

Introduction

Thank you for choosing a Sunrise Medical Sterling Onyx.

Before using your scooter please **read this manual carefully**. It will provide you with all the information you will require however, if you have any queries about the use, maintenance or safety of your scooter please contact your local Sunrise Medical Service Agent. If you have any other questions please write to the address below.

This scooter is designed for comfort, safety and durability and has been exhaustively researched and tested by our experts.

The Onyx scooter is classified as a category C vehicle under the European wheelchair standard EN 12184.

It is intended for the use of people of all ages who may have difficulty walking distances or for periods of time. It is ideal for indoor and outdoor use and suitable for users up to 150kg in weight (330 lbs). Weights can cause performance variation. Maximum user weight tested using 150kg test dummy.

The scooter is designed to be driven on pavements and to cross roads and therefore should not be driven through mud, water or snow which is deeper than 50mm.

It has been manufactured to comply with the requirements of the KBOH R06/SBV/SBR P57, Medical Device Directive 93/42/EEC, the radio interference requirements of EEC Directive 89/336/EEC and the battery charger requirements of EEC Directive 73/23/EEC and 89/336/EEC. Electro Magnetic fields, such as those emitted by shop alarms may be disturbed by use of the scooter. The function of the scooter as well may be disturbed by Electro Magnetic fields emitted by shop alarms.



Sunrise Medical is dedicated to providing products of exacting quality which conform fully and reliably to the requirements of their intended use. We are BS/EN ISO 9001 accredited which is the internationally recognised standard for quality management systems. This approval ensures we provide quality in all areas of our business from development through to final delivery. Should you require any further assistance then please contact your local dealer.

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Guarantee

Your guarantee

The guarantee form is supplied with this manual, please fill in the relevant details to register and activate your warranty.

THIS IN NO WAY AFFECTS YOUR STATUTORY RIGHTS.

Warranty conditions

- 1 The repair or replacement will be carried out by an authorised Sunrise Medical Dealer/Service Agent.
- 2 To apply the warranty conditions should your Scooter require attention under these arrangements, notify the designated Sunrise Medical Service Agent immediately giving full information about the nature of the difficulty. Should you be operating the Scooter away from the locality of the designated Sunrise Medical Service Agent work under the "Warranty Conditions" will be carried out by any other service agent designated by the manufacturer.
- 3 Should any part of the Scooter require repair or replacement as a result of a specific manufacturing or material defect within two years from the date on which the possession of the scooter was transferred to the original purchaser, and subject to it remaining within that ownership, the part or parts will be repaired or replaced completely free of charge if returned to the authorised Service Agent.
Note: This guarantee is not transferable.
- 4 Any repaired or replaced part will benefit from these arrangements for the balance of the warranty period applicable to the scooter.
- 5 Parts replaced after the original warranty has expired are covered for a further three months.
- 6 Items of a consumable nature will not generally be covered during the normal warranty period unless such items have clearly suffered undue wear as a direct result of an original manufacturing defect. These items include amongst others upholstery, tyres, inner tubes, batteries and other similar parts.



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- 7 The above warranty conditions apply to all scooter parts, for models purchased at full retail price.
- 8 Under normal circumstances, no responsibility will be accepted where the scooter has required repair or replacement as a direct result of:-
 - (i) The scooter or part not having been maintained in accordance with the manufacturer's recommendations, where such exist. Or failing to use only the specified original equipment parts.
 - (ii) The scooter or part having been damaged by neglect, accident or improper use.
 - (iii) The scooter or part having been altered from the manufacturer's specifications, or repairs having been attempted prior to the Service Agent being notified.

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 scooter shown and described in this manual may not be exactly the same in every detail as your own model. However, all instructions are still entirely relevant, irrespective of detail differences.

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

Your local service agent:

Your local service agent:



INVESTOR IN PEOPLE



Please remember to fill in and post the guarantee registration card enclosed with this manual. **Sunrise Medical Limited** recommend that you do not undertake maintenance tasks other than those explained in this manual. Your local authorised Sunrise Medical service agent is fully trained by Sunrise Medical to carry out detailed maintenance as and when required. **Use only genuine Sunrise Medical replacement parts.**

