



## R-Net Control System

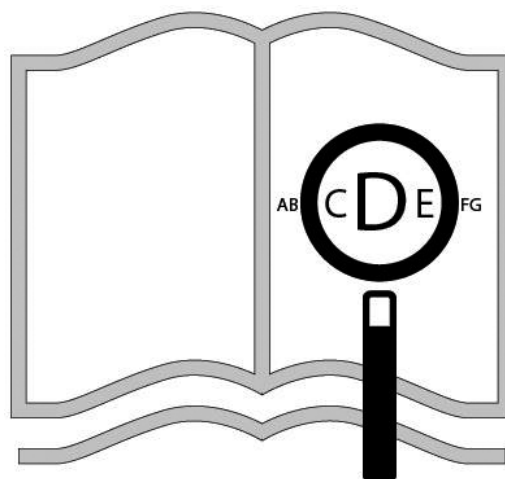
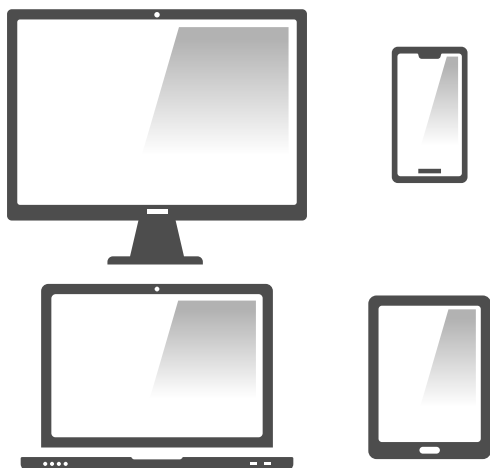
## Instructions for Use

  
**QUICKIE®**



015670

**[www.sunrisemedical.com](http://www.sunrisemedical.com)**



**If you are visually impaired, this document can be viewed in pdf format at [www.Sunrisemedical.co.uk](http://www.Sunrisemedical.co.uk).**

## User Information

Intended use power wheel chairs:

### Use

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

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) is marked on the serial number label, which is affixed to the chassis of the chair.

Warranty can only be taken on if the product is used under the specified conditions and for the intended purposes.

The intended lifetime of the wheelchair is 5 years. Please DO NOT use or fit any 3rd party components to the wheelchair unless they are officially approved by Sunrise Medical.







#### **IMPORTANT:**

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

**For CE compliance information please contact PG Drives Technology at Curtiss-Wright.**

## Definitions of words used in this manual

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

#### **NOTE:**

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

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## 1.0 R-Net Control System

We at Sunrise Medical want you to get the best out of your wheelchair. This Owner's Manual will familiarise 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 authorised 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 familiarise yourself with its operation. If you are in any doubt as to the suitability of the control system, contact your local Sunrise Medical approved supplier 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 authorised 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 service agent. If you do not know of an approved dealer in your area or have any other questions please write or telephone:

**Sunrise Medical**

**Thorns Road**

**Brierley Hill**

**West Midlands**

**DY5 2LD**

**England**

**Phone: 0845 605 66 88**

**Fax: 0845 605 66 89**

**[www.SunriseMedical.co.uk](http://www.SunriseMedical.co.uk)**

Dealer signature and stamp

## 2.0 Warranty

### 2.0 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. Should a part or parts of the wheelchair require repair or replacement as a result of a manufacturing and/or material fault within 24 months or for frame and cross-braces within 5 years after delivery to the customer, then the affected part or parts will be repaired or replaced free of charge. The warranty will only cover manufacturing defects
2. To enforce the warranty, please contact Sunrise Medical Customer Service with the exact details of the nature of the difficulty. Should you be using the wheelchair outside the area covered by the Sunrise Medical customer service agent, repairs or replacement will be carried out by another agency as designated by the manufacturer. The wheelchair must be repaired by a Sunrise Medical designated Customer Service agent, (dealer).
3. For parts, which have been repaired or exchanged within the scope of this warranty, we provide a warranty in accordance with these warranty conditions for the remaining warranty period for the wheelchair in accordance with point 1).
4. For original spare parts which have been fitted at the customer's expense, these will have a 12 months guarantee, (following the fitting), in accordance with these warranty conditions.
5. Claims from this warranty shall not arise, if a repair or replacement of a wheelchair or a part is required for the following reasons:
  - a. Normal wear and tear, which include batteries, armrest pads, upholstery, tyres, brakes shoes, etc.
  - b. Any overloading of the product, please check the EC label for maximum user weight.
  - c. The product or part has not been maintained or serviced in accordance with the manufacturer's recommendations as shown in the user instructions and/or the service instructions.
  - d. Accessories have been used which are not specified as original accessories.
  - e. The wheelchair or part having been damaged by neglect, accident or improper use.
  - f. Changes/modifications have been made to the wheelchair or parts, which deviate from the manufacturer's specifications.
  - g. Repairs have been carried out, before our Customer Service has been informed of the circumstances.
6. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical\*

\* Means the Sunrise Medical facility from which the product was purchased.

#### **Additional Notes For Australia Only:**

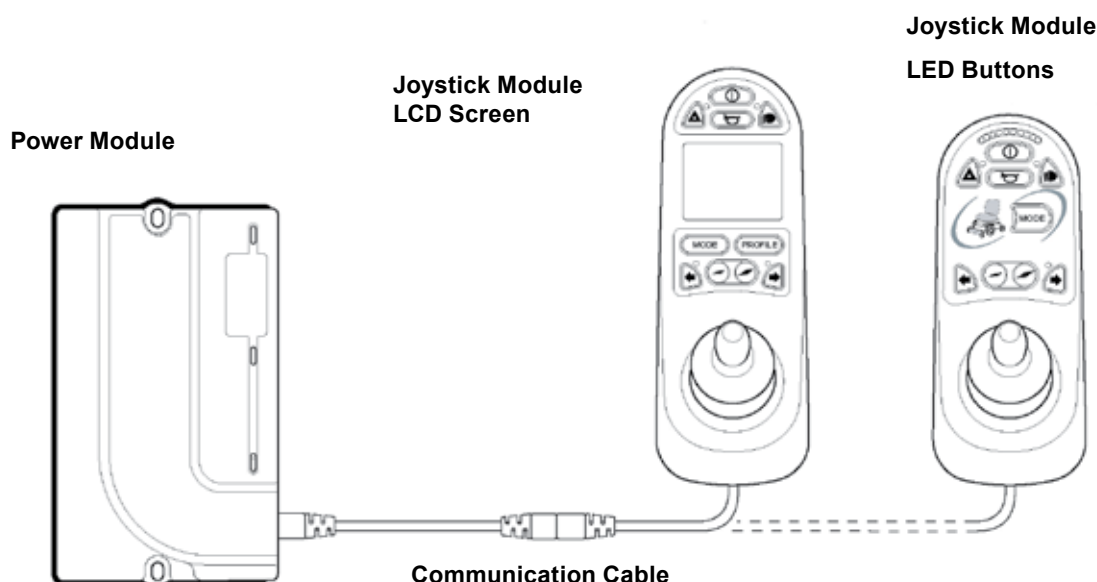
- i. For goods provided by Sunrise medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under Australian Consumer Law.
- ii. You are entitled to a replacement or refund for a major failure and for compensation for any foreseeable loss or damage.
- iii. 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.
- iv. 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.



# LED & CJSM1

## 3.0 The R-net Control System

Fig.3.0



### 3.0 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.

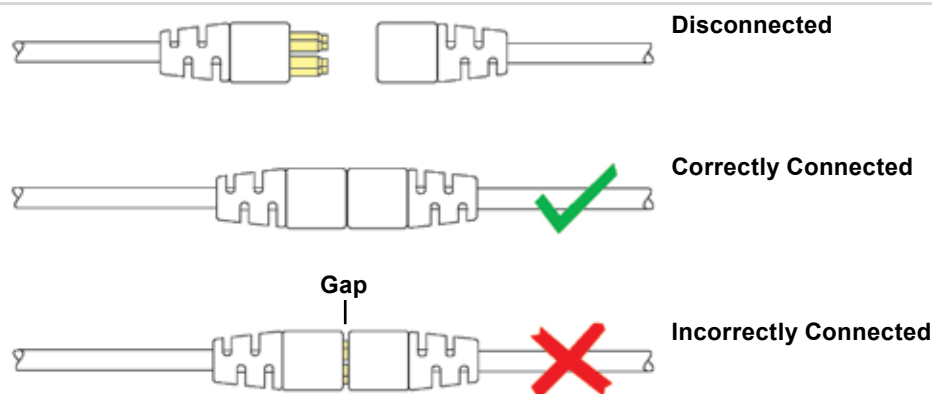
Never use abrasive or spirit-based cleaners.

#### **WARNING:**

Before cleaning, ensure the control system is switched off & 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 whilst 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





### 3.1 R-net Joystick Modules

The R-net control system has two versions of Joystick Module with LCD Screen, (Fig 3.3), & 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.

### 3.2 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 indicators.

#### 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 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 & 3.4)

This is a stereo jack socket that allows the connection, via a suitable adaptor, of two external switches or buttons. The function of these switches or buttons is assignable via programming.

Please contact your servicing agent.

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 bungs 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

