTERNAL ON - OFF SWITCH JACK

This allows the user to turn the control system on and off using an external switch, such as a Buddy-Button.

CAUTION:

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

TRANSMITTER

The CJSM2 includes an IR transmitter and receiver that allows the CJSM2 to replicate commonly used IR devices, such as remote controls for TV's, DVD's, Cable/Satellite or environmental controls such as automatic door openers. Once correctly configured IR Control can be performed using the Joystick (or other Input Device) or from a Specialty Input Device that is connected to the system.

EXTERNAL PROFILE SWITCH JACK

This allows the user to perform the function of the Profile/Mode paddle using an external switch, such as a Buddy-Button.

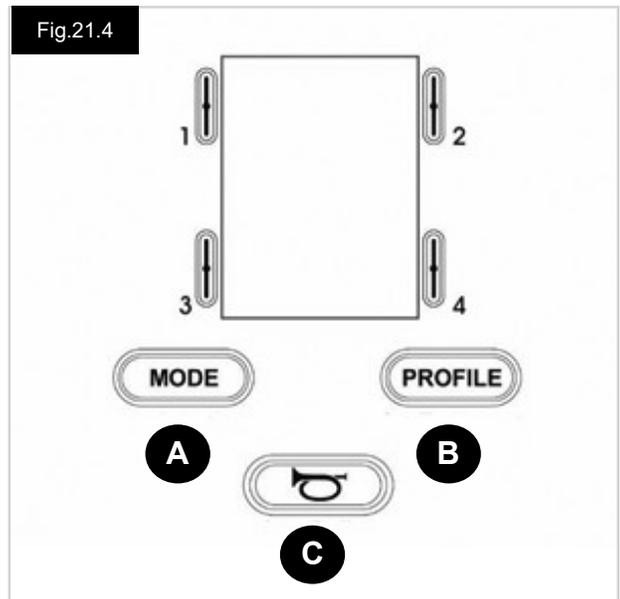
If the control system is set for latched drive or latched actuator control operation, then this input will provide the Emergency Stop Switch function.

Alternative functions for this input are available via programming as described below:

- Switch pad to control multiple seat
- Switch pad to control Bluetooth functions.
- To set the operation of the control system in the event of a failure in the connected switch or it's wiring to this input.

21.3 Buttons (Fig 21.4)

- A. The Mode button allows the user to navigate through the available Modes for the control system. The number of available Modes is dependent on how the control system is programmed. Refer to your authorized Sunrise Medical dealer for programming.
- B. The Profile button allows the user to navigate through the available Profiles for the control system. The number of available Profiles is dependent on how the control system is programmed. Depending on the way the control system has been programmed a momentary screen may be displayed when the button is pressed. Refer to your authorized Sunrise Medical dealer for programming.
- C. The Horn will sound while this button is depressed.

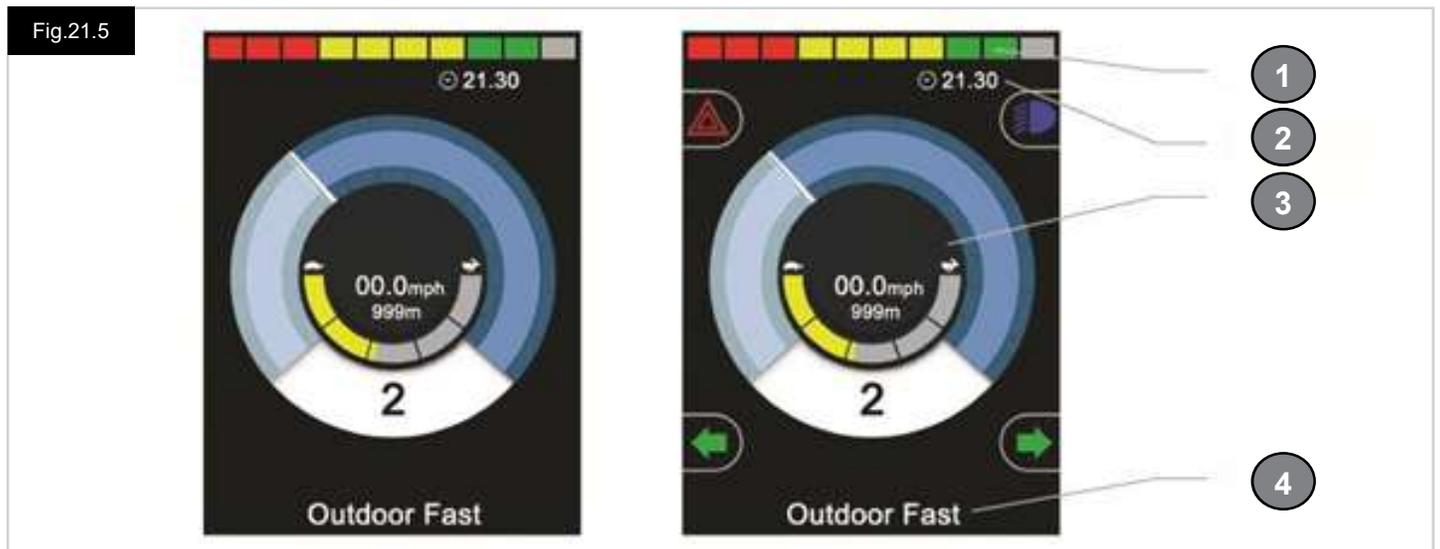


21.4 LCD Screen Detail (Fig 21.5)

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

The screen for the R-Net CJSM2 has common components, which will always appear, and components that will only appear under certain conditions. Opposite is a view of a typical Drive screen, with and without lights.

The screen is split into four areas of information: Battery Indicator, Information Bar, Main Area and Text Bar. Each area is detailed separately in the following sections.



- 1. Battery Indicator
- 2. Information Bar
- 3. Main Area
- 4. Text Bar

BATTERY INDICATOR (Fig 21.6)

This displays the charge available in the battery and can be used to alert the user to the status of the battery:

- **Steady:** This indicates that all is well.
- **Flashing Slowly:** The control system is functioning correctly, but you should charge the battery as soon as possible.
- **Stepping 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.

INFORMATION BAR (Fig 21.7 - Fig 21.11)

This area contains information and warning symbols, as well as a clock.

FOCUS (Fig 21.7)

When the control system contains more than one method of direct control, such as a secondary Joystick Module or a Dual Attendant Module, then the Module that has control of the wheelchair will display the Focus symbol.

BLUETOOTH SIGNAL ICON (Fig 21.8)

This symbol appears when Bluetooth is enabled. If the symbol is white, the system is not paired to an external Bluetooth device. If the symbol is blue, the system is paired to an external Bluetooth device. When the system has been placed into Discovery Mode, the icon will flash blue.

MOTOR TEMPERATURE (Fig 21.9)

This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.

CONTROL SYSTEM TEMPERATURE (Fig 21.10)

This symbol is displayed when the control system has intentionally reduced its own power, in order to protect itself against heat damage.

CLOCK (Fig 21.11)

This displays the current time in a numeric format. The clock is user adjustable.

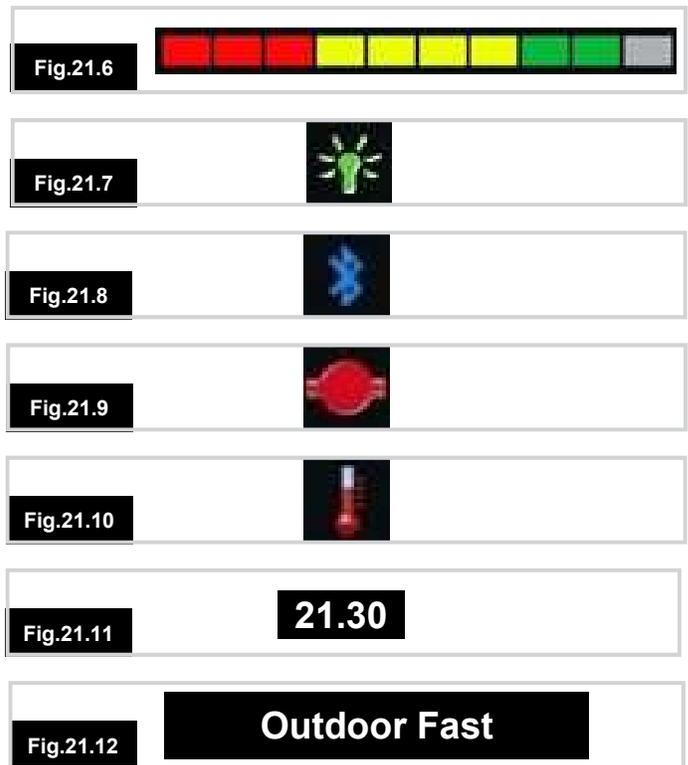
Adjustable options are:

- Visibility, whether the clock is displayed on screen.
- The display format, 12 or 24 hour.
- The time, the user can adjust the time.

