



R-Net Control System

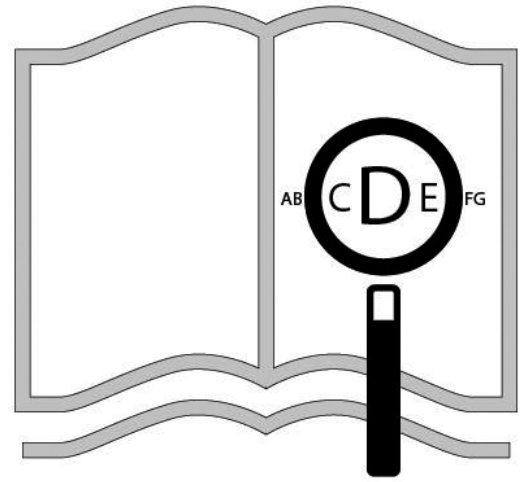
Instructions for Use


QUICKIE[®]



015670

www.sunrisemedical.com



If you are visually impaired, this document can be viewed in pdf format at 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
 DANGER!	Advice to the user of Potential Risk of serious injury or death if the advice is not followed
 WARNING!	Advice to the user of a potential risk of injury if the advice is not followed
 CAUTION!	Advice to user that potential damage to equipment may occur if the advice is not followed
NOTE:	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

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:

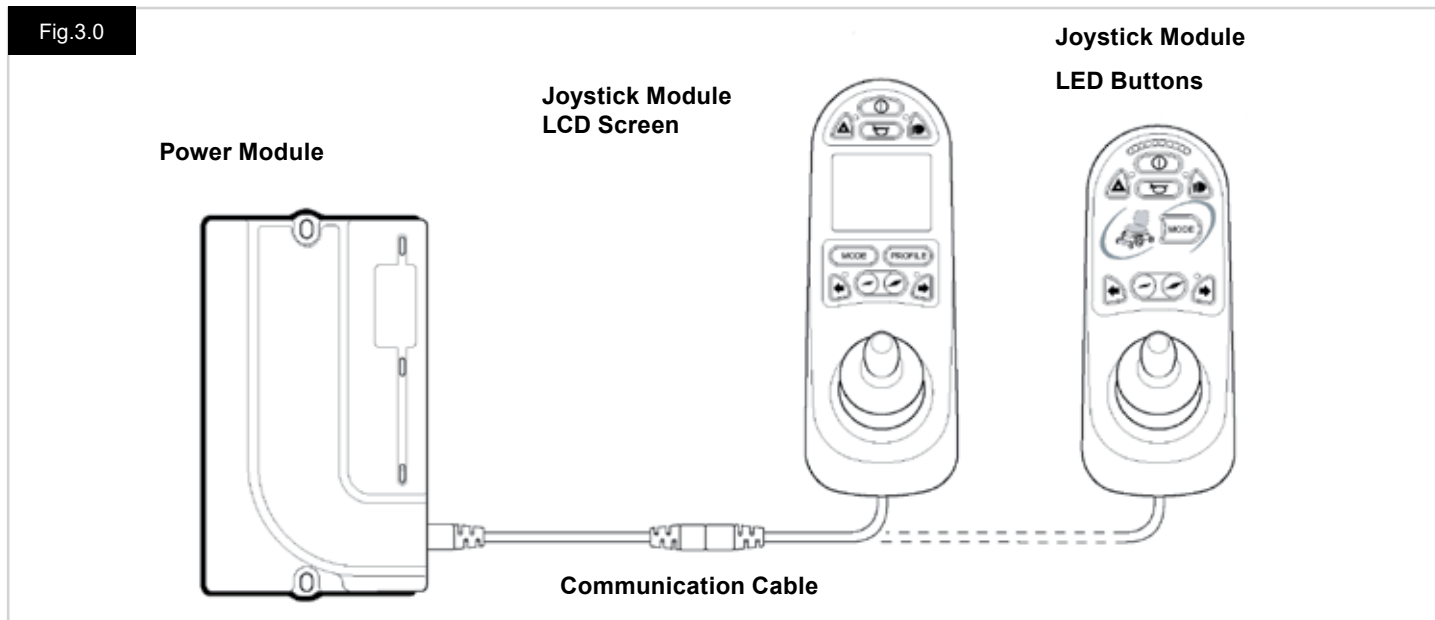
- i. For goods provided by Sunrise medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under Australian Consumer Law.
- ii. You are entitled to a replacement or refund for a major failure and for compensation for any foreseeable loss or damage.
- iii.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

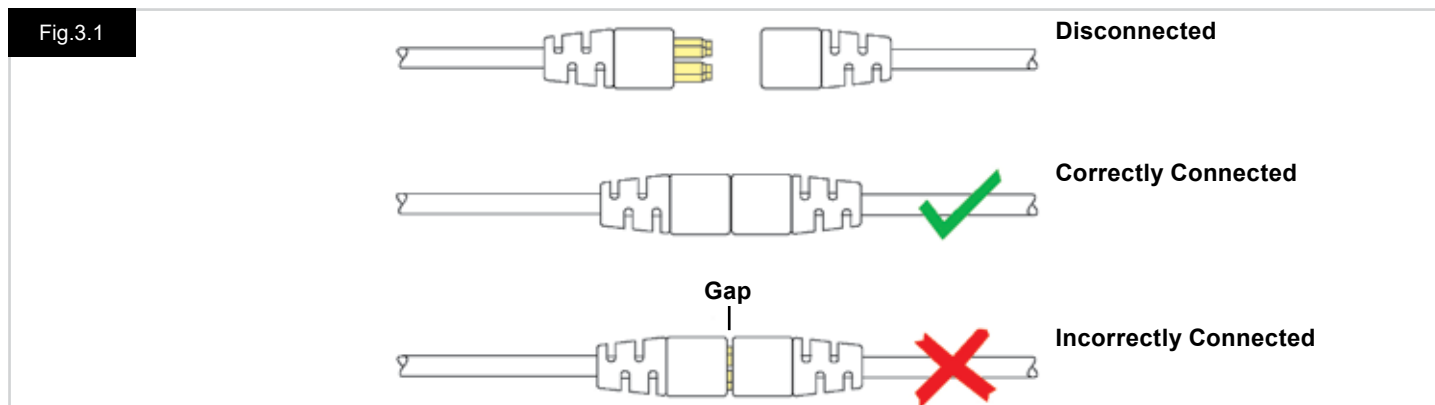
Clean the control system and the joystick with a cloth dampened with diluted detergent. Be careful when cleaning the joystick and screen. Never use abrasive or spirit-based cleaners.