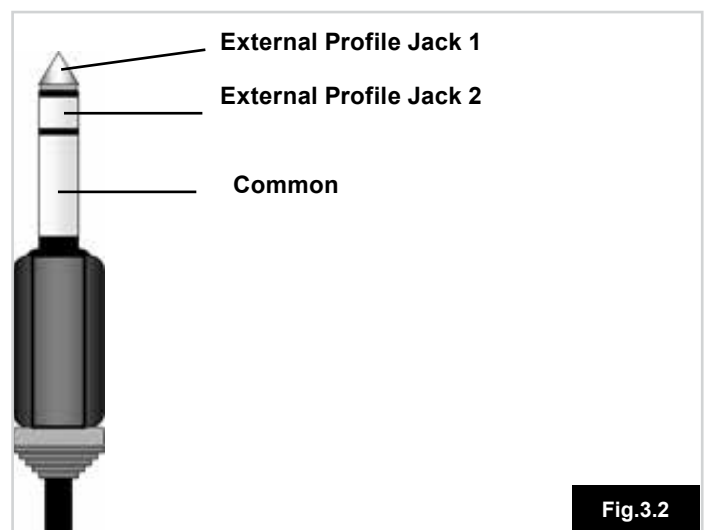


Fig.3.2

Fig.3.3

### Joystick Module With LCD Screen

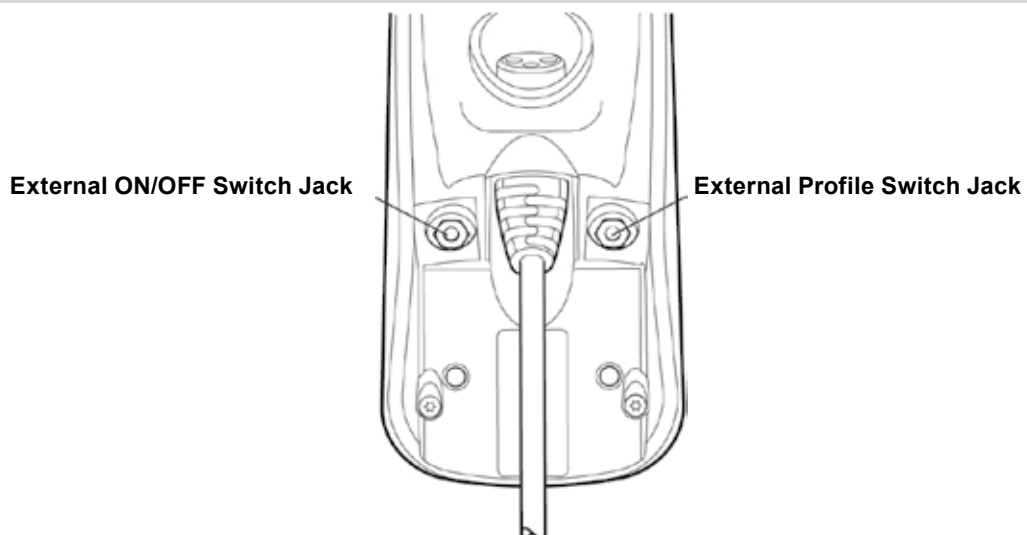
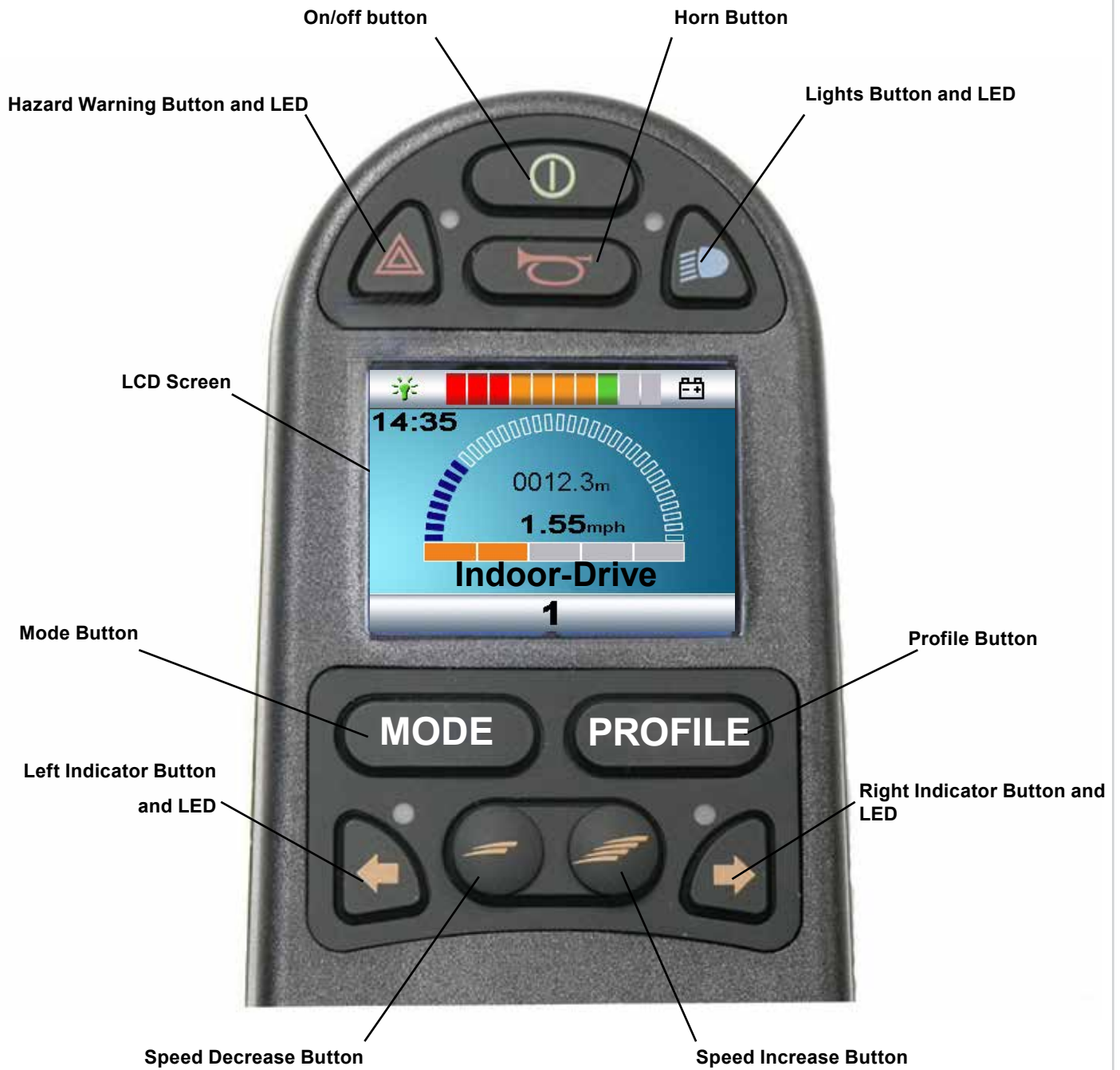


Fig.3.4

### 3.3 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 the user 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 5 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 5 Profiles enabled. For programming information, please contact your servicing agent.

#### 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 Seating 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 E.M.C. performance of the wheelchair.

The control system's warranty will be voided if any device other than a battery charger supplied, with the wheelchair is connected into 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 servicing agent.

Fig.3.5

Joystick Module With LED Buttons



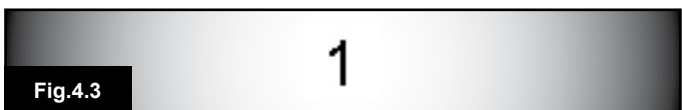
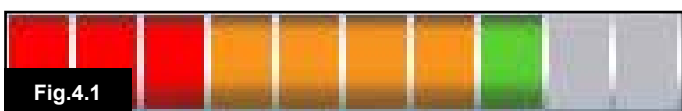
Fig.3.6

Charger Socket, (underneath)

## 4.0 The R-net LCD Screen Joystick Module



**A. Top Bar:**  
**B. Main Screen Area:**  
**C. Main Screen:**



## 4.0 LCD Screen

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

The colour LCD screen is split into 3 areas of information. The Top Bar, the Base Bar and the Main Screen Area. Each area is covered separately within this section.

### Top Bar

Battery level indicator & 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

### Current Profile (Fig 4.3)

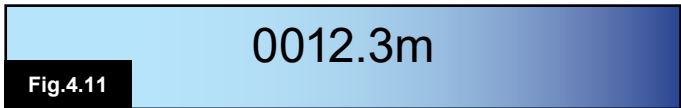
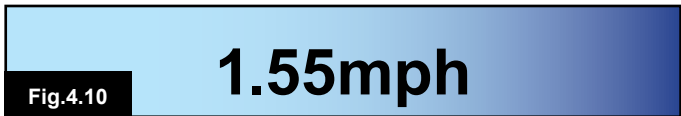
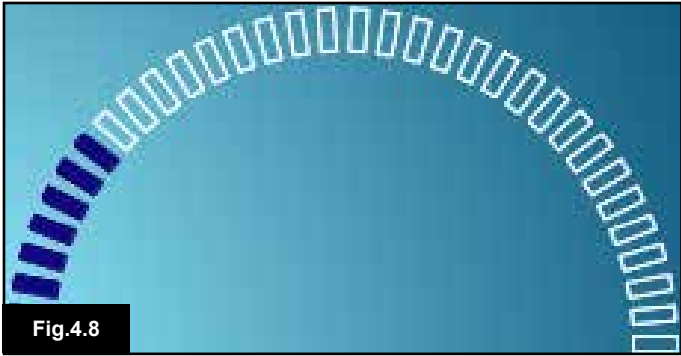
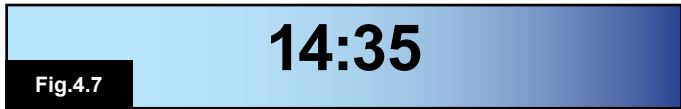
The currently selected Profile is shown in numeric form.

### 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.



# 4.1 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, the user 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 kilometre. 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)

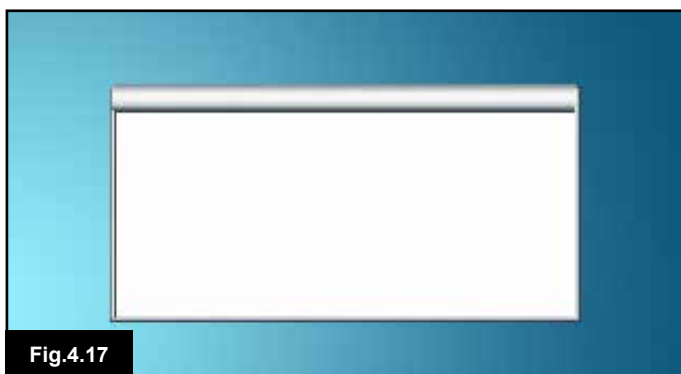
When the control system is operating in a latched condition this symbol will be displayed.

## Inhibit (Fig 4.13 & 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.





## 4.2 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.

### Actuator 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, for example, after a module re-configuration, this symbol will be flashed.

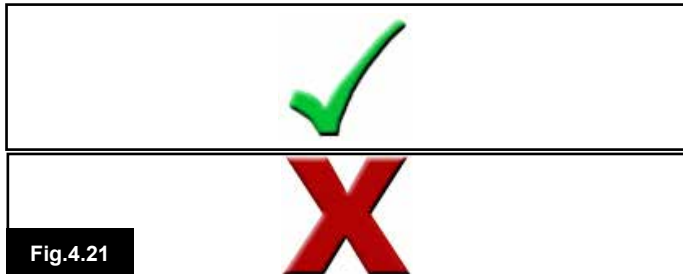
### Timer

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.

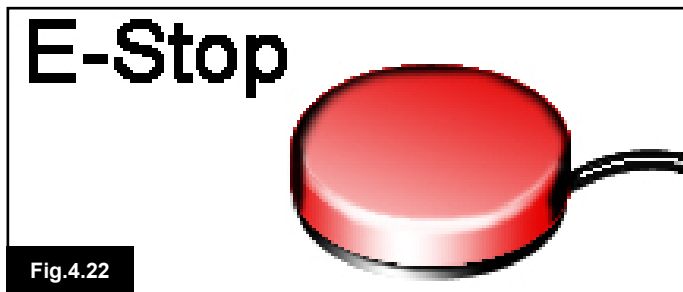


#### **Cross & Tick (fig 4.21)**

These symbols will be displayed during configuration procedures.

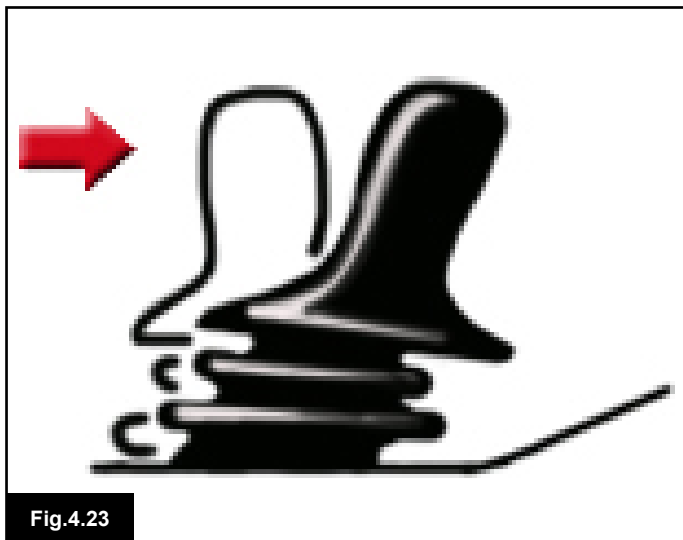
1. Process completed correctly.

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 centre 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.





### 4.3 Main Screen Area: Diagnostics (Fig 4.24)

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 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 means 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.

#### Please follow this procedure:

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

#### 4.4 Locking the Joystick Module (Fig 4.26 - 4.29)

##### To lock the wheelchair:

- While the control system is switched on, (Fig 4.26) depress and hold the On/Off button.
- After 1 second the control system will beep & the screen will go blank, (Fig 4.27). 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 4.28), 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 4.28).
- 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 screen will illuminate, (Fig 4.29).
- The wheelchair is now unlocked.



