SAVVY DEFENDER

SHREWD . PRACTICAL . JUST MAKES GOOD SENSE



USER MANUAL

EN

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1 Welcome

Congratulations on purchasing your Scooterpac Savvy Defender Defender. With regular maintenance and proper operation your Savvy Defender Defender will give you many years and countless miles of rewarding experiences. This manual contains the information that you and your authorised Scooterpac dealer will need to keep your Savvy Defender Defender in good working order.

If you have any questions, please contact the Scooterpac dealer that supplied your Savvy Defender Defender, and they will be happy to help you.

Please fully charge your scooter, at least once a week to maintain battery life & maximise performance. Even when the scooter isn't in use.

This Savvy Defender Defender was originally supplied by:

Dealer Name _____

Address 1 _____

Address 2 _____

Town/City _____

Postcode _____

Phone Number _____

E-mail Address _____

Website _____

2 Intended Purpose

This mobility scooter has been designed to help people with limited mobility move around more easily and independently. The user has full control over the mobility scooter.

The Scooterpac Savvy Defender Defender is designed to be operated by a single person, in accordance with the legal requirements for operating a Class 3 invalid carriage in the jurisdiction in which it was sold. Operating the vehicle outside of these limitations may invalidate your warranty.

3 Important Information

	An authorised mobility supplier or qualified technician must perform the initial setup of this mobility scooter. They must follow all the procedures in this manual.

The instructions in this manual are based on the expectation that the mobility scooter has been correctly selected for user.

The manufacturer also expects the user has received assistance from the authorised mobility supplier and/or prescribing health care professional in ensuring the user clearly understands how to safely operate this product.



Scooterpac
Elevation House
23 Commercial Road
Lowestoft
Suffolk
NR32 2TD
United Kingdom

Certifications



Labelling: Symbol list explanation

	Manufacturer Name and Address
	Medical Device
	Lot Number
	Unique Device Identification
	CE Mark
	European Authorised Representative
	Importer Name and Address

4 Electromagnetic Interference (EMI)

This motorised scooter has an immunity of 20V/m which should protect it from Electromagnetic Interference from radio wave sources. These EM waves are invisible, and their strength increases as one approaches the source. All electrical conductors act as antennas to the EM signals and to varying degrees, all power wheelchairs and scooters are susceptible to electromagnetic interference. This EMI could result in unintentional movement and or erratic control of the vehicle. Motorised scooters may be susceptible to EMI emitted from sources such as radio and TV stations, amateur radio transmitters and two-way radios.
The interference can cause the scooters to brake or move by itself.

Each motorised scooter can resist EMI up to a certain intensity called its "immunity level." The higher this level the greater the protection. Current technology can achieve at least 20V/m immunity level which will provide suitable protection from the more common sources of radiated EMI.

Because EM energy rapidly becomes more intense as one moves closer to the source the EM fields from hand-held radio wave sources are of special concern. It is possible to bring high levels of EM energy very close to the scooter control system while using these devices.

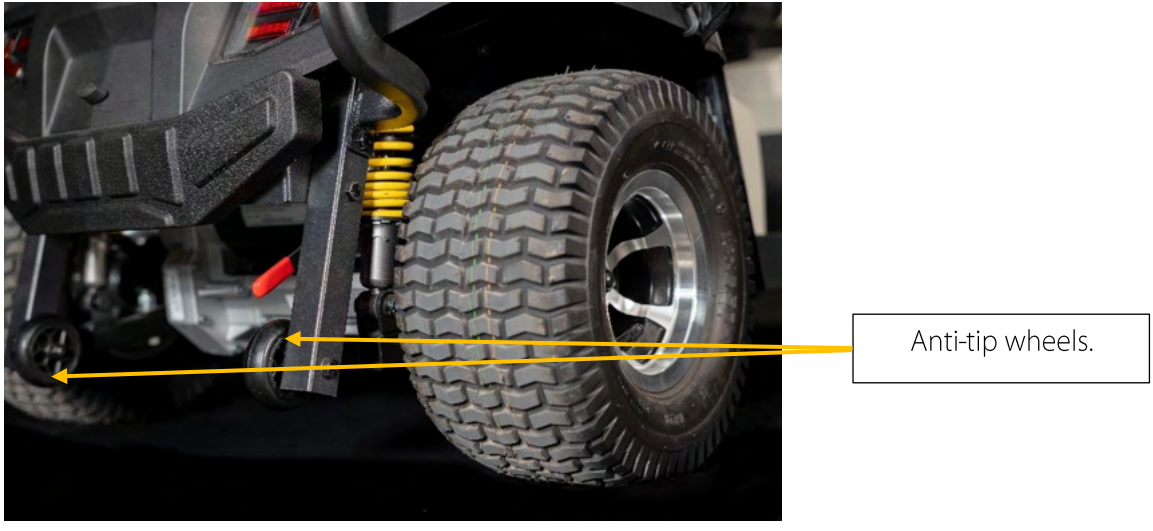
WARNING
Do not operate hand-held personal communication devices such as two-way/CB radios while the scooter is turned on.