Features

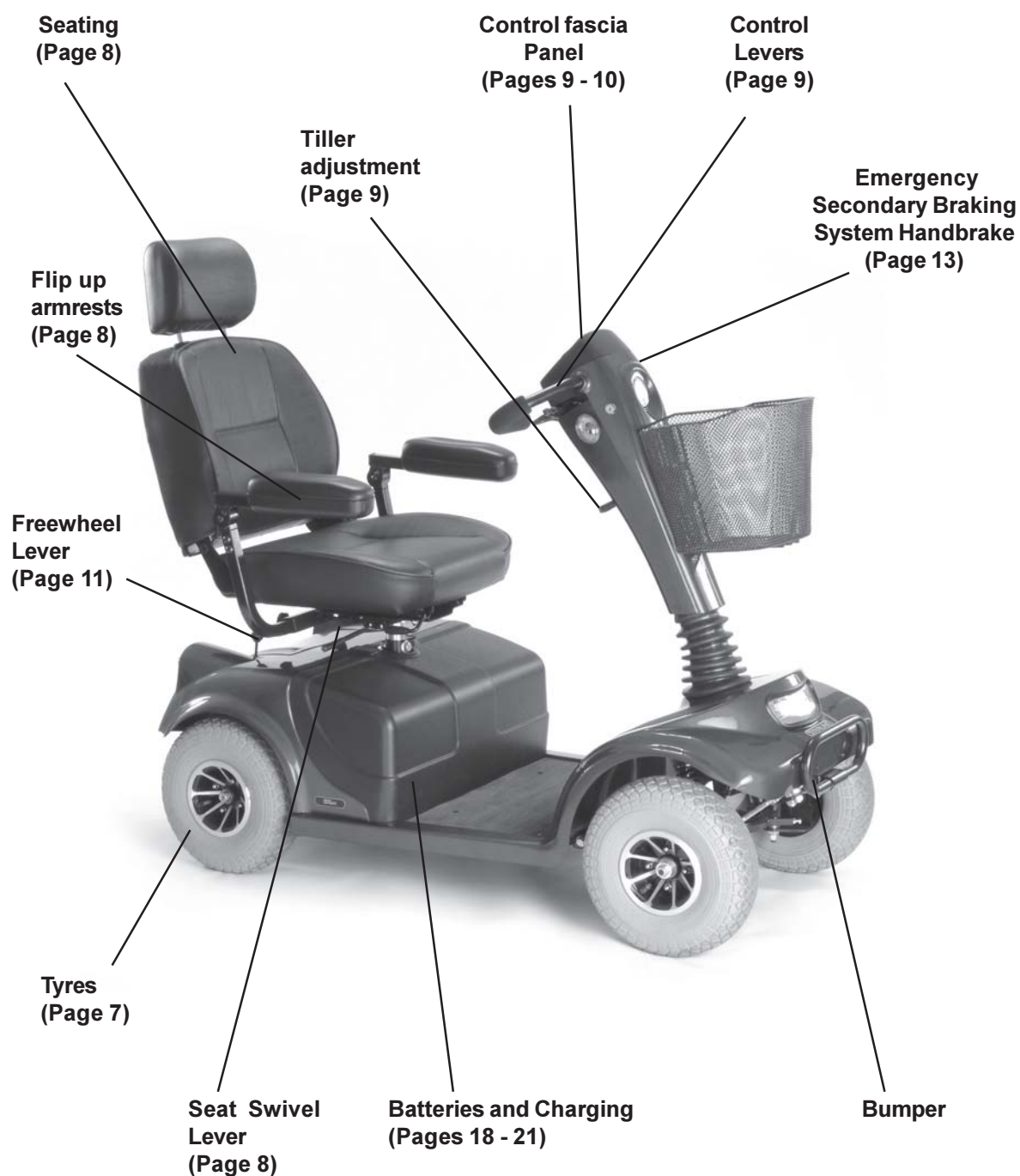


Fig. 1

Safety warning and user guidance

Getting on your Onyx scooter

1. Ensure that the key is turned to the off position.
2. Stand at the side of the scooter.
3. Pull the seat rotate lever upwards and rotate the seat until it faces you (Photo 1).
4. Make sure that the seat is locked securely into position.
5. Position yourself comfortably in the seat (Photo 2).
6. Pull the seat rotate lever upwards and rotate the seat until facing forward (Photo 3).
7. Make sure that the seat is locked securely into position.
8. Ensure that your feet are placed firmly on the floorboard of the scoota (Photo 4).

Getting off your Onyx scooter

1. Bring your Onyx scooter to a complete stop.
2. Make sure that the key is turned to the off position (Photo 4).
3. Pull the seat rotate lever upwards and rotate the seat until you are facing the side of the scooter (Photo 5)
4. Make sure that the seat is locked securely into position (Photo 2).
5. Carefully get out of the seat and stand by the side of your scooter (Photo 6).
6. You may leave the seat in this position or return it to facing forward.



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

Safety warning and user guidance

General safety warnings

Safety is important with any vehicle that is power driven. Below are some essential tips to safeguard your use. These are not conclusive and should be read in conjunction with the sections, which explain how to adjust, operate and maintain your vehicle.

Always ensure that your scooter is switched off before attempting to mount or dismount.

Do not attempt to operate your scooter whilst standing next to it.

Always ensure that you are able to operate all the controls from a seated position, that the rear view mirror (if fitted) is set correctly and that the seat is securely locked into place.

Do not hang anything from your scooter's handle bars, wig wag levers or rear view mirror (e.g. handbag, shopping bag) as this may interfere with the safe operation of your scooter and could result in injury to yourself or others.

Attention: Switch on the scooter lights to make yourself visible when there are low levels of light, day or night.

Do not operate your scooter whilst under the influence of alcohol or drugs.

Please observe all relevant rules and regulations pertaining to pedestrians at all times.

Turning corners

Always reduce your speed when turning corners, particularly when travelling downhill. Disregard of this advice could lead to your scooter tipping over.

Kerb climbing

Do not attempt to mount or dismount kerbs in excess of 10cm (4").

Always mount and dismount kerbs with caution and directly facing the kerb.

Do not attempt to mount or dismount kerbs in reverse.

Hill climbing

Where possible always travel up or down hills or ramps directly facing the slope of the hill.

This scooter has been tested to climb an incline of no more than 50 metres (4 x 10m, then 1 x 10m) at 14 degrees (1 in 4) with a maximum user weight of 113kg (250 lbs). Do not attempt to climb inclines in excess of this. For inclines longer than 50 metres, you should not climb in excess of 11 degrees (1 in 5) with a max. user weight of 150kg (330 lbs).

Do not traverse across the face of a slope, in excess of 10° (1 in 6).

Always reduce your speed to the minimum setting when reversing down hills.

Do not attempt to drive along with the wheels at different levels, e.g. along the pavement and road simultaneously.

Please note that lap belts must only be obtained and fitted by an authorised Sunrise dealer.

Safety warning and user guidance

Lifting components over 10kg

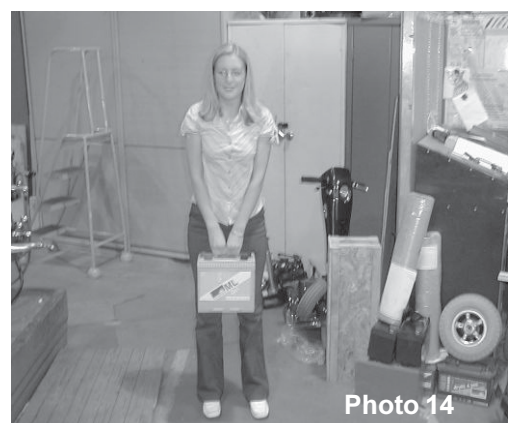
Please note that these instructions are to be used as a guide only.

