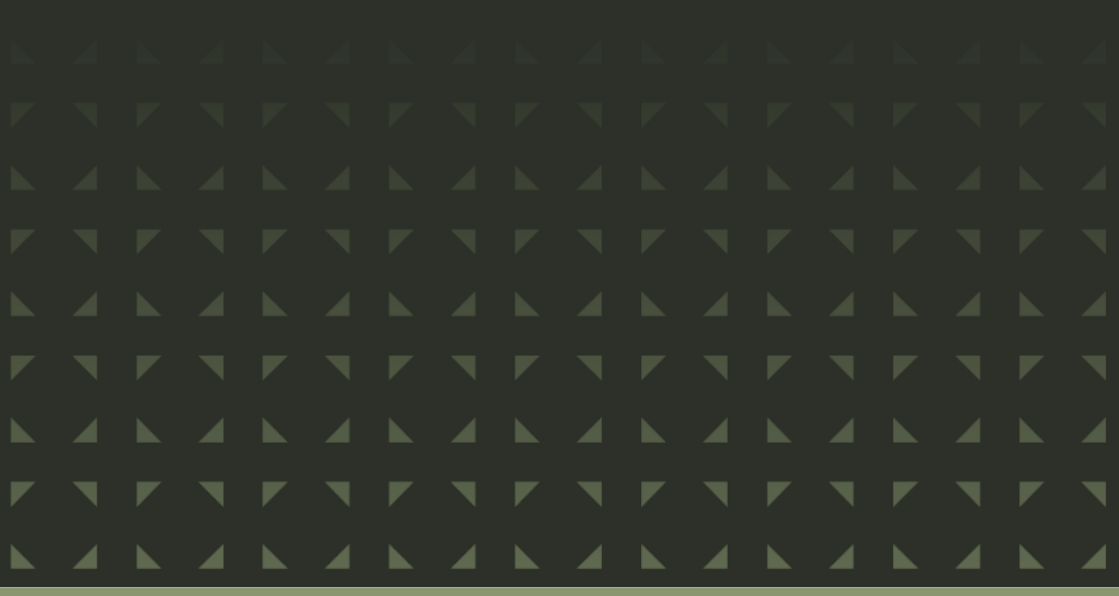




VOLTQUADS

Owner Handbook

The VQ



Contents

Welcome	4
Specifications	6
Your VQ	8
Safety Guidance	10
Pre-operating Inspection	16
Pre-Use Checklist	18
Operating Instructions	20
How to Start Your VQ	22
Stopping the VQ	24
Features	26
Creep Speed	28
Programmable Modes	28
Drive Modes	29
Display Unit	30
Buttons	31
Tyres	32
Brakes	33
Handlebar Switches	35
Emergency Stop	35
Gear Lever	36
Towing and Trailed Equipment	37
Winch	39
How to Charge Your VQ	40

Maintenance	42
Making the VQ safe to perform maintenance	44
Long-term storage	44
Making the VQ safe for transportation	44
Tyre Maintenance	45
Parking brake adjustment	46
Gear oil	47
12V Auxillary Battery	48
48V Lithium Battery	49
Disposal of your VQ	49
Emergency situations	49
Troubleshooting	50
Additional Warning Stickers	51
Warranty	55
Frame and motor numbers	56
Pre-delivery inspection	57
Support and contact	58
Notes	59

Welcome

Thank you for choosing the VQ

Our bikes are robust, commercial machines designed for safe, efficient, emission-free operation in challenging conditions. The VQ incorporates a number of rider safety aids and built-in protections for the battery, motor and charger – details can be found in the following sections of the handbook.

All users should be made aware of the operating instructions before riding.

We welcome feedback and ideas for improving the VQ experience. Please send to info@voltquads.com



Specifications

Vehicle	
Classification	Light Ag/ L7e (upon request)
Max Speed (configurable)	40 mph (65 kph)
Typical Range	50 miles (80 km)
Weight	420 kg (unloaded)
Transmission	2WD/4WD Switchable, Diff lock, High/ Low/ Reverse
Front suspension	Long Shocks: Dual A-arm with 5 way preload adjustable shocks
Power steering	Fitted
Front Brakes	Hydraulic Front: R/L Disc brake
Rear Brakes	Disc Brake
Wheels	14" (35.5cm); Alloy rims
Tyres	Bighorn F AT Front 26X 8 -14 Rear 26X 10 -14
Length	2150 mm
Width	1280 mm
Height	1250 mm
Ground Clearance	300 mm
Towing Capacity	900 kg

Battery	
Voltage	48V- nominal
Capacity	7.8 KWHr
Charge Time	2.5 Hrs

Charger	
Mounting	On-Board
Supply Requirements	110-265 V AC 1 Phase
Power	3.3 KW
Connector Compatibility	Type2, Standard Universal Mains

Electric Drive	
Type	IPM
Max Torque (configurable)	100 NM
Max Power	23 KW

Your VQ

1. Charging Lead Cubby Box.
2. Winch.
3. Electric Drive Motor.
4. Emergency Stop
5. Display Unit



Warnings

Operator warnings

- ▶ Do not operate if under the age of sixteen.
- ▶ Controlling your VQ is physically demanding. The driver is responsible for ensuring their physical capacity and that of any passengers, is sufficient.
- ▶ Always wear a correctly fitting approved helmet when on the VQ.
- ▶ Read and ensure you understand all safety labels on your VQ.
- ▶ The operator is responsible for their own safety. Good judgement will prevent accidents and injury.
- ▶ Your VQ is configurable to suit your preference. However, the operator is always responsible for safe operation.
- ▶ Never operate the VQ under the influence of alcohol or drugs, including prescription and over-the-counter medicines that may cause drowsiness or affect your judgement, coordination or reaction time.