⚠ 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

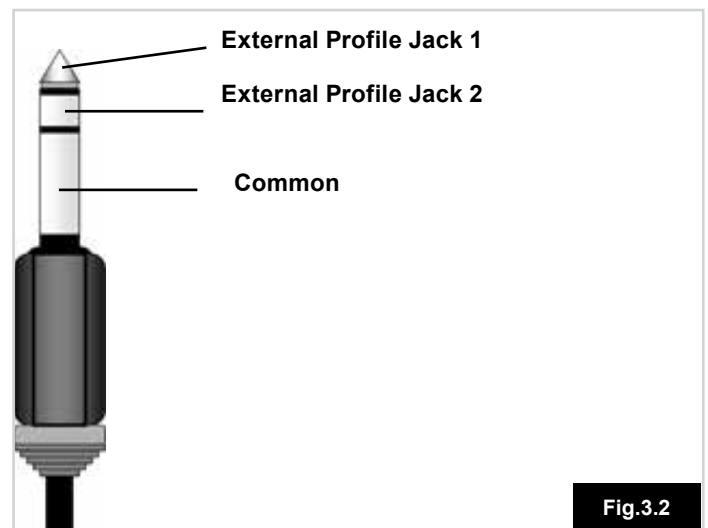


Fig.3.2

Fig.3.3

Joystick Module With LCD Screen

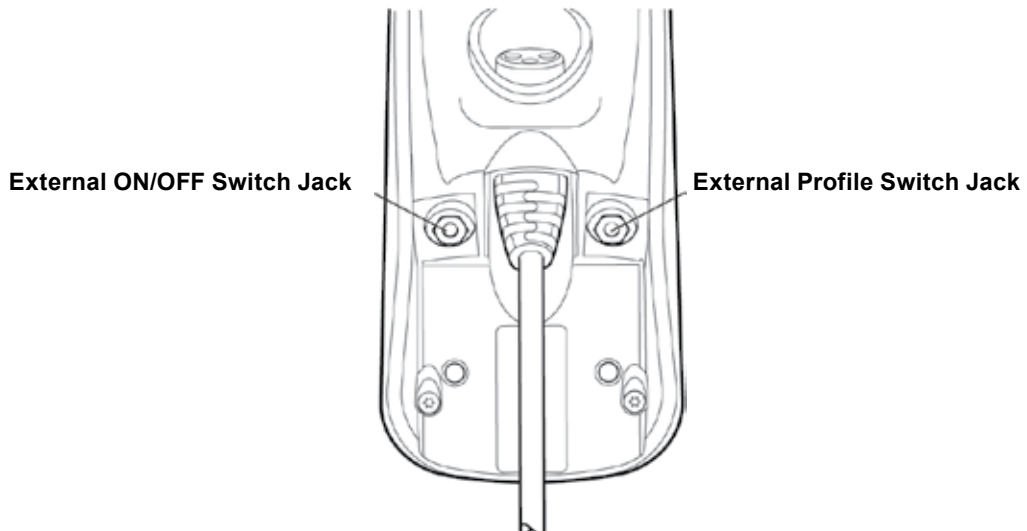
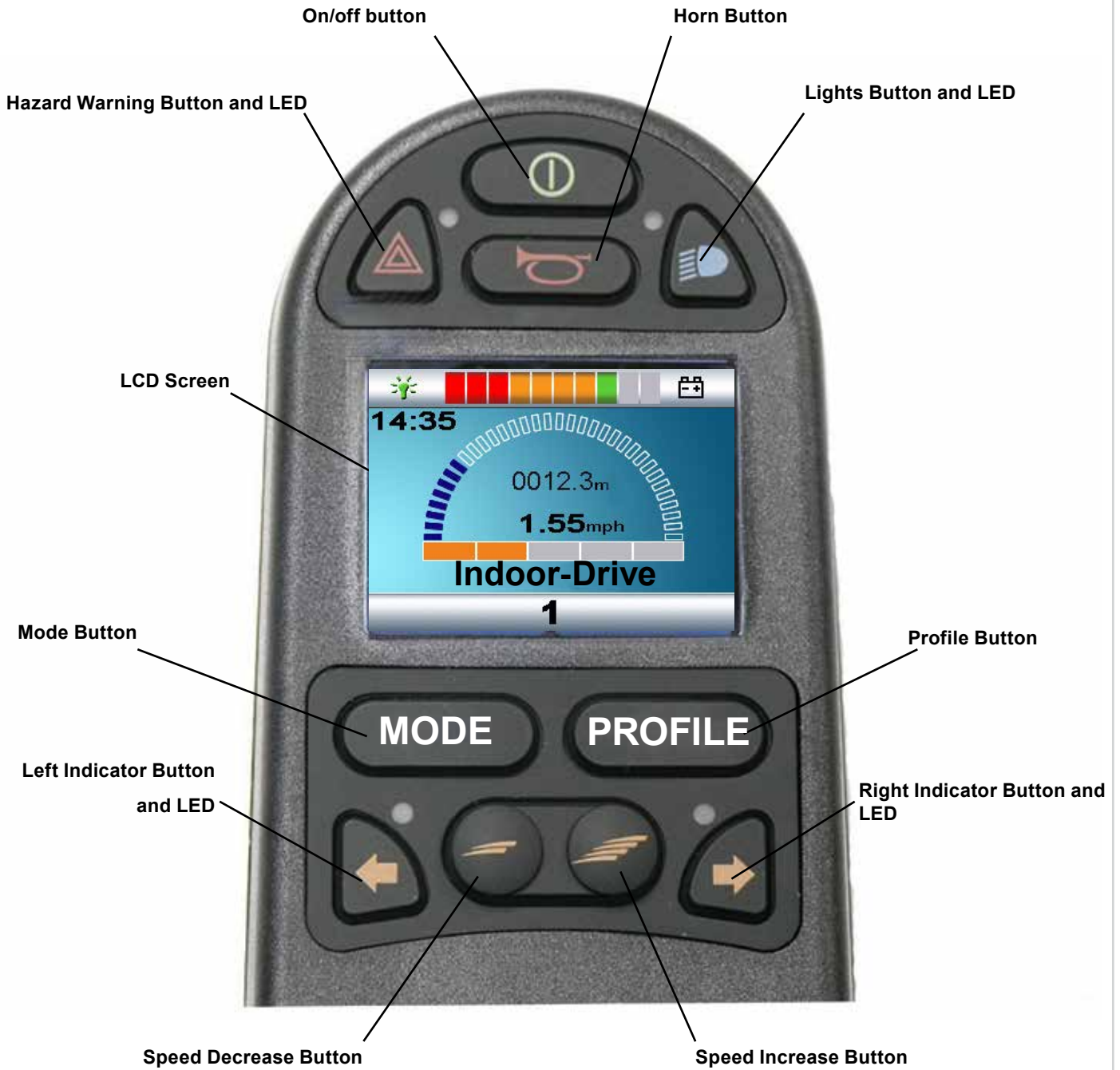


