

# ROMA MEDICAL



Model – Denver S130 / Denver Plus S135

## USER MANUAL

*Please ensure that this manual is read and understood before using the scooter.*

<b>Contents</b>	<b>Page</b>
<b>Introduction</b>	<b>3</b>
<b>Intended Use</b>	<b>3</b>
<b>Technical Specification</b>	<b>3</b>
<b>Feature Guide</b>	<b>4</b>
<b>Safety Advice</b>	<b>5</b>
<b>Assembly</b>	<b>6</b>
<b>Adjustments</b>	
• Tiller angle	<b>7</b>
• Seat swivel	<b>7</b>
• Seat removal	<b>8</b>
• Seat height	<b>8</b>
• Arm width adjustment	<b>8</b>
<b>Tiller Controls</b>	<b>9</b>
<b>Brake Release / Freewheel Operation</b>	<b>10</b>
<b>Starting to Drive</b>	
• Getting Started	<b>11</b>
• Moving Off	<b>11</b>
• Steering	<b>11</b>
• Reversing	<b>11</b>
• Ramps / Slopes	<b>12</b>
• Surfaces	<b>12</b>
• Transferring	<b>12</b>
<b>Storage</b>	<b>12</b>
<b>Batteries and Battery Charger</b>	<b>12 - 13</b>
<b>Dismantling &amp; Re-assembly</b>	<b>14</b>
<b>Maintenance</b>	<b>15</b>
<b>Troubleshooting</b>	
• Fuses	<b>15</b>
• Check List	<b>15</b>
<b>Further Information</b>	<b>17</b>
<b>Charge Socket Locations</b>	<b>19</b>
<b>Warranty</b>	

## Introduction

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Congratulations on your purchase of the ROMA **DENVER / DENVER PLUS** scooter. This scooter incorporates the latest innovative designs. The ROMA **DENVER** can be used in confined spaces both indoors and out. A direct drive rear transaxle and electromagnetic brake give a safe and efficient ride.

## Intended Use

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The ROMA **DENVER** is intended for indoor or outdoor use in pedestrian areas by a single individual with limited mobility up to a maximum weight of 136kg (21st). The acute manoeuvrability prohibits the use by persons who are severely physically impaired or those who have balance difficulties. Your assessor / healthcare professional will determine the suitability of the scooter for each individuals' intended use.

**Note: Persons with lower body amputations should not use this device unless evaluated with artificial limbs fitted, as stability may be compromised due to an irregular centre of gravity.**

## Technical Specification

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### Class 1 Medical Device

### Class Indoor/Outdoor Vehicle

<b>Overall Size</b>		<b>Seat Dimensions</b>	
<i>Length</i>	1120mm	<i>Width</i>	440mm
<i>Width</i>	550-650mm	<i>Depth</i>	380mm
<i>Height</i>	930-970mm	<i>Backrest height</i>	370mm
<i>Battery – S130</i>	2 x 12Ah	<i>Range – S130</i>	16km / 10m*
<i>S135</i>	2 x 38Ah	<i>S135</i>	32km / 20m*
<i>Maximum user weight</i>	136kg / 21st	<i>Battery charger (off board)</i>	2 Amp (S130) 6 Amp (S135)
<i>Safe working slope</i>	6° / 10%	<i>Turning Radius</i>	1440mm
<i>O/All Weight - S130</i>	56kg / 123lbs	<i>Heaviest Part</i>	20.5kg / 45lbs#
<i>S135</i>	73kg / 160lbs		
<i>Max. Speed</i>	6kmph / 4mph		

\* Passenger weight, rough ground conditions, low temperatures and battery condition can affect maximum range.