Location warnings

- ▶ This vehicle is built for off-road purposes only.
- ▶ You may use the VQ for short distances on paved surfaces to move from one off-road location to another.

Terrain and conditions warnings

- ▶ The vehicle's behaviour will vary by surface.
- ▶ Pay attention to the surface you are on.
- ▶ Never operate your VQ on hills that are too steep. This is for your safety.
- ▶ The operator is responsible for deciding whether the terrain is safe.
- ▶ Do not drive your VQ over terrain that is too uneven for its ground clearance.
- ▶ If you are unsure of the riding conditions, stop the bike and get off.
- ▶ Never ride into water deeper than the top of the wheels. Deeper water risks losing control of the VQ and the electronic components on the upper half of the machine are not designed to be submerged.
- ▶ Never fully submerge the VQ.

Riding technique and stability warnings

- ▶ There is significant risk of roll-over when turning.
- ▶ Reduce speed significantly when turning.
- ▶ Be extra cautious when crossing or turning on hills; there is significant risk of overturning your VQ when doing so.

- ▶ Operating the VQ standing up increases risk of injury and damage.
- ▶ Always keep both hands on the handlebars when driving.
- ▶ On rough terrain and hills, use low gear.
- ▶ Avoid skidding or sliding your VQ.
- ▶ Use active riding techniques so that weight shifting in both positions maintains stability.
- ▶ Difficult terrain and incorrect riding techniques can result in rollovers.
- ▶ Switch off the key when not seated on the VQ.

Braking warnings

- ▶ Braking distance depends on environmental conditions; the operator is responsible for ensuring sufficient braking distance.
- ▶ If the brakes have been submerged, test the brakes upon leaving the water and repeat until you are confident they are working effectively.

Loads, passengers and towing warnings

- ▶ Never overload your VQ. Carrying or towing loads over the design specifications is unsafe.
- ▶ Distribute weight and loads evenly on your VQ.

- ▶ If pulling a load, ensure that all relevant operational and safety criteria are met.
- ▶ Passengers must not sit on the front or rear racks.
- ▶ Never operate with more than 2 people on the VQ.

Battery and charging warnings

- ▶ Never attempt to open, disassemble or modify any of the electrically powered parts on your VQ (including battery, motor controller, on-board battery charger, etc.)
- ▶ Any hissing, high temperatures, or smells coming from the battery pack could indicate thermal runaway.
- ▶ If there are any concerns or doubts about the battery pack, do not operate or charge your VQ, leave your VQ outside, away from anything else and contact Volt Quads immediately.
- ▶ Ensure the bike is unplugged and disconnect the charger before riding.
- ▶ Plan your journey and take your battery range into account.
- ▶ Different terrains, loads and driving styles will affect range.
- ▶ Before plugging in, check that your mains supply can deliver the voltage and current the on-board charger requires. Connecting to an under-rated supply may blow a fuse.

- ▶ Only charge your VQ from a standard mains supply using the charge lead supplied. Never attempt to charge it from an electric vehicle charge point, a domestic EV wallbox, or a three-phase supply.

Servicing, faults and modification warnings

- ▶ If your VQ's controls do not operate as usual, don't drive the vehicle until this has been investigated (if required, call Volt Quads for assistance).
- ▶ It is not permitted to modify your VQ; doing so may impact your safety and warranty.
- ▶ Periodically check your VQ and follow the maintenance schedule.



Pre-operating Inspection



Pre-Use Checklist

Always inspect your VQ each time you use it.

1. Check the tyre condition and pressure.
2. Check all nuts, bolts and other fasteners, visually ensuring no loose parts.
3. Check the throttle for smooth operation.
4. Check that the steering handle turns easily to the left and right.
5. Check all four brakes.
6. Apply downward pressure on the front steering handle and on the rear hand hold to check the function of the front and rear shock absorbers.

Caution

- If you notice any damaged components or operator controls, do not use the VQ. Refer to our support team.