5 Safety

	Do not ride the scooter without reading this instruction manual.
	Do not exceed the safe maximum climbing angle of the scooter.
	Do not exceed the maximum user weight at any time.
	Do not mount or dismount the scooter when the key is turned on.
	Do not operate or sit on the scooter if it is in free wheel mode.
	Do not drive your scooter unless the seat is locked in the driving position.
	Do not attempt to drive over curbs that exceed the safe climbing angle for your scooter.
	Always approach kerbs etc. at a 90-degree angle and at low speed.
	Sudden turns or sudden changes in speed are not recommended.
	Avoid surfaces where there is a risk of skidding (e.g. icy / polished / wet surfaces).
	Avoid driving over loose surfaces such as gravel.
	Never use the product under the influence of alcohol.
	Always drive forwards down gradients, kerbs and other obstacles.
	Do not operate the product until the assembly and inspection have been completed.

5.1 Anti-Tip Wheels

The Savvy Defender is fitted with rear anti-tip wheels. These are an emergency failsafe that should never be relied upon in normal operation. These are designed to stop the Savvy Defender tipping backwards on a steep incline. Should you see any damage to the wheels, you should cease using the scooter and take it to a certified mechanic who can ensure that the chassis has not been damaged.



5.2 Safe Inclines

The Savvy Defender can climb inclines of up to 15˚ without danger. On this 15˚ incline, the Savvy Defender can stop, brake and turn. It is possible to attempt steeper inclines, but we strongly suggest that you do not. To reduce the possibility of tipping backwards on inclines, lessen the load on the back of the scooter by sliding the seat forward as much as possible and leaning forward.

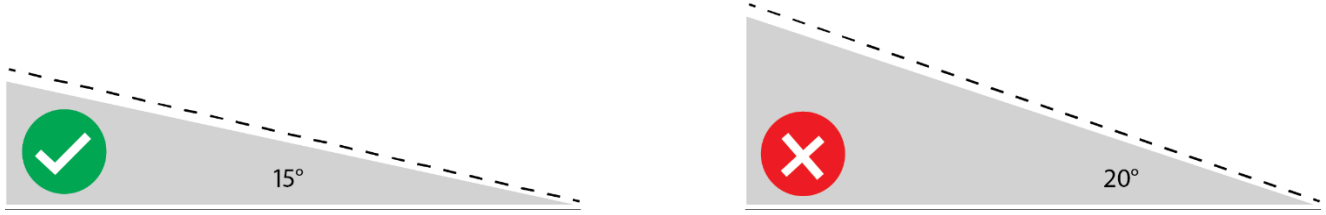


Figure 1 – Recommended gradients

6 Introduction

Your Savvy Defender is a high-tech piece of mobility equipment that will give you years of faithful service and enjoyment. This manual introduces you to the operation, maintenance and care of your Savvy Defender. If you have any questions, or are unsure of anything, please contact the dealer your originally purchased the Savvy Defender from. All maintenance work should be carried out either by an authorised Scooterpac dealer or by a certified mechanic.

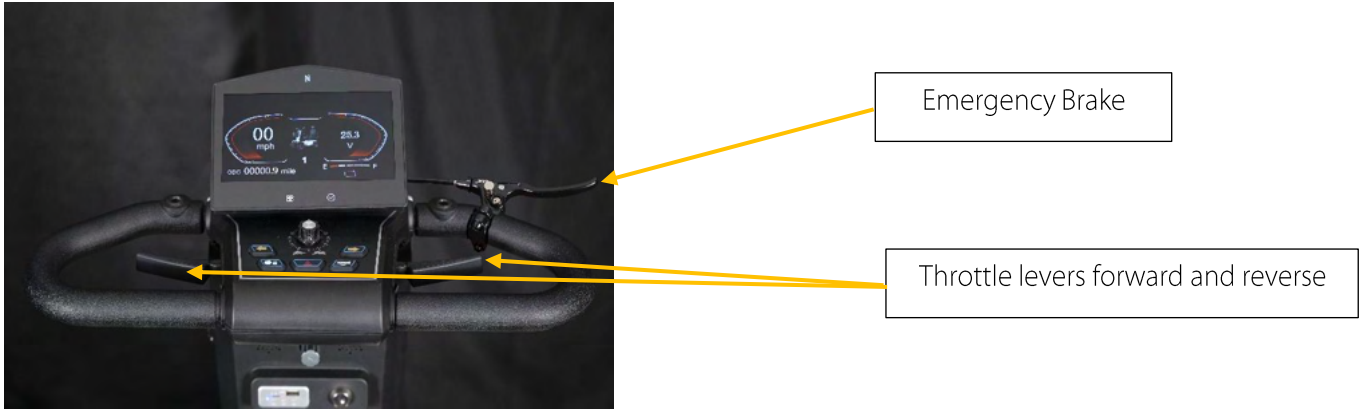
6.1 Unintentional Movement

Before operating, the Savvy Defender should always be stationary. When the Savvy Defender is switched on, it will remain stationary until one of the following:

1. The forward or reverse lever is pulled/pushed.
2. The freewheel function is engaged.

Do not attempt to operate the scooter when standing beside it.

If the scooter is moving an emergency stop can be performed by releasing the throttle levers and firmly pulling the hand-operated brake lever on the right-hand side of the tiller.