Seat:

1. Lift rotate lever upwards and turn seat 90° clockwise (Photo 7).
2. Stand behind seat (Photo 8).
3. Fold backrest forward and flip up armrests.
4. Place hands on either side of seat base, lift seat vertically keeping back posture upright. Bend knees if required (Photos 9 & 10).
5. Place seat at desired location keeping back posture upright at all times, bend knees where required.

Batteries:

1. Remove battery panel (Photo 11) and unstrap and disconnect batteries (Photo 12).
2. Bend knees with battery positioned centrally in front of you (Photo 13).
3. Grab battery handle with both hands.
4. Lift vertically by straightening legs, keeping back posture upright (Photo 14).
5. Place battery at desired location, keeping back posture upright and bending knees if required.



Safety warning and user guidance

Batteries

Always check the batteries are sufficiently charged before setting off.

Always ensure that your batteries are in good condition and that no leakage has occurred.

Beware, battery fluids are corrosive and care should be taken at all times to avoid contact with it. If it comes into contact with the skin or clothing, wash immediately with soap and water. If it comes into contact with the eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical attention.

Keep batteries upright at all times, especially when transporting your scooter.

Always follow the procedures for battery charging set out in Pages 17 - 20.

Always charge your batteries in a room with good ventilation.

Do not charge your batteries in outdoor conditions.

Do not expose any part of your charger, battery or scooter to direct heat (i.e. Gas fires or naked flame).

Tyres

Do not inflate your scooter tyres using a powered airline.

Each tyre pressure should be upto 172 Kilopascals (25 P.S.I.).

Emergency Braking

Removal of the ignition key whilst moving will switch off the power causing immediate and full braking. This method of stopping is not recommended except in an emergency.

Caution!

Routine use of emergency braking will cause damage to your scooter.

Freewheel mechanism

Caution!

Transporting the scooter along a slope in freewheel mode can be dangerous. Take extra care if this is necessary. Always re-engage the freewheel device after use.

Never sit on your scooter whilst in freewheel since the scooter will no longer automatically stop.

Safety warning and user guidance

Transportation

When transporting the scooter remove seat and lower tiller (Fig. 2).

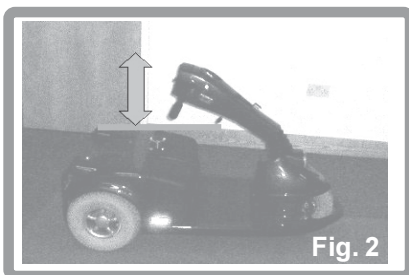
Always stow your scooter in the luggage compartment of your vehicle.

Always ensure your scooter or scooter parts are securely anchored when being transported.

Do not sit on your scooter whilst it is being transported in or on another vehicle.

Do not attempt to carry passengers on your scooter.

Do not attempt to tow another vehicle.



Use of mobile phones

Mobile telephones or two way radio devices must not be used while operating the vehicle.

Use of mobile phones or two way radios can cause excessively strong electromagnetic fields. This may interfere with the vehicle's electronic systems.

If mobile phones or mobile radios are required to be used, the vehicle must be brought to a halt and the power turned off before any such device is switched on or used.

If you are in any doubt about your ability to drive the scooter due to any medical condition or treatment, then consult your doctor.

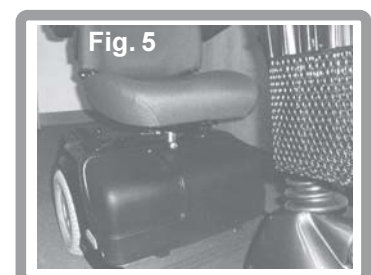
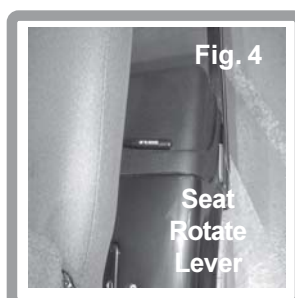
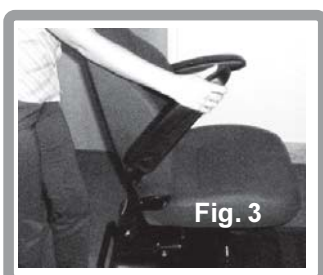
Seat Adjustment

Flip Up Armrests (Fig 3): By pulling up on the end of either armrest, the armrest will flip back for easy transfer on and off of your Onyx.

Seat Rotate Lever (Fig 4): This is found under the right side of the seat. Pull it up allows the seat to rotate 360 degree and release to lock in any 45 degree position desired.

Seat Height Adjustment: The seat post is height-adjustable, providing 4 height positions. Carefully unscrew the bolt and nut, and insert into desirable position and tighten nut

Sliding Mechanism (Fig. 5): This allows forward and backward movement of the seat. Pull up lever found under the front of the seat and use legs and body to move to the required position and release lever.



Tiller control functions

Hand Controls (Fig. 6 to 8)

Remember that your controls are located on the Tiller (Fig. 6). The handle bar angle can be adjusted to the most comfortable position by your local authorised Sunrise dealer.