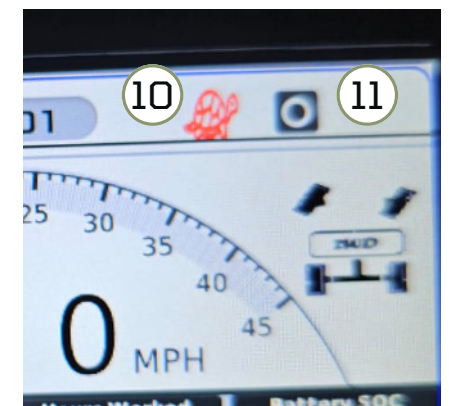
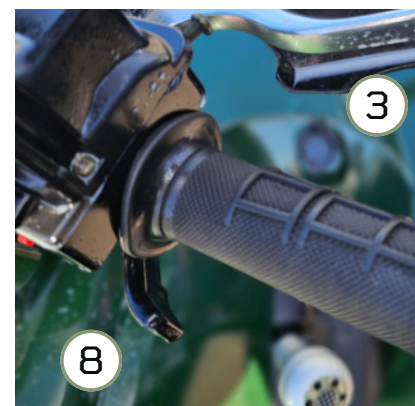
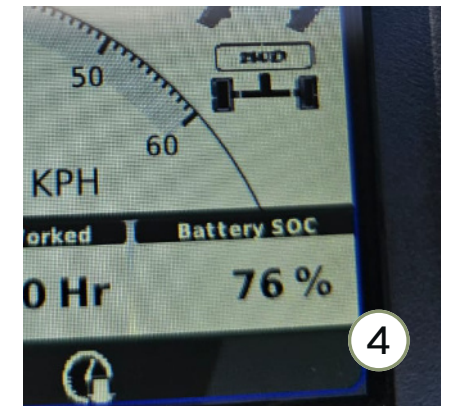
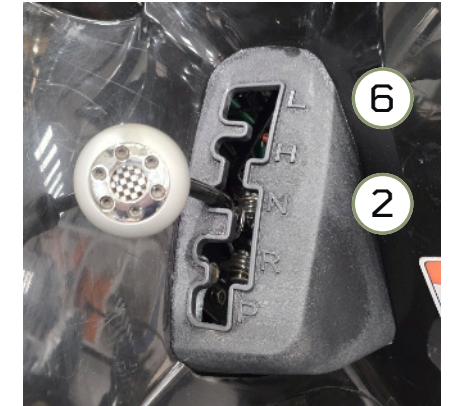
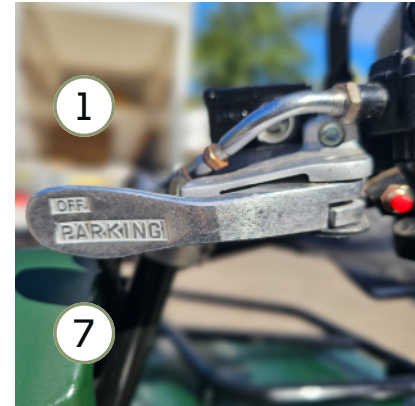


Operating Instructions



How to Start Your VQ

1. Ensure the parking brake is engaged, or the foot or hand brake is engaged, to maintain control of your VQ.
2. Ensure the gear lever is in the Neutral position and the Control System Switch is in the ON position.
3. Insert the ignition key and turn it to the ON position.
4. Check the battery to ensure it has enough charge for your intended use.
5. Briefly pull in and release the yellow start lever on the left-hand handlebar while the brakes are engaged.
6. Engage L (low) or H (high) gear with the gear lever. Use low gear for uneven or steep terrain.
7. Disengage the parking brake. Release other brakes if the ground is even or as you take control of the VQ.
8. Lightly squeeze the thumb throttle lever until the VQ begins to move, then apply more pressure until you reach the desired safe speed.
9. Manually check that the brakes and suspension are working as expected. Inspect and correct any unusual noises or feel before driving further. (see brake section page 32)
10. When safe to do so, deselect creep speed mode using the display unit. (see drive mode section page 28)
11. Select the drive mode suitable for the operator. See the drive mode section for more information. (see drive mode section page 29)
12. Gently push the throttle, ensuring you have a good feel for the acceleration rate.

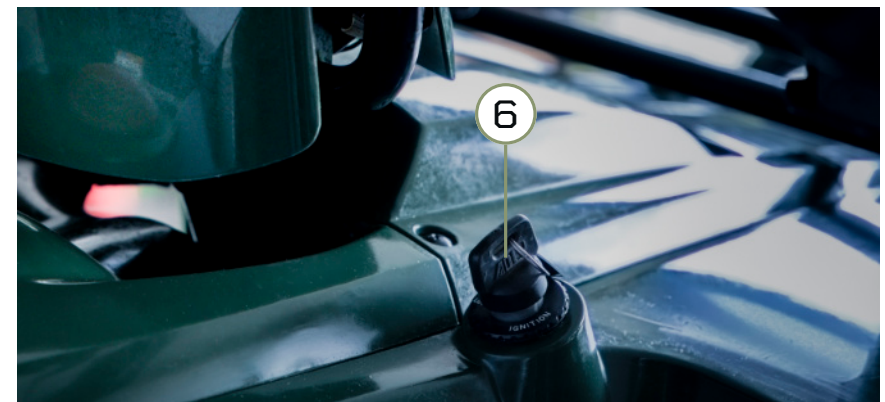


Stopping the VQ

1. As you approach the parking point, release the accelerator and apply the brakes.
2. Do not park on uneven ground to avoid tipping over.
3. When you have completely stopped, move the gear lever to P (Park).
4. Apply the parking brake.
5. Switch off the Control System Switch.
6. Turn off the key.
7. Remember to charge your VQ, ready for its next use.

Caution

- ▶ Do not turn the main key or the motor switch to OFF during operation.
- ▶ Do not attempt to change gear until you are completely stopped.
- ▶ Ensure the parking brake is disengaged before driving; driving against the parking brake will heat the brakes and potentially cause failure.

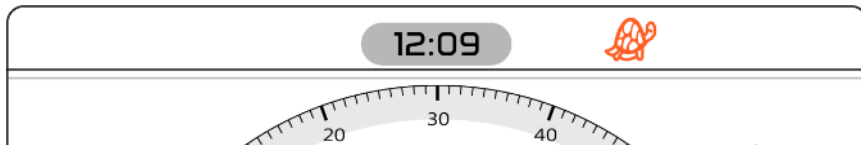


Features



Creep Speed

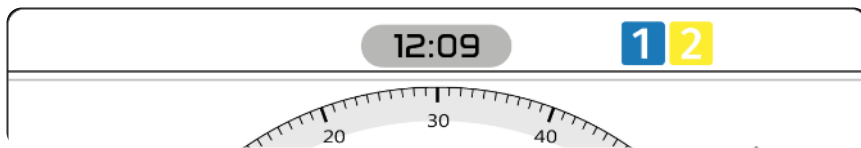
For your safety, your VQ will default to Creep Speed when keyed on. This mode limits the max speed to a safe speed. We recommend using Creep Speed in any restricted area, for example: inside buildings, in yards, in car parks, or around pedestrians, animals or other vehicles.