7 Operating Your Savvy Defender

7.1 Keys & Fobs

The Savvy Defender is delivered with the below keys:



Ignition Keys x2



NFC Fobs

To use the NFC fob place it at the top of the display screen over the symbol. This will turn the Savvy Defender on/off.



NFC Symbol

7.2 Seat Adjustments

It is important to adjust the seat into a good position that allows you to comfortably operate all the scooter's controls.

Forward/Backwards

To move the seat forwards or backwards, pull up the Seat Slider lever on the right-hand side underneath the seat whilst sitting down. To move forward, pull on the tiller handlebars. To move backwards, push firmly against the floor with your feet.

Swivel Adjustment

To enable easy access, the seat can be swivelled to a 90-degree angle. To change the angle of the seat, sit on the seat, pull the Seat Rotation lever towards the front of the scooter and turn the seat anticlockwise.

Backrest Adjustment

The pitch of the seat can be changed by the lifting the Backrest lever located on the right-hand side of the seat when seated.



Figure 2 – Seat Adjustments

7.3 Tiller Adjustments

The angle of the tiller can be adjusted by pressing the lever down on the front of the tiller.

The entire tiller assembly can then pitch forwards and backwards to find a comfortable driving position. Release the lever to secure your preferred position. Be aware that lowering the tiller too far may make it difficult to steer.

Try to find a position that allows a good view of the digital control panel and allows full left and right movement of the steering.



Figure 3 – Tiller Adjustment

7.4 Steering

The Savvy Defender is fitted with a mechanical steering column that ideally should be operated with both hands. When the Savvy Defender is stationary the steering may feel a little heavy or stiff. Steering will become lighter whilst the scooter is in motion.

For the most accurate steering the Savvy Defender should be moving forwards or backwards at a controllable speed. Gently push one side of the tiller away from you, allowing the Savvy Defender to begin turning. Make sure that you are continually observing your surroundings during any manoeuvre.