# Component weights:-

S130 Denver:-

Front Chassis – 20.5kgs / Rear Chassis – 13.5kgs / Battery Pack – 9kgs / Seat 13kgs

S135 Denver Plus:-

Front Chassis – 20.5kgs / Rear Chassis – 13.5kgs / Battery Pack (ea) – 13kgs / Seat 13kgs

'DENVER'



1. Tiller control head
2. Detachable swivel padded seat with fold down back
3. Detachable battery pack
4. Non marking tyres
5. Tiller angle adjustment
6. LED front light
7. Detachable shopping basket

## Safety Advice

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### DO:

- Read this manual carefully before using your scooter.
- Turn the power off when transferring to and from the scooter.
- Select a slow speed when going down gradients (max 6°) or over uneven ground.
- Keep your feet on the scooter whilst driving.
- Ensure the seat is in a fixed position facing forwards before driving.
- Ensure the tiller is secure.
- Ensure the batteries are fully charged before your journey.
- Avoid rough or soft terrain and long grass wherever possible.
- Be aware of other road users and pedestrians.
- Turn the power off when not in use.
- Follow the maintenance guide to ensure safe operation of the scooter.
- Always remove the keys if leaving the scooter unattended. Unauthorised persons/children may use the scooter resulting in injury.



### DO NOT:

- Carry passengers.
- Exceed inclines over 6°.
- Traverse inclines.
- Attempt inclines if the surface is slippery.
- Turn sharply at full speed.
- Exit or enter the scooter unless the power is switched off.
- Switch off the power whilst driving – this will cause the scooter to stop abruptly (see emergency procedures – page 17).
- Use the scooter where you cannot safely or legally walk.
- Attempt to climb or descend kerbs except drop down kerbs.
- Use the scooter if under the influence of alcohol or any medication.
- Use a mobile phone whilst driving.
- Attempt to negotiate steps or escalators.
- Sit on the scooter if being transported in a vehicle.
- Attempt to tow any other devices.
- Exceed the stated weight limit.
- Connect any other devices to the batteries as this could cause permanent damage and void your warranty.
- Use any other batteries/charger other than those supplied by ROMA.
- Travel through water or over soft terrain (mud, sand etc.)
- Lift the scooter by the shroud assembly or any plastic part.
- Sharply shift your centre of gravity as this could make the scooter unstable.
- Freewheel down hills. This will damage the motor and brake and void the warranty.
- Tow the scooter with any other vehicle in the event of a breakdown.

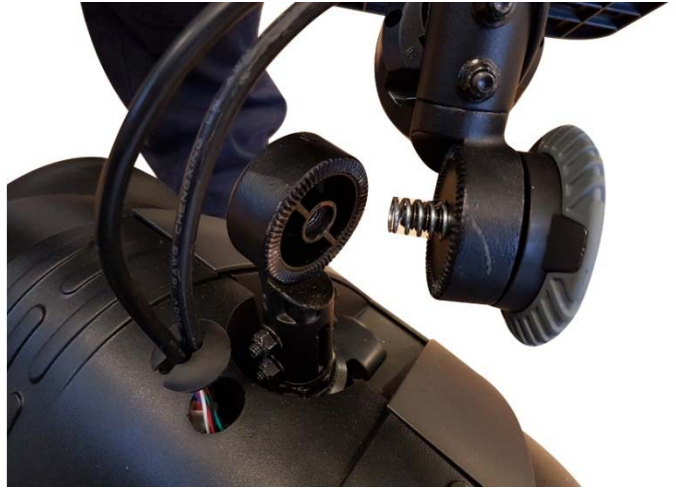
Every care has been taken to ensure that your scooter will give you safe, reliable service provided you adhere to the advice given above.

## Assembly

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Before use your scooter will require the fitting of the tiller and seat post.

To fit the tiller assembly, you will require the hand-knob and spring. Fit the hand-knob through the right side hinge and locate the spring over the shaft of the bolt. Align both hinge joints and locate the thread of the hand-knob into the right side of the hinge. Adjust the tiller to the desired angle and tighten the hand-knob fully.



There are two electrical connections - with white and black plugs. These should be connected to the matching colour connector. When connected carefully push the connectors one at a time through the hole in the chassis cover and fit the grommet (a small amount of washing up liquid rubbed on the grommet can make it easier to locate).



To fit the seat post the rear part of the scooter will need to be removed (see page 14) to access the securing bolt.

Locate the seat post and align the holes in the frame and the post at the desired height. Tighten the bolt using the allen key and spanner provided. Re-fit the rear part of the scooter.