Programmable Modes

Your VQ has two configurable profiles, in addition to the standard drive modes. Each profile stores its own maximum speed, maximum torque, acceleration rate and braking strength.

You choose the settings. A Volt Quads technician configures them for you, so contact your Volt Quads contact to discuss what you need.

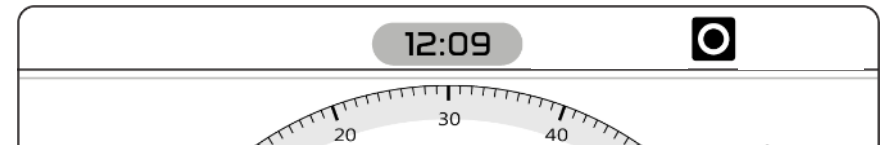


Drive Modes

Your VQ has pre-programmed drive style options to suit specific operators and driving conditions.

Standard Mode

This mode is suitable for everyday use, balancing performance and battery life for realistic daily use.



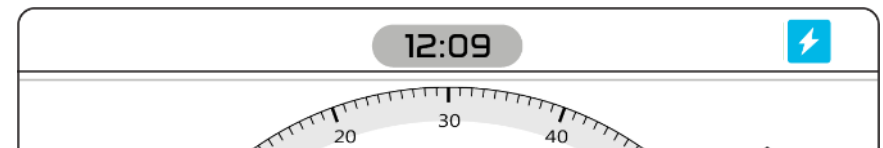
Eco Mode

This limits performance to maximise range. So max speed, torque and braking strength are reduced.

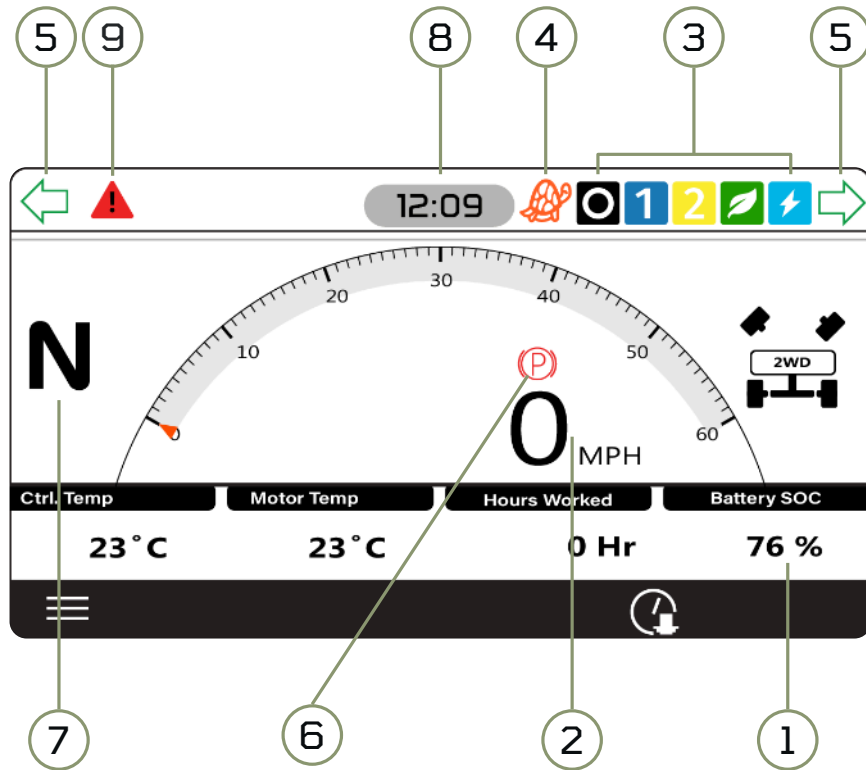


Boost Mode

This maximises performance. It optimises max speed, torque and braking strength for maximum responsiveness. Note: only for experienced operators.



Display Unit



- | | |
|-----------------------|--------------------------|
| 1. State of Charge | 6. Brake indicator |
| 2. Speed | 7. Gear indicator |
| 3. Drive Mode | 8. Time |
| 4. Creep Speed | 9. Fault State indicator |
| 5. Turning indicators | |

Buttons



1. Service Button - reserved for technicians
2. Language selection
3. Access to battery info. Cell Voltages and module Temperatures
4. Creep Speed Button
5. Drive Mode Select Button

The bike is delivered with Bighorn off-road tyres.

Front: 26x8-14

Rear: 26x10-14

It is possible for users to buy their own tyres appropriate to their use. The user is responsible for ensuring the tyres are suitable for the application.