7.5 Digital Tiller Guide

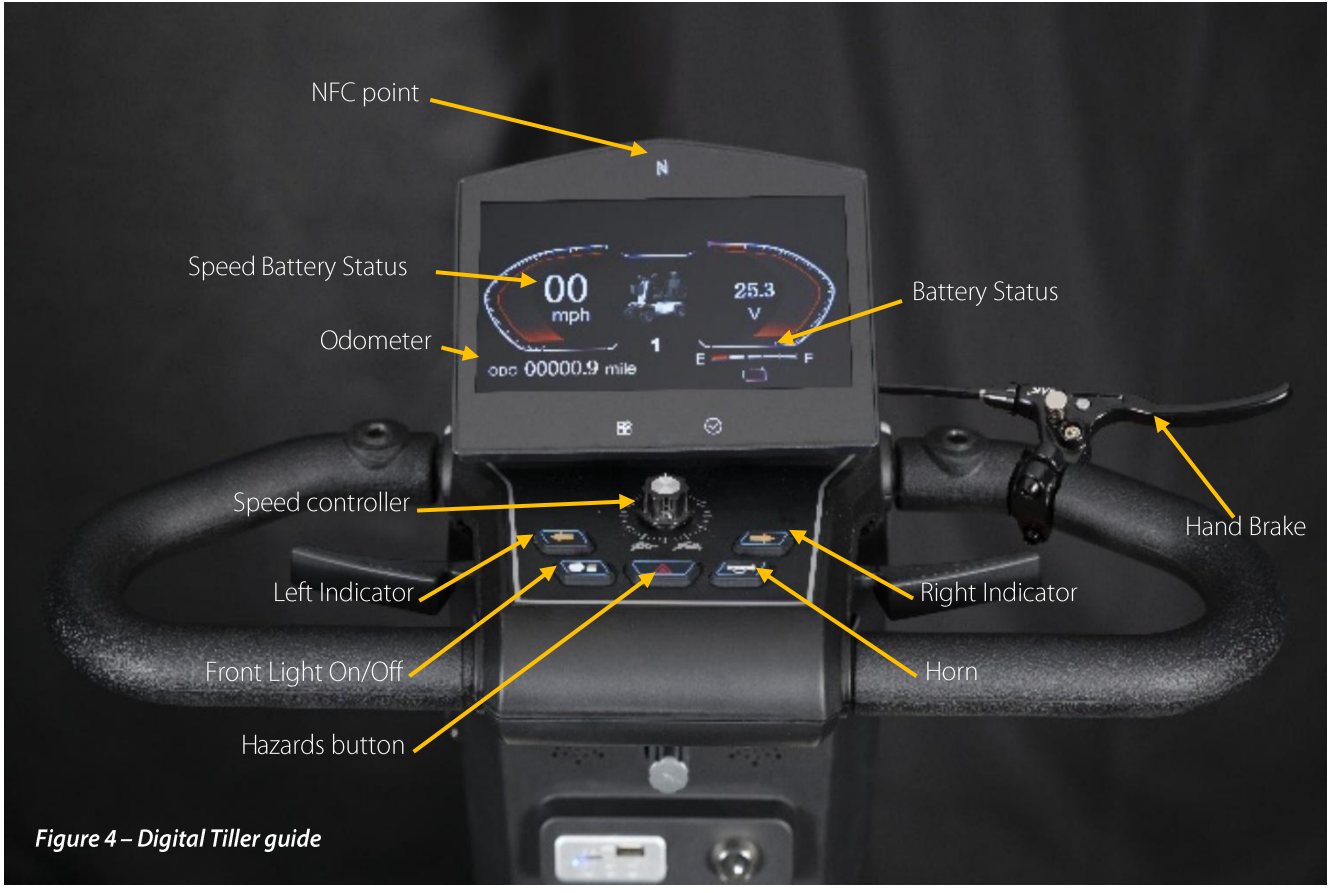


Figure 4 – Digital Tiller guide

7.6 Acceleration & Braking

When the central speed control dial is turned fully to the left, the scooter's maximum speed is reduced to its slowest setting. Conversely, turning the dial fully to the right will allow the scooter to operate at its maximum speed. We recommend adjusting the speed to a level at which you feel safe and confident while maintaining full control of the scooter and complying with legal speed limits.

When the throttle lever is released, the scooter's electromagnetic braking system will automatically engage, bringing the scooter to a smooth and controlled stop. If an emergency stop is required, the emergency handbrake should be applied in addition to the automatic braking system.

7.7 Throttle Levers

Acceleration and deceleration are controlled by the black levers on the tiller. They are designed to prevent both the forward and reverse functions from being activated at the same time.

To move forward, gently squeeze the right lever. The Savvy Defender will accelerate up to the maximum allowable speed set by the speed controls. To slow down or stop, release the accelerator and the scooter will stop. In an emergency the handbrake can be applied by pulling the brake handle located on the right of the handlebars.

Reverse mode can be activated by pulling the left lever when the scooter is stationary. For more information on reverse mode please see 8.5.3 Reversing.

7.8 Freewheel Function

You may need to move the Savvy Defender without engaging the motor. This mode can be enabled by pushing the red freewheel lever up. This is located under the rear right of the scooter.

To disable the freewheel function and engage the motor, pull down the red lever.
TOP TIP – To re-engage the motor you may need to turn the ignition off and on.

For your own safety, only operate this function when on a flat surface. When in freewheel mode care must be taken to manoeuvre the scooter safely as there is no brake function.

TOP TIP – When enabled, the scooter will continue to roll if pushed.



Figure 7 – Freewheel lever

8 Reversing

To engage reverse mode, ensure that the Savvy Defender is stationary and on even ground. Before moving, check that the area is clear of obstructions and your planned path is of adequate size.

Gently pull the reversing lever, and the Savvy Defender will begin to slowly move backwards.



8.1 Ignition

The Savvy Defender will start once the NFC tab is placed against the top of the digital screen. (figure 8.1).
Or once the ignition key is inserted into the housing on the tiller and turned clockwise (figure 8.2).



(Figure 8.1)


(Figure 8.2)

8.2 Odometer

The displayed miles on the Digital LCD Display are cumulative and represent the total distance the Savvy Defender Defender has travelled.

8.3 Indicators

The indicators are bright LEDs used for easy visibility, in an orange colour.

To switch them on press the ▶ button once before initiating a manoeuvre. Once the turn is complete and it is safe to do so, press the ▶ again to turn off the indicator.

8.4 Hazard Lights

In an emergency both indicators can be engaged at once, by pressing the  button. This will leave both indicators flashing front and rear, until the button is pressed again.

8.5 Horn

The electric horn is activated by pressing the  button on the tiller top. The horn should only be used in compliance with the Highway Code. The horn will only sound if the ignition is switched on.

8.6 Charge Port

Charging the Savvy Defender can be completed by using the charge port on the tiller.

The port is located on the left-hand side of the tiller column below the handlebars. To charge the scooter, simply connect the supplied charge cable to the port.

When the Savvy Defender Defender is in charge mode it will not enter drive mode.

TOP TIP – For best practice, please ensure to charge your batteries after each use.

If there are long periods where you decide not to use your scooter, we recommend that batteries are charged at least once a week.

This will ensure they remain healthy and are ready for regular use.



Figure 10 – Tiller mounted charge port

9 USB Charging & Audio Player

9.1 USB Charge Port

The Savvy Defender is equipped with one USB charging port located in the centre of the tiller column.

The USB port is designed to charge mobile phones and other small devices. The port delivers a charge of 1.5amps.

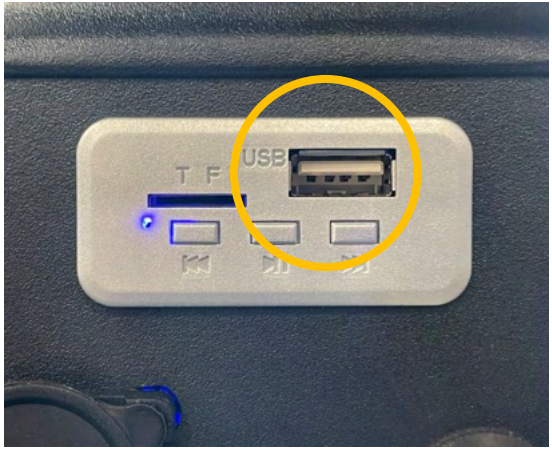


Figure 11 – USB charge port

9.2 Bluetooth Pairing

To pair your mobile device with the audio player:

1. Ensure there are no USB drives plugged into the USB port.
2. Turn on the Savvy Defender ignition.
3. Navigate to your mobile phone's Bluetooth settings and connect to the device named, **'bao jie'**.
4. Once connected, the scooter will play an audible confirmation tone. The blue LED light will become solid.
5. Any audio played from the mobile device will now play through the scooter's speaker.