Fig.3.4

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



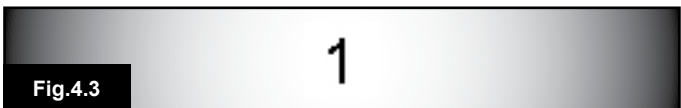
Charger Socket, (underneath)

Fig.3.6

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)

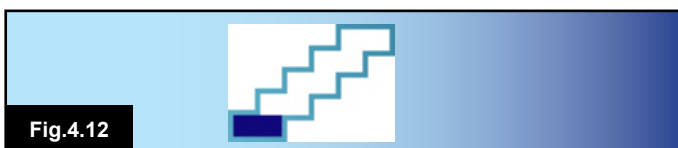
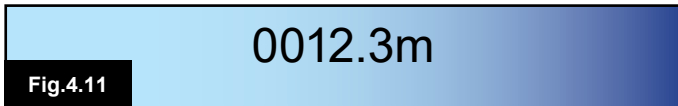
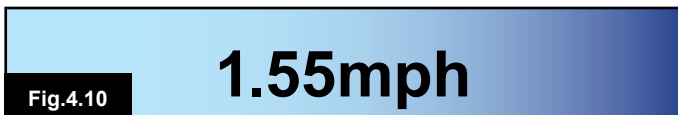
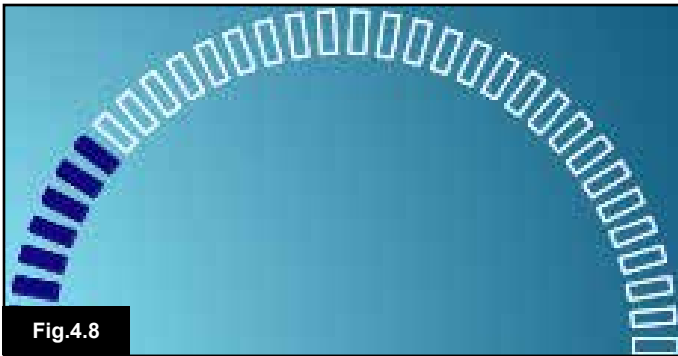
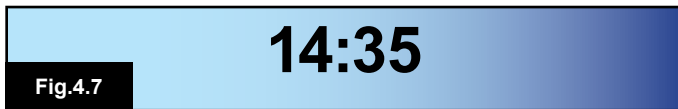
The currently selected Profile is shown in numeric form.

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.

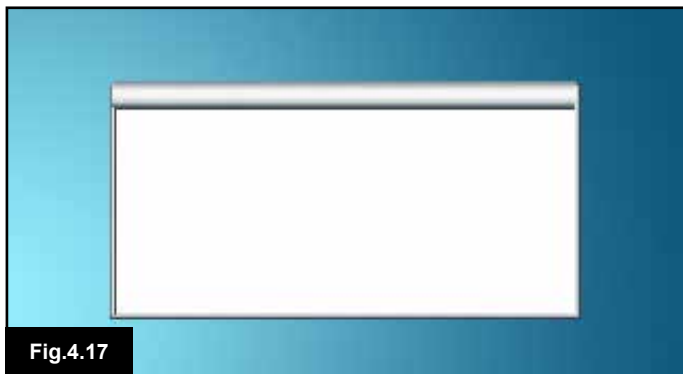
Actuator Mode (Fig 4.15)

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.



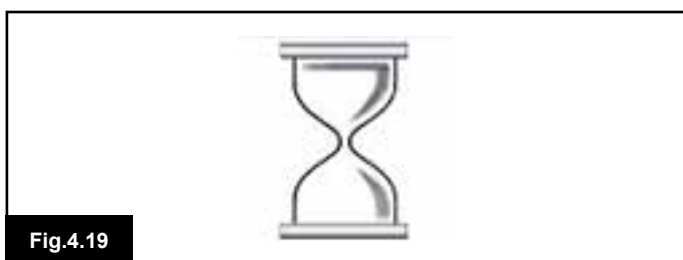
Message Window (Fig 4.17)

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.



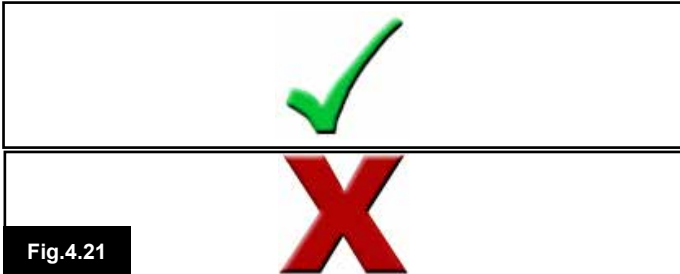
Timer

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.

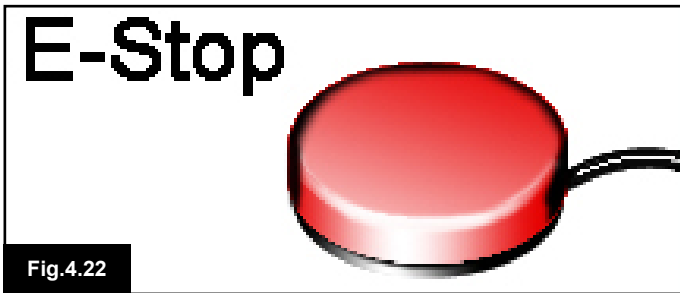


Cross & Tick (fig 4.21)

These symbols will be displayed during configuration procedures.

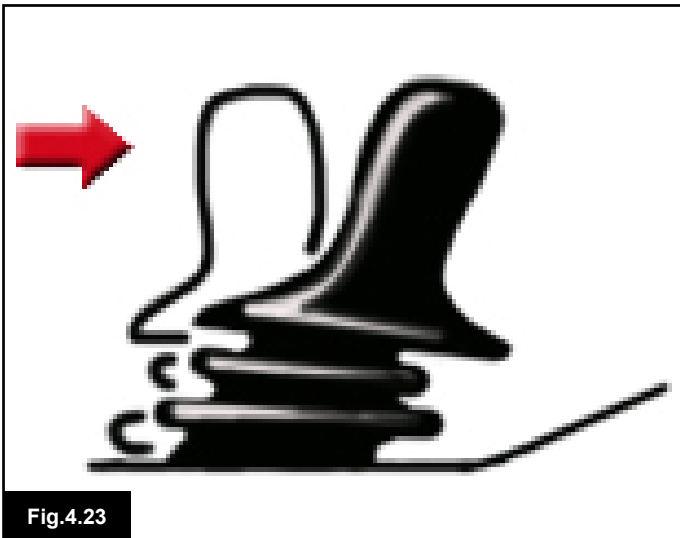
1. Process completed correctly.