Pressure:

On-road: 20 psi

Max. pressure: 20 psi

Off-road: 10 psi

Min. pressure: 6 psi

Caution

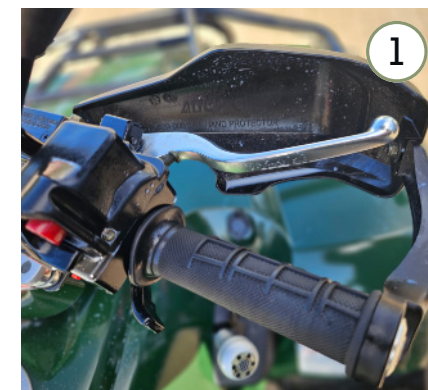
- ▶ Do not overinflate the tyres.
- ▶ Check for gravel in the tread grooves or any nail puncture. If so, clean the tyres.
- ▶ Check for cracks or heavy wear. If wear exceeds the limit, replace the tyre.

Note

- ▶ Check the marking on the tyres for the detailed specification

Your VQ has four brakes. Each one acts on a different combination of wheels.

- 1. Right-hand lever.** Brakes all four wheels.
- 2. Left-hand lever.** Brakes the two front wheels.
- 3. Foot brake.** Brakes the two rear wheels.
- 4. Parking brake.** Brakes the two rear wheels.



Handlebar Switches

- | | |
|---------------------------|------------------------------|
| 1. Key Switch | 6. Hazard Lights |
| 2. Start Switch | 7. Lights- Main Beam/ Dipped |
| 3. Control System Switch | 8. 2WD/4WD selector |
| 4. Indicator Light Switch | 9. Winch switch |
| 5. Horn | 10. Emergency Stop |

Emergency Stop

This will remove all power from the wheels. You will need to apply the brakes to come to a full stop.

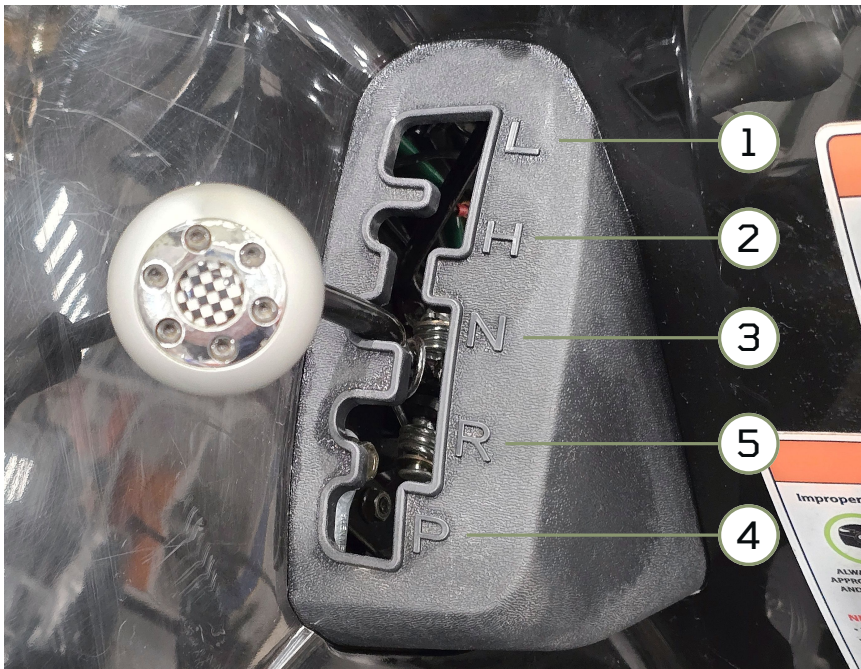
The Red Emergency disconnect button should be pressed if the VQ does not respond correctly to the throttle and/or the operator feels that the VQ is making an uncontrolled movement. The operator can then use the brakes to bring the VQ to a safe stop. If the VQ made an uncontrolled movement, for example, it drove forward when not requested or did not decelerate when the throttle was released, this must be reported and investigated by a Volt Quads technician.

To reset the emergency stop button, twist it anticlockwise to release it. Then follow the starting procedure.



Gear Lever

1. L, from neutral. Low speed, maximum torque. Use for towing, uphill driving and rough terrain. Speed will be limited.
2. H, from neutral. High speed. Use in general driving and on flat ground. When approaching a hill or an obstacle, stop and select low to gain torque.
3. N, neutral. Use to move the bike without power, for example, when recovering it.
4. P, park. Locks the transmission to stop the bike from running away on inclines or slopes.
5. R, reverse. From neutral, select R to reverse. Come to a complete stop before selecting R. Ensure you check behind you when reversing.



Towing and Trailed Equipment

When selecting trailed equipment, look for:

1. Overrun brakes
2. A swivel hitch drawbar
3. Bead lock rims on the wheels
4. A low centre of gravity and a wide wheel track
5. A long drawbar
6. Attachment points for securing the load

The operator must know:

1. The maximum tow weight, trailer plus load
2. The maximum tongue weight on the hitch point
3. The maximum combined tongue and rear carrier weight

Be aware that:

1. It is very difficult to unhitch a loaded trailer on a slope
2. Turning may be restricted when towing a trailer
3. Turning across slopes should be avoided