## Adjustments

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### Tiller Angle Adjustment

At the bottom right hand side of the scooter you will find the angle adjustment handwheel. To adjust the angle, loosen the handwheel by turning anti-clockwise. Once the desired angle is achieved tighten by rotating clockwise. Ensure the tiller is fully secure before using the scooter.



### Seat Swivel / Seat Depth

The seat has a lockable swivel base to allow easier transfers. Simply push the lever circled forward and rotate the seat at the same time. Releasing the lever will allow the seat to lock in position. The seat locks in 45 degree intervals. Always ensure the seat is in a locked position before mounting or dis-mounting the scooter. The seat should always be locked facing forward whilst driving.

The seat depth can be adjusted by lifting the yellow lever (arrowed below) on the left underside of the seat. Slide the seat to the desired position and release the lever to lock in place



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### Seat Removal

To remove the seat, fold down the back of the seat and simply lift the seat away from the chassis while pushing the seat swivel lever forward.

***Do not hang baggage or other objects on the back of the seat as this may affect stability.***

### Seat Height Adjustment

Remove the seat and rear part of the scooter (see page 14). Undo the locking bolt from the frame using the tools supplied and set the seat to the desired height. Re-fit the locking bolt.

Re-assemble the rear part of the scooter and fit the seat.



***The higher the seat is adjusted; stability may be affected due to the higher centre of gravity.***

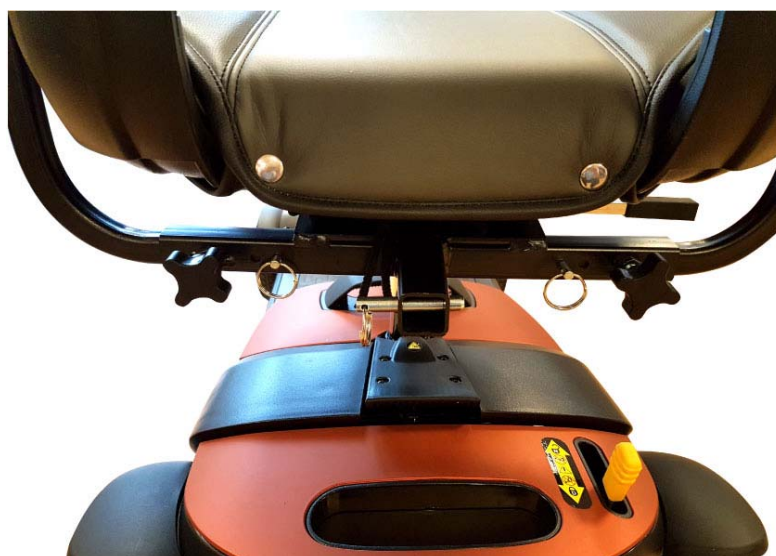
### Arm Adjustments

On each side of the seat towards the back there are two hand knobs and locking pins, these are to adjust the width of the armrests or to remove them for transport.

Turn the hand knobs anti-clockwise to loosen and pull out the locking pins. Once the knobs are loose you will be able to adjust the armrests in or out to the desired width. Re-tighten when a comfortable width has been achieved and reinsert the locking pins fully or remove the armrests completely for transport.

***If removing the armrests for transport, ensure that the hand knobs are re-tightened to avoid them rattling loose and falling out.***

***Do not apply full body weight to the armrests for transferring. Lift the arm up out of the way to transfer to another seat.***







### A – Battery Gauge

This gauge gives you a guide to the amount of charge left in the scooters batteries. This will give the truest reading when the scooter is in motion. ***Always fully charge the batteries before driving your scooter and never let the batteries become completely drained, as this may cause permanent damage to the batteries.***

### B – Horn

The button operates the scooters horn. ***This should only be used to warn others of your presence and not as a rebuke of any form.***

### C – Maximum Speed Knob

The speed control enables you to set the maximum speed of the scooter. Turn clockwise to increase the maximum speed and anti-clockwise to decrease. ***Always start at a slow speed until accustomed with the characteristics of your scooter. Do not put excessive pressure on the dial. Only turn as far as the stops.***  
***When driving in pedestrian areas such as shopping precincts and busy pavement areas always respect other pedestrians and turn the maximum speed down so that the scooter travels at the walking pace of others around you.***

### D – On/Off Key

The keyswitch is located on the top of the tiller. Simply insert the key and turn clockwise to switch the power on. The display will light up to indicate the power is on. There may be a slight delay before the thumb levers operate as the controller checks the scooters circuits. ***Never leave the key in the switch unattended to prevent unauthorised use. Do not switch the power off to stop the scooter unless it is an emergency. The scooter will stop very abruptly if stopped in this way.***

### E – Front Light

This button operates the LED headlight.