Fig.4.26

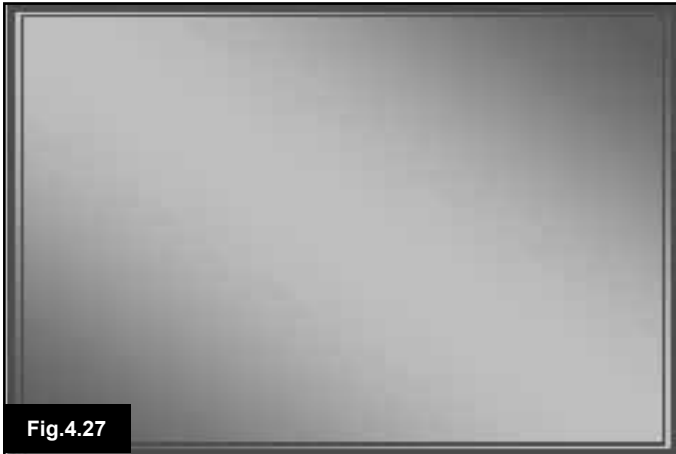


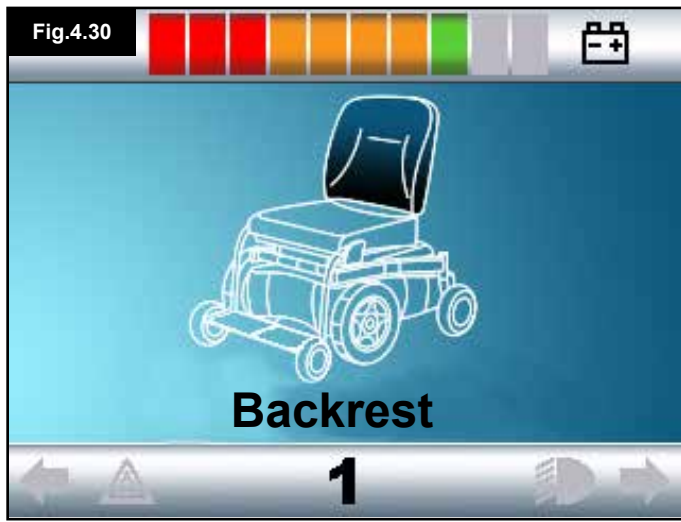
Fig.4.27



Fig.4.28



Fig.4.29



#### 4.4 Actuator Selection Screen

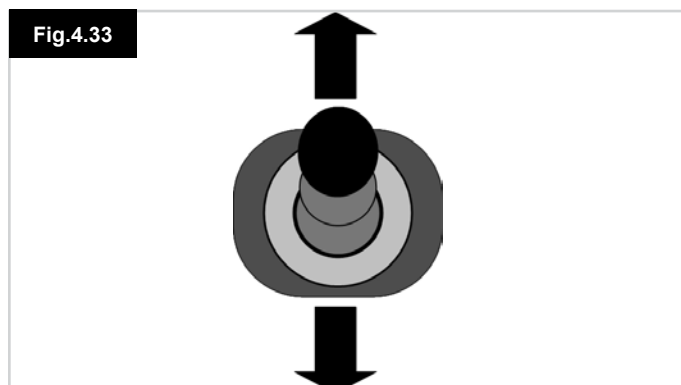
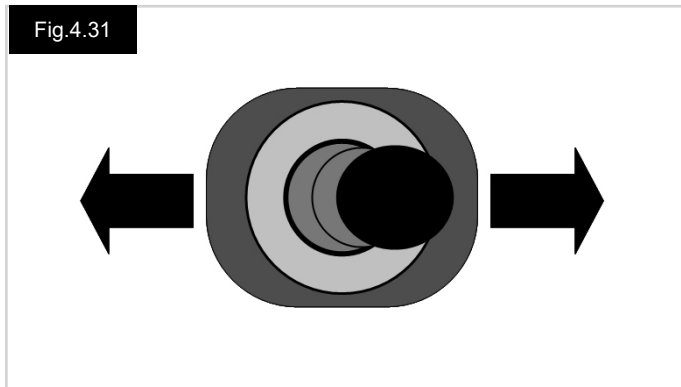
This is accessed through the MODE button.

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

Depress the Mode Button to scroll through the Mode screens until you reach the actuator screen, (Fig 4.30).

**Actuator adjustment is achieved as follows.**

- Move the Joystick sideways to the left or right to select the desired axis, (Fig 4.31 ). The axis is indicated by the section of the wheelchair that is highlighted, (Fig 4.32).
- Move the joystick forwards or backwards to move the selected actuator correspondingly, (Fig 4.33).
- Repeat these steps for each actuator that requires adjustment.
- 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.



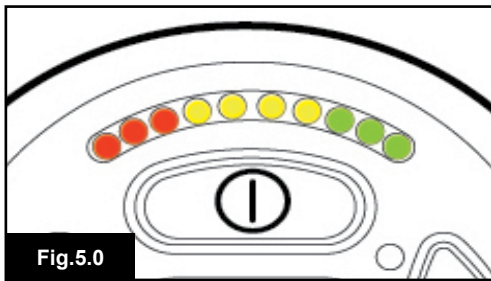


Fig.5.0

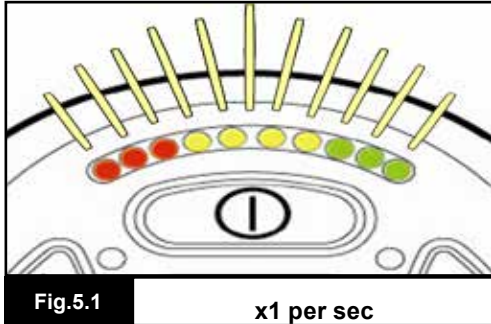


Fig.5.1

x1 per sec

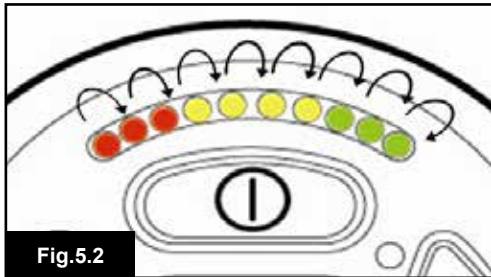


Fig.5.2

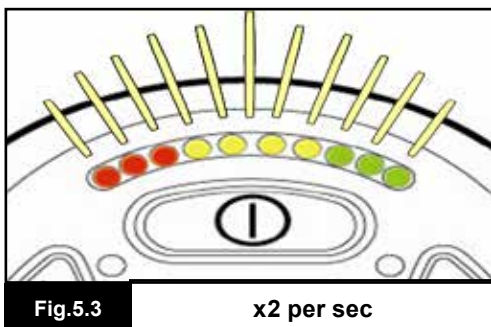


Fig.5.3

x2 per sec

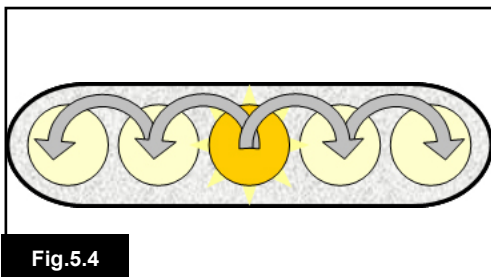


Fig.5.4

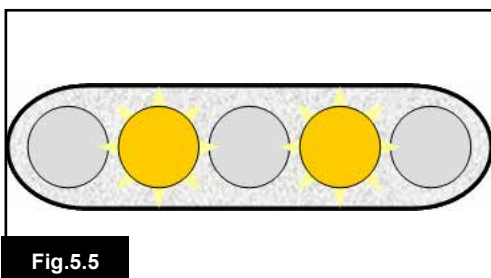


Fig.5.5

## 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 & 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, i.e. 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, sections 5.6 to 5.22.
- Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair.
- Contact your service agent.

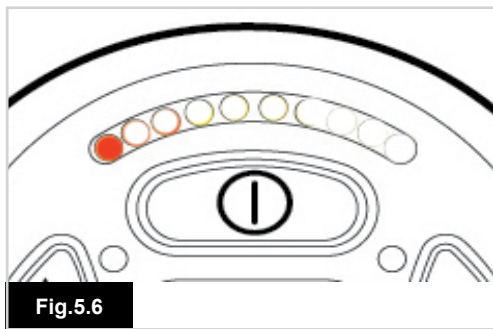
#### Speed Indicator Ripples Outwards From Centre (Fig 5.4)

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 & 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.



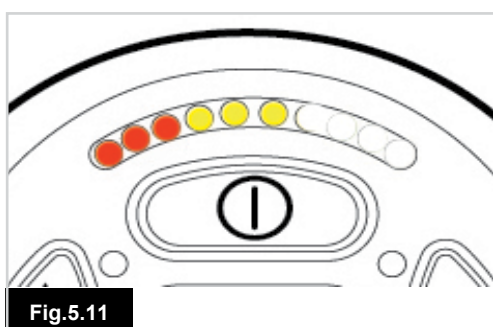
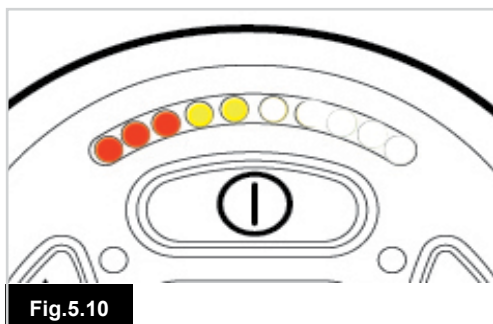
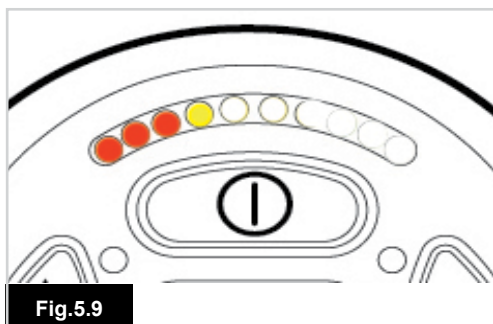
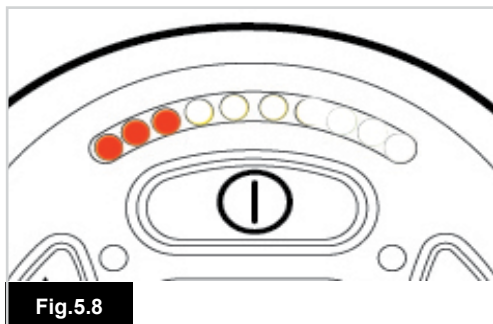
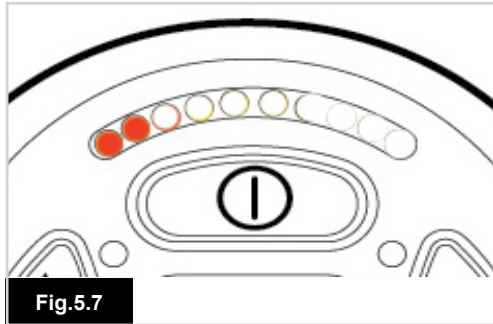


## 5.2 Self Help Guide

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 service agent. 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 service agent.



### 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 service agent.

### 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 service agent.

### 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 centre 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.

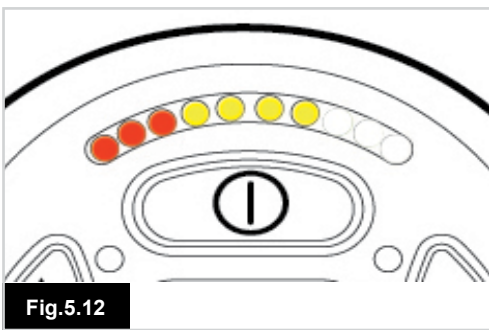


Fig.5.12

#### 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.

#### 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.

#### 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.

#### 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.

#### Slow or sluggish movement

If the wheelchair does not travel at full speed or does not respond quickly enough, and the battery condition is good, check the maximum speed setting. If adjusting the speed setting does not remedy the problem then there may be a non-hazardous fault. Contact your service agent.

#### 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 the fourth LEDs from the left will only be illuminated.

#### Maximum Speed / Profile Indicator Ripples Up and Down

This indicates the control system is locked; refer to Chapter 4, section 4.32 for details.

#### Maximum Speed / Profile Indicator Flashes

This indicates the speed of the wheelchair is being limited for safety reasons. The exact reason will depend on the type of wheelchair. However, the most common cause is that the seat is in the elevated position.