Caution

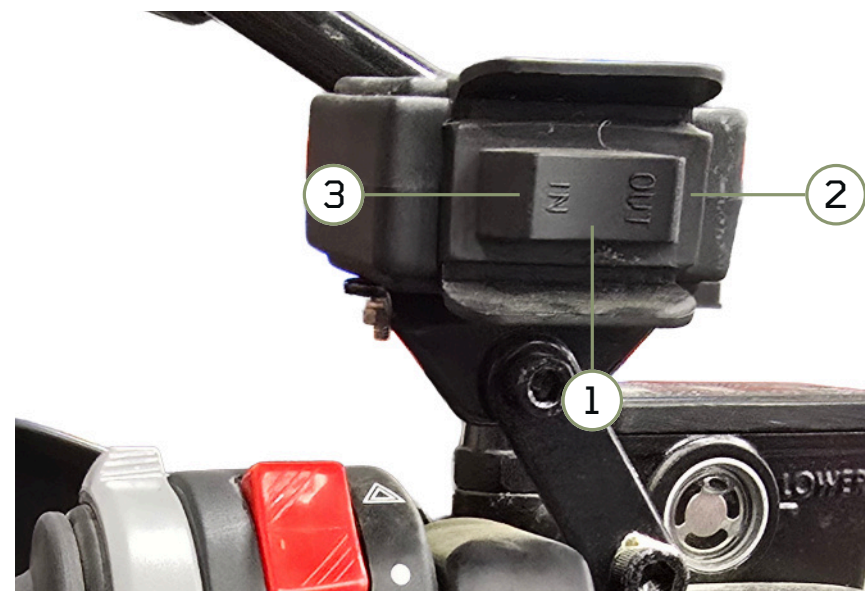
- Attach all loads only to the towing hitch and to no other part of the VQ



Warning

- ▶ When pushing a VQ and trailer combination, no person should stand between the VQ and the trailer.
- ▶ Maximum tow weight: 900kg.
- ▶ Maximum tongue weight: to be confirmed.
- ▶ Braked trailers can add: to be confirmed.

1. Rocker switch, in and out
2. Out button
3. In button

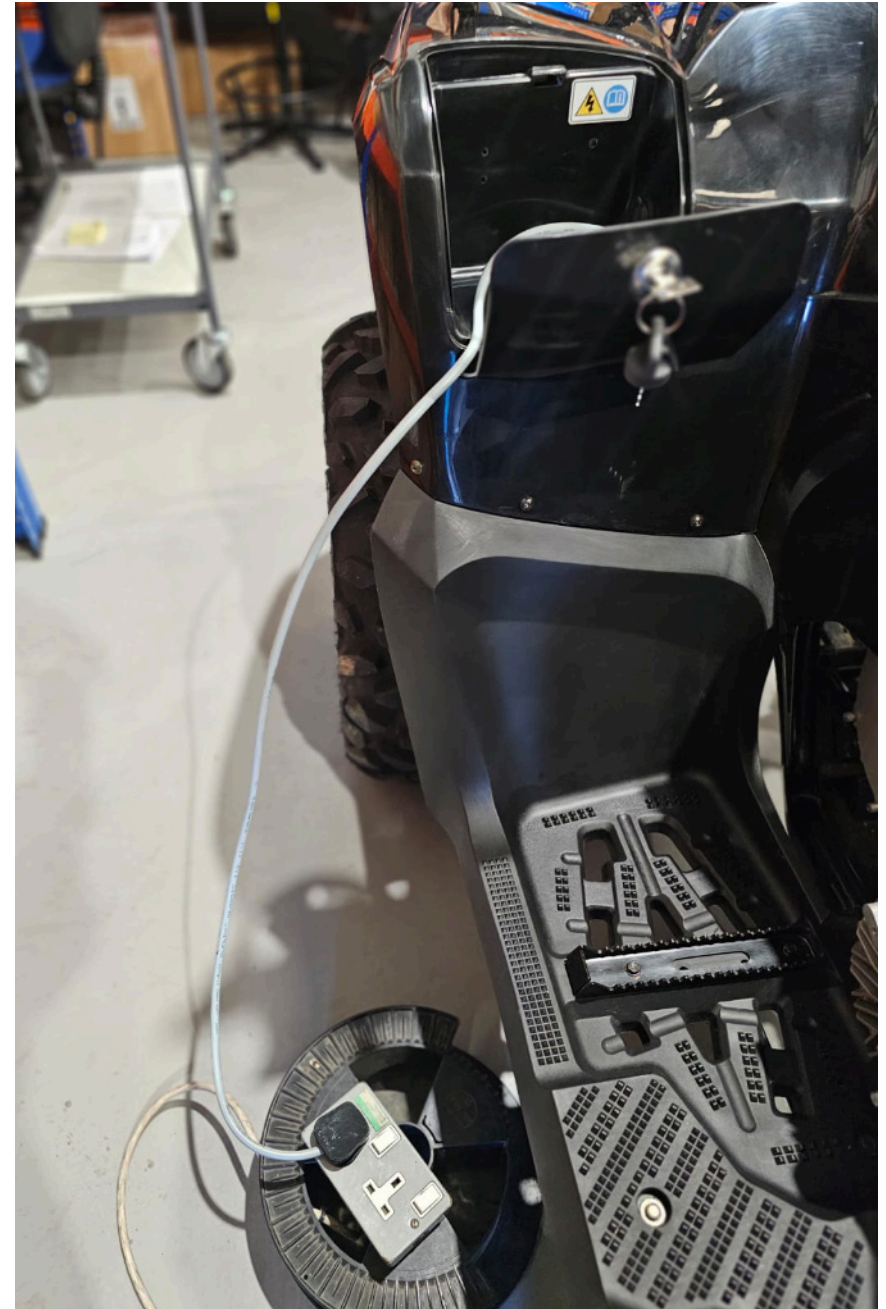


Caution

- ▶ Release the in button immediately when the winch is fully rewound. Operating the switch with a stalled motor will cause damage.
- ▶ Never use the winch for towing.
- ▶ Max winch load: 1300 Kgs.