## Brake Release / Freewheel Operation

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The brake release lever is situated at the right rear of the scooter. This lever allows you to disengage the drive mechanism and push the scooter in 'freewheel' mode. To disengage the drive push the lever forward until you reach the stop position (indicated by the 'N' direction.)

Simply push the lever toward the back of the scooter to re-engage the drive mechanism ('D' position.) The scooter will not operate when the lever is in the disengaged position. The scooter must be turned off and on by the key switch to reset the circuits before it will resume normal operation. The scooter will beep continually if the brake is disengaged when it is switched on.



*Caution! Never leave the scooter unattended whilst in freewheel mode as it will roll away down an incline. 'Freewheel' mode should only be used in an emergency to move the scooter due to power failure. NEVER move the scooter in this mode whilst it is occupied. NEVER tow the scooter.*

When in freewheel mode the scooter may be pushed on level ground at a walking pace. The scooter will 'auto-brake' if this speed is exceeded.

NEVER sit on the scooter and freewheel down a hill as this can cause permanent damage to the motor, brake and controller due to excessive regenerative braking. As above the scooter can only be moved at a walking pace when in freewheel mode.

## Starting to Drive

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### Getting Started

✓ **Note:** You must fully charge the batteries prior to first use (see 'Batteries and Charging')

Select an area with plenty of space.

Mount the scooter by lifting the arm and sliding onto the seat. **Ensure the seat is securely locked in the forward facing position before driving.** Adjust the tiller and seat if necessary (see 'Adjustments'). **DO NOT use the tiller to fully support you during transfers.**



The scooter's speed and direction is controlled by the 'wig-wag' lever. The arrows shown in the image above show the direction in which the scooter will move when the lever is operated as indicated.

### Moving Off

Insert the key and switch on the power and initially set the speed control to a low setting. The further you pull the lever the faster the scooter will travel, but only to the maximum speed that has been selected. Release the lever and the scooter will come to a smooth controlled stop.



**Caution!** DO NOT switch off the power to stop the scooter as this will cause the transmission to lock and the scooter will come to a sharp stop, which could possibly cause injury. This procedure should only be used in an emergency.

### Steering

Steering the scooter is light and easy. Ensure you give obstacles a wide clearance to avoid the rear wheels catching. When steering through limited spaces, turn the tiller in the direction that you wish to go and apply power gently. The scooter can turn very tightly with complete stability at slow speeds.



**Caution!** NEVER turn sharply at high speeds as it can make the scooter unstable. The maximum speed should be set at 50%.

### Reversing



Before reversing ensure the area behind the scooter is free from any obstacles or hazards. Adjust the speed setting to low before you reverse. Steer wide of all corners and obstacles.

**Caution!** Do not reverse onto a main thoroughfare.

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### Ramps / Slopes

The stability of your scooter depends on several factors such as seat height, angle of gradient and the users height and weight. When approaching an incline, do so directly and not at an angle and avoid making turns where possible.



### Surfaces

Your scooter will perform well over many surfaces. However, avoid long grass, loose gravel, sand, mud and ice.

### Transferring

Lift up the armrest from the side you wish to leave or sit on the scooter. Use an aid for balance if required. DO NOT use the tiller or armrests to support the full weight during transfers.

### Storage

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Your scooter should be stored in a dry environment, preferably a garage or shed. Tarpaulins and covers may create condensation during certain weather conditions.

If your scooter is to be stored for prolonged periods, fully charge the batteries and disconnect the battery plugs.

Very cold weather can severely deplete battery condition (up to 40%). If left for any period during cold weather it is very important that the scooter is fully charged before use.