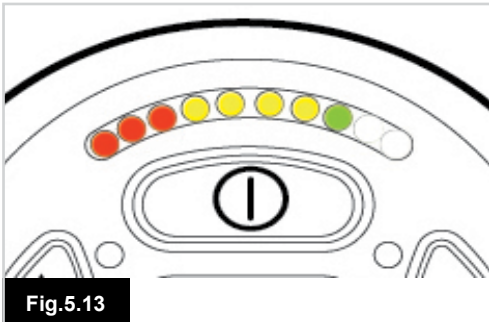


Fig.5.13

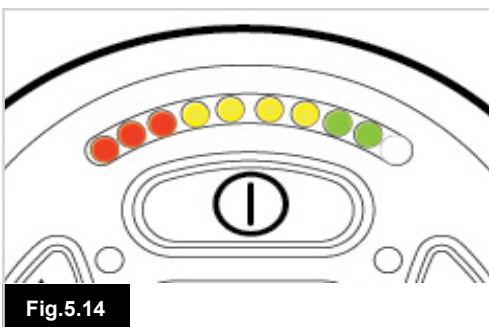


Fig.5.14

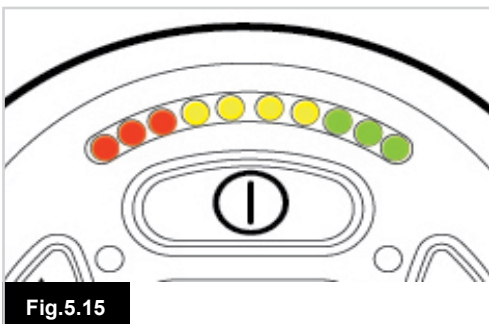


Fig.5.15

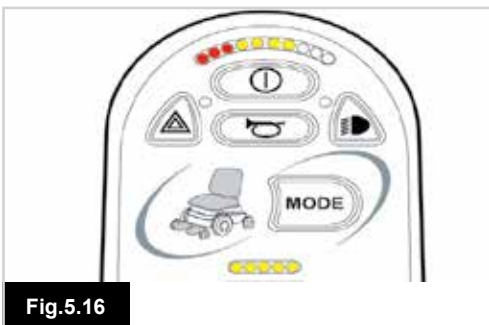


Fig.5.16



Fig.5.17

## 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 centre 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.

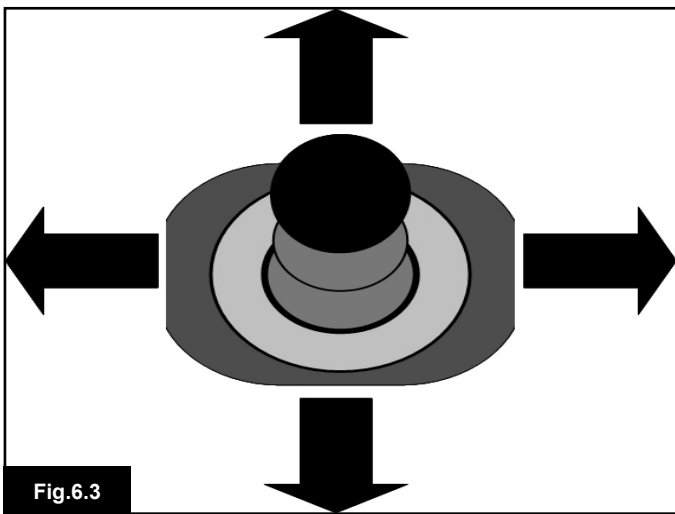


Fig.6.3

### Slow or sluggish movement

If the wheelchair does not travel at full speed or does not respond quickly enough, and the battery condition is good, check the maximum speed setting, (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 service agent.

### 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.

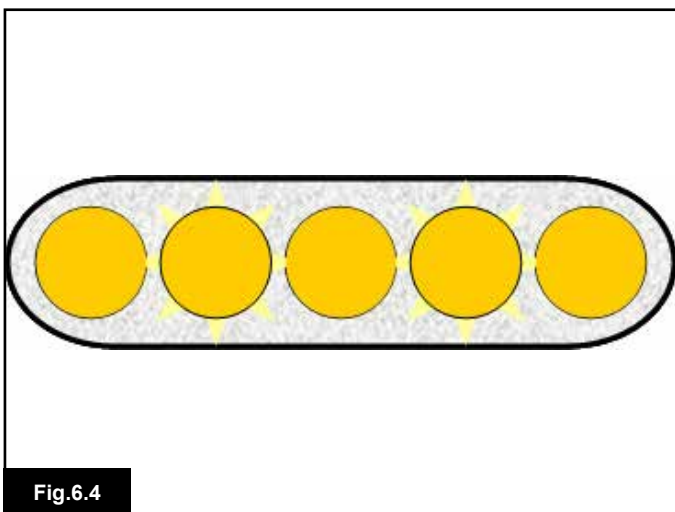


Fig.6.4

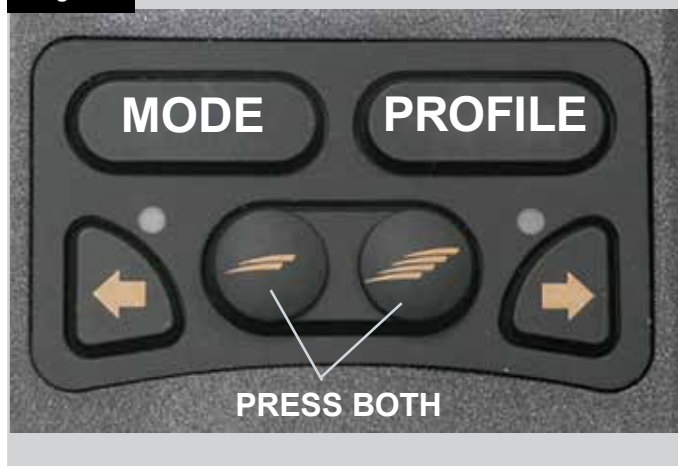


For comprehensive instructions and advice on driving techniques for your wheelchair and more, please consult your wheelchair Owners Manual/Instruction Book.



## 7.0 Settings Menu

Fig.7.0



### 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 colour and the behaviour of the odometer. The menu is accessed by depressing the Speed Down and Speed Up buttons simultaneously, (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

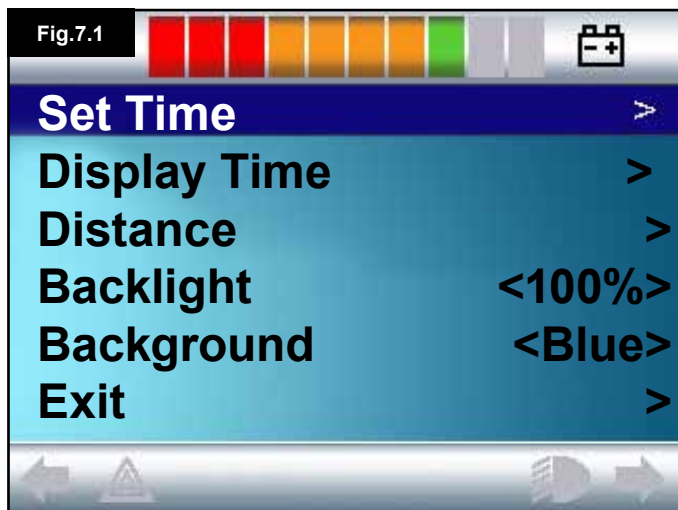
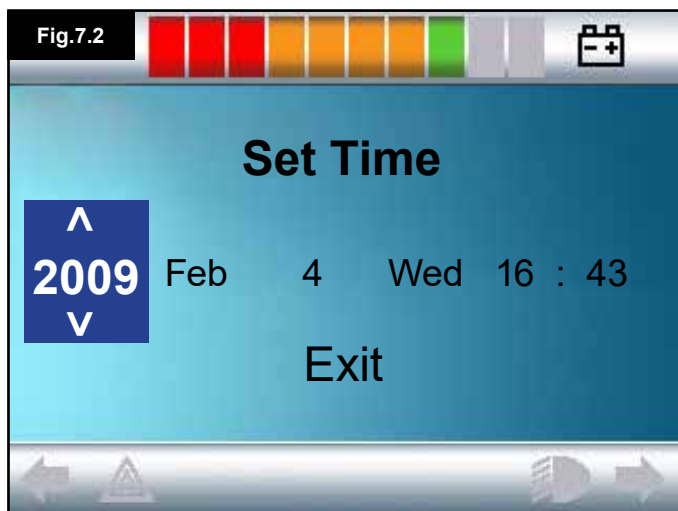
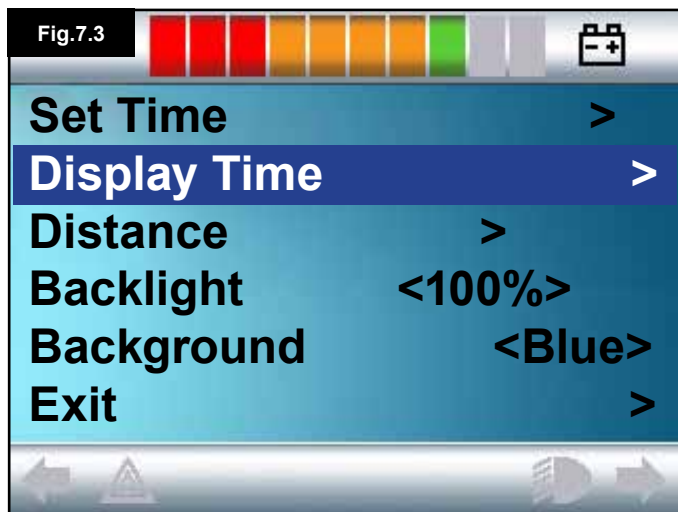


Fig.7.2

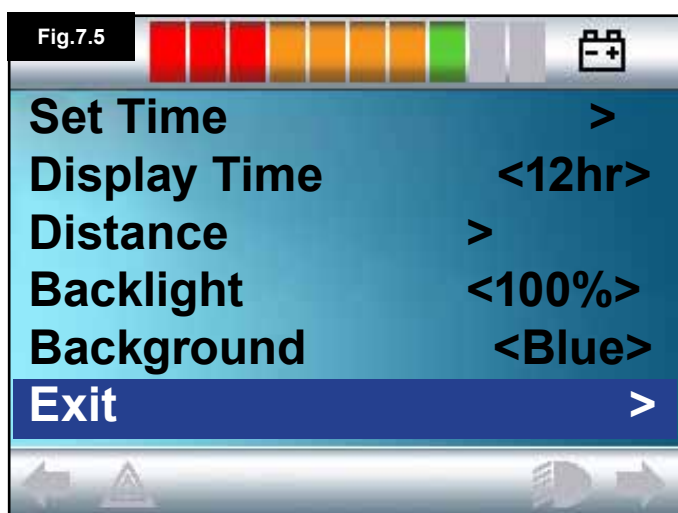
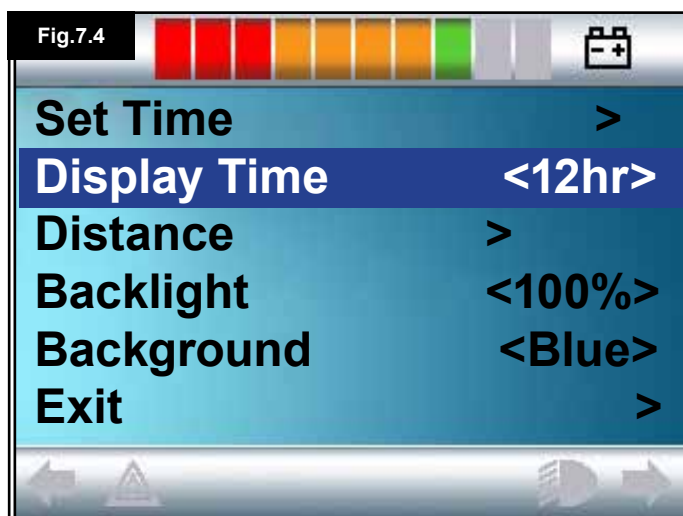




### 7.3 Display Time

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".