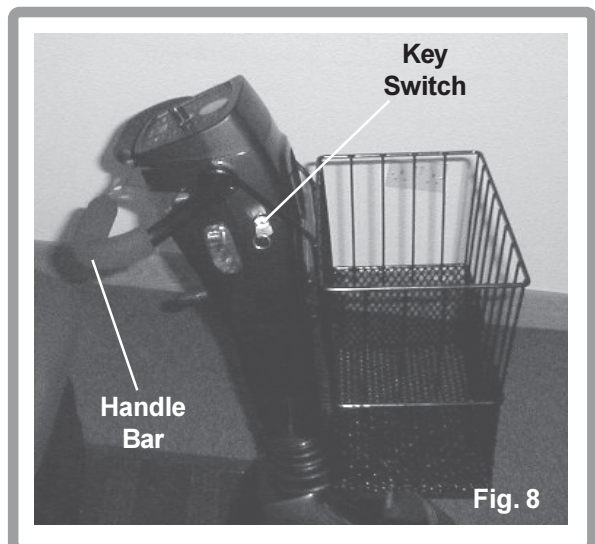
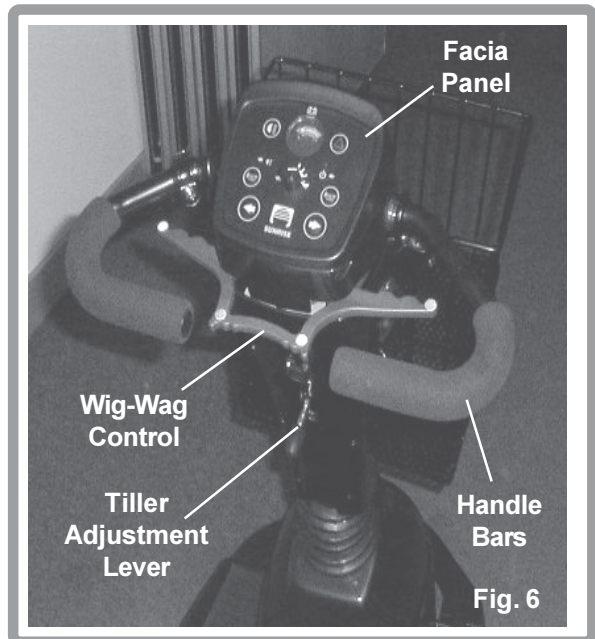
Wig-Wag Control (Fig. 7): Located under the handle bar grips. Your speed as well as forward and reverse motion is controlled here.

The right hand or left thumb moves the Onyx in a forward motion and also controls the rate of speed by the amount of the pressure applied.

The left hand or right thumb moves the Onyx in a reverse motion and controls the rate of the speed by the pressure applied.

The lever will return by itself when released, and you will stop gently. Braking is engaged when Wig-Wag is released.

Key Switch (Fig. 8): Located on lower centre of control panel. Insert the key vertically and turn 90 degree clockwise. To turn off scooter, turn key back to vertical position and remove.



Tiller control functions

Battery Gauge (Fig. 9): Located on the centre of the control panel. It indicates the average amount of charge you have in the batteries. Green indicates fully charged batteries. Yellow indicates caution and approximately half-charged batteries. Red indicates warning and less than half-charged batteries. Please be aware that the meter reading will fluctuate when accelerating from start or travelling uphill, this is normal. The reading is more accurate when the scooter is operating on flat level ground.

Indicator Switch (Fig. 9): Located on right/left corner of control panel. Press the left or right switch whenever left or right direction is intended. Press the switch again, the indicator light will be turned off.

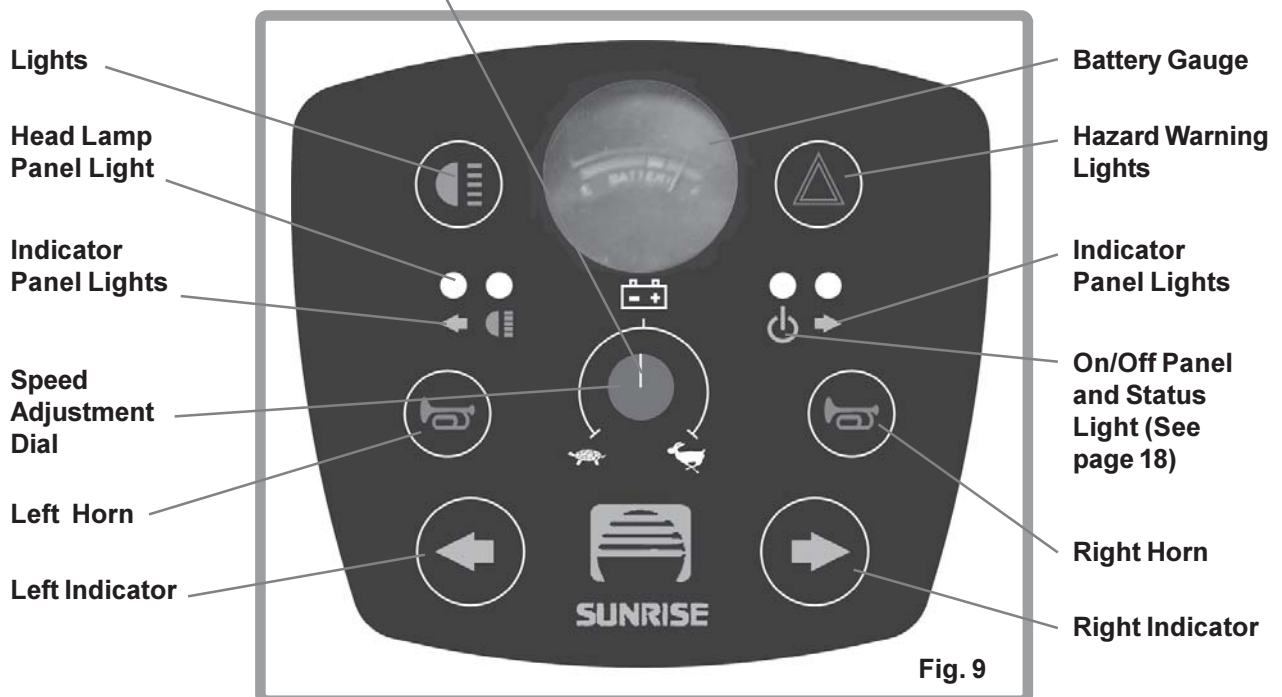
Speed Adjustment Dial (Fig. 9): This allows you to preset your desired top speed. Turn the dial anti-clockwise to slow for very gentle operation. Turn it clockwise to increase your speed.

Horn Switch (Fig. 9): Press switch to cause a warning sound.

Headlight Switch (Fig. 9): The scooter comes equipped with a head light which is activated by a push on/push off switch located near the centre of the control panel. The face of the switch is lighted in the "on" position. If the light is advertently left after the use, removal of key will extinguish headlight.