### Batteries and Battery Chargers

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#### Batteries

***Charge the batteries completely (8-12 hours) prior to first use.***

The ROMA **DENVER** uses two 12Amp (\$130) or 38Amp (\$135), 12 Volt AGM batteries. The batteries are located in a battery pack under the front of the seat. They can be easily removed by simply lifting by the handle(s) on the top (\$135 – remove the right side battery pack first). Always make sure the batteries are correctly relocated before use.

Low temperatures, rough terrain and the weight of the user can affect battery performance. Your battery gauge is a guide only to the level of charge remaining in your batteries and will give its best indication while the scooter is moving.

***Note: Batteries recommended by ROMA MUST be used if they need to be replaced. An authorised ROMA dealer must carry out battery replacement.***

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### Battery Charger

The battery charger is a 2-amp (S130) or 6-amp (S135) switch mode type off board. The battery charging port is located on the front of the battery box (see image below). Before using your scooter for the first time be sure to fully charge the batteries, this may take up to 12 hours.

To charge the batteries connect the 3-pin male charger plug into the charging sockets – see page 19. Plug the 3-pin mains plug into a wall socket and switch on. A constant red light will show when the battery charger is connected and charging is underway. The green LED will light when the charging cycle is complete. Always turn off mains power to the charger before disconnecting the plug from the battery box.



**Caution!** Do not charge the batteries for longer than 12 hours. Always charge the batteries in a well-ventilated indoor area. You must still maintain charging the batteries even if the scooter is not to be used for a prolonged period of time (2 to 3 weeks). Failure to do so could result in permanent damage and render the batteries unusable. Wherever possible do not interrupt the charge cycle until the batteries are fully charged. Continual interruption can permanently damage the batteries. If the charging lead should get damaged discontinue use immediately and seek a replacement from your dealer. **ONLY USE THE CHARGER SUPPLIED WITH YOUR SCOOTER.** Do not leave the charger plugged into the charger port after the charge is complete. **ALWAYS** remove the keys from the scooter when charging.



### Disposing and recycling of used batteries

Batteries must always be recycled correctly. Do not dispose of them with your domestic refuse.



For further information regarding your nearest recycling facility please contact your local authority.

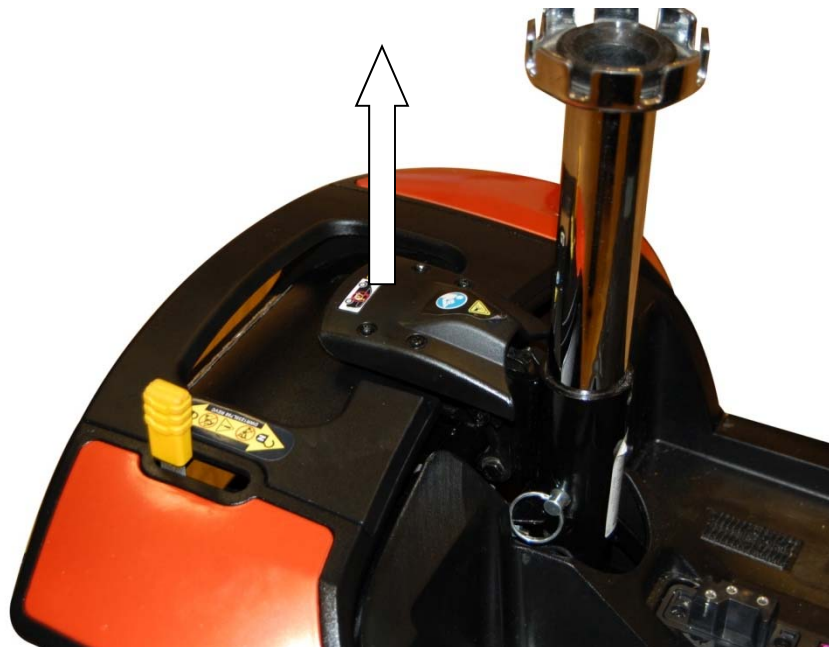


## Dismantling & Re-assembly

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The scooter can be easily and quickly dismantled for easy transportation. Always remove the seat and battery pack(s) before attempting to disassemble the scooter.

Lift the front part of the scooter by the seat post whilst pulling up on the release lever as indicated by the arrow below. The scooter will now be in two parts.