These adjustments are made within the Settings Menu. Refer to section Settings Menu for more details.

TEXT BAR (Fig 21.12)

This area of the screen displays text relevant to the operating condition of the control system. Example text strings would be Profile Name, Mode Name or Axis Name. These text strings are programmable.



MAIN SCREEN AREA

This area will contain different information dependent on the current operating Mode of the control system. The area is also used to display general system information, when necessary.

DRIVE MODE SCREEN (Fig 21.13)

Displays symbols relevant to the drive control of the wheelchair.

CURRENT PROFILE (Fig 21.14)

This denotes the currently selected Profile, shown in numeric form.

SPEED INDICATOR (Fig 21.15)

This gives a graphical display of the wheelchair's speed. As the speed increases, the needle will move around the arc, covering the background with the white highlight.

The display is scaled between zero speed and the speed corresponding to the programmable parameter, Max Displayed Speed.

DIGITAL SPEED DISPLAY (Fig 21.16)

This displays the actual speed of the wheelchair in digital form. The display can be set to mph or km/h, or can be turned off. These options are set by the programmable parameter, Display Speed.

MAX SPEED INDICATOR (Fig 21.17)

This displays the current maximum speed setting.

When the left-hand segment is illuminated, then the speed setting corresponds to the programmed minimum forward, reverse and turning speeds.

The indicator will never show a lower setting, i.e. the left-hand segment will always be fully illuminated.

When all segments are fully illuminated, then the speed setting corresponds to the programmed maximum forward, reverse and turning speeds.

ODOMETER (Fig 21.18)

This displays the total distance the wheelchair has travelled or the trip distance since the last reset. This selection is made in the Settings Menu. Refer to Settings Menu further in this section of the manual.

The display can be set to mph or km/h, or can be turned off.

These options are set by the same programmable parameter that affects the digital speed display, i.e. Display Speed.

Fig.21.13



Fig.21.14



Fig.21.15

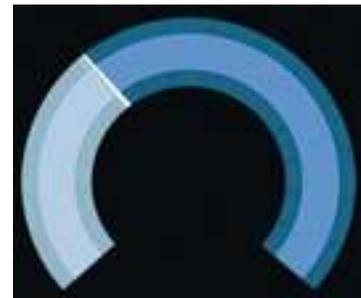


Fig.21.16

11.3mph

Fig.21.17

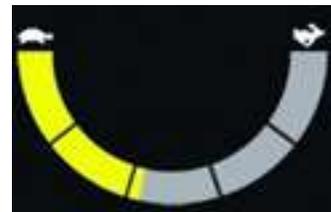


Fig.21.18

660 ft

INHIBIT (Fig 21.19)

If the wheelchair is being inhibited from driving, then this red symbol will be flashing.

If the speed of the wheelchair is being limited, for example, by a raised seat, then this orange symbol will be displayed.



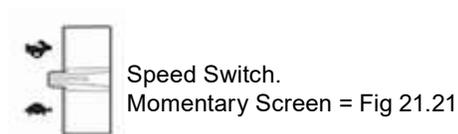
LATCHED DRIVE (Fig 21.20)

This symbol will be displayed if the control system is set for latched drive operation.



MOMENTARY SCREENS (Fig 21.21 - Fig 21.22)

If the momentary screens are programmed to be displayed then pressing the Speed or Profile Buttons will display screens such as below.



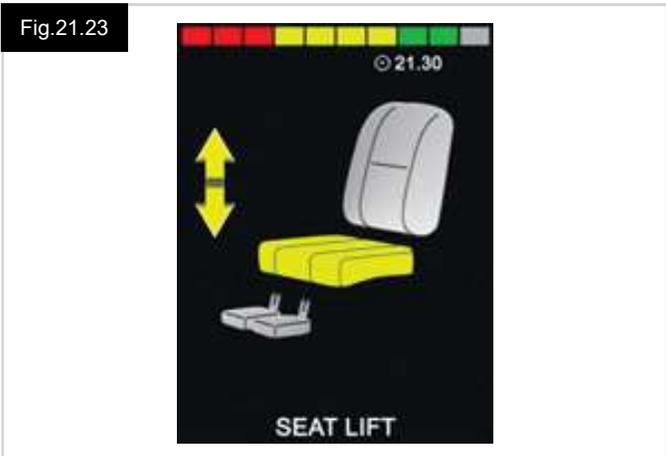
SEATING MODE SCREEN (Fig 21.23)

Displays symbols relevant to the seating control of the wheelchair.

Displays the sections of the chair currently selected for movement, the name given to the selection and a direction arrow showing what sort of movement is available.

Seating adjustment is achieved as follows:

- Move the joystick left or right to select the desired axis.
- Move the joystick forwards or backwards to move the seat.



LATCHED SEATING CONTROL (Fig 21.24)

This symbol will be displayed if the control system is set for latched seating control operation.



BLUETOOTH MODE SCREEN (Fig 21.25 - Fig 21.26)

The initial Bluetooth Mode screen will be dependent upon whether the CJSM2 has been set up to control one or more devices.

If set up to control just one device, a screen such as shown in Fig 21.25, will appear.

If set up to control more than one device, a screen such as shown in Fig 21.26 will appear.

The joystick should be used to navigate the menu and select the device to control.

Forward and reverse deflections navigate the menu.

A right deflection selects the highlighted device.

For further details of Bluetooth operation, refer to the Bluetooth chapter.

BLUETOOTH SCREEN PROGRAMMING

The text to describe each device can be set via the programmable parameter, "Device Name".

The screen symbol for each device can be set via the programmable parameter, "Screen Graphic".

Please contact your local approved Sunrise Medical authorized dealer.

DISCONNECTING A BLUETOOTH DEVICE

Enter the Settings Menu and select Bluetooth.

Set the device you wish to disconnect from to Off.

FLIGHT-SAFE MODE

It is common practice to disable wireless transmissions while on an aircraft.

Enter the Settings Menu and select Bluetooth.

Set all the devices to Off.

GENERAL INFORMATION SYMBOLS

LIMP MODE (Fig 21.27)

This message is displayed if a user switch has become disconnected, the switch detect has been set to on, and the control system is programmed to still allow drive, at a reduced rate.

TIMER (Fig 21.28)

This symbol is displayed when the control system is changing between different states. An example would be entering into module re-configuration.

Fig.21.25

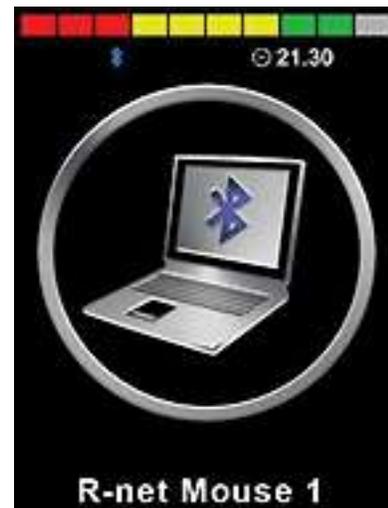


Fig.21.26



Fig.21.27



Fig.21.28



RESTART (Fig 21.29)

When the control system requires a reboot; for example, after a module re-configuration, this symbol will be flashing. Turn the chair off and back on.