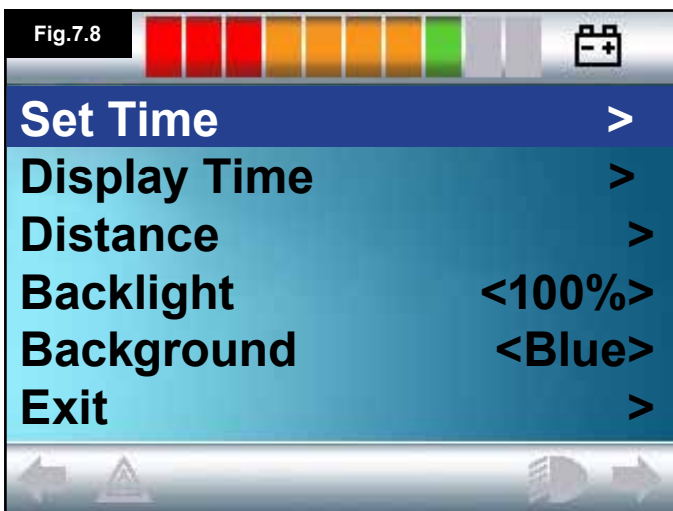
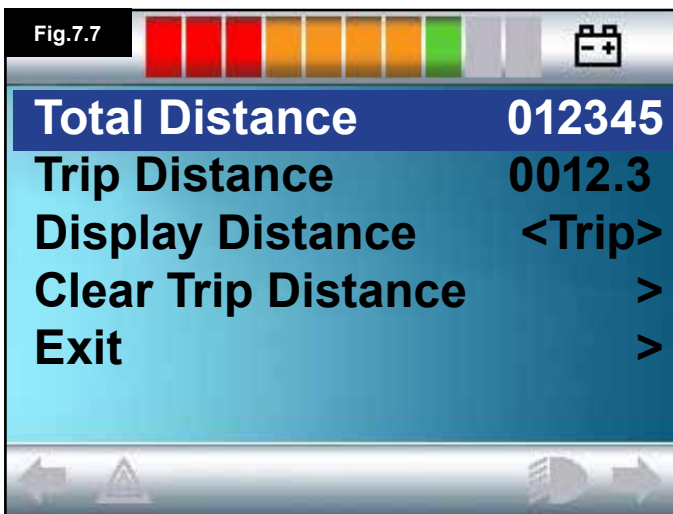
##### Clear Trip Distance

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 colour 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 colour will be set by the installed programme. 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 service agent.

### Exit

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

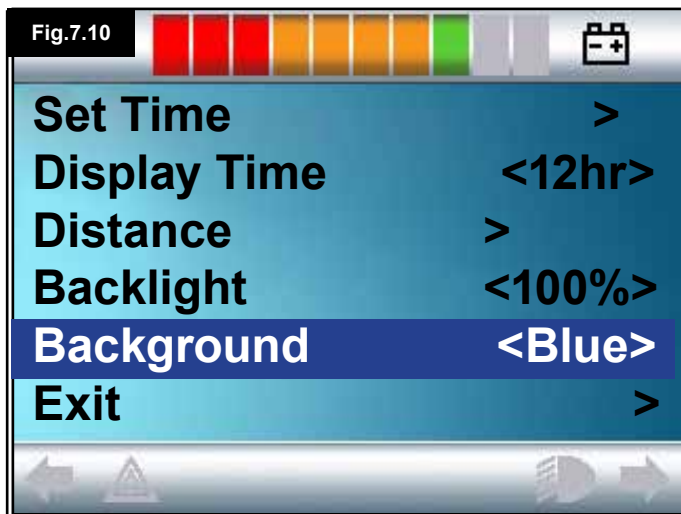




Fig.8.0

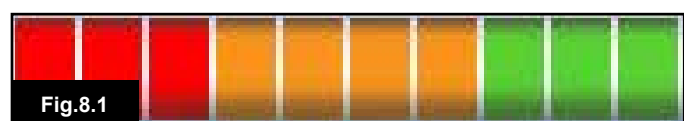


Fig.8.1



Fig.8.2



Fig.8.3

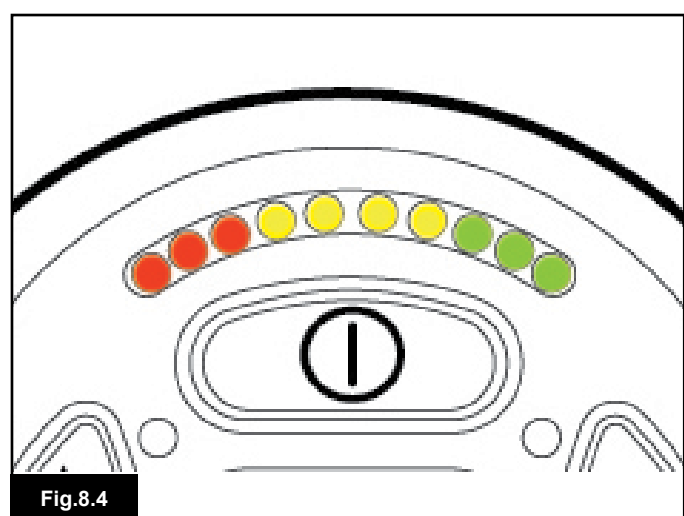


Fig.8.4

## 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 servicing agent

## 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 coloured LED's correspond to the coloured bars on the LCD version, (Fig 8.4).

### ⚠ WARNING:

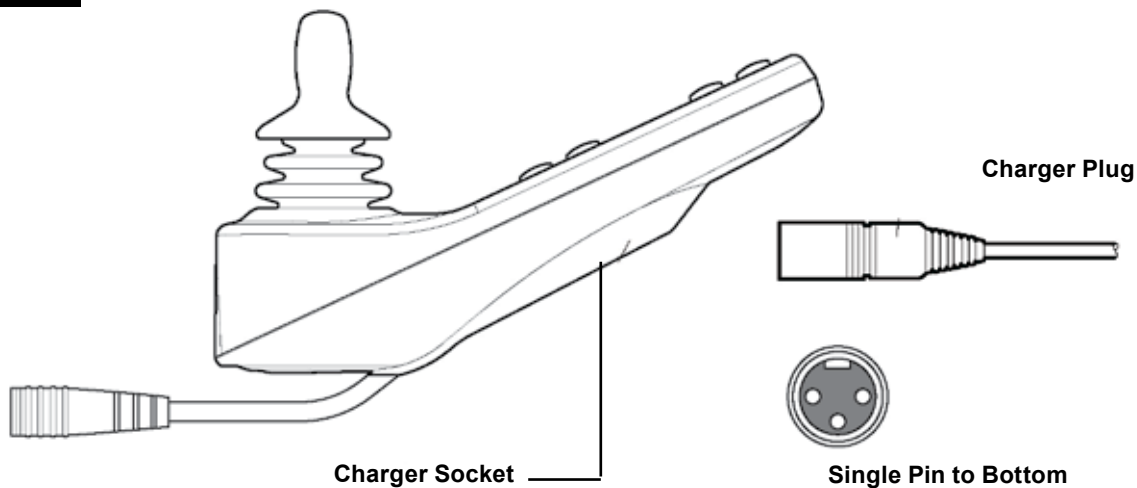
Do not operate the control system if the battery is nearly discharged. Failure to comply with this condition may leave you stranded in an unsafe position, such as in the middle of a road. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.



For comprehensive instructions and advice on Batteries & Battery Charging, please consult your wheelchair Owner's Manual/Instruction Book 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:

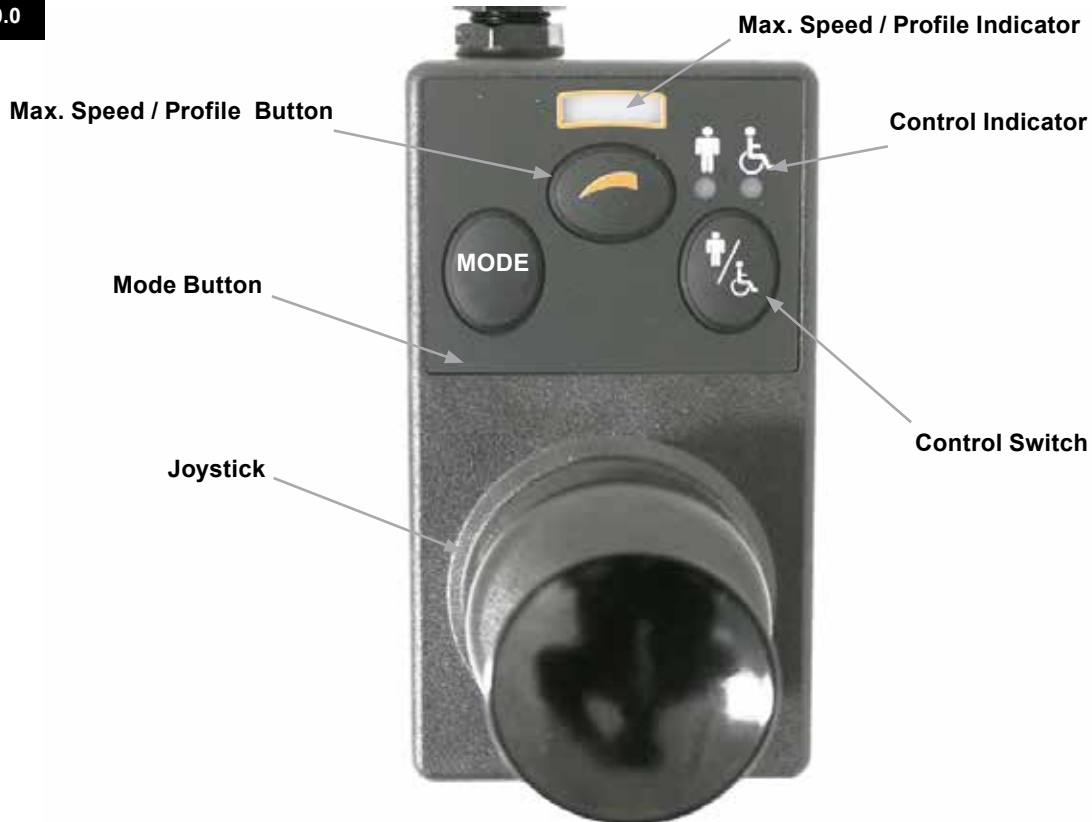
- Only use the battery charger that has been supplied with your wheelchair.
- The use of incorrect chargers could damage the batteries, wheelchair, control system or charger itself, or may result in parts overheating creating the potential for burns or even fire.
- Sunrise Medical accepts no liability for losses of any kind if the charger used is incompatible with the control system or any other part of the wheelchair system.



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



Fig.10.0



**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 Seating the Speed and Actuator LED's, (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 washing up liquid 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 centre when you release it. If there is a problem do not use your wheelchair and contact your service agent.

## 10.9 Weekly Checks

### Electrical Brakes:

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

Switch on the control system.

Check that after 1 second the battery gauge remains on or flashes slowly.

Push the joystick slowly forwards until you hear the electrical brakes operate. The chair may start to move.

Immediately release the joystick. You must be able to hear each electrical brake operate within a few seconds.

Repeat the test three times, pushing the joystick backwards, left and right respectively.

### Lights & 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, kerb 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 service agent. 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 behaviour due to EMI, turn the control system off immediately and consult your service agent. 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 & EMI conformity, please consult your wheelchair Owner's Manual/ Instruction Book.



## 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 service agent.

### Daily Checks

#### Joystick:

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

### Weekly Checks

#### Parking brake:

This test should be carried out on a level floor within a clear & 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 service agent after a period of 1 year from commencement of service. Contact your service agent for details when the inspection is due.