2. Process not completed correctly.



E-stop (Fig 4.22)

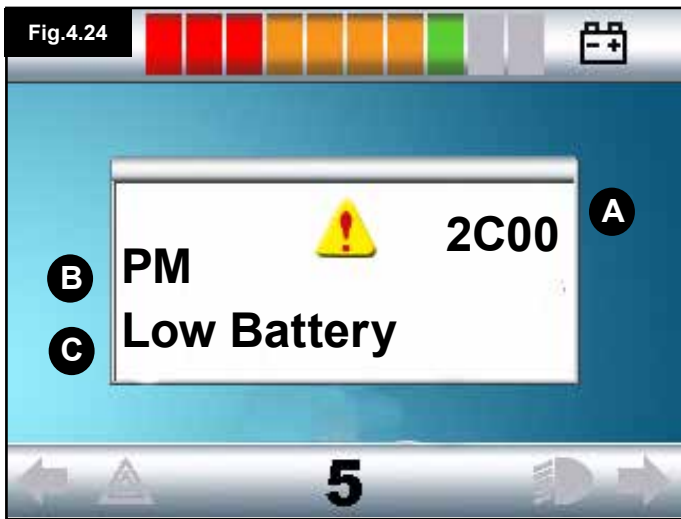
If the External Profile Switch is activated during drive, or actuator operation, this symbol will be displayed.



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

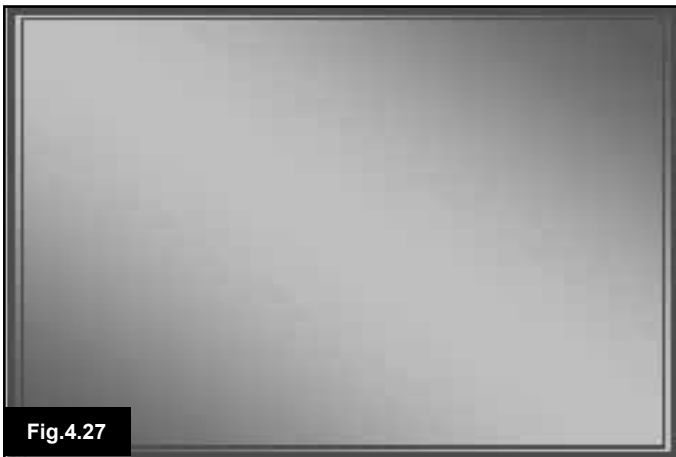


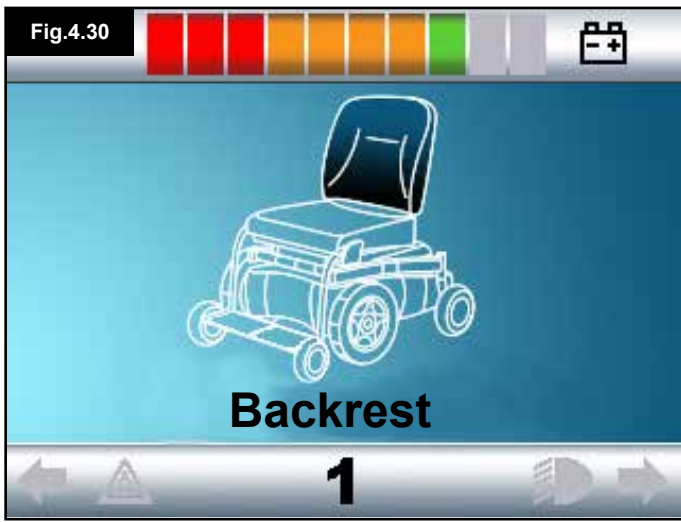
Fig.4.27



Fig.4.28



Fig.4.29



4.4 Actuator Selection Screen

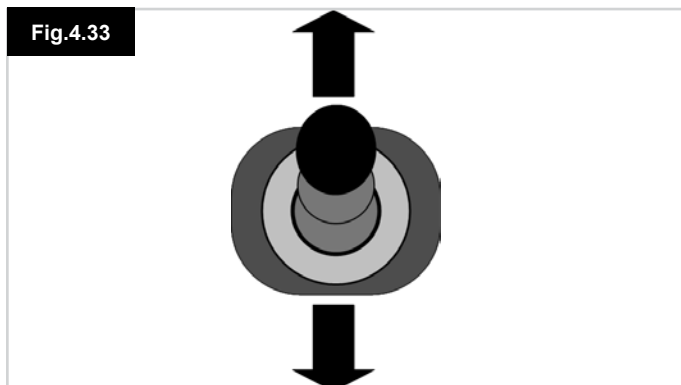
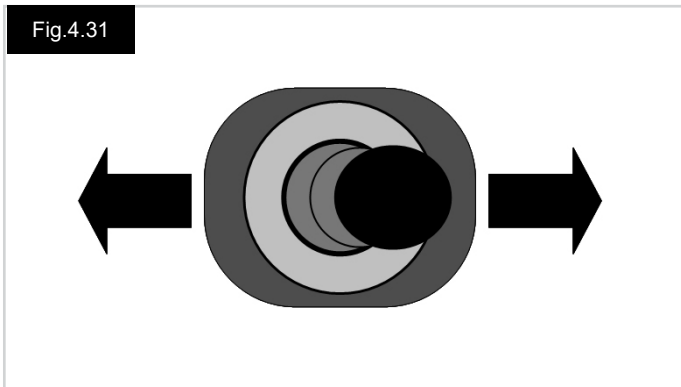
This is accessed through the MODE button.

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.



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.

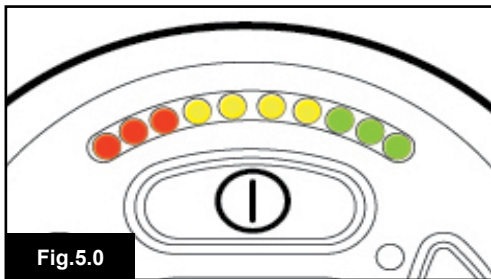


Fig.5.0

Battery Gauge is Steady (Fig 5.0)

This indicates that all is well.