SLEEP (Fig 21.30)

This symbol will be displayed for a short time before the R-Net enters into a sleep state.

E-STOP (Fig 21.31)

If the control system is programmed for latched drive or seating control operation, then it is normal for an Emergency Stop Switch to be connected into the External Profile/Mode Switch Jack.

If the Emergency Stop Switch is operated or disconnected, this symbol will be displayed.

Fig.21.29



Fig.21.30



Fig.21.31



JOYSTICK DISPLACED (Fig 21.32)

If the joystick is operated before or just after you switch the control system on, the screen will flash the joystick displaced screen.

You must release and center the joystick to resume normal operation.

If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and operate it again.

The screen will display a diagnostic screen at this time.

You can reset this condition by switching the control system off and on again.

Fig.21.32



CONTROL SYSTEM LOCK (Fig 21.33)

This symbol is displayed if the control system is locked, see section 3.5 for locking and unlocking the joystick.

DIAGNOSTIC SCREEN (Fig 21.34)

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

This indicates a system trip, i.e. the R-Net has detected a problem somewhere in the wheelchair's electrical system. If the error is in a non-active module, for example in the ISM but Drive Mode is selected, then drive will still be possible, however, the diagnostic screen will appear intermittently. Refer to Diagnostics for a complete description of the Trip Texts and diagnostic procedures or contact your authorized dealer.

Fig.21.33



SETTINGS MENU (Fig 21.35 next page)

The Settings Menu allows access to user-related adjustments. The menu is accessed by depressing and holding the top left-hand Screen Button for 1 second.

A typical Settings Menu display would be as shown in Fig 21.35.

Joystick forward and reverse movements are used to navigate up and down the screen.

Each of the menu items are described in the following sections:

TIME

A right joystick deflection will enter a sub-menu with the following Time related function options:

Set Time:

Allows the user to set the current time.

Display Time:

This sets the format of the time display or turns it off. The options are 12hr, 24hr or Off.

Fig.21.34



DISTANCE

A right joystick deflection will enter a sub-menu with the following odometer data and function options:

Total Distance

This is a value held in the Power Module and relates to the total distance driven using that Power Module.

Trip Distance

This is a value held in the Joystick Module and relates to the total distance driven since the last reset.

Display Distance

Sets whether Total Distance or Trip Distance appears as the odometer display on the Joystick Module.

Clear Trip Distance

A right joystick deflection will clear the Trip Distance value.

BACKLIGHT

A right joystick deflection will enter a sub-menu with the following Backlight related function options:

Backlight

This sets the intensity of the LCD backlight, adjustable range is 0% to 100%.

Auto Backlight

The Joystick Module contains an ambient light sensor to automatically adjust screen brightness. The programmable options are On or Off. If set to On, the display adjusts the screen brightness based on the light sensor reading. If set to Off the screen brightness will not change with changes in light intensity.

Backlight Timeout

This adjusts the period of time the backlight will remain active once no further instructions are received from an input device, adjustable between 0 and 240 seconds (4 minutes).

BLUETOOTH

A right deflection of the joystick will enter a sub-menu to configure the Bluetooth Mode screen.

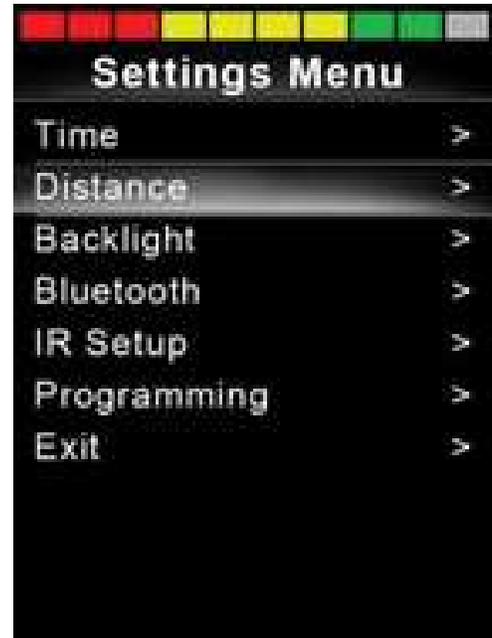
Refer to chapter Bluetooth Set-up and Operation for more details.

IR SETUP

A right deflection of the joystick will enter a sub-menu for learning and deleting IR codes.

Refer to chapter IR Set-up and Operation for more details.

Fig.21.35



21.5 Programming (Fig 21.36)

A right deflection of the joystick will enter a sub-menu for programming user experience functions as follows:

Sleep

Sets the time after which the control system will go to sleep if an Input Device command is not received.

Sounder Volume

Sets the volume of the sounder used to indicate button presses.

Horn Volume

Sets the volume of the horn when used.

Start-up Beep

Sets whether a short beep occurs when the controller is turned on.

Momentary Screens

Sets whether programmed Momentary Screens are displayed.

Display Speed

Sets how the wheelchair's speed is displayed; options are mph, km/h or off.

Displays

Sets the format of the digital drive display; options are odometer, speed, or both

Diagnostics

Allows the user to read diagnostic information from the control system.

Timers

Enables the user to view how many hours the chair has been driven.

Exit

A right deflection of the joystick will exit the settings menu.

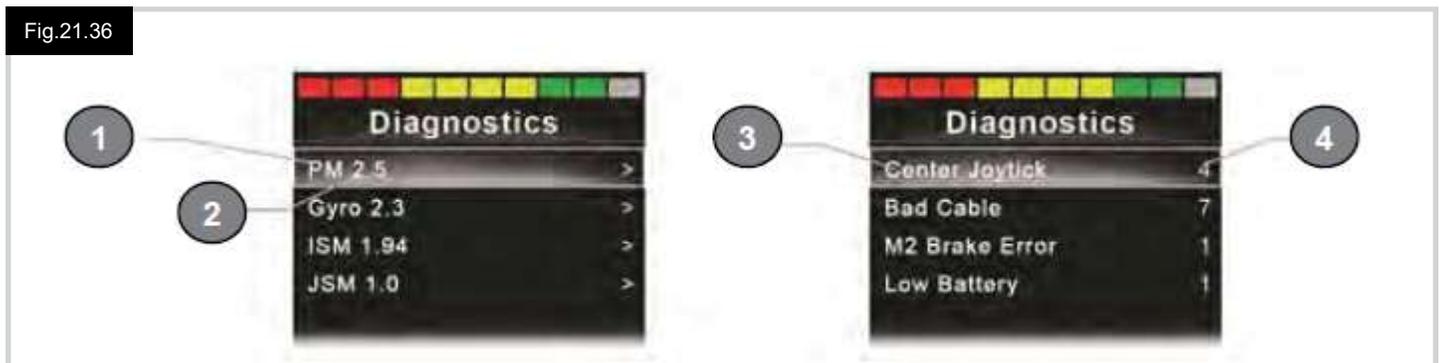
Fig 21.36

1. Module

2. Software Version

3. Trip Text

4. Occurrences



22.0 CJSM2 IR Setup and Operation

22.1 Introduction

The CJSM2 includes an IR transmitter and receiver to replicate commonly used IR devices, such as remote controls for TV's, DVD's, Cable/Satellite or environmental controls such as automatic door openers (Fig 22.1).

22.2 CJSM2 Used With An Omni2-IR

If there are two devices with IR connected into a system, for example a CJSM2 and an Omni2-IR, only one of the devices can have IR codes stored in it.

If there are IR codes in both devices, then IR Mode will not be accessible.

If a CJSM2 and an Omni2-IR are connected into a system, the Omni2-IR's learning function is disabled and IR codes must be learned through the CJSM2.

To ensure the CJSM2 supports a greater number of modern day IR appliances, the storage format of its IR codes is different to that of the Omni2-IR.

Therefore, it is not possible to use the IR Configurator to exchange IR codes between the devices (contact your Sunrise Medical authorized dealer).

IR Control Mode is accessed in the normal way of Mode selection, i.e. operation of the R-Net system's Mode button or Command.