Bluetooth Controls

a) Back
b) Play/Pause
c) Forward



Figure 12 – Bluetooth Player

10 Maintenance

10.1 Battery Care

The battery assembly in your Savvy Defender should not require any maintenance on a day-to-day basis, however access may be required. The batteries are located under the seat, protected by a plastic shroud – secured by one thumb screw.

To access the batteries, the seat must be removed. The seat can then be removed by pulling the black swivel lever towards the front of the scooter and then twisting left and right whilst lifting.

Once the maintenance has been completed, ensure that the thumb screw is used to refit the battery cover securely, without crushing or bending any wires. Replace the seat ensuring its locked in place and test the fitting for tightness to avoid danger to any user.

10.2 Tyre Pressures

The tyres on the Savvy Defender are designed to give a good balance between comfort and energy efficiency. Incorrectly inflated tyres may lead to poor handling, reduced range and increased wear. The tyres should always have at least 3mm of tread to provide adequate grip on the road surface. If the tyres become worn, they should be replaced before the Savvy Defender is used again.

Front tyre pressures: 30psi
Rear tyre pressures: 30psi

10.3 Cleaning & Maintenance

10.3.1 Rubber Mats

The rubber mat should be cleaned using a vacuum cleaner with an upholstery brush attached. For stains, a mild mixture of washing up liquid and water may be used, ensuring that the area is thoroughly dried afterwards.

TOP TIP – Please do not use bleach.

10.4 Paintwork

To care for the paint, regularly wash the Savvy Defender using soft cloths and a mild automotive detergent.

Apply automotive polish to achieve a high-shine finish. It is highly recommended that polish is applied in areas where the paintwork may be exposed to adverse weather conditions.

TOP TIP – Never use boiling water to clean the Savvy Defender.

11 Assembling the canopy

Tools Needed:
End Wrench-13mm
5mm Allan Key
Cross Screwdriver

1. Take off the tiller
A. Unpack your scooter and canopy from their boxes.
B. Undo the fixings holding the handbrake wire and remove the wire.
C. Take off all the screws as figure 1 show. Then take off the tiller covers.
D. Disconnect all the wiring harness between the tiller cover and the PCB.
(Make sure your make a note or markup which wire joins which wire)
E. Undo the bolts and remove the handlebar.

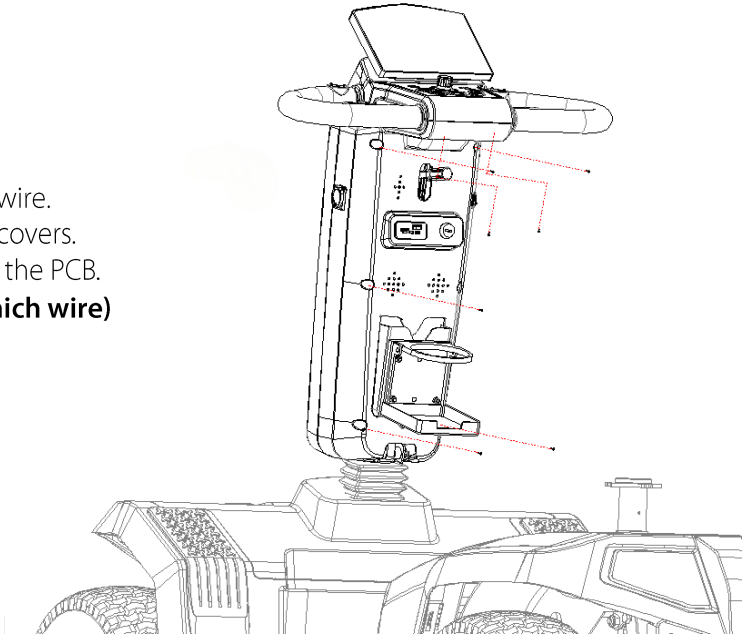


Figure 1

2. Take off the front cover

A. Remove the floor mat, then remove all the screws as figure 2 shows.
B. Take off front bumper.
C. Take off the two front caps on the front cover as figure 2 shows.
D. lift off the front cover.