Hazard Light Switch (Fig. 9): This switch can be pushed on whenever the switch is turned on/off.

Important Note: When driving on the pavement the speed should be set to the half mark



Operating your Scooter

Freewheel mechanism

A freewheel device disengages the power drive to allow manual operation (Fig. 10).

The freewheel is selected by pulling up the lever which is located at the rear of the scooter. Once it has been selected a visual display will appear as shown (Fig. 11) and it will be accompanied by a high pitched sounding of the horn. This is a safety device to warn you that the scooter is in freewheel mode.

To stop the horn sounding whilst pushing your scooter, switch off the power using the key.

To turn off the freewheel and engage the motor, simply push the lever downwards.

Note: Use extreme caution in the freewheel mode, especially on slopes/inclines.



Fig. 10

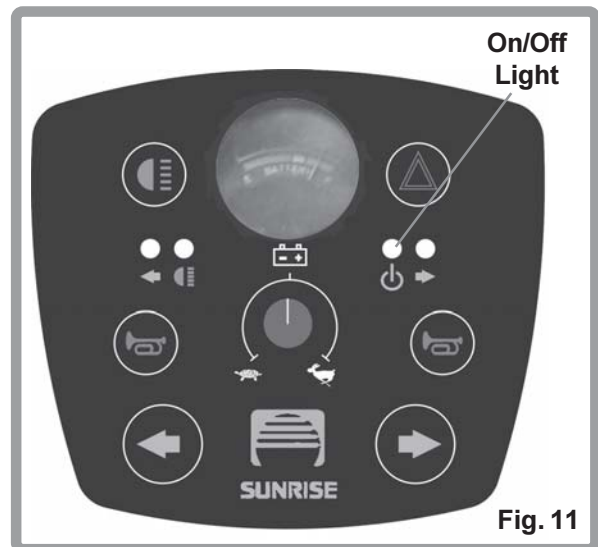


Fig. 11

Caution!

It is advisable that during the first few **sessions** of operating your scooter that the area around you is clear of obstacles and pedestrians.

Before operating your scooter, ensure the seat height has been adjusted to your satisfaction, and the tiller angle has been set for optimum safety and comfort.

Mounting

When first driving the scooter, be sure you and the Onyx are on a level surface. Put the key in its slot, but leave it turned off. Stand behind the seat and reach down to the Seat Lock Lever. It is located on the right side directly under the seat (can be configured on either side of the seat: standard position is on the right side).

Operating your Scooter

Basic Driving

1. Make sure you are properly seated on the Onyx and that the Speed Control Dial is turned fully anti-clockwise towards the tortoise.

Note: Reverse movement of scooter may not occur when Speed Control Dial is turned fully anti-clockwise.

2. Insert key into Key Switch and turn clockwise to on (90 degrees).
3. On tiller, use the Wig-Wag as described earlier.
You will gently accelerate. Release and you will gently stop. Practice these two basic functions until you get used to them.
4. Steering the Onyx is easy and logical. Just be sure to remember to get wide clearance when turning so that the rear wheels clear any obstacle.
5. Shortcutting a pavement corner can cause the back wheel to go off the pavement, causing problems, if the corner is very rough. Avoid this at all times by steering an exaggerated curve around the obstacle.

6. When steering in a tight spot, such as entering a doorway or when turning around, stop the scooter and then turn the handlebar to where you want to go, then apply power gently. This will make the Onyx turn very sharply. It is also recommended that the pre-set speed is set to a slower setting to aid control in tight spots.

Exercise caution when reversing

7. Reversing requires attention. Right thumb or left fingers operation of the Wig-Wag will reverse the scooter. Always steer in the opposite direction of the way you want to go. The more you use the Wig-Wag Control the faster you will go. Reverse speed is 50% slower than forward speed. If the Onyx does not move in reverse, turn the speed control dial clockwise until the scooter moves gently backwards.

Operating your Scooter

Braking

To stop the scooter simply release the Wig-Wag control, whilst keeping your hands on the handlebar. Two types of braking will automatically operate

- (a) Automatic regenerative braking, which slows the scooter to a standstill and
- (b) Automatic braking which will operate a short while after releasing the control lever and holds the scooter in position, even if you are on a hill.

This is not instantaneous and will engage in approx. 1/2 a wheel turn.

Emergency Braking

In the unlikely event of an unwanted movement of the scooter, using the ESBS handbrake or switching off at the key will bring the scooter to a stop.

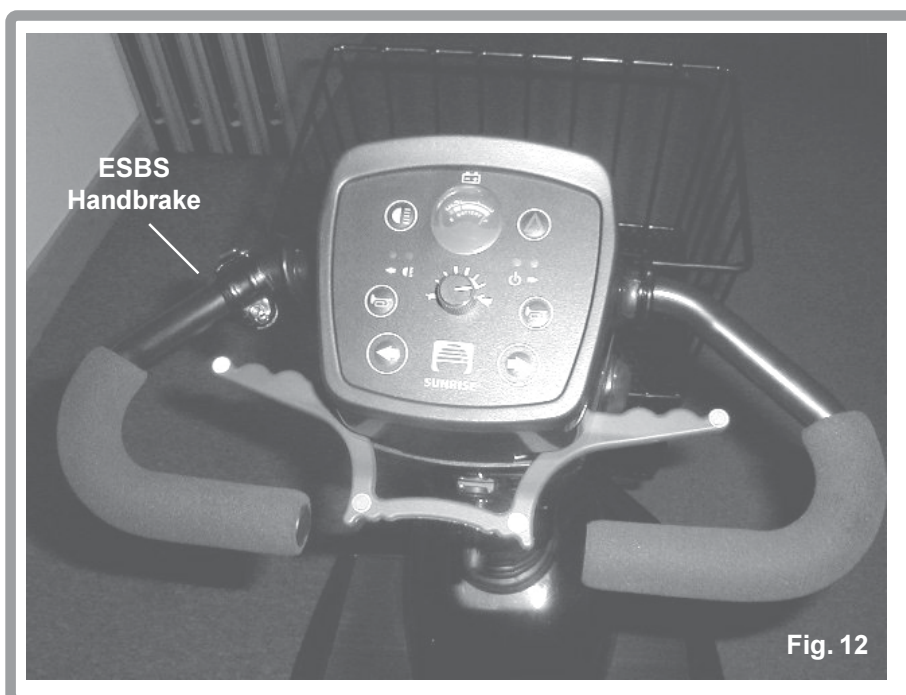
The Emergency Secondary Braking System (ESBS) is operated by using the handbrake on the tiller (Fig. 12) which will slow the scooter to a controlled stop.