IR Control Mode will only be available if IR Codes have been stored in the CJSM2.

There are two ways to store IR Codes in the CJSM2: by 'learning' Codes from IR handsets; or by programming from the PC based IR Configuration Tool (contact your Sunrise Medical authorized dealer).

Refer to section IR Set Up for details of the method.

NOTE:

If IR Mode is not available and there are stored IR Codes, then refer to your Sunrise Medical authorized dealer.

Fig.22.1



22.3 IR Code User Menu

IR Control Mode is accessed through Mode selection, i.e. operation of the R-Net system's Mode button or Command. IR Control Mode will only be available if IR Codes have been stored in the CJSM2.

There are two ways to store IR Codes in the CJSM2:

1. Copying codes from IR handsets (e.g. Television remote).
2. Programming from the PC based IR Configuration Tool (contact your Sunrise Medical authorized dealer).
3. Enter IR Mode to access the list of available IR Appliances (Fig 22.2).

Navigate the User Menu as below (Fig 22.3 to 22.4):

- i. Forward joystick deflections will highlight the Appliance above.
- ii. Reverse joystick deflections will highlight the Appliance below.
- iii. Left or Right joystick deflections will enter the highlighted Appliance's sub-menu, which will contain all the IR Commands for that Appliance
- iv. Left or Right joystick deflections will then activate the highlighted IR Command.

For each Appliance there is a list of associated IR Commands: For example, if TV is selected commands such as:

TV – ON, TV – OFF, Channel Up, Channel Down, Volume Up and Volume Down may be displayed.

When the CJSM2 is transmitting the selected command, it is highlighted with a red background.

NOTE:

- If IR Mode is not available and there are stored IR Codes, then please refer to your Sunrise Medical authorized dealer.
- The CJSM2 contains a default menu. If required, the IR Configuration tool can be used to change this default menu. Please refer to your Sunrise Medical authorized dealer.

22.4 IR Set Up Menu

On entering the IR Set-up Menu, the default appliances will appear (Fig 22.2).

By selecting an appliance, then its commands will be shown, (Fig 22.3).

If a Command is checked, this means it has a stored IR Code, (Fig 22.5).

If it is not checked, then there is no stored IR Code for that Command.

IR Codes can be stored or deleted as detailed in the following sections.

Fig.22.2



Fig.22.3



Fig.22.4



Fig.22.5



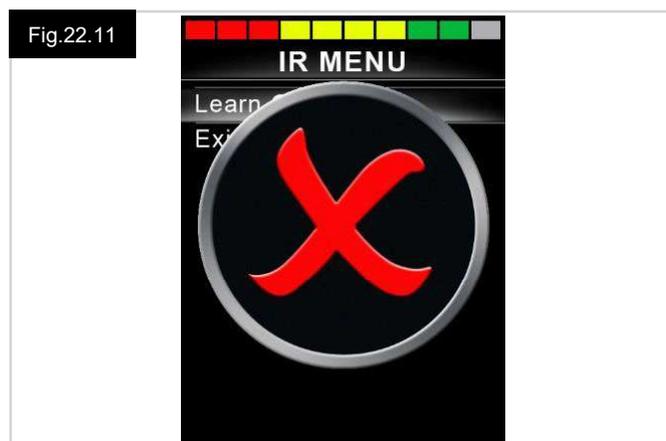
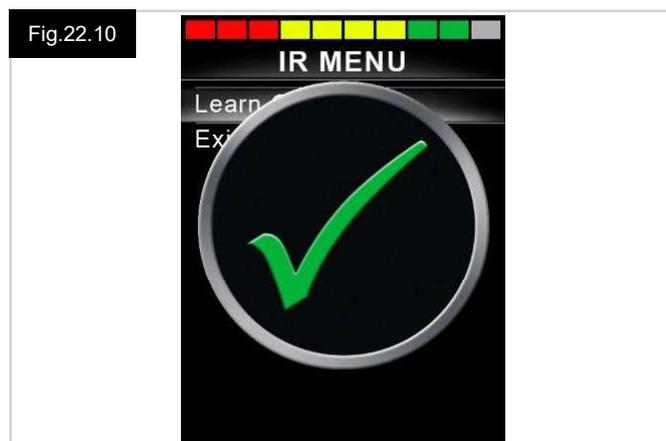
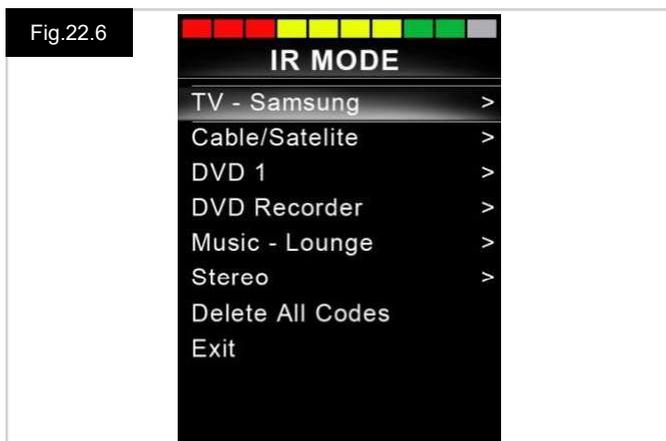
22.5 Learning an IR Code

Refer to (Fig.22.6 to Fig.22.11).

1. Enter the IR Set-up Menu.
2. Select an Appliance, e.g. TV – Samsung.
3. The commands for the Appliance will appear on the screen.
4. Select the command to be learned, via a right deflection of the joystick. In this example, TV > Channel Up (Fig 22.7).
5. Select Learn Code, via a right deflection of the joystick while the command is highlighted (Fig 22.8).
6. Point the TV remote control at the CJSM2 Receiver LED and press the Channel Up button twice.
7. A check denotes a successful learn operation (Fig 22.10).
8. A cross denotes an unsuccessful learn operation, please retry (Fig 22.11).
9. After the code is learned, highlight Exit and deflect the joystick to the left. This will return the system to the Appliance level of the IR Set-up Menu.

NOTE:

The first time an IR Code has been learned, it is necessary to cycle the power to the CJSM2 (turn OFF and ON). If other IR Codes are already learned, then this is not necessary.



22.6 Learning Sequential IR Codes

Multiple IR Codes can be learned against one Command in the CJSM2 IR set up menu. This enables multiple IR Codes to be transmitted through one Command in the CJSM2 when in IR mode.

Examples of use:

1. The on/off function for multiple appliances (the TV and the DVD for example) can be learned against one entry in the IR Set up menu. The CJSM2 will then transmit the Codes for the learned Command in one burst. In this case, turning the TV and the DVD recorder on or off simultaneously.

To create a Sequence, relating to example 1 above:

- Select the Command to use as the Sequence initiator. In this example, TV > On/Off.
- Select Learn Code, by deflecting the joystick to the right while the Command is highlighted.
- Point the TV remote control at the CJSM2's Receiver LED and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Point the DVD remote control at the CJSM2's Receiver LED and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Complete the sequence by highlighting Exit and deflecting the joystick to the left.
- This time the On/Off Command will have a Tick and 3 Dots beside it, showing a Learned Sequence (Fig 22.12).

22.7 Enabling/Disabling IR Codes

IR Codes can be enabled or disabled in the IR Set-up Menu. If a Code is disabled it will not transmit and will not appear in IR Mode options.

- To disable an IR Code, deflect the speed paddle of the CJSM2 up or down. A disabled IR Code appears with an X against the highlighted Command (Fig 22.13).
- To enable an IR Code, deflect the speed paddles on the CJSM2 up or down. An enabled Code appears with a check against the highlighted Command.

Fig.22.12



Fig.22.13



22.8 Deleting IR Codes

To delete an IR Code for a specific command, highlight the specific command in the appliance menu and deflect the joystick to the right. Then select the Delete Code option (Fig 22.14).

To delete all IR Codes for an appliance select Delete All Codes within that appliance's sub-menu (Fig 22.15).