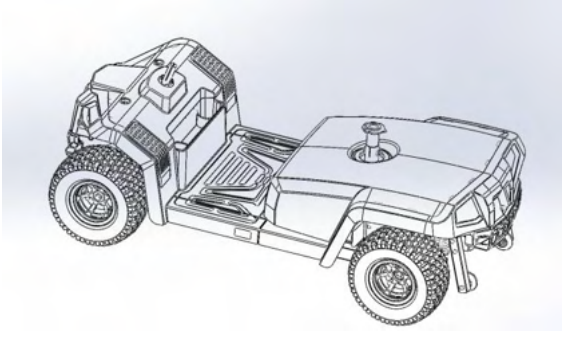


Figure 2

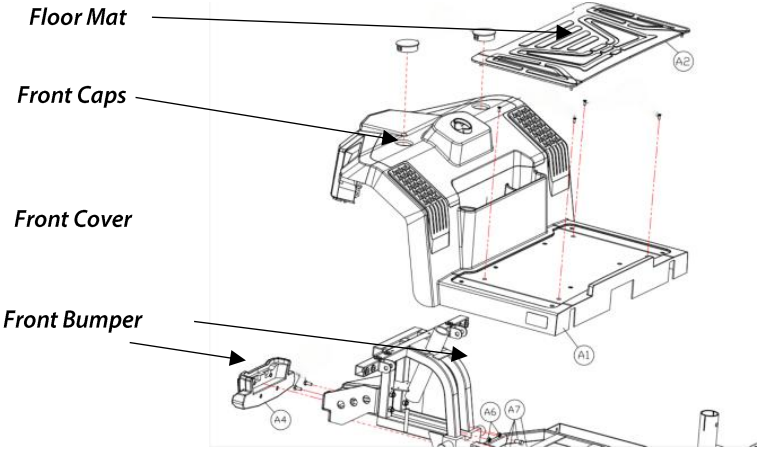
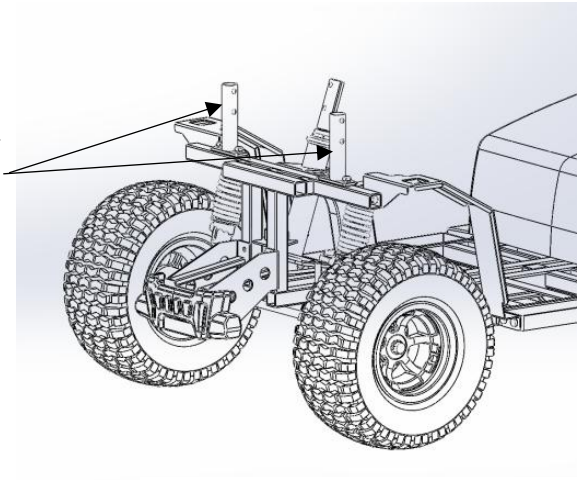


Figure 3

3. Assemble:

A. Fix the two front canopy support brackets on the frame as figure 3 shows.
B. Put the front cover back into place.
C. Screw the front cover back to the frame.
D. Put the floor mat back in place.
E: Reattach the front bumper.

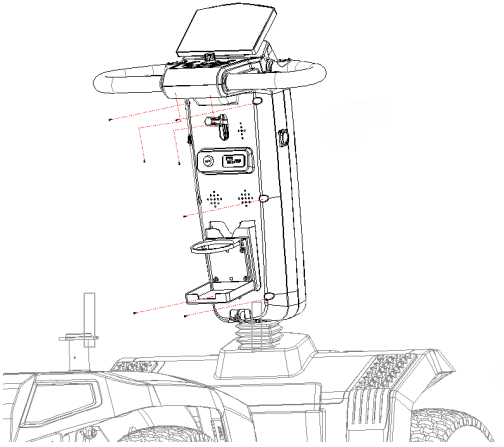
Canopy Support brackets



4. Assemble Tiller

A. Bolt the handlebar to the main frame.
B. Connect all the harness to the tiller head.
C. Assemble tiller covers as shown in figure 3a.
D. Assemble handbrake. Put the handbrake wire back.

Figure 3a



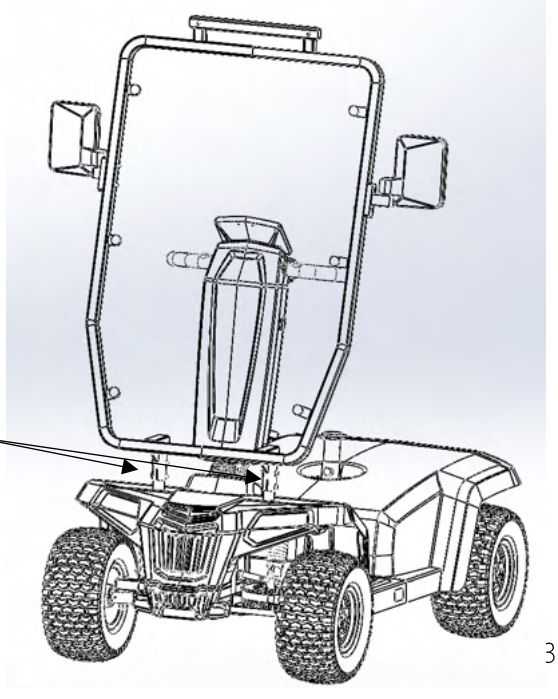
5. Assemble the front part of the canopy.