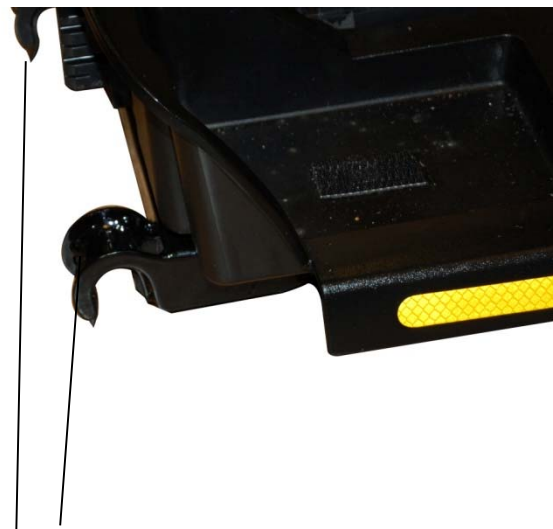


To re-assemble, let the rear section of the scooter rest backwards on the anti-tipper wheels. Lift the front section by the seat post towards the rear section and locate the 'lugs' on each side of the chassis over the main tube of the rear section as shown below. The front can then be gently lowered into position. When lowered, push down on the seat post and you will hear the front and rear section click into place.

To ensure a secure connection is made pull up on the seat post to make sure the rear part is properly connected.



Rear Chassis Main Tube



Front Chassis Lugs

## Maintenance

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### Product Life Expectancy

Your scooter has been designed to provide the user with a long, reliable life provided it is correctly maintained and regularly serviced by an authorised dealer. However, due to inevitable wear and tear and technological improvements it is recommended that the average useable life of this scooter is five years.

### General Cleaning

The shrouds and seat of the scooter should be cleaned using a damp cloth and gentle detergent. Do not use abrasive cleaners or solvents, as this will damage the plastic components. Do not spray water (*hose or pressure washer*) onto the scooter as this may cause damage to the electronics.

### Routine Maintenance

We suggest that your scooter should undergo a full service at least once a year by an authorised ROMA dealer.

Please check the following on a weekly basis:

- Tyres are in good condition
- Front wheels spin freely
- Moving parts, pivots and frame fixings are not damaged or worn
- All hand knobs and levers are secure

## Troubleshooting

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Your scooter is fitted with the latest in electronic controls that are programmed to protect the electrical system from abnormal overloads.

### Fuses

There are two fuses on the battery cables to give protection against possible overload on the wiring.

### Check List

If your scooter fails to operate, please check the following:

- The unit is switched on.
- All plugs and connections are firmly fixed.
- Battery level shows full charge.
- Freewheeling device is in the drive position.
- Circuit breaker has not tripped if fitted. (See previous image)

## Continued.....

If the freewheel device has been operated with the scooter switched on, the scooter will not operate until the key switch has been turned off and on again.

Should a fault occur, the fault will be identified by a beeping sequence which relates to the fault in the table below.

Beep Code	Description	Scooter Condition	Action
1	Charge batteries	Scooter may run slowly	Batteries less than 23.3v. Charge as soon as possible.
2	Bad motor connection.	Scooter will not run	Check all connections between the motor and the controller.
3	Motor short circuit.	Scooter will not run	Check all connections between the motor and the battery.
4	Not used.		
5	Not used.		
6	Inhibit circuit activated.	Scooter will not run	Check charger is not still connected or a controller fault.
7	Throttle pot error.	Scooter will not run	Check wig wag lever is in neutral position. Faulty potentiometer.
8	Controller fault.	Scooter will not run	Check all connections are secure. Switch scooter on and off, this may clear the code.
9	Magnetic brake error.	Scooter will not run	Check scooter is not in freewheel. Check brake connections.



**Note:** Should your scooter fail to operate after checking these possible problems, consult your local ROMA dealer immediately.

**If the scooter is switched on and not operated for a period of time (approx 10 minutes) it may enter 'sleep' mode. Simply switch the scooter off and on to reset the controller.**



## Further Information

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### **Safety Information Regarding Electromagnetic Interference (EMI)**

Scooters and powerchairs are designed to operate under certain conditions. However, radio waves or electromagnetic fields may affect the operation of the scooter. The source of EMI could be radio or television transmitters or portable devices such as mobile phones, portable CB radios etc.