To delete all IR Codes stored in the CJSM2, select Delete All Codes within the IR Set-up Menu (Fig 22.16).

Fig.22.14

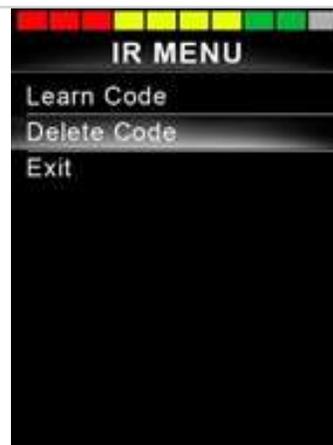


Fig.22.15



Fig.22.16



22.9 Default IR Menu

The CJSM2 is shipped with a default User Menu as shown below:

TV	DVD 1	DVD RECORDER	CABLE/ SATELLITE	MUSIC	DEVICE 1	DEVICE 2
On/Off	On/Off	On/Off	On/Off	On/Off	Command 1	Command 1
Channel Up	Play	Play	TV Guide	Play	Command 2	Command 2
Channel Down	Stop	Stop	Up	Stop	Command 3	Command 3
Volume Up	Pause	Pause	Down	Volume Up	Command 4	Command 4
Volume Down	Fast Fwd	Fast Fwd	Left	Volume Down	Command 5	Command 5
Menu	Fast Rev	Fast Rev	Right	Pause	Command 6	Command 6
0		Menu	Select / OK	Fast Fwd	Command 7	Command 7
1		Up	Information	CD Changer	Command 8	Command 8
2		Down	Page Up	AM		
3		Left	Page Down	FM		
4		Right	Red	Search		
5		Select / OK	Green	Preset		
6		Record	Yellow			
7		Timer Record	Blue			
8		Record Mode				
9						
Input (Up, Down, Left, Right)						
Select / OK						

23.0 CJSM2 Bluetooth Setup and Operation

23.1 Introduction

The R-Net CJSM2-BT allows a wheelchair user to control multiple Bluetooth-enabled devices. Typical applications include PC mouse control or operation of a Smart device. Up to four devices can be controlled. Two of which can be Apple iOS devices and two of which can be Windows or Android devices.

23.2 Operation and Configuring

Bluetooth Mode will only be available if one or more devices are set to On in the Settings Menu. See section Bluetooth Mode Screen Configuration for more details.

The CJSM2-BT and target Bluetooth devices will remain paired until they are disconnected by the target device.

Once a CJSM2-BT has been paired with a Bluetooth device, the module remembers the device's unique identifier. This means the wheelchair can be driven outside the operating range of the Bluetooth connection and upon returning within range the connection will be automatically reinstated.

There are three configuration processes that need to be carried out:

- Bluetooth Mode configuration.
- Bluetooth Mode screen configuration.
- Pairing with Bluetooth Devices.

Each is described in the following sections.

An R-Net Output Mode must be set to Bluetooth. Please contact your Sunrise Medical authorized dealer.

This is a two-stage process. First, a device or devices must be set to On from the Settings Menu. Second, for each device a screen graphic and a name can be set via PC Programming. The following two sections describe each process.

Settings Menu

- Enter the Settings Menu and select Bluetooth.
- The Bluetooth Devices screen is displayed.
- Set one or more of the devices to On.
- Switch the R-Net system off and on again (Refer to Fig 23.1).

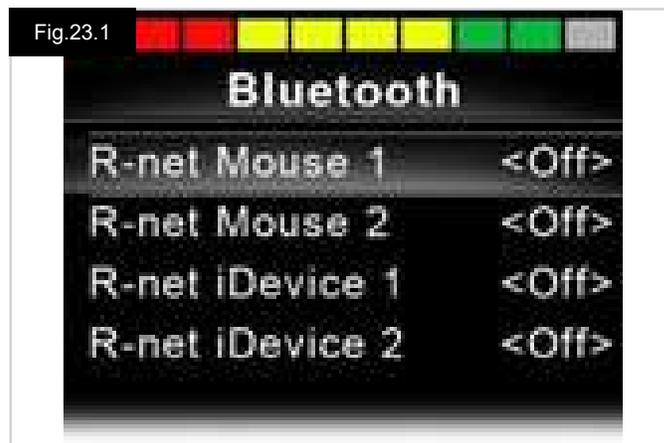


Fig.23.1

23.3 Pairing With a Bluetooth Device

The CJSM2-BT must first be put into Discovery Mode via the sequence below:

- Enter Bluetooth Mode and select the device you wish to pair with.
- Deflect the joystick in the forward direction and hold until there is a beep. This will take approximately 10 seconds, then release.
- Deflect the joystick in the reverse direction and hold until there is a beep. This will take approximately 10 seconds, then release.
- A screen will appear (Fig 23.2).
- The flashing blue icon indicates that the CJSM2-BT is in Discovery Mode.

Depending on which type of device is being paired with – a Windows PC, an Android device or an iPhone – refer to one of the following three sections:

23.4 Pairing With Windows

If the PC does not have integrated Bluetooth, then a receiver dongle must be used and its drivers installed.

The following Bluetooth dongles are recommended:

- Trust BT-2400
- Linksys USB BT100-UK
- Belkin F8T012uk1 Version 1000

Once a Bluetooth connection is confirmed, the following process should be undertaken on the PC:

- Enter My Bluetooth Devices (Fig 23.3).
- Click 'Add' to open the Bluetooth Device Wizard (Fig 23.4).
- Check the box marked 'My device is set up and ready to be found' (Fig 23.4).
- Click 'Next' (Fig 23.4).
- The PC will now search for local Bluetooth devices.
- The available Bluetooth devices are shown on the screen (Fig 23.5).
- Click on the New Device name e.g. 'Tom's PC' and then click on 'Next' (Fig 23.5).

Fig.23.2



Fig.23.3



Fig.23.4



Fig.23.5



- Select 'Use the passkey found in the documentation'.
- Type in 1234 as the pass key. Click Next (Fig 23.6).
- The PC will commence connection with the CJSM2-BT (Fig 23.7).
- When the connection is completed click 'Finish' (Fig 23.8).
- The blue icon on the CJSM2-BT should stop flashing (Fig 23.2).
- The screen will show connected devices (Fig 23.9).

NOTE:

If the process fails, click on New Device name e.g. 'Tom's PC', then select 'Remove' and repeat the process (Fig 23.9).

Fig.23.6



Fig.23.7



Fig.23.8



Fig.23.9



23.5 Pairing With an Android Device

The following process should be undertaken on the Android device:

- Select System Settings and set Bluetooth to On.
- Select Android Device name e.g. 'Tom's Samsung' from the list of available devices.
- Enter the password 'PGDT' (this is only required the first time the device is connected) when prompted on the screen.
- Open the R-Net for Android App and select 'Connect'. This will present a list of available Bluetooth devices.
- The R-Net for Android App is available from the Play Store, simply search for "PGDT", "R-Net" or "R-Net for Android" and download the App to the Smart device. A direct link to the App is available at: <https://play.google.com/store/apps/details?id=com.teksoftco.android.pgdtoverlay>.
- Select 'Tom's Samsung' from the list of available devices.
- Enter the password '1234' when prompted on the screen.
- Tom's Samsung should appear as a paired device. In addition, the blue icon on the CJSM2-BT should stop flashing.

23.6 Pairing With an iDevice

The following process should be undertaken on the iDevice:

- Select Settings and set Bluetooth to On.
- Select the iDevice name e.g. 'Tom's iPad' from the list of available devices.
- The iDevice name should appear as a paired device. In addition, the blue icon on the CJSM2-BT should stop flashing.

23.7 Updating the List of Devices

The CJSM2 will remember the Bluetooth ID of up to four devices.

To replace an entry on the list of devices, one of the existing pairings must be terminated.

This process is initiated from the paired device and will vary depending on the device.

When the device is unpaired a new device can be added.

23.8 Operating a Windows PC

There are programmable options for the timings and sensitivity of the operations, refer to the Bluetooth Programming chapter for more information.