**SERVICE AGENT DETAILS &  
CONTACT PHONE NUMBERS**





CJSM2

12.0 R-net CJS2 Control System

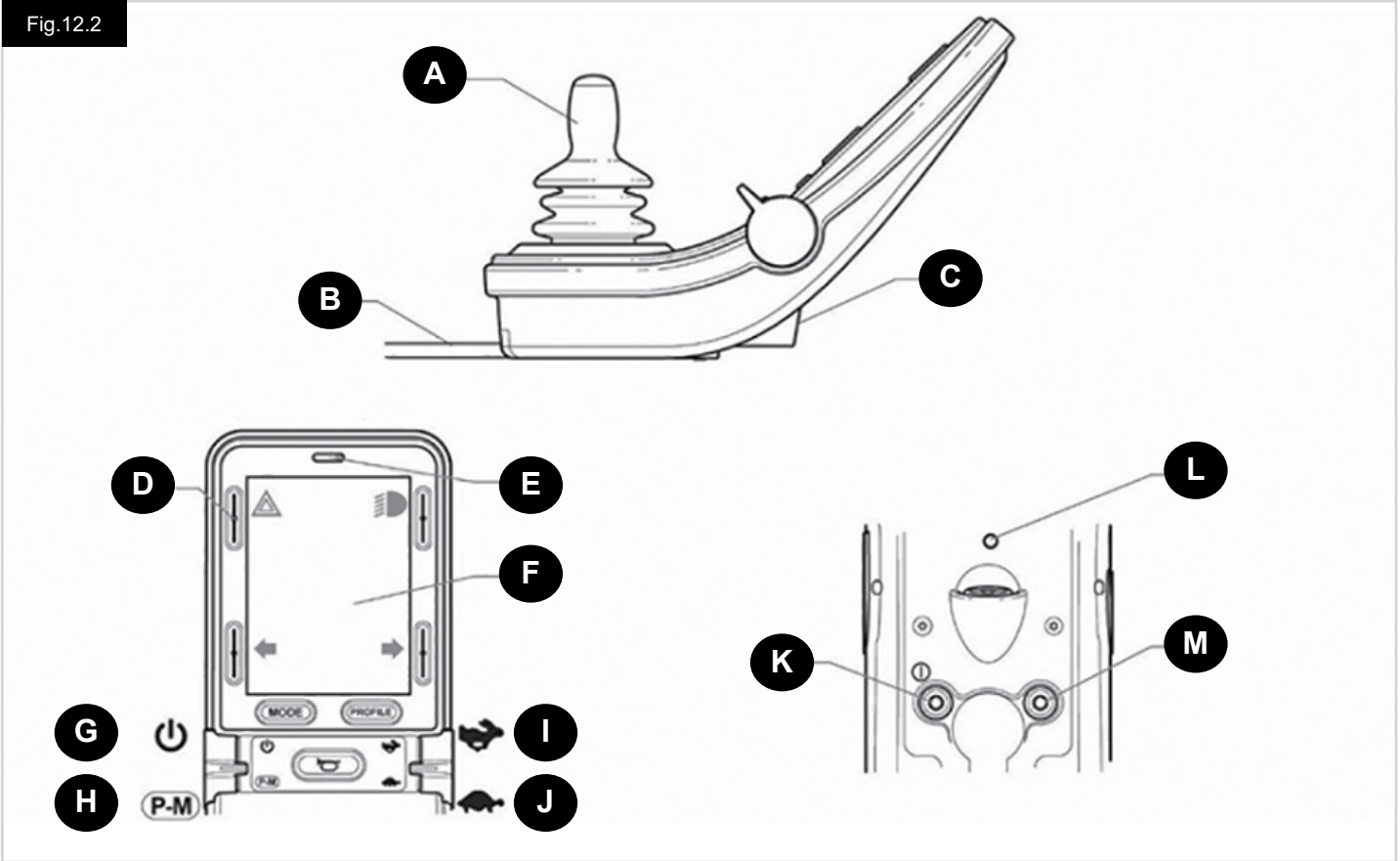
12.1 Introduction

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.

Fig.12.1



Fig.12.2



## 12.2 Controls, (Fig. 12.1 - Fig.12.2 - Fig.12.3).

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.

### A. 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.

### B. COMMUNICATION CABLE

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

### C. 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.

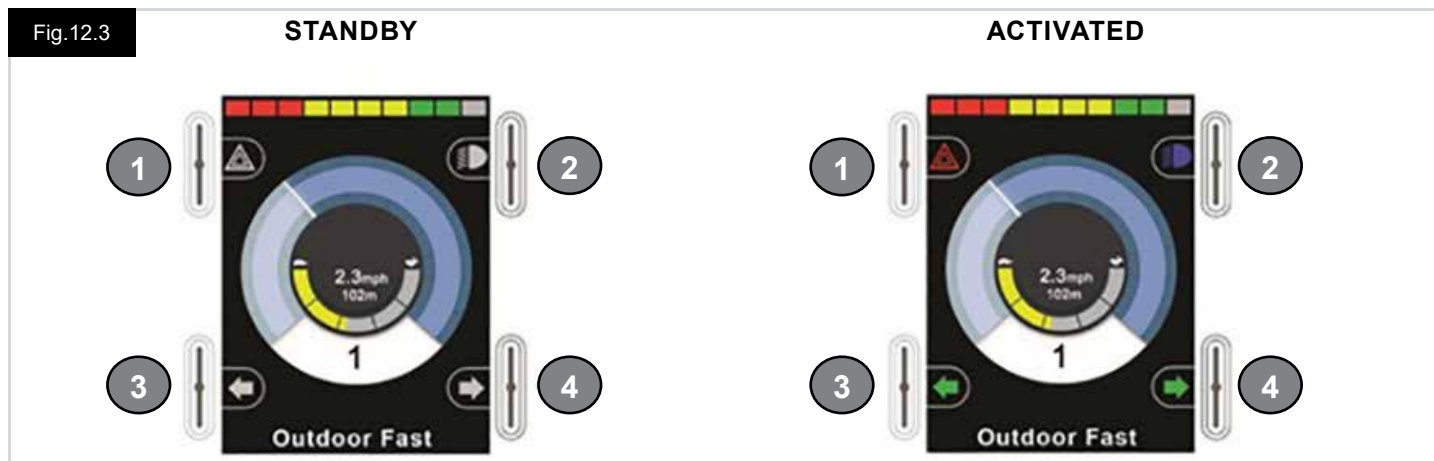
### D. SCREEN BUTTONS

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.12.3). 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.



### E. 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.

### F. 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.

### G. 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.12.3).

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

**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.12.33). 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.12.35), then the R-net has detected a problem somewhere in the wheelchair's electrical system

**H. 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.

**I. INCREASE SPEED (RIGHT PADDLE)****J. 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).

**K. 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.

**L. 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.

**M. 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.

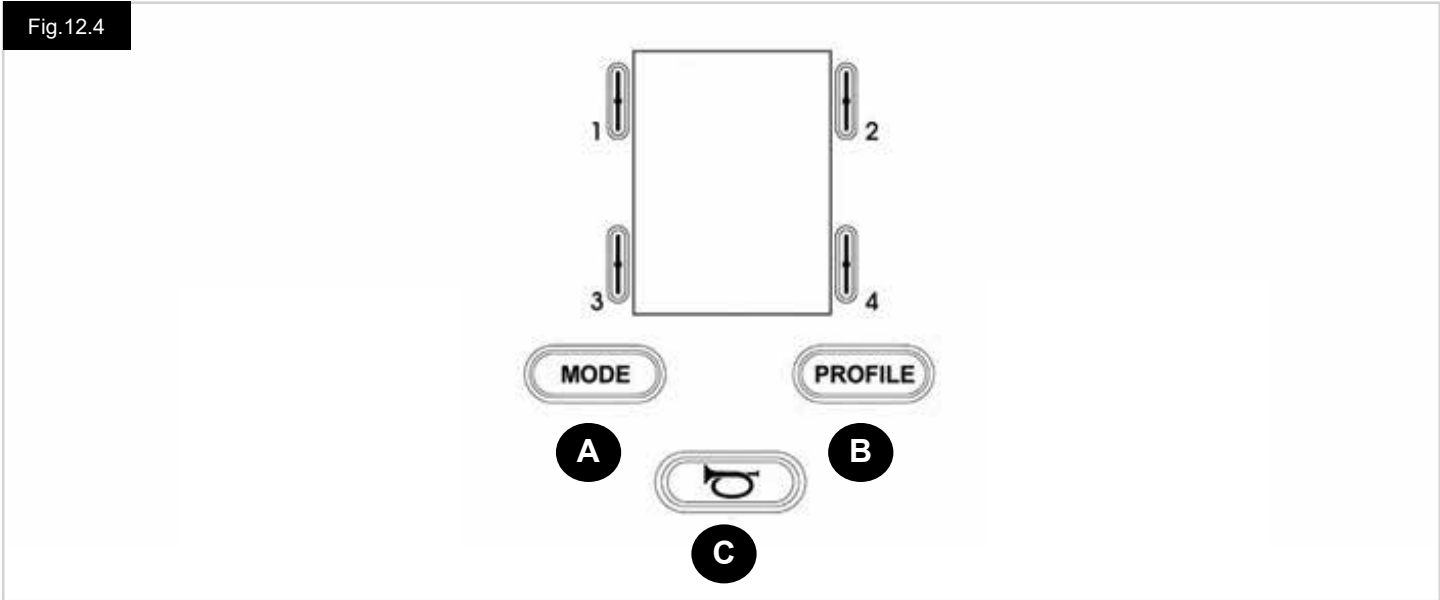
Alternative functions for this input are available via programming as described below:

- 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.

**CAUTION:**

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

12.3 Buttons, (Fig. 12.4).



- 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 authorised 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 authorised Sunrise Medical dealer for programming.
- C. The Horn will sound while this button is depressed.

12.4 LCD Screen Detail

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.12.6)

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.12.7 - Fig.12.11)

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

#### FOCUS, (Fig.12.7)

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.12.8)

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.12.9)

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.12.10)

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

#### CLOCK, (Fig.12.11)

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.12.12)

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.

Fig.12.6



Fig.12.7



Fig.12.8



Fig.12.9



Fig.12.10



Fig.12.11

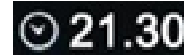


Fig.12.12

Outdoor Fast



## 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.12.13)

Displays symbols relevant to the drive control of the wheelchair.

### CURRENT PROFILE, (Fig.12.14)

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

### SPEED INDICATOR, (Fig.12.15)

This gives a graphical display of the wheelchairs 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.12.16)

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.12.17)

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.12.18)

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. 12.13



Fig. 12.14



Fig. 12.15

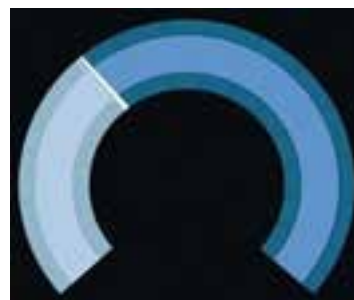


Fig. 12.16

11.3mph

Fig. 12.17



Fig. 12.18

201m



### INHIBIT, (Fig.12.19)

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.

Fig.12.19



### LATCHED DRIVE, (Fig.12.20)

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

Fig.12.20



### MOMENTARY SCREENS, (Fig.12.21 - Fig.12.22)

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



Speed Switch.  
Momentary Screen = Fig.12.21

Fig.12.21



Profile Button.  
Momentary Screen = Fig.12.22

Fig.12.22



### SEATING MODE SCREEN, (Fig.12.23)

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.

Fig.12.23



### LATCHED SEATING CONTROL, (Fig.12.24)

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

Fig.12.24



## BLUETOOTH MODE SCREEN (Fig.12.25 - Fig.12.26).

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.12.25, will appear.

If set up to control more than one device, a screen such as shown in Fig.12.26 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 service agent.

### 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.12.27).

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

### TIMER (Fig.12.28).

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

Fig.12.25



Fig.12.26



Fig.12.27



Fig.12.28



**RESTART (Fig.12.29).**

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

**SLEEP (Fig.12.30).**

This symbol will be displayed for a short time before the R-net enters into a sleep state, (standby).

**CROSS & TICK (Fig.12.31).**

These symbols will be displayed during configuration procedures.

- TICK = Process completed correctly.
- CROSS = Process not completed correctly.

**E-STOP (Fig.12.32).**

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.12.29****Fig.12.30****Fig.12.31****Fig.12.32**

### JOYSTICK DISPLACED (Fig.12.33).

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. 12.33



### CONTROL SYSTEM LOCK (Fig.12.34).

This symbol is displayed if the control system is locked.

### DIAGNOSTIC SCREEN (Fig.12.35).

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.

Fig. 12.34



### SETTINGS MENU (Fig.12.36 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.12.36.

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

Fig. 12.35



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.

## 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.

## Bluetooth

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

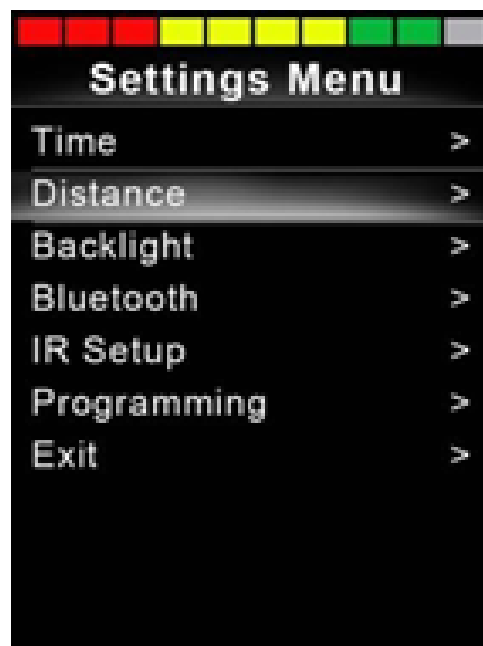
Refer to chapter Bluetooth Set-up & Operation for more details.