How to Charge Your VQ

1. The charge lead and plug are located in the cubby box.
2. Ensure your voltage and current supply match the on-board charger spec. The standard charger will work on AC single-phase voltage of 100- 240 VAC, < 13 A. Your VQ's on-board charger can be configured for any current between 5A and 16A, if required, by a VQ technician.
3. Plug the charge unit into a 13 amp mains supply, unless reconfigured by VQ.
4. Switch the charger on at the mains plug.
5. The charger will run its checks and start charging automatically.
6. It is normal to hear the fan operating during charge. Note: the on-board charger also charges the 12V, so you can sometimes hear the fan operating when the charger is not plugged into the wall.
7. When charging is complete, the charger stops automatically.
8. A full charge takes 2.5 hours from a standard mains supply.
9. You can check the state of charge of your 48V battery using the display unit.



Maintenance

Warning

- ▶ The use of non-approved parts or spares could make the VQ dangerous and will invalidate the warranty. Repairs must be carried out by an authorised service agent.
- ▶ Repairs and maintenance to the high voltage 48 volt side of the vehicle is expressly forbidden and must be entrusted to an authorised service agent.



Making the VQ safe to perform maintenance

1. Apply the hand brake and use suitable-sized wheel chocks to limit the bike's forward and rearward movement.
2. Isolate the electrical system. Method to be confirmed.
3. When removing wheels, use a suitable jack and an axle stand.

Long-term storage

Charge the bike for 24 hours prior to storage; the bike can then be stored for up to 12 months without any maintenance to the batteries or electrical system. **Store the bike in a cool, dry place.**

Making the VQ safe for transportation

When strapping the bike for transportation, the straps need to be connected to the front bar and the rear A arms, and tensioned down away from the vehicle to the correct load weight of the straps used. Straps need to be rated at 2 tonnes. When correctly fastened, the parking brake needs to be applied.

Tyre Maintenance

Fitting and removal

It is recommended that these operations be entrusted to a specialist who has the necessary equipment and expertise.

Inflation

Correct inflation pressures are of the highest importance for safety. Check the tyre pressures and inflate the tyres only when they are cold.

Tyre and wheel maintenance

Tyre tread depth should be checked regularly. The shallower the tread, the lower the tyre grip. Stop as soon as possible after a puncture and have the tyre removed and examined. Tyre repairs must be entrusted to a tyre specialist. Distorted or damaged wheels must be replaced.

Tyre replacement

Replacement tyres and wheels must be of the same size designation and type as those specified by the manufacturer. Changes in tyres should not be made without first seeking advice from the tyre or vehicle manufacturer, as the effect on safety, vehicle behaviour, and clearance must be considered. Used tyres should not be fitted if their previous history is unknown.

Tyre ageing

Tyres age, even if they have not been used or have only been used occasionally. Cracking of the tread and sidewall rubber, sometimes accompanied by carcass deformation, is evidence of ageing. Old and aged tyres must be checked by a tyre specialist to establish their suitability for further use.

Parking brake adjustment

The parking brake works in conjunction with the rear brake calliper, but is controlled by the parking brake lever on a separate wire. Check the parking brake before every ride. Adjust the parking brake if your VQ slips or can be moved easily when the brake lever is engaged.

Adjustment

Set the parking brake lever in the OFF position. Loosen the fixture nut and turn the adjustment nut until you can feel it slightly touching. Turn out the adjustment nut half a turn, hold it, and tighten the fixture nut. Recheck the parking brake effectiveness.



Gear oil

Replace gear oil every 6000 km. Place the VQ on a level surface. Select NEUTRAL position, then apply the parking brake. Check the gearbox oil level by removing the gearbox oil level plug. The oil should be level with the bottom of the oil level hole. Removing the drain plug to drain gear oil. Tighten the drain plug and place a funnel into the level hole to refill the gear oil.



Caution

- ▶ Do not overfill. Properly tighten level plug.

Note

- ▶ Replace gear oil at first 500KM maintenance. Then replace each 6000KM. Check oil level each 3000KM
- ▶ Use grade SAE 80W-90 transmission oil in gear box
- ▶ Total oil capacity: 0.55 litres

12V Auxillary Battery

Your VQ has a 12V Standard Motorcycle Battery. This is used for the lights, switches, power steer, display and Horn. It is charged by the main On Board Charger which has an output which acts like an alternator on an ICE vehicle, and can be charged at any time automatically.

Note

- ▶ if the power steering stops working when under heavy use, it could be indicative that the 12V batt needs replacing.



48V Lithium Battery

Your VQ has a Lithium NMC Battery, the battery has a very high power density. It is very important that any noises or heat coming from the battery be investigated immediately.

It is possible to check the battery temperatures on the Display Unit, the Battery can not go over 50 degs C. If in any doubt about the battery immediately contact VQ.



Emergency situations

- ▶ If a breakdown occurs, contact Volt Quads.
- ▶ If a fire occurs, call the emergency services.