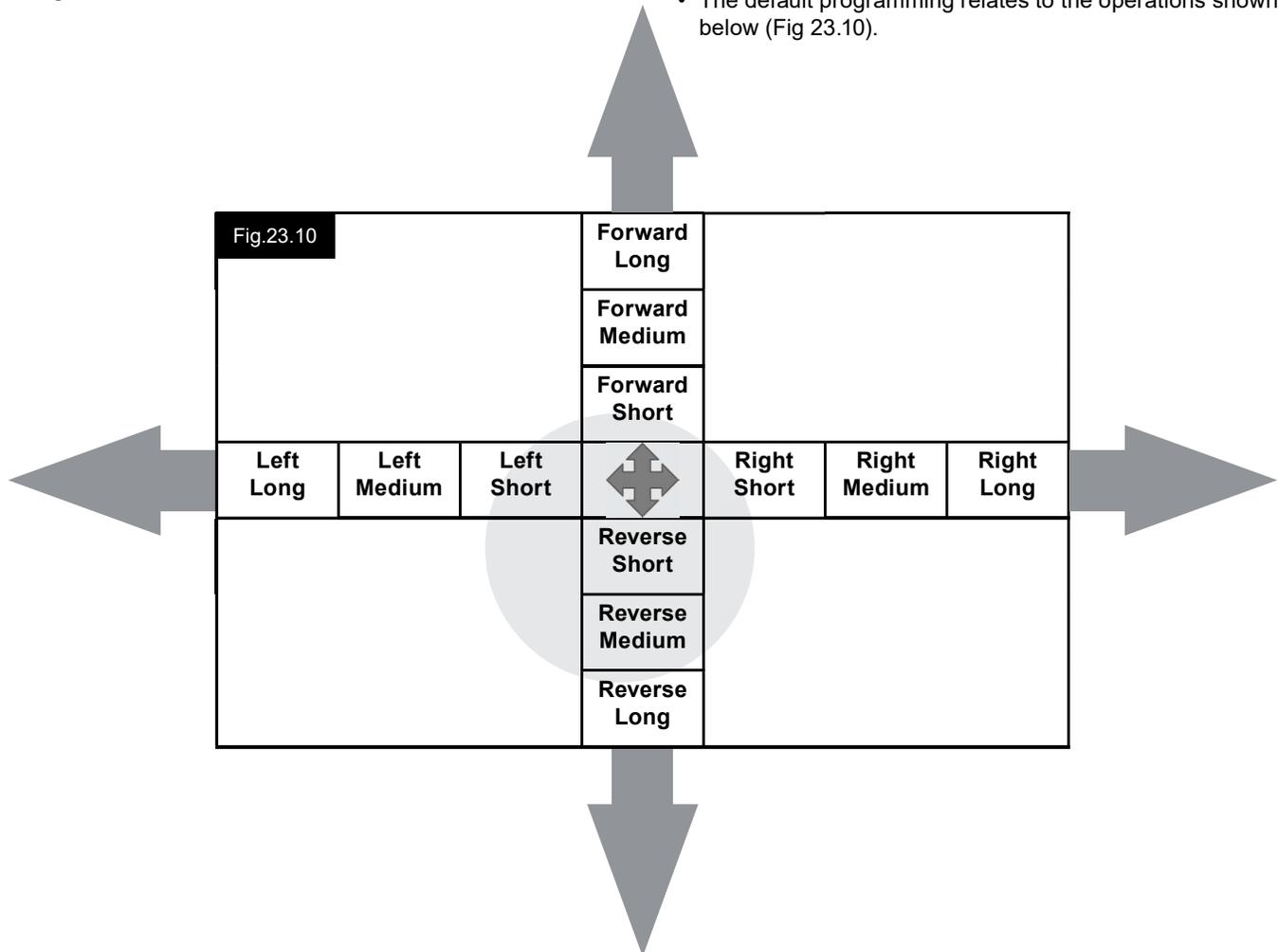
External switches connected to the External Profile jack socket can also be used to control devices, but programming of the R-Net will be required. Refer to chapter Bluetooth Programming for more details.

23.9 Operating an Android Device

The operating method is similar to that of a Windows PC and the same programmable options apply. Refer to the Bluetooth Programming chapter for more details.

NOTE:

- The CJSM-BT cannot switch an Android device on or off.
- The Sleep function of the Android device must be disabled.
- If the device does 'go to sleep', then a manual wake-up process will be needed.
- The default programming relates to the operations shown below (Fig 23.10).



23.10 Operating an iDevice

The CJSM2-BT can control an iDevice in two ways:

- Using the iDevice's Switch Control functionality
- Using the iDevice's Switch Control functionality in conjunction with the iDevice's Voice Over functionality

These two methods will be referred to as Switch Control and Voice over respectively, and each is explained in the following sections.

Switch Control

The principle of Switch Control is that certain iDevice commands, such as the Home button or tapping the screen, can be assigned to commands received via Bluetooth from an external device such as the CJSM2-BT.

The process for assigning CJSM2-BT commands to the iDevice commands is covered in section Switch Control Set-Up. An example of Switch Control is given below.

NOTE:

The screen navigation sequences are defined by the iDevice and not the CJSM2-BT.

Switch Control operates by highlighting sections within the application window. Various commands are then used to navigate the sections and to select individual applications (Fig 23.11).

iDevice command Next Item selects another highlighted area (Fig 23.12).

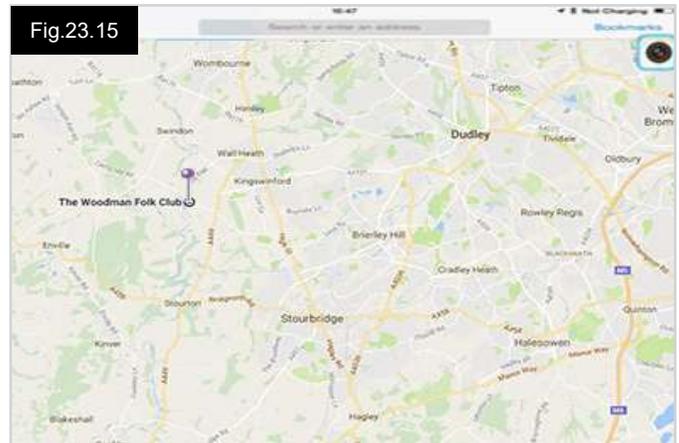
iDevice command Select Item enters the highlighted area (Fig 23.13).



iDevice commands Next Item and Previous Item are used to select individual icons within the highlighted area (Fig 23.14).

iDevice command Select Item opens the highlighted item. Depending on the nature of the application, areas of the screen will be highlighted and similar commands to the above can be used to navigate it (Fig 23.15).

iDevice command Home returns to the Home screen (Fig 23.16).



Voice Over

Voice Over operates in conjunction with Switch Control, but offers an alternative method of screen navigation. Examples are given (Fig 23.17 - 23.20). Please note, the screen navigation sequences are defined by the iDevice and not the CJSM2-BT.

iDevice commands Cursor Right and Cursor Left select individual icons within a row (Fig 23.17 - 23.18).

The same iDevice commands also navigate the rows.

Opening items and returning to the Home screen are effected in the same way as Switch Control (Fig 23.19 - 23.20).

Fig.23.17



Fig.23.18



Fig.23.19

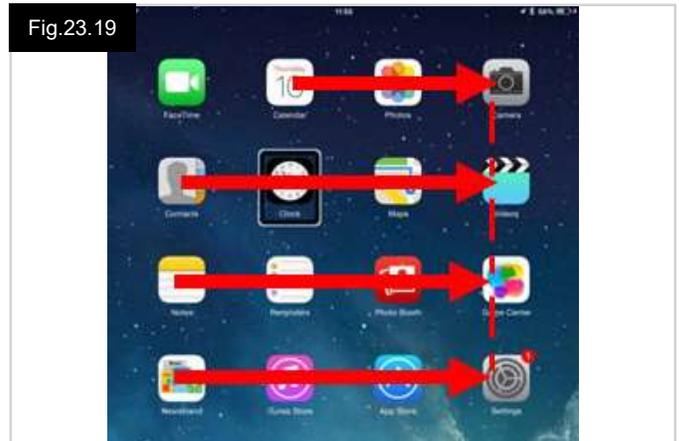


Fig.23.20



Switch Control Setup

Certain CJSM2-BT commands can be assigned to iDevice commands. The CJSM2-BT commands are detailed below. Time-related deflections (nudges) of the joystick in each of the four directions (Fig 23.10).