## 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 & Operation for more details.

Fig. 12.36



12.5 Programming (Fig.12.37).

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 wheelchairs speed is displayed; options are mph, km/h or off.

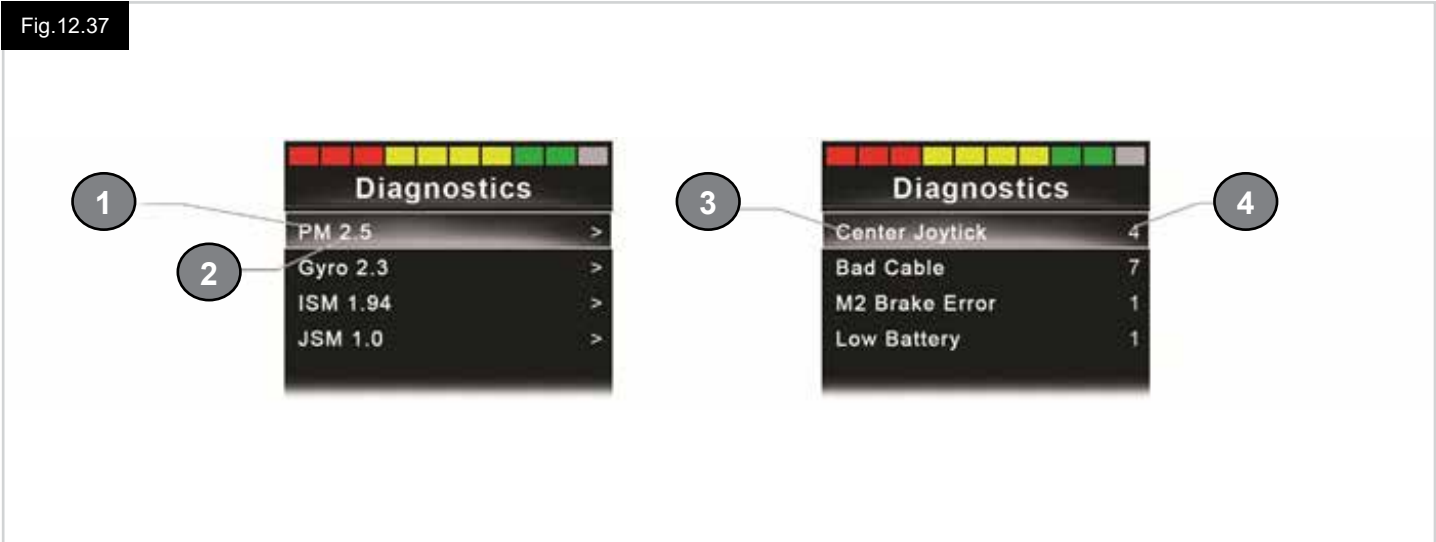
**Displays**  
Sets the format of the digital drive display; options are odometer, speed or both

**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 for.

**Exit**  
Exits the settings menu.

- Fig.12.37**
- 1. Module
  - 2. Software Version
  - 3. Trip Text
  - 4. Occurences





## 13.0 CJSM2 IR Setup & Operation

### 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.

### 13.1 CJSM2 Used With An Omni-IR

If there are two devices with IR connected into a system, for example a CJSM2 and an Omni-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 Omni-IR are connected into a system, the Omni-IR's learning function is disabled and IR codes must be learnt 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 Omni-IR.

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

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 approved agent).

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 approved agent.

Fig.13.1



### 13.2 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, (eg. Television remote).
2. Programming from the PC based IR Configuration Tool, (contact your Sunrise Medical approved agent).
3. Enter IR Mode to access the list of available IR Appliances, (Fig.13.2).

Navigate the User Menu as below, (Fig.13.3 to 13.4):

- 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 approved agent.
- 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 approved agent.

### 13.3 IR Set Up Menu

On entering the IR Set-up Menu, the default appliances will appear, (Fig.13.2).

By selecting an appliance, then its commands will be shown, (Fig.13.3).

If a Command is checked, this means it has a stored IR Code, (Fig.13.5).

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.13.2

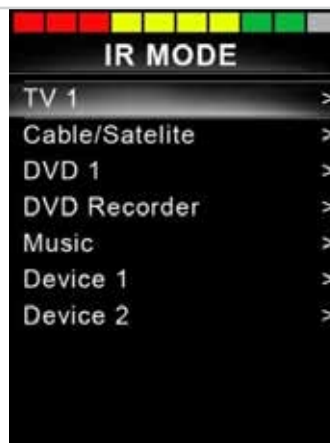


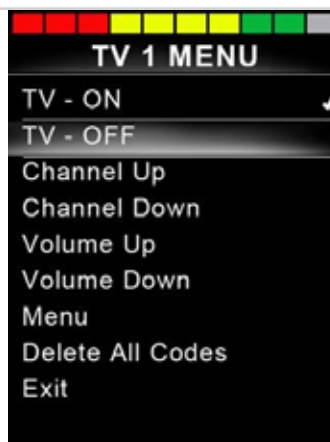
Fig.13.3



Fig.13.4



Fig.13.5



### 13.4 Learning an IR Code

Refere to (Fig.13.6 to Fig.13.11).

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 learnt, via a right deflection of the joystick. In this example, TV > Channel Up.
5. Select Learn Code, via a right deflection of the joystick while the command is highlighted.
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.
8. A cross denotes an unsuccessful learn operation, please retry.
9. After the code is learnt, 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 learnt, it is necessary to cycle the power to the CJSM2, (turn OFF and ON). If other IR Codes are already learnt, then this is not necessary.

Fig.13.6



Fig.13.7

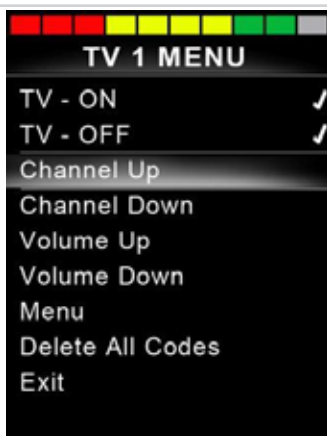


Fig.13.8



Fig.13.9



Fig.13.10



Fig.13.11



### 13.5 Learning Sequential IR Codes

Multiple IR Codes can be learnt 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 learnt against one entry in the IR Set up menu. The CJSM2 will then transmit the Codes for the learnt 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 learnt against one Command in the CJSM2 IR Set-up Menu. When this Command is selected the IR Codes are transmitted in the correct sequence.

#### 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 Learnt Sequence, (Fig.13.12).

### 13.6 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.13.13).
- 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.13.12

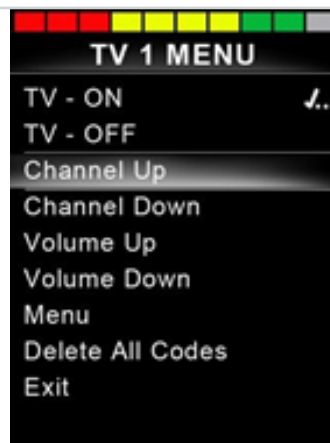


Fig.13.13

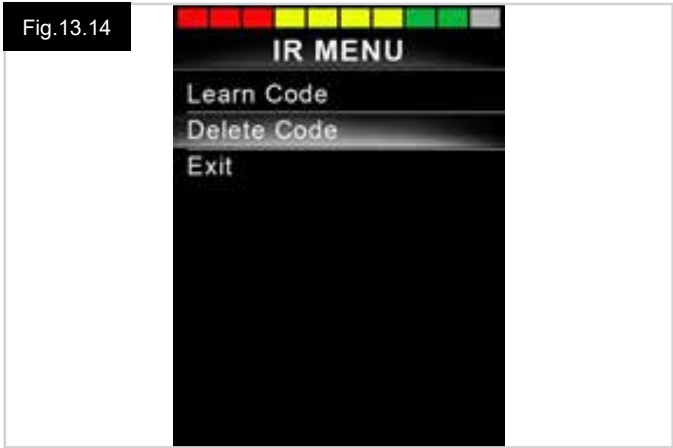


13.7 Deleting IR Codes

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.13.14).

To delete all IR Codes for an appliance select Delete All Codes within that appliance's sub-menu, (Fig.13.15).

To delete all IR Codes stored in the CJS2, select Delete All Codes within the IR Set-up Menu, (Fig.13.16).



### 13.8 Default IR Menu

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

TV	DVD 1	DVD RECORD	CABLE/ SATELLITE	MUSIC	DEVICE 1	DEVICE 2
On/Off	On/Off	On/Off	<b>On/Off</b>	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
Channel Selection	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				
0						
Input						
Select/OK						



## 14.0 CJSM2 Bluetooth Setup & Operation

### 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.

### 14.1 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.

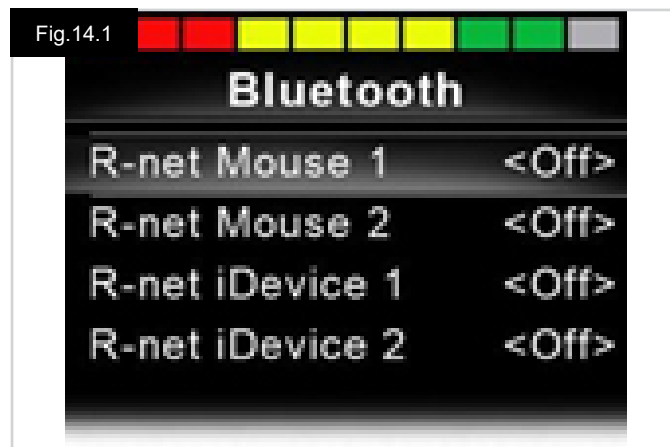
Each is described in the following sections.

An R-net Output Mode must be set to Bluetooth. Please contact your approved Sunrise Medical servicing agent. This is a two-stage process. Firstly, a device or devices must be set to On from the Settings Menu. Secondly, 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.14.1).



## 14.2 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.14.2).
- 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 iDevice – refer to one of the following three sections:

## 14.3 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.14.3).
- Click 'Add' to open the Bluetooth Device Wizard, (Fig.14.4).
- Check the box marked 'My device is set up and ready to be found', (Fig.14.4).
- Click 'Next', (Fig.14.4).
- The PC will now search for local Bluetooth devices.
- The available Bluetooth devices are shown on the screen, (Fig.14.5).
- Click on 'Tom's PC' and then click on 'Next', (Fig.14.5).

Fig.14.2



Fig.14.3



Fig.14.4



Fig.14.5



- If a passkey is requested use 1234, (Fig.14.6).
- The PC will commence connection with the CJS2-BT, (Fig.14.7).
- When the connection is completed click 'Finish', (Fig.14.8).
- The blue icon on the CJS2-BT should stop flashing, (Fig.14.2).
- The screen will show connected devices, (Fig.14.9).

**NOTE:**

If the process fails, click on 'Tom's PC', then 'Remove' and repeat the process, (Fig.14.9).

Fig.14.6



Fig.14.7



Fig.14.8



Fig.14.9



14.4 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' from the list 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 CJSM2-BT should stop flashing.

14.5 Pairing With an i Device

The following process should be undertaken on the iDevice:

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

14.6 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 dependent on the type of device.

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

14.7 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.