A. Insert the front part of the canopy into the two front canopy support brackets as figure 4 shows.

B. Use 4 hexagon screws and M8 × 45 nut to fix it in place.

C. Assemble the rear mirrors.

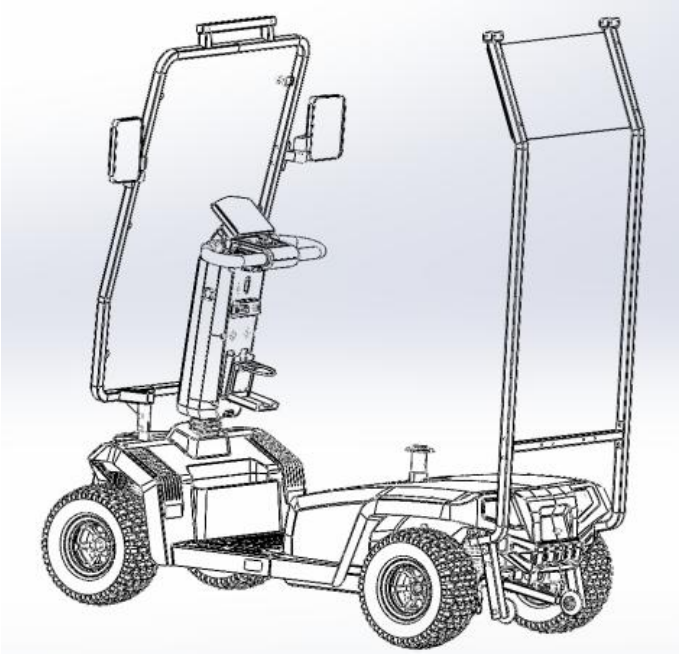
Figure 4



6. Assemble the rear part of the canopy as figure 4a Shows.

A. Fix the rear part of the canopy with 2 external hexagonal Screws and M8x45mm nuts, and 2 external hexagonal screws M8×50 and nuts for locking.

Figure 4a



7. Assemble the top of the canopy.

A. Put on the canopy top.

B. Use 2 external hex screws M8 × 60 and nuts to lock the roof on the canopy front part.

C. Use 4 external hexagonal screws M8 × 45 and nuts to lock the ceiling roof with canopy rear part. As figure 6 shows.

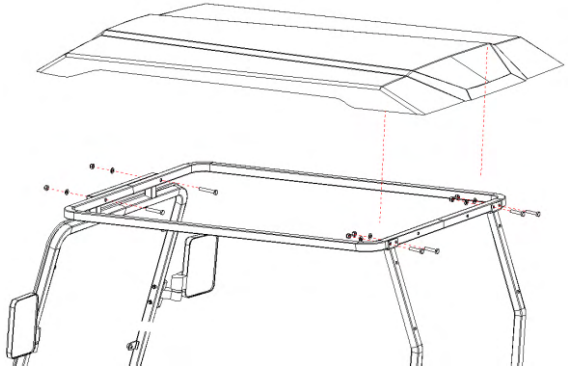
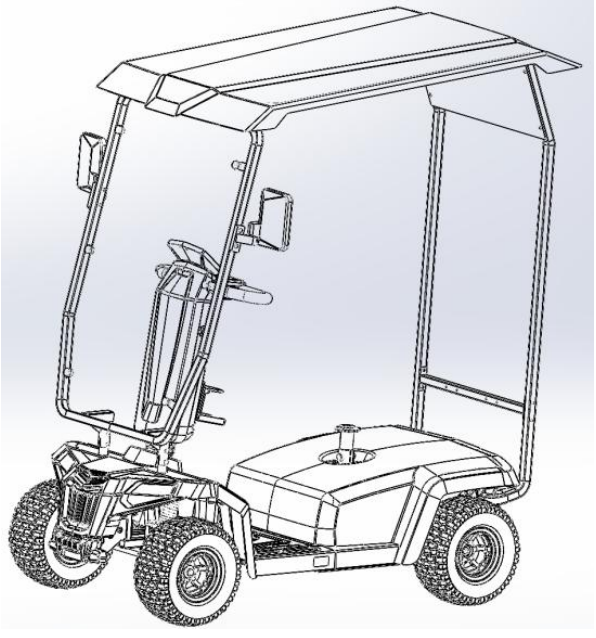


Figure 6



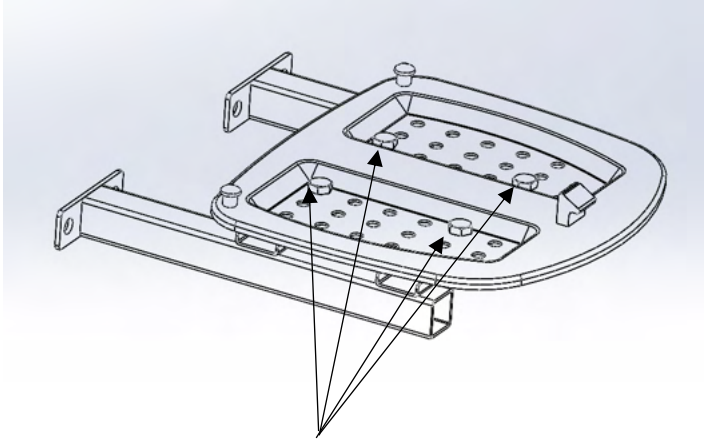
8. Assemble Rear Box

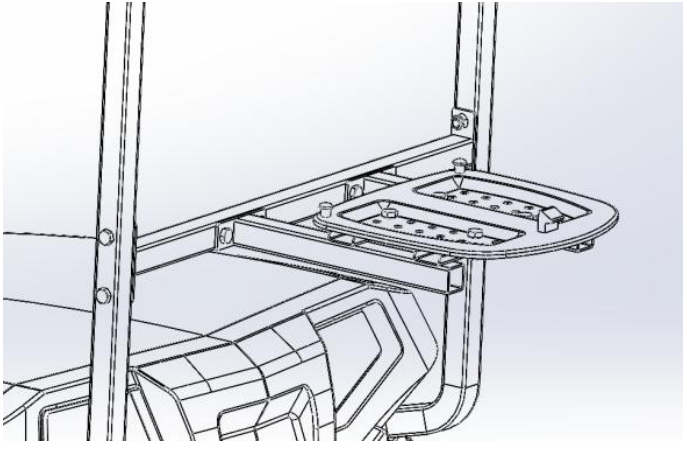
A. Fix rear box plate on the bracket as figure 7 shows.