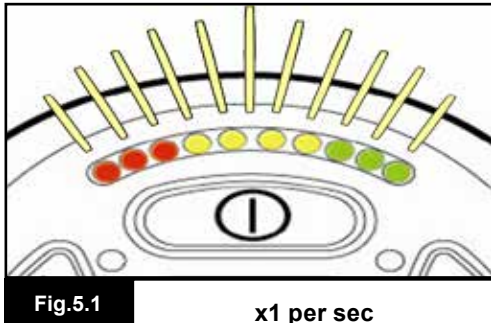


Fig.5.1

x1 per sec

Battery Gauge Flashes Slowly (Fig 5.1)

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

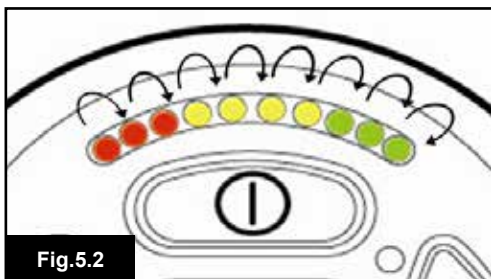


Fig.5.2

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.

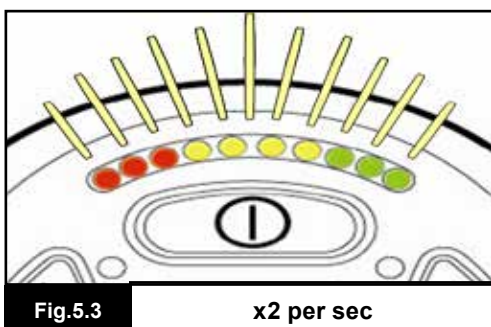


Fig.5.3

x2 per sec

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.

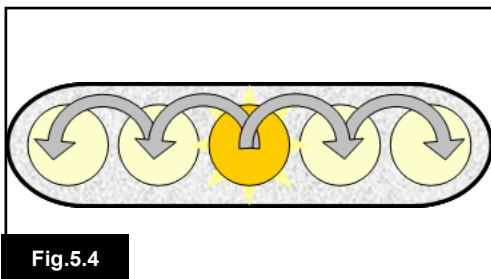


Fig.5.4

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

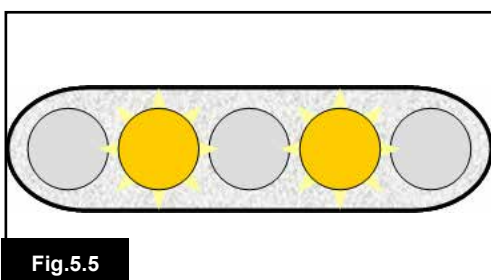


Fig.5.5

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.

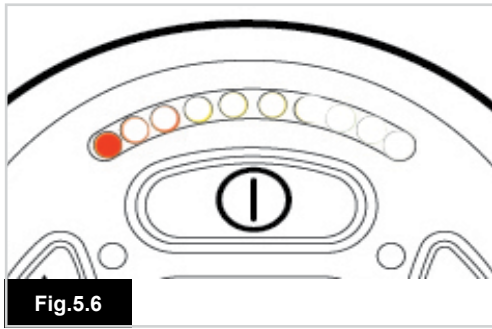


Fig.5.6

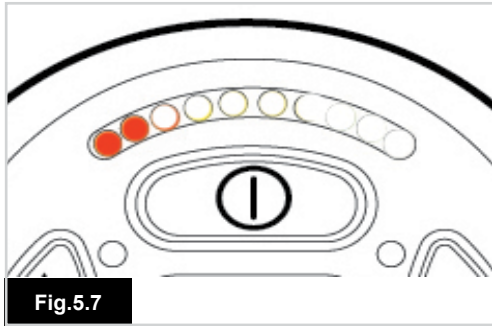


Fig.5.7

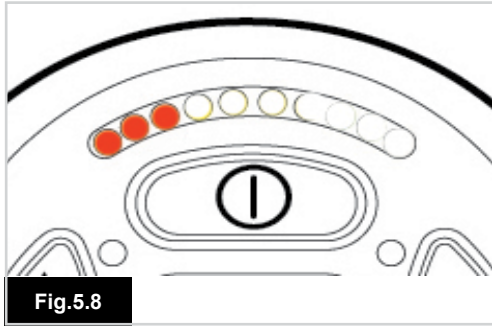


Fig.5.8

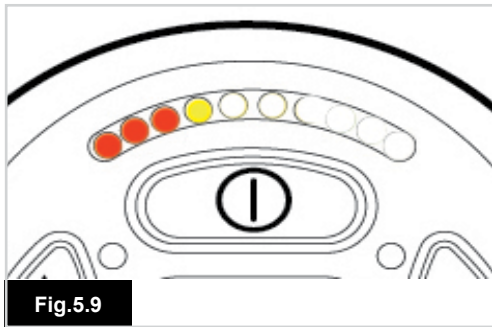


Fig.5.9

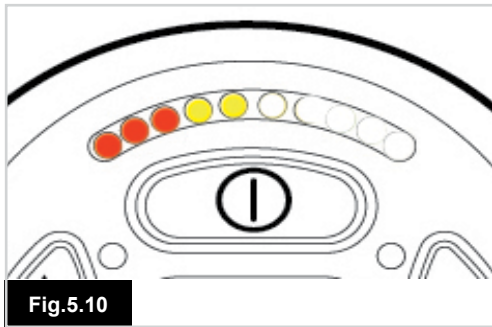


Fig.5.10

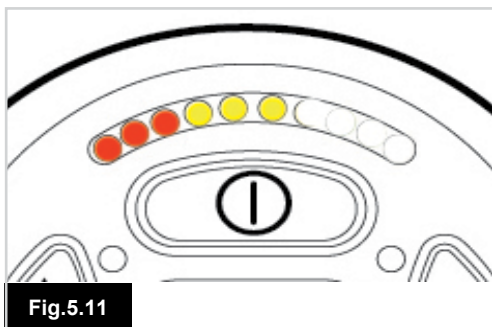


Fig.5.11

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.

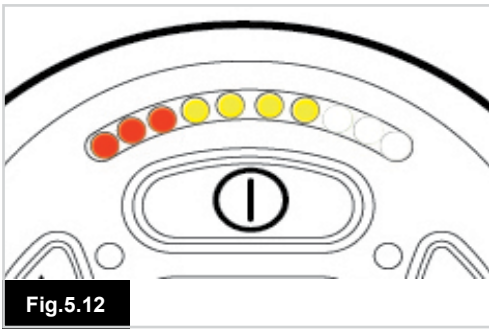


Fig. 5.12

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.