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programmable. Refer to the Bluetooth Programming chapter for more information.

Set the R-Net programmable parameter Mode to Switch Control. Refer to the Bluetooth Programming chapter for more information.

NOTE:

Within Accessibility there are Auto Scanning and Auto Hide options. It is recommended that these options are turned off for the initial set up.

To enable Switch Control on the iDevice and assign commands:

- From the iDevice Settings menu, select General > Accessibility (Fig 23.21).
- Set Switch Control to ON (Fig 23.22).
- Select Switches (Fig 23.23).
- Select External (Fig 23.24).
- Select Add New Switch (Fig 23.25).
- This screen is displayed (Fig 23.26).
- Activate the CJSM2-BT command you wish to assign to the iDevice; for example, a long reverse nudge.
- When the command has been received, this screen is displayed (Fig 23.27).
- Enter a convenient name – for example, long reverse – and then Save (Fig 23.28).
- This screen is displayed (Fig 23.29).
- Select the iDevice command you wish to assign; for example, Move To Next Item (Fig 23.29).
- This screen will appear and the process can be repeated to assign further commands (Fig 23.30).

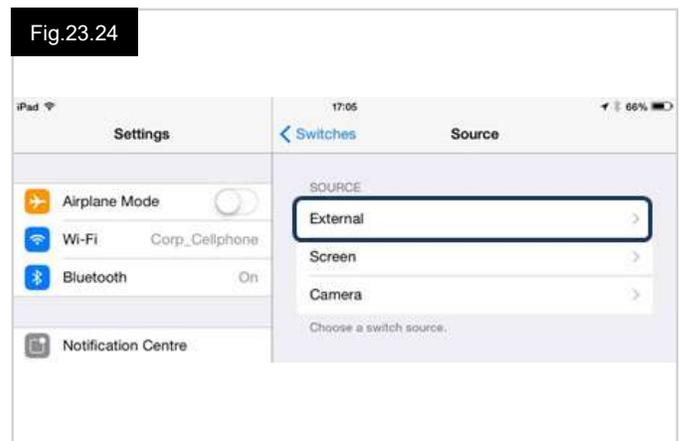
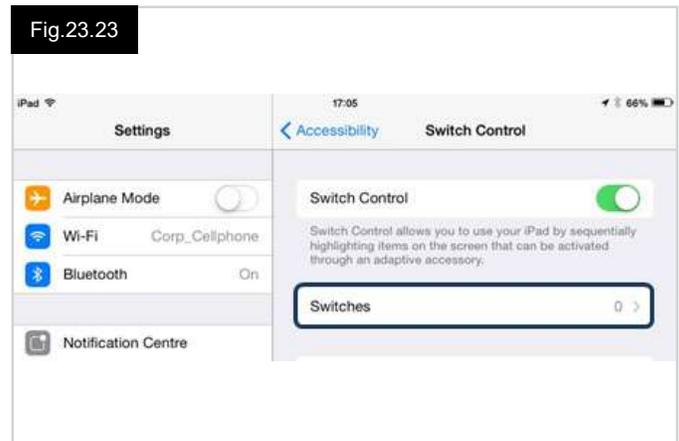
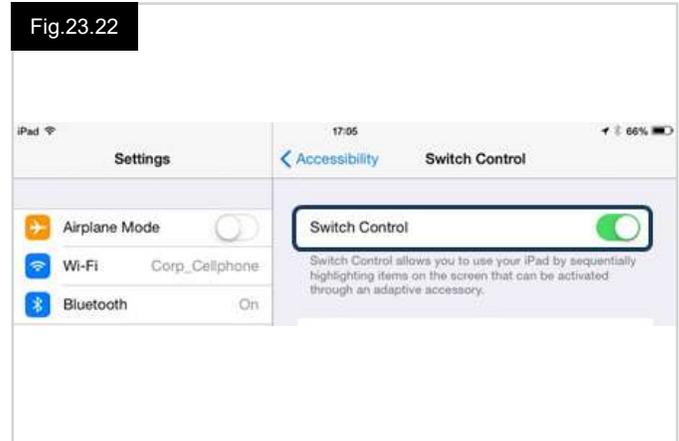
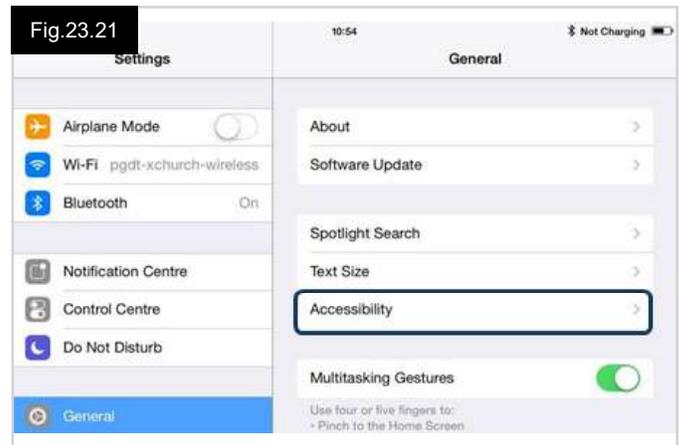