B. Fix rear box bracket on the rear support of the canopy as figure 7 shows.

C. Lock the rear box on the plate. This should slide in and down and click into place.
(Please the box needs to be unlocked to do this).

Figure 7





9. Assemble Curtain

A. Place the Velcro strips to the side of canopy frame as figure 8 shows.
B. Insert the canopy into the aluminium gutters on the top of the canopy as figure 9 shows.
C. Push the canopy onto the Velcro to hold It firm.

Figure 8

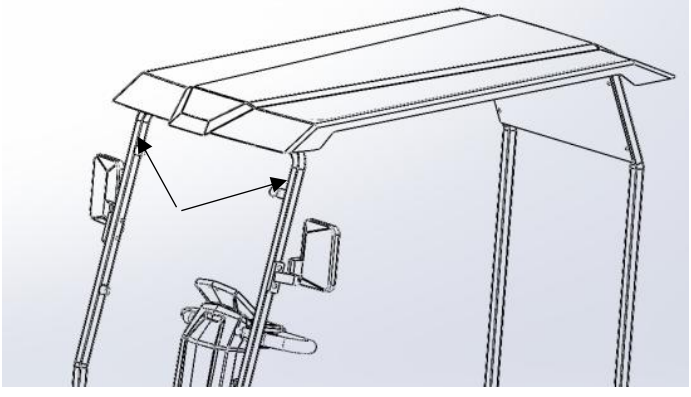


Figure 9



10. Inspection:

1. Power on the scooter. Check the if the lights work correctly.
2. Check if all the screws are tightened.

12 Warranty

The Savvy Defender comes with a 12-month manufacturer's warranty when purchased new from an authorised Scooterpac dealer. During the warranty period any part which becomes defective due to faulty workmanship or materials will be repaired by the Scooterpac dealer from which it was purchased. If a repair cannot be completed a replacement part will be fitted.

If a manufacturing defect is found, it must be reported in writing to the Scooterpac dealer from which the Savvy Defender was purchased from within 28 days of purchase.

Items considered to have a limited lifespan including batteries and tyres will not be covered if they are deemed to have undergone excessive wear and tear or misuse.

The warranty does not cover damage arising from improper use of the product, after-market modifications or accidental damage. The warranty is non-transferable.

The warranty does not extend to the consequential costs resulting from fault clearance, freight and travel costs, loss of earnings, expenses, etc.

The manufacturer will not accept responsibility for any damage or injury caused by misuse or non-observation of the instructions set out in this user manual.

13 Specifications

13.1 Technical Specification

Motor	Rear Wheel Drive Sealed Transaxle 1400W 24 Volt DC	**Batteries**	Dual 12V 75Ah
Dashboard	Digital Dashboard Display 5-button Tiller Max Speed Dial Speed Mode Dial	**Tyres**	Pneumatic 13″

13.2 Sizes & Weights

Class	3 (Invalid Carriage)
Speed Modes [1]	4mph, 8mph
Range [2]	36 miles
Brakes	Electromagnetic
Scooter Weight	146kg
Weight Capacity	250kg / 39 stone
Length [3]	1600mm
Width [3]	805mm
Height [3]	1435mm
Length[3] with Hardtop	1995mm
Width[3] with hardtop	1080mm (with adjustable side mirrors fully extended)
Height[3] with hardtop	1775mm
Maximum Slope [4]	15 degrees
Turning Radius	1600mm

[1] International Speeds: Available dependant on jurisdiction and local legislation.
[2] Range may vary with battery charge/condition/option, terrain type, tyre condition and vehicle loading.
[3] Due to manufacturing tolerances and continuous product improvement this specification can be subject to variance of +/-3%.
[4] Varies with user weight, terrain type, battery charge, battery condition, tyre condition.

14 Servicing

To ensure continued safe operation, the Savvy Defender must be serviced every 12 months. We recommend recording the servicing dates and locations on the sheets below. Always have your Savvy Defender serviced at an authorised Scooterpac dealer, using original Scooterpac parts.

Year	Service		Next Service Due
Year One	Dealer Name		
	Technician Name		
	Date of service		
	Mileage		
	Notes		
	Signed		

Year	Service		Next Service Due
Year Two	Dealer Name		
	Technician Name		
	Date of service		
	Mileage		
	Notes		
	Signed		
Year	**Service**		**Next Service Due**
Year Three	Dealer Name		
	Technician Name		
	Date of service		
	Mileage		
	Notes		
	Signed		

15 Notes

Scooterpac

Brighten your day

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