Though very effective, emergency braking is extremely abrupt and must never be used in normal use.

Switching off

The scooter must always be switched off at the key.

Note: When the scooter is not in use for a long period of time always disconnect the batteries unless they are being charged.



Guidance for safe operation and use

Mounting and dismounting kerbs

Your scooter is capable of mounting and dismounting kerbs and obstacles up to 10cm (4").

Remember when climbing kerbs to drive forwards and face the kerb at 90°. Stopping about 30 - 60cm (1 - 2 feet) away, select a medium to high speed setting and drive up without stopping. Leaning forwards will also help maximise your stability. (Fig. 13)

Note: Heavier users will require higher speed settings.

To dismount a kerb, face the kerb at 90°, but select a low speed setting. Move forward and slowly allow your scooter to drop gently, front wheel(s) first from the kerb. The rear stabilising wheels may make contact with the kerb when dismounting this is normal.

Note: Low speed settings are also recommended when travelling down hill, particularly in reverse. Also, reduce your speed when turning corners. The anti-tip devices fitted with the scooter may interfere with kerbs when mounting and dismounting.

Travelling across slopes

Care should be taken traversing across a slope. (Fig. 14)

Note: Do not traverse across the face of a slope in excess of 10° (1 in 6).

Disregard of this advice could result in your scooter tipping.



Fig. 13

Maximum kerb height 10cm (4")
(Scooter shown to illustrate kerb mounting)



Fig. 14

Maximum slope 10° (1 in 6)
(Scooter shown to illustrate travelling across slopes)

Use on the pavement

When using your scooter on the pavement always be aware of pedestrians and situations which might require extra care. For example, young children and pets. Remember, especially when driving in public places, to drive with caution and regard for others at all times. When manoeuvring in confined areas, including shops, ensure the minimum speed is selected. If you leave your scooter outside a shop ensure that it does not obstruct pedestrians, and remember to keep the key with you for security.

In the UK always set the speed to half (See Fig. 9 on page 10).

Guidance for safe operation and use

Hill climbing

Your scooter is designed to travel up or down most reasonable slopes up to 14° (1 in 4) (Fig. 15), however both hill climbing capability and distance travelled between battery charges will be adversely affected by such things as:

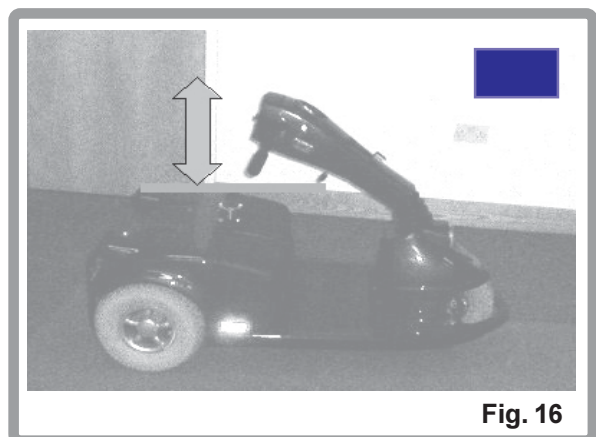
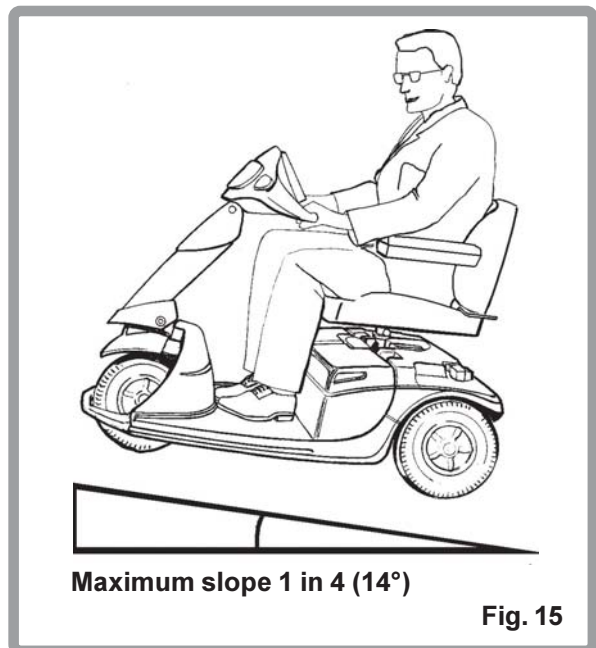
1. The weight of the user.
2. Terrain (e.g, grass or gravel).
3. Steepness of hills
4. Level of charge and the age of the batteries.
5. Extremes of temperature.
6. Use and weight of accessories.

Transportation

Your scooter may be disassembled quickly and simply for transportation by car. Alternatively, if you wish to use a ramp to load your scooter into the back of a car then:

- (i) Remove the seat, leaving the seat stem in position.
- (ii) Lower the tiller using the adjustment lever, to its lowest setting. (Fig. 16).
- (iii) Select the minimum speed setting, and using extreme care stand alongside the scooter drive it forward up the ramp, switch the scooter off, release the freewheel lever at the rear of the scooter and push the scooter fully into the car (Fig. 17).

Important: Remember to re-engage the drive unit by pushing the freewheel lever downwards to stop the scooter from moving. Always secure your scooter before transportation.