Fig.23.25

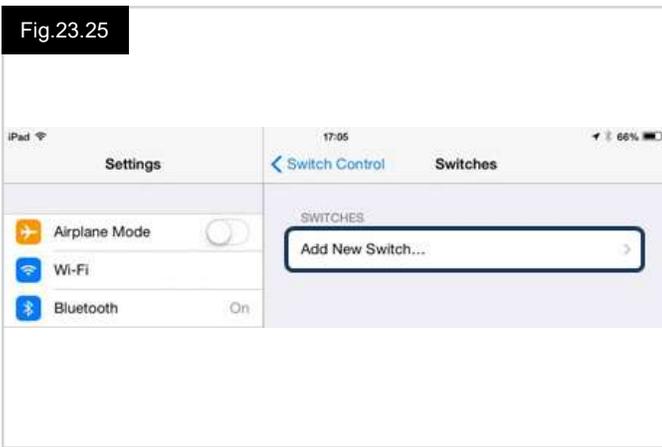


Fig.23.29

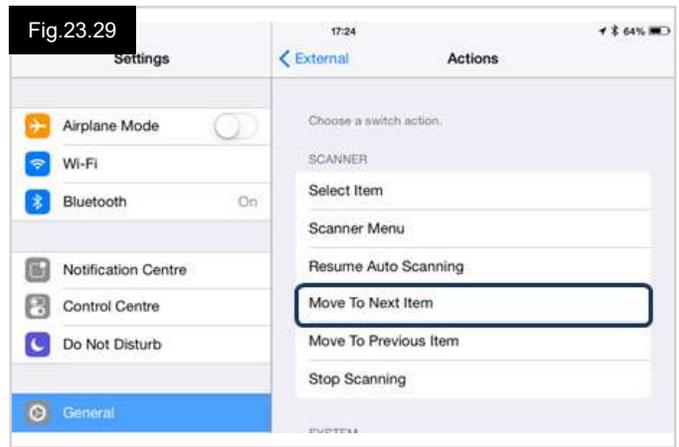


Fig.23.26

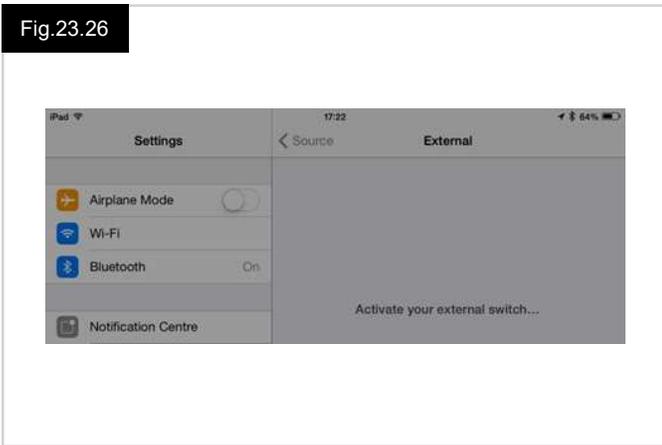


Fig.23.30

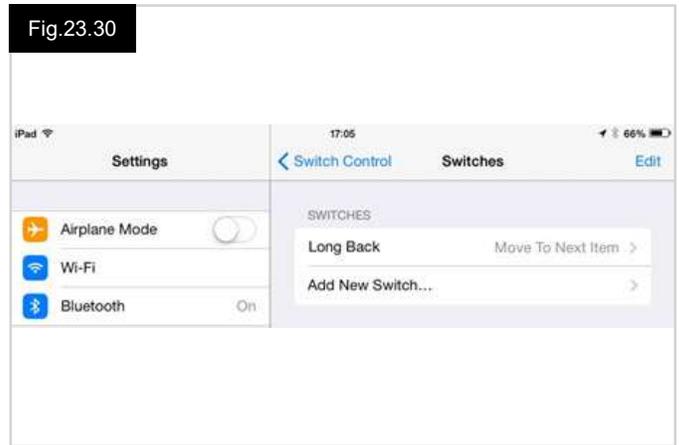


Fig.23.27

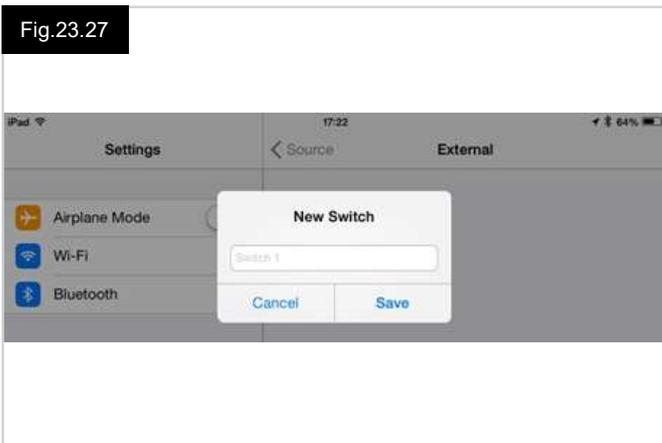
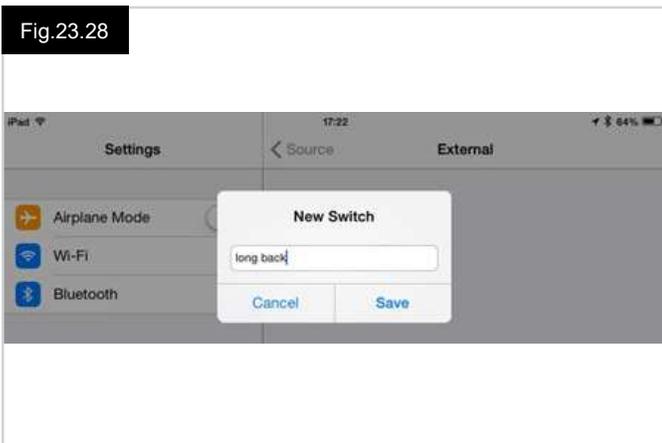


Fig.23.28



Voice Over Setup

Certain CJSM2-BT commands can be assigned to iDevice commands. These are detailed below. Time-related deflections (nudges) of the joystick in each of the four directions (Fig 23.10).

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programmable. Refer to the Bluetooth Programming chapter for more information.

Time related operations of two external profile jack switches.

The timings associated with the external switch operations are programmable.

Refer to the Bluetooth Programming chapter for more information, section 21.0.

The Speed Down and Speed Up buttons.

The procedure to enable Voice Over on the iDevice and assign commands is as follows:

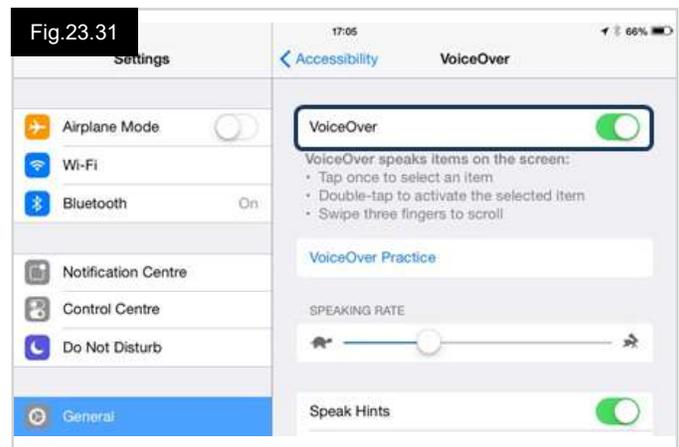
- From the iDevice Settings menu, select General > Accessibility and set Voice Over to On (Fig 23.31).

NOTE: The remainder of Voice Over set up is via the R-Net PC programmer. Contact your authorized dealer for more information.

WARNING:

PC Programming must be done by trained and qualified personnel only. Please contact your approved Sunrise Medical authorized dealer.

- Set the parameter Voice Over and then use the relevant parameters to assign CJSM2-BT to iDevice commands.
- Refer to the Bluetooth Programming chapter for more information, section 23.0.



24.0 Guarantee / Warranty

THIS GUARANTEE DOES NOT AFFECT YOUR LEGAL RIGHTS IN ANY WAY.

Sunrise Medical* provides a guarantee, as set out in the warranty conditions, for wheelchairs to its customers covering the following.

WARRANTY CONDITIONS:

1. FOR ONE (1) YEAR - We warrant all Sunrise-made parts and components of this wheelchair including: motors, gearboxes, and electronic components, against defects in materials and workmanship for one year from the date of first consumer purchase.

2. LIMITATIONS:

1. We do not warrant:
 - a. Tires and tubes, upholstery, pads, and push handle grips.
 - b. Damage from neglect, accident, misuse, or from improper installation or repair.
 - c. Products modified without Sunrise Medical's express written consent.
 - d. Damage from exceeding the weight limit.
2. This warranty is VOID if the original chair serial number tag is removed or altered.
3. This warranty applies in the USA and Canada only. Check with your authorized dealer to find out if international warranties apply.
4. This warranty is not transferable and only applies to the first consumer purchase of this wheelchair through an authorized Sunrise Medical dealer.
5. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical.

3. WHAT WE WILL DO - Our sole liability is to repair or replace covered parts. This is the exclusive remedy for consequential damages.

4. WHAT AUTHORIZED DEALER MUST DO -

1. Obtain from Sunrise Medical, while this warranty is in effect, prior approval for return or repair of covered parts. Contact Customer Service for a Returned Material Authorization (RMA) number and information as to where to return the product. Upon contacting Customer Service please provide Model number, Serial number, description of what is required for service/repair, and any additional information as to reason for service being performed to the wheelchair.

5. NOTICE TO CONSUMER -

1. You must pay the cost of labor to repair, remove or install parts even if they are covered under warranty.
2. If allowed by law, this warranty is in place of any other warranty (written or oral, express or implied, including a warranty of merchantability, or fitness for a particular purpose).
3. This warranty gives you certain legal rights. You may also have other rights that vary from state to state or province to province.
6. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical.

* Denotes the Sunrise Medical facility from which the product was purchased.

Additional Notes For Australia Only:

1. For goods provided by Sunrise Medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under Australian Consumer Law.
2. You are entitled to a replacement or refund for a major failure and for compensation for any foreseeable loss or damage.
3. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
4. The benefits to you given by this warranty are in addition to your other rights and remedies under a law in relation to the goods to which the warranty relates.

Record your serial number here for future reference:





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