Should any unintentional movement occur turn the scooter off as soon as safely possible.

### **Solar Energy**

During periods of sunny weather, it is possible that surfaces of your scooter may reach high temperatures (as with motor vehicles). Please take precautions if leaving the scooter in direct sunlight for any period of time. Seek shade or cover the seat and hand controls to keep any temperature increases to a minimum.

### **Health Factors**

Suitability for this product has been assessed on the user's current state of health. It is essential that the user regularly monitor their ability to use the scooter safely.

### **General Use**

Take heed of the information given in this manual regarding safety and the maintenance of your scooter. If adhered to, your scooter should give you years of reliable mobility.

### **Storage and General Care**

We recommend that the scooter is always stored in a dry environment such as a garage or shed to protect the chassis and other components from corrosion. Do not leave the scooter outside during rainstorms. If the scooter is wet, wipe with a dry cloth to ensure there is no ingress of water into the internal components of the scooter.

During everyday use, do not use in rain showers or travel through puddles. Avoid use in areas where the scooter could become contaminated with sand or abrasive materials.

### **Emergency Procedures**

Should your scooter behave erratically or become unresponsive whilst driving, release the wig-wag lever so it may return to the neutral position and switch off the power at the key / switch. Use the emergency handbrake if fitted. These procedures will stop the scooter and activate the braking system, preventing any further uncontrolled manoeuvres.

*Note: Switching the power off at the key / switch can cause the scooter to stop abruptly and should only be used to stop the scooter during an emergency as this can damage the drive unit.*

### **Product Stability**

Scooters and powered wheelchairs are designed to allow the user flexibility of movement in restricted areas. Driving at maximum speed and attempting sharp turns can create a situation where the product becomes unstable. Therefore it is essential that the user pay attention to the guidance set out in this manual.

**For maximum stability the speed setting should be set up to 50% of the maximum available (halfway between the tortoise and the hare or just entering the red sector on the speed indicator depending on the model.)**

The main factors affecting stability are:

- Maximum speed setting
- Seat height
- User movement
- User's manoeuvres
- Gradients or slopes

Please keep your speed to a level where you can safely stop without having to make any erratic turns.

Do not load bags etc. on the back of the seat as this will affect the centre of gravity and could cause instability.

Do not lean outside of the 'footprint' of the product, especially whilst moving.

Avoid making turns on gradients or slopes.

### **Driving in Pedestrian Areas**

As mentioned previously, when using the scooter in pedestrian areas always lower your maximum speed to that of the pedestrians around you. Remember the stopping distance of your scooter and always allow enough space to stop safely to avoid collisions with pedestrians or other objects.

## Charging Socket Locations

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The scooter has two locations to charge the batteries. Both the S130 and S135 have a socket on the rear of the tiller. For off board charging both scooters have charging sockets on the battery packs. The S130 has a charge socket on the front of the battery pack and the S135 has a charge socket on the top of the left side battery pack to enable the batteries to be charged off-board.

Tiller:



S130:



S135:



## Warranty Terms and Conditions

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This is to certify that your Roma Medical product is warranted for a period of 12 months from the date of original purchase. This warranty is not transferable.

***Should a defect or operating fault arise within this period the Dealer from where the product was originally purchased should be notified immediately. Failure to register the fault may invalidate the warranty.***

***The Dealer from where the product was purchased is responsible for any warranty repairs.***

Roma Medical warrants that if a fault occurs within this period due to faulty workmanship or materials that the product will be repaired (or replaced at the Company's discretion) free of charge.

Any unauthorised modifications will invalidate the warranty.

Parts which are subjected to normal wear and tear, accidental damage, neglect or misuse are excluded from this warranty. Normal wear and tear includes tyres, chassis covers, bulbs, seat coverings etc.

Component parts replaced outside this period carry a six-month warranty. (Standard terms and conditions apply for this period).

Model:

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Serial No:

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Purchase Date:

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Dealer Stamp

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Roma Medical reserve the right to change specifications without prior notice