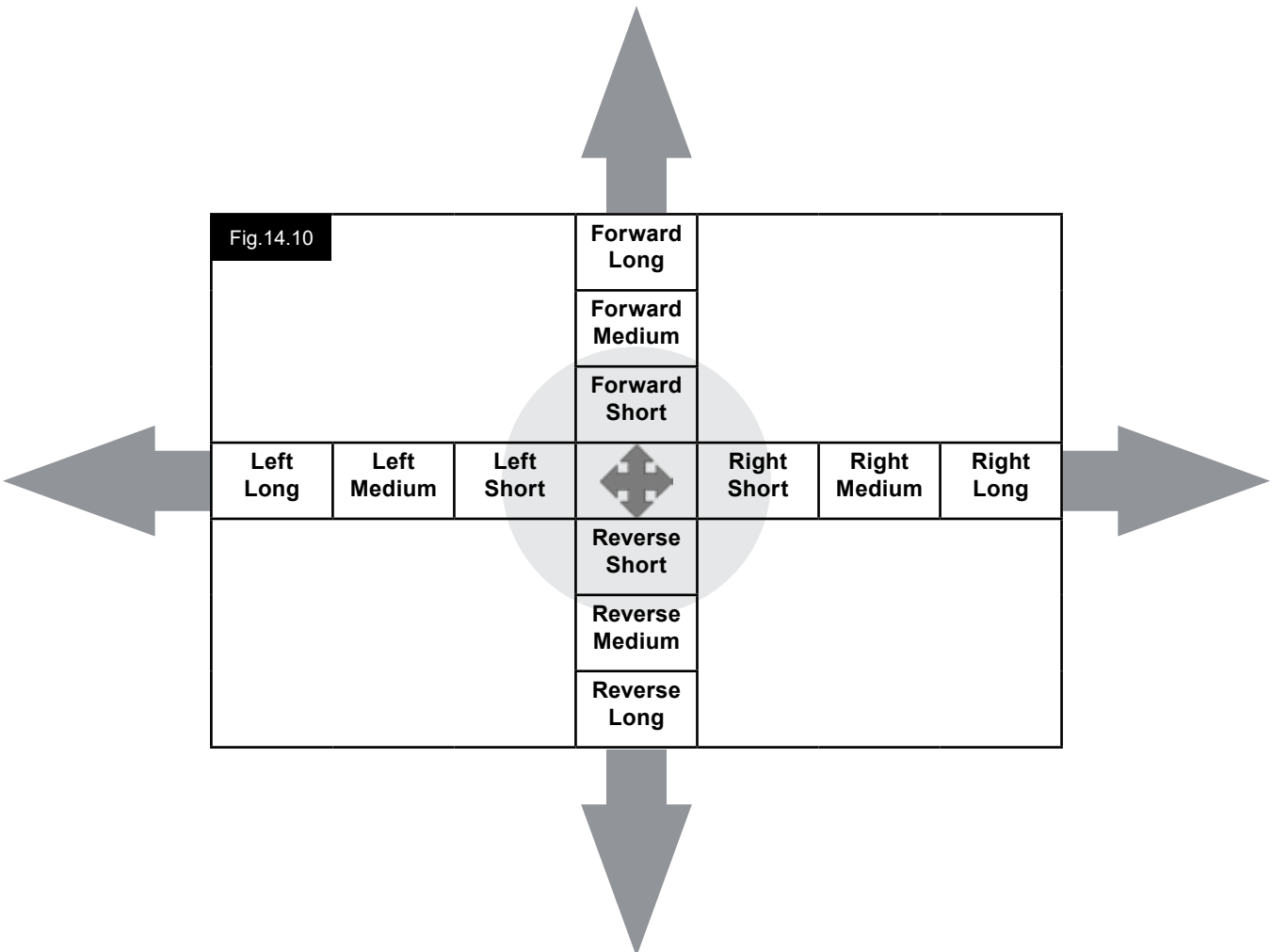
External switches connected to the External Profile jack socket can also be used to control devices, but programming of the R-net will be required. Refer to chapter Bluetooth Programming for more details.

14.8 Operating an Andriod 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 29.10).



## 14.9 Operating an iDevice

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

- Using the iDevice's Switch Control functionality
- Using the iDevices Switch Control functionality in conjunction with the iDevices 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.14.11).

iDevice command Next Item selects another highlighted area, (Fig.14.12).

iDevice command Select Item enters the highlighted area, (Fig.14.13).

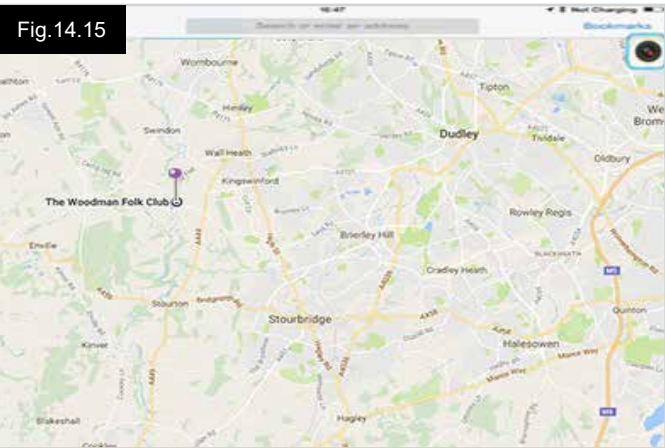




iDevice commands Next Item and Previous Item are used to select individual icons within the highlighted area, (Fig.14.14).

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.14.15).

iDevice command Home returns to the Home screen, (Fig.14.16).





## Voice Over

Voice Over operates in conjunction with Switch Control, but offers an alternative method of screen navigation. Examples are given, (Fig.14.17-14.20). 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.14.17-14.18).

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.14.19-14.20).

Fig.14.17



Fig.14.18



Fig.14.19



Fig.14.20



## 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.

- 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.14.21).
- Set Switch Control to ON, (Fig.14.22).
- Select Switches, (Fig.14.23).
- Select External, (Fig.14.24).
- Select Add New Switch, (14.25).
- This screen is displayed, (Fig.14.26).
- 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.14.27).
- Enter a convenient name – for example, long reverse – and then Save, (Fig.14.28).
- This screen is displayed, (Fig.14.29).
- Select the iDevice command you wish to assign; for example, Move To Next Item, (Fig.14.29).
- This screen will appear and the process can be repeated to assign further commands, (Fig.14.30).

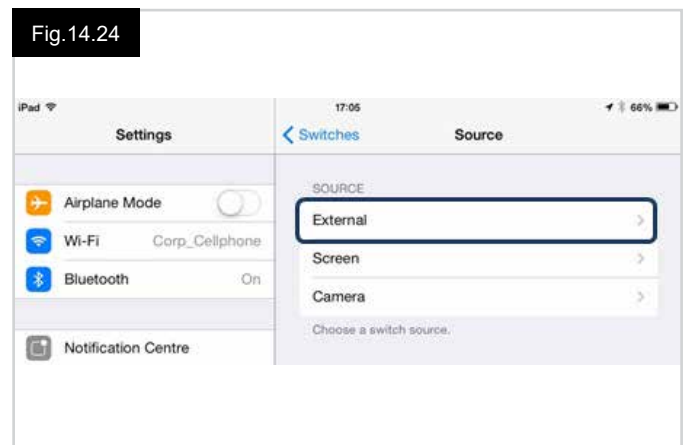
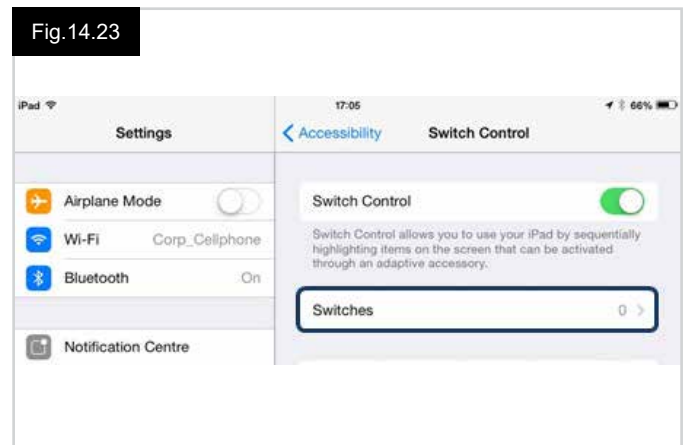
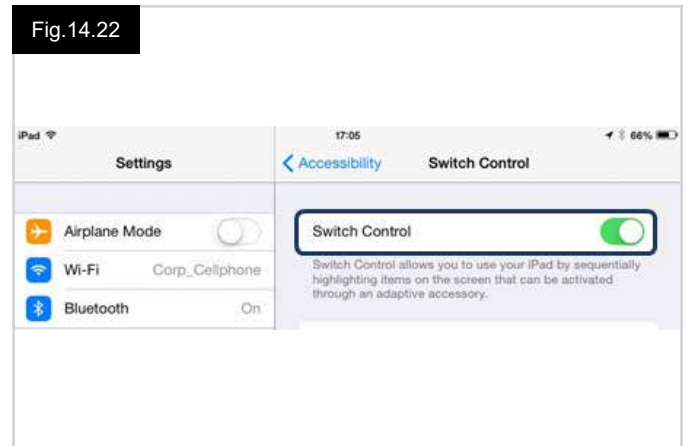
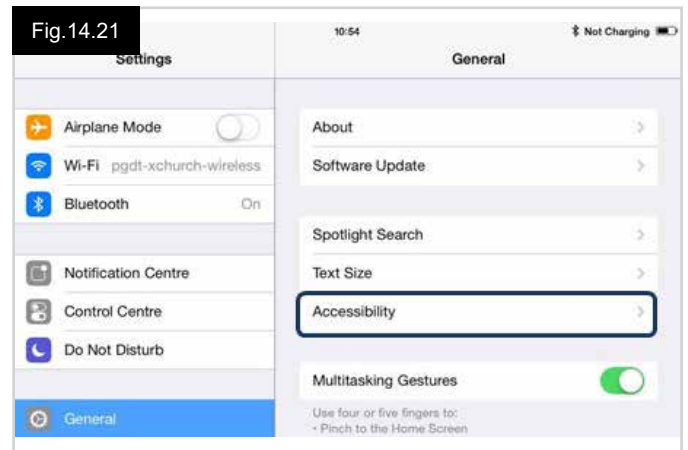


Fig. 14.25



Fig. 14.26



Fig. 14.27



Fig. 14.28



Fig. 14.29

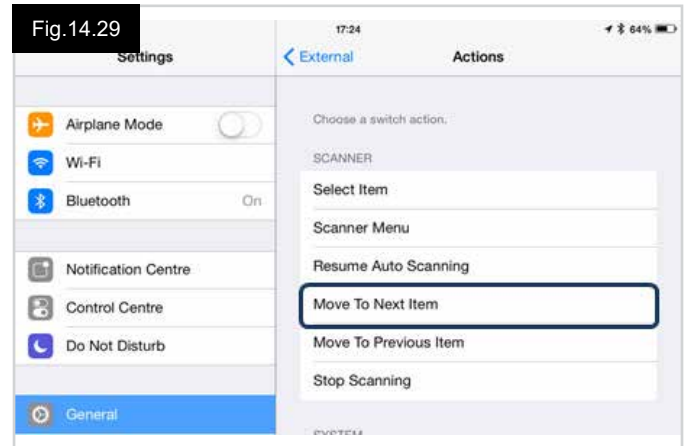
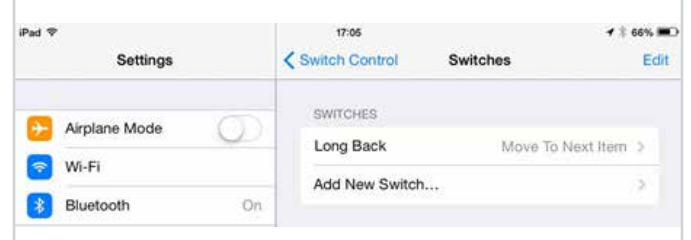


Fig. 14.30



## 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.

- 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.

### The Speed Down and Speed Up buttons.

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

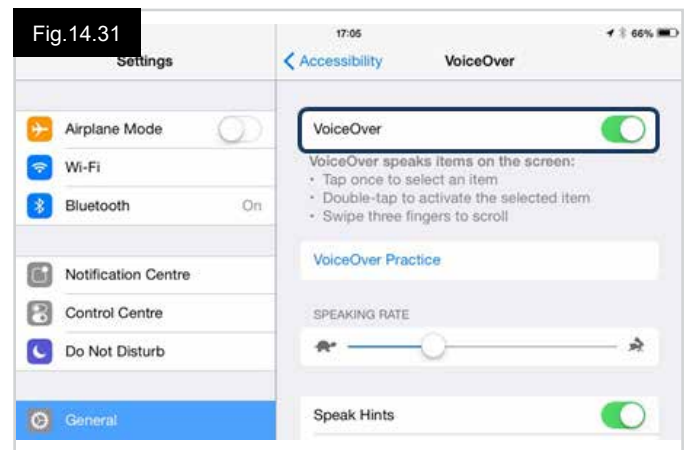
- From the iDevice Settings menu, select General > Accessibility and set Voice Over to On, (Fig.14.31).

**NOTE:** The remainder of Voice Over set up is via the R-net PC programmer.

### WARNING:

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

- 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.







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