Guidance for safe operation and use

Lap Belt

Please note that a lap belt is available and must be fitted only by your local authorised Sunrise dealer.

The belt is attached to the armrests of the seat.



Fig. 18



Fig. 19

Ramps

The Onyx easily climbs ramps to access or within a building.

Where ever possible always travel up or down the ramp directly facing the slope (Fig 20 to 22).



Fig. 20



Fig. 21



Fig. 22

Programmable Controller

In order to keep you safe, under certain conditions your scooter may either not let you drive, bring you to a safe stop, or drive at a reduced speed or power.

Note: The controller can be programmed to alter the maximum speed, rate of acceleration and deceleration and the rate of braking. This will have an effect on driving performance. This should only be done by an authorised Sunrise dealer as it is possible to program the settings outside of the safe parameters intended.

If the scooter stops or will not drive the reason is normally indicated by a flashing status light on the dash board.

If your scooter operates, but seems to lack top speed and power; this indicates a flat battery and/or the controller has been worked so hard it is very hot and can not supply full power.

This will happen more frequently and more quickly on hot days, in hilly environments and with heavy drivers.

This action is perfectly normal and means the controller is working to keep itself, the motor, the batteries and you safe.

Batteries and charging

General information

Batteries are the power source for almost all of the modern mobility products available today. The design of batteries used in mobility products is significantly different from the batteries used to start a car for example. Car batteries are designed to release a large amount of power over a short period of time, whilst mobility batteries (commonly called deep cycle batteries) release their power, evenly, over a long period of time. Therefore, due to the lower production volumes and increased technological requirements, mobility batteries are typically more expensive. Commonly two 12 volt batteries are used together in a mobility product giving a total voltage of 24 volts. The size of the battery, (e.g. its available power) is expressed in amps per hour (e.g. 50amp/hr). The higher the number, the bigger the battery size, weight and, potentially, the greater the distance you can travel.

Battery types

Your scooter should be fitted with a pair of 50 Amp maintenance free batteries.

Always be careful handling the battery if the battery casing is broken, as corrosive acid may be leaking.

The capacity at 5 hrs. discharge time = 50 Ah.

ISO 7176-4 requirement 7.11.

Maximum size of batteries is 276mm x 176mm x 220mm.

The batteries are interchangeable and so can be connected to either side.

Please do not dispose batteries, always recycle.

Maintenance free

This type of battery uses a different method of carrying the electrolyte which is totally sealed within the battery's outer case. As the name implies, no maintenance is required other than regular charging. As the battery case is sealed, you can safely transport this type of battery without fear of acid spilling.

Furthermore, they are approved for transportation on aircraft.

It is recommended that the batteries are always stored upright.

Only use dry batteries supplied by an authorised Sunrise Dealer.

Battery care

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

Note: Do not expose any part of the battery to direct heat and when charging always place on a hard surface in a room with good ventilation. You should not charge the batteries in outdoor conditions.

Do not smoke when in the vicinity of charging batteries. Exclude all naked flames from the area.

Batteries and charging

Maintenance free battery care plan

1. Only use an approved Sunrise Medical charger compatible with the vehicle to be charged.
2. Charge your batteries every night, regardless of the amount of use your mobility device has had during the day.
3. Do not interrupt the charging cycle.
4. If your mobility device is not required for use, it should remain connected to the charger until required. This will not damage the batteries, so long as the mains socket/plug is left switched on.

Do not turn the mains socket off with the charger still connected to the batteries will eventually deplete the battery charge.

5. If you leave your vehicle for an extended period (more than 5 days) first charge your batteries for 24 hours, then remove charger lead and disconnect the main battery lead(s).
6. Failure to allow for recharge will damage the batteries and can lead to shortened distances and permanent failure.
7. Do not top up the charge of your batteries during the day. Wait until the evening for a full overnight charge.

8. As a general rule, maintenance free batteries take longer to fully charge than lead acid batteries.

Always remember to remove the plug from your scooter after charging to prevent driving away whilst attached. The scooter can not be operated when being charged.

9. The battery terminals need to be checked regularly for signs of corrosion. If any corrosion is apparent, then clean the terminals completely (a wire brush is ideal) and re-grease the terminals using Vaseline petroleum jelly, not ordinary grease. Ensure that the terminal nuts and bolts, cable clips and exposed cable are completely covered with jelly.

Caution!

Take care not to short circuit the battery terminals. When using metal tools, exercise great care. Remove all conductive jewellery (e.g. watches, necklaces etc.) before handling exposed batteries.

10. Following all the nine points above should result in a healthier battery, greater range for the vehicle user and a longer life for your batteries.

Batteries and charging

The range of your vehicle

Most manufacturers of mobility products state the range of their vehicles either in the sales literature or within the Owners Manual.

The range stated sometimes differs from manufacturer to manufacturer even though the battery size is the same. Sunrise Medical measure the range of their vehicles in a consistent and uniform manner, but variances still occur due to motor efficiencies and overall product load weight.

The range figures are calculated to I.S.O. Standard 7178, Part 4: Scooter Energy Consumption Theoretical Range.

This test is carried out in controlled conditions with new, fully charged batteries, on a level test surface and a user weight of 75kg. The range figures stated should be seen as a theoretical maximum and could be reduced if any single, or combination, of the following circumstances occur:

1. User weight heavier than 75kg.
2. Batteries whose age and condition are less than perfect.
3. The terrain is difficult e.g. very hilly, sloping, muddy ground, gravel, grass, snow and ice.
4. The vehicle climbs kerbs regularly.
5. The ambient temperature is very hot or very cold.
6. Incorrect tyre pressures in one or more tyres.
7. Lots of start/stop driving.
8. Also thick pile carpets within the home can affect range.

All this technical information may seem complicated and a little daunting, but please remember, that the battery sizes available on your Sterling Onyx should give sufficient range to cope with the majority of customer's lifestyles.