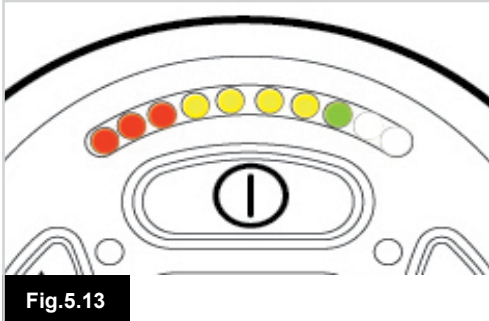


Fig. 5.13

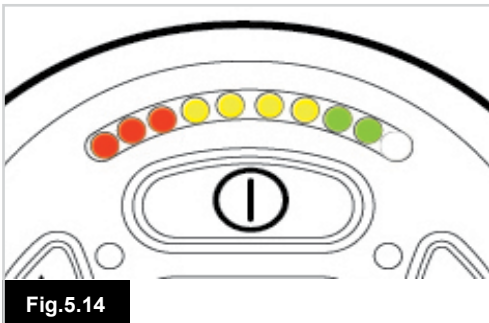


Fig. 5.14

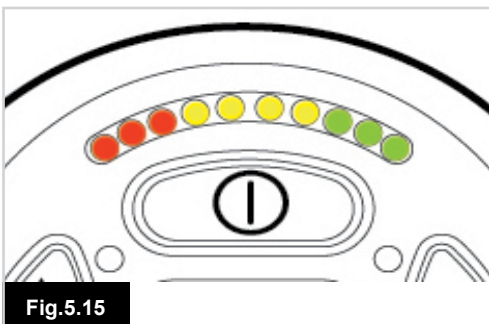


Fig. 5.15

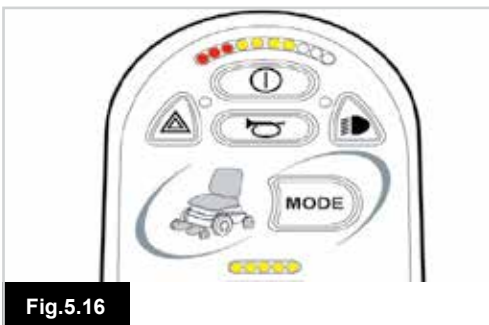


Fig. 5.16



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.6.0





Fig.6.2

6.2 Using Your Control System

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

Driving Technique

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

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

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

Slow or sluggish movement

If the wheelchair does not travel at full speed or does not respond quickly enough, and the battery condition is good, check the maximum speed setting, (Fig 6.4). If adjusting the speed setting does not remedy the problem then it's possible there may be a non-hazardous fault. Contact your service agent.

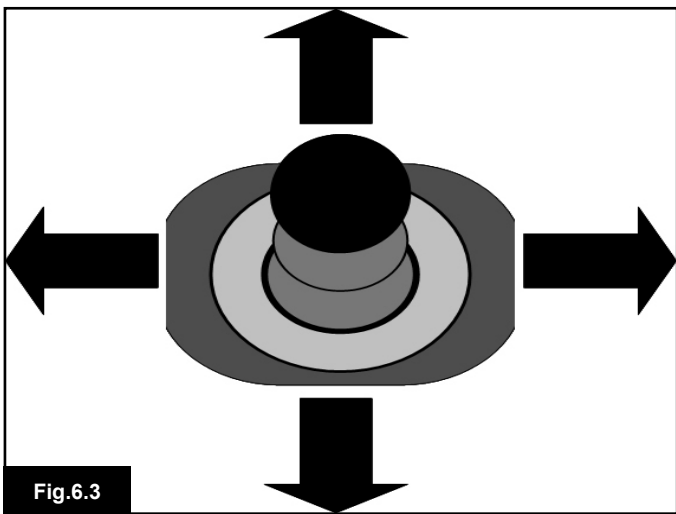


Fig.6.3

WARNING:

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

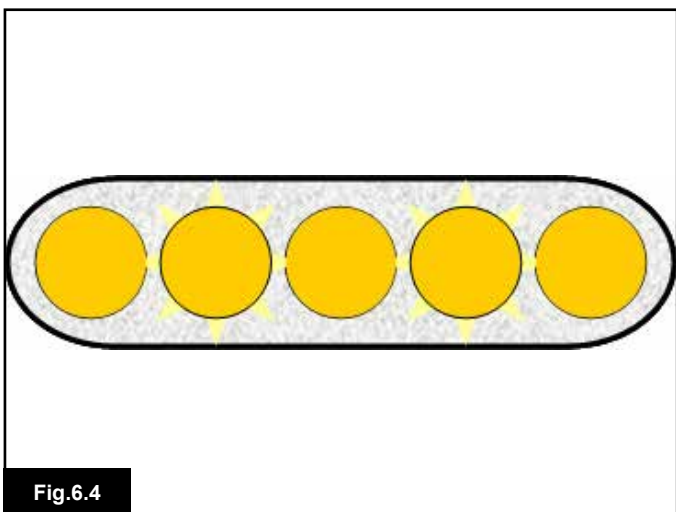


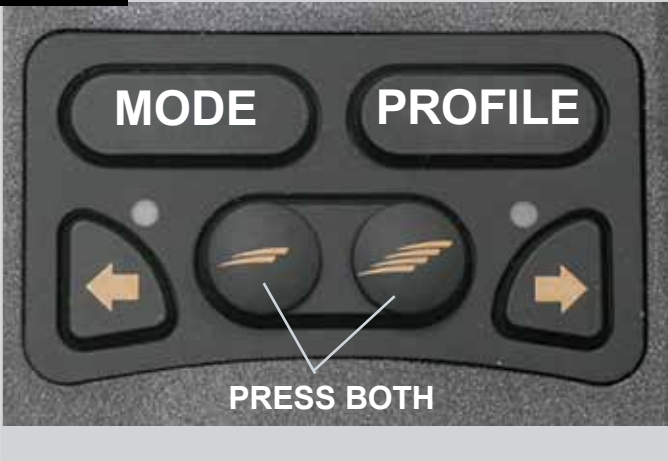
Fig.6.4



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

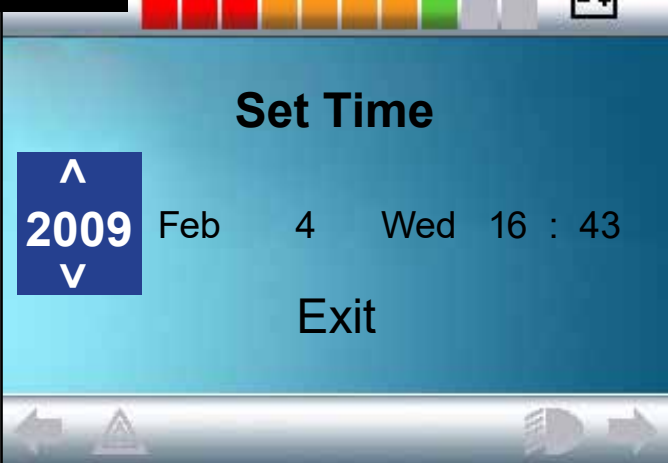
7.2 Set Time

- 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

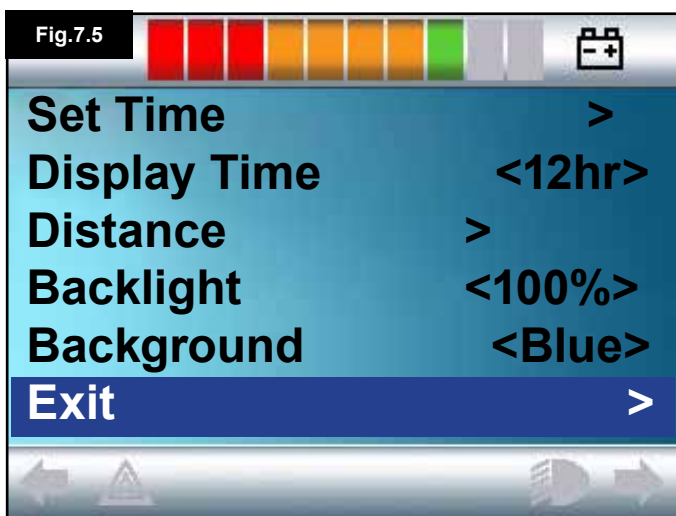
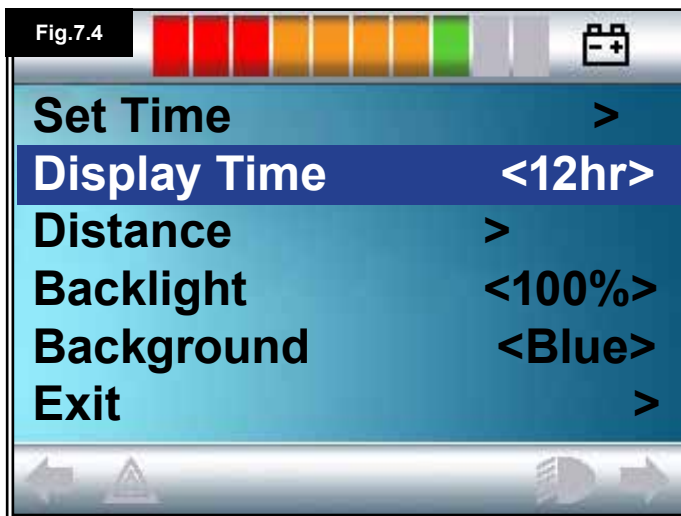


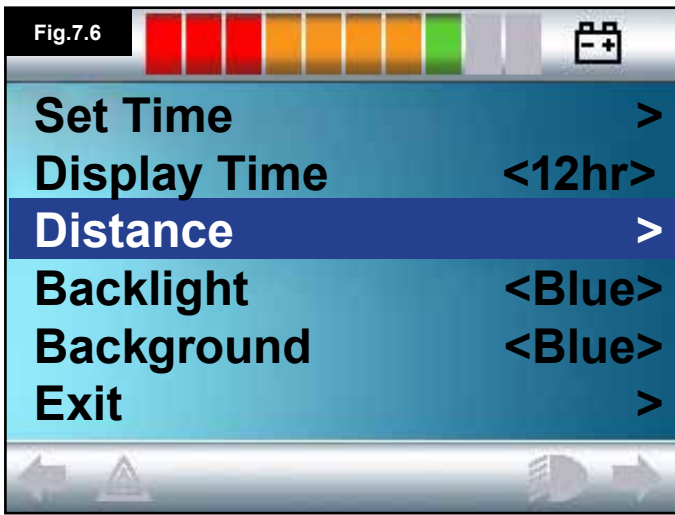


7.3 Display Time

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”.

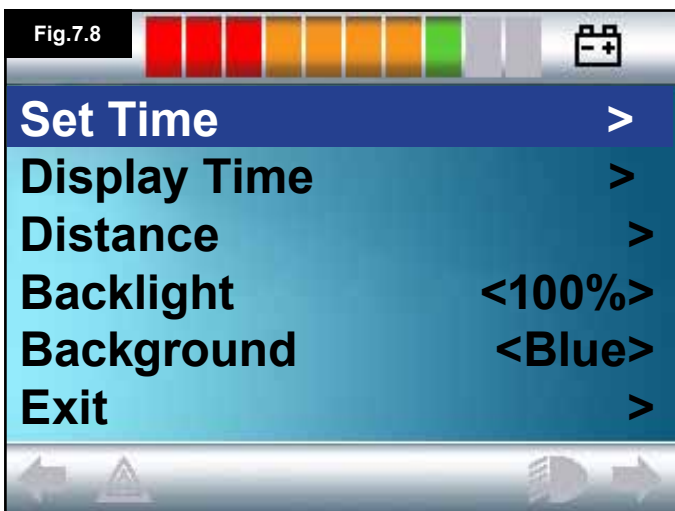
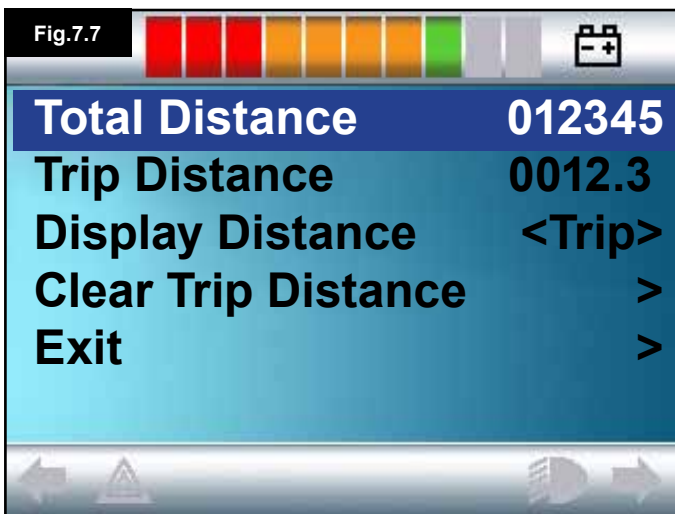
Clear Trip Distance

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 return to the Settings Menu, (Fig 7.8).

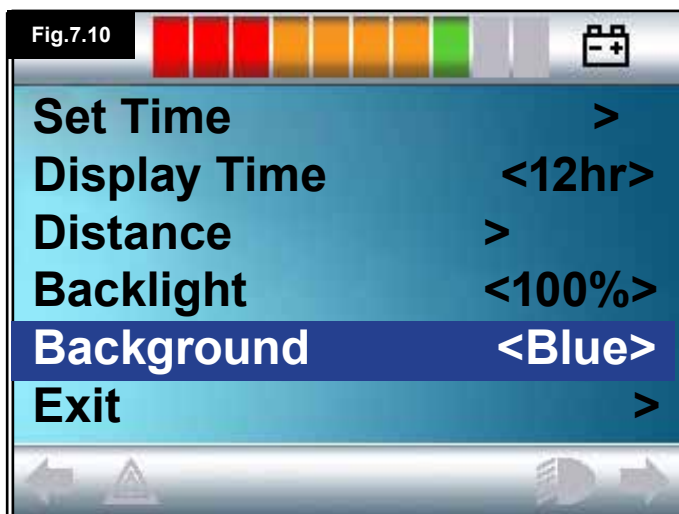




Fig.8.0



Fig.8.1



Fig.8.2



Fig.8.3

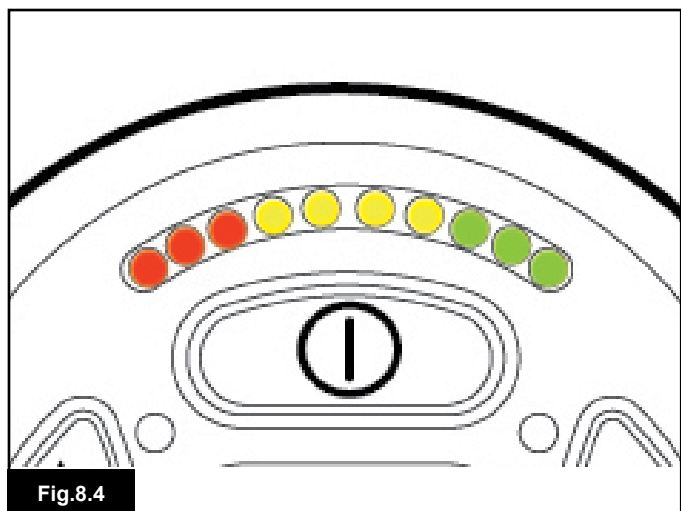


Fig.8.4

8.0 The Battery Gauge

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

The battery gauge works in the following way:

When you switch on the control system, the battery gauge shows an estimate of the remaining battery charge. The battery gauge gives you a more accurate reading about a minute after you start driving the wheelchair. When you replace worn out batteries, fit the type recommended by Sunrise Medical. If you use another type the battery gauge may be inaccurate.

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

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

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

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

Please consult your 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:

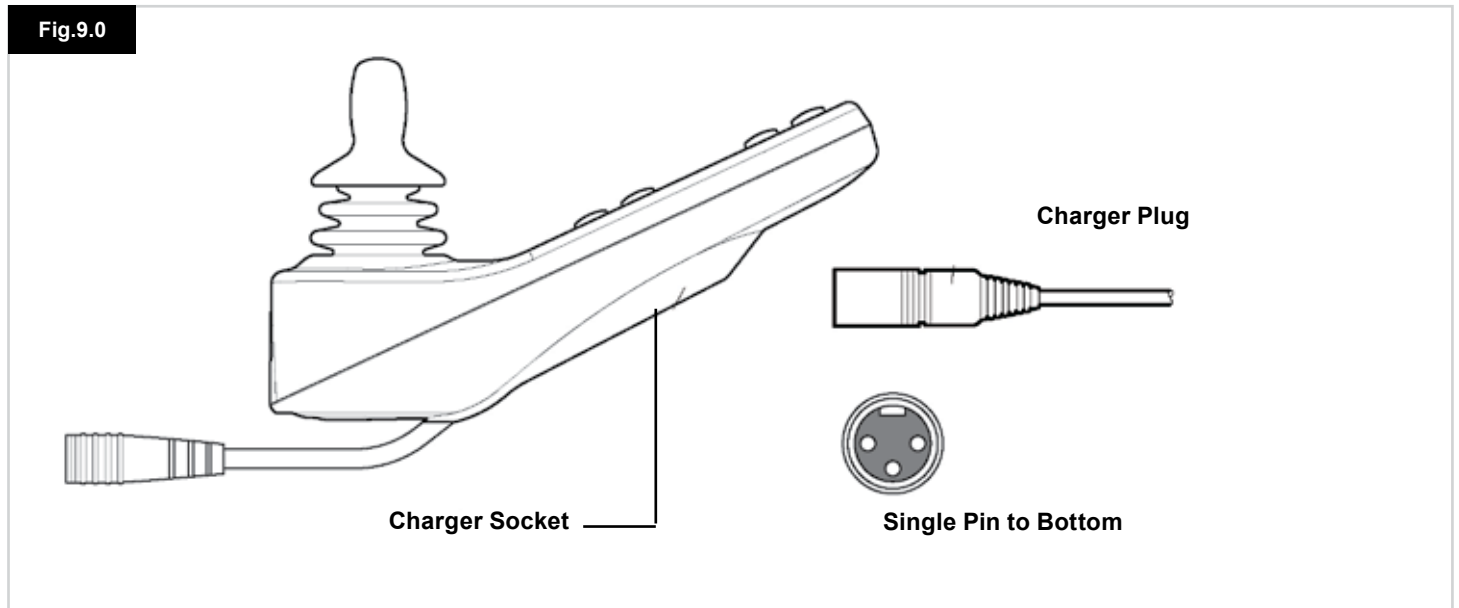
Do not operate the control system if the battery is nearly discharged. Failure to comply with this condition may leave you stranded in an unsafe position, such as in the middle of a road. Sunrise Medical accepts no liability for losses of any kind arising from failure to comply with this condition.



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.

10.0 Dual Attendant Control Module



NOTE: Chapters 10.1 - 10.9 Refer to Fig 10.0

10.1 Joystick

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

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

10.2 Maximum Speed Indicator

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

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

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

10.3 Speed Increase / Decrease Button

Pressing this button increases or decreases the maximum speed setting.

10.4 Mode Button

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









www.SunriseMedical.com



curtisswright.com