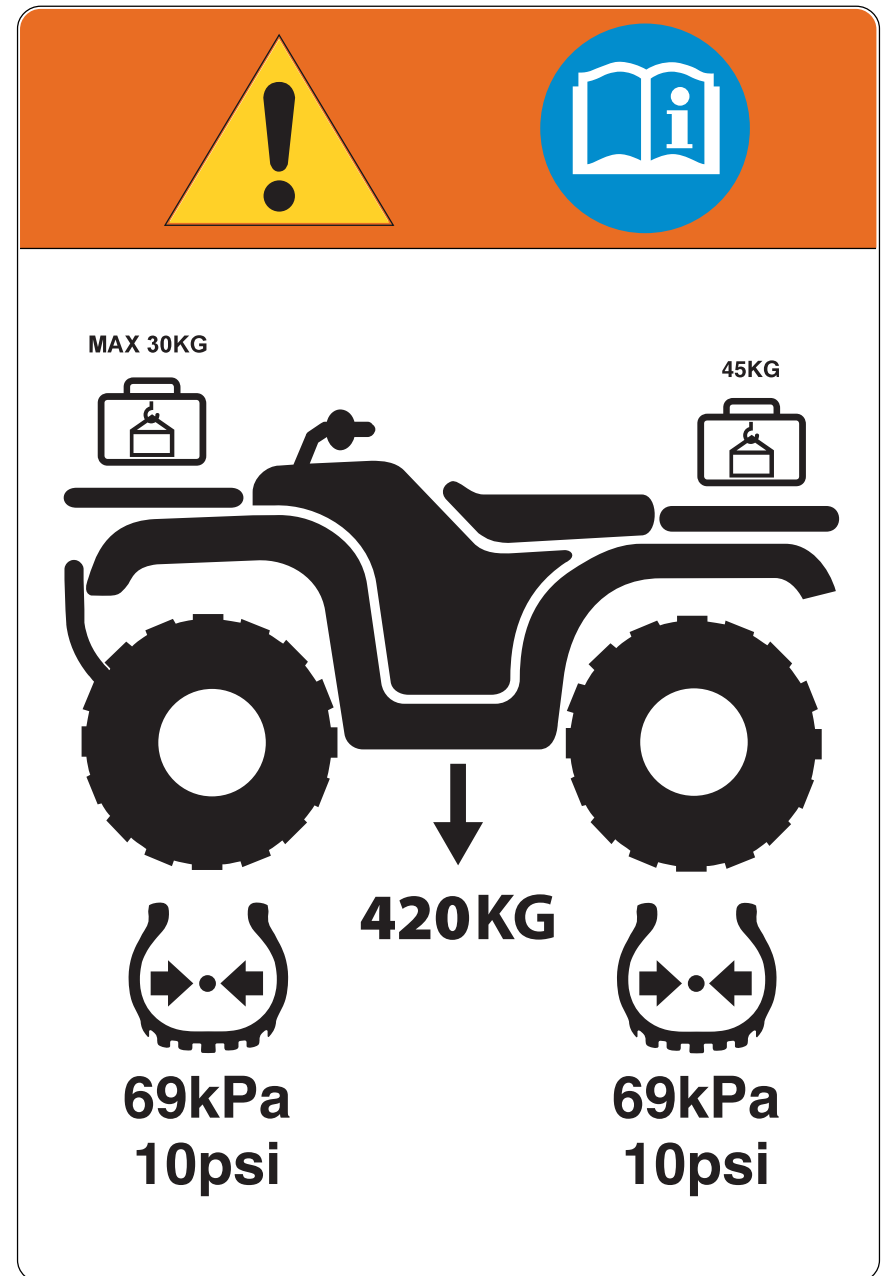
Disposal of your VQ

For correct disposal and recycling of your VQ, take it to your nearest vehicle dismantler.

First things to check

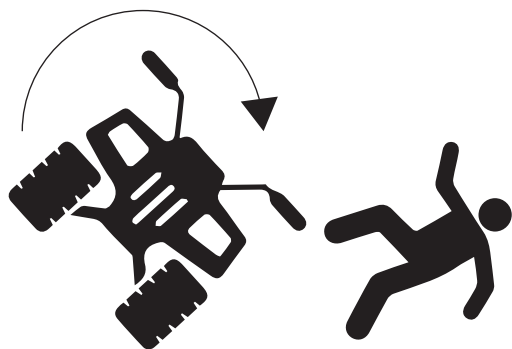
Most problems are simple. Work through this list before calling.

- ▶ Has the red emergency stop button been pushed? Twist it anticlockwise to release it, then follow the starting procedure
- ▶ Review the start sequence and ensure all switches are in the correct position.
- ▶ Is there a warning sign on the display unit? if so contact VQ.
- ▶ Is the parking brake still applied?
- ▶ Is the bike still connected to the charger?
- ▶ Is the battery charged?





WARNING



RISK of ROLLOVER even on flat terrain

ROLLOVERS could result in **DEATH** or **SERIOUS INJURY**

AVOID sudden sharp turns

AVOID steep inclines

AVOID riding across slopes



WARNING



Operating this ATV if you are under the age of 16 increases your chance of severe injury or death

NEVER operate this ATV if you are under age 16



L7E Heavy Quadricycle

OUTPUT

Volts: 48V
Power: 15KW
Protect Fuse: 250A

INPUT

87-267VAC/PFC
Power: 3KW MAX
Output: 48V/25A



WARNING

Improper ATV use can result in SEVERE INJURY or DEATH



**NEVER OPERATE
IF YOU ARE
UNDER AGE 16**



**NEVER CARRY
MORE THAN ONE
PASSENGER**



**NEVER USE
WITH DRUGS
OR ALCOHOL**



**ALWAYS USE AN
APPROVED HELMET
AND PROTECTIVE
GEAR**

NEVER operate:

- without proper training or instruction
- at speeds too fast for your skills or the conditions

ALWAYS

- use proper riding techniques to avoid vehicle overturns on hills and rough terrain in turns
- be extra cautious on paved