Off Board Battery Charger

Your scooter is fitted with an off-board charging facility. Please note that only chargers with a capacity of minimum 4 Amp and maximum 10 Amp supplied by your local authorised Sunrise dealer should be used.

1. Switch your scooter off.
2. Uncoil the charger lead.
3. Lift up the charge connector cover located on the tiller and connect charger.
4. ***Ensure that the charger plug is dry and in intact before connecting it to the mains and switching it on.***
5. A fuse is located in the fuse box at the rear of the battery compartment

Batteries and charging

Important safety warnings:

Do not expose any part of the battery to direct heat (i.e. naked flame, gas fire).

When charging always place on a hard surface in a room with good ventilation. You should not charge your batteries in outdoor conditions.

Always use Sunrise recommended batteries from your local authorised dealer. The off-board charger must be kept dry in temperatures between -25°C and +40°C and not be subjected to mechanical damage.

In all cases, the charger must only be repaired by a Sunrise authorised dealer.

Fuses

The fuse box has the following standard rated fuses

Charger	15Amp
Aux Power	5 Amp
Right Indicator	2 Amp
Left Indicator	2 Amp
Lights	2 Amp

Specifications

Overall Length

Overall Width

Maximum user weight

Maximum Gradient

Range

Speed

Turning Radius

Weight (excluding batteries)

Weight of heaviest part

Battery Capacity

Adjustable seat height

Front wheel diameter

Rear wheel diameter

Onyx

54" / 138cm

26" / 67cm

330lbs / 150kg / 23.5st

14° - 115kg user weight

11° - 150kg user weight

24m / 37km

8mph / 12kph

63" / 162cm

190lbs / 87kg

N/A

50 AH

19" - 23" / 48cm - 58cm

12" / 31cm

12" / 31cm

Routine maintenance

The following table gives an indication as to when routine maintenance checks should be made.

<i>There is no service manual available. Maintenance, fault finding and servicing should be carried out by an authorised Sunrise dealer unless otherwise indicated.</i>						
The checks below can be carried out by the user						
	Daily	Weekly	Monthly	Quarterly	Six Monthly	Annually
Battery charge check (Fig. D) Look at battery charge indicator on tiller before use to ensure batteries are fully charged.	<input checked="" type="radio"/>					
Inspection of connectors (Fig. C) Remove battery panel ensure all connectors are secure.		<input checked="" type="radio"/>				
Wipe over with a damp cloth Use only a damp soft cloth and mild detergent on panels, tiller and seat.		<input checked="" type="radio"/>				
Check tyre pressure Please use a footpump with pressure gauge to inflate tyres and/or a tyre gauge to check pressure. Each tyre should be inflated to 207 kilopascals (30psi).		<input checked="" type="radio"/>				
Long overnight battery charge Please ensure that the batteries are charged for a minimum of 8 hours.		<input checked="" type="radio"/>				
Check tyres for wear (See Fig. A and Fig. B) Look at the tyres to ensure that the tread is visible and continuous.				<input checked="" type="radio"/>		
The checks below must be carried out by an authorised Sunrise dealer						
Seat swivel, seat slide (where fitted)			<input checked="" type="radio"/>			
Inspection of wiring for chafing and wear			<input checked="" type="radio"/>			
Battery terminals Clean and protect with petroleum jelly.				<input checked="" type="radio"/>		
Ensure parking brake (where fitted) is correctly adjusted				<input checked="" type="radio"/>		
Check stabiliser wheels for wear				<input checked="" type="radio"/>		
Inspect motor brushes				<input checked="" type="radio"/>		
Full service by dealer						<input checked="" type="radio"/>



Fig. A



Fig. B



Fig. C

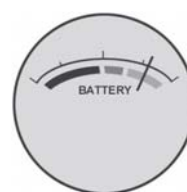


Fig. D

Storage

When storing your scooter for long periods (in excess of one week), charge batteries for 24 hours and then disconnect the batteries to minimise battery discharge.

Electronic faults

Do not attempt to investigate faults in the control box, the control pod or charger as the design and set up of the electronics is of a safety critical nature.

Spare parts are available from authorised Sunrise Dealers.

Replacing bulbs

Caution! Disconnect batteries before changing bulbs.

Indicators	24v 5w
Rear lights	24v 5w
Headlight	24v 18w

Always replace the bulbs with the correct rating or incorrect operation will result.

Wheels

N.B. Wheels should only be removed and refitted by a Sunrise dealer, ensure that the nuts are replaced with Sunrise nuts.

Service history

This section is designed to assist you in keeping a record of any service and repairs to your scooter. Should you decide to sell or exchange your vehicle in the future, this will prove most helpful to you. Your Service Agent will also benefit from a documented record and this manual should accompany the scooter when service or repair work is carried out. The Service Agent will complete this section and return the manual to you.

Customer Name. _____					Date Scoota purchased _____				
Address _____					Model _____				
_____					Colour _____				
Postcode _____					Serial No. _____				

YEAR	1	2	3	4	YEAR	1	2	3	4
Service dates					Service dates				
Controller					Upholstery				
On/off switch					Seat				
Output plug					Back				
Operation					Armrests				
Dynamic braking					Electrics				
Programmable settings					Condition of loom				
Batteries					Connections				
Levels					Lights (where fitted)				
Connections					Test run				
Discharge test					Forwards				
Wheels/tyres					Reverse				
Wear					Emergency stop				
Pressure					Left turn				
Bearings					Right turn				
Wheel nuts					Up/down slope				
Motors					Over obstacle				
Wiring					Parking brake (where fitted)				
Noise					List items repaired/adjusted				
Connections									
Brake									
Brushes									
Chassis									
Condition									
Steering									

Dealer stamp	Dealer stamp
Date: Signed:	Date: Signed:
Dealer stamp	Dealer stamp
Date: Signed:	Date: Signed:



How to use this manual

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

Your scooter will reach you in excellent condition having been personally inspected before leaving our premises. By following the guidelines for maintenance on page 22 your scooter will maintain its first class condition and give you years of complete reliability and satisfaction.

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Owner's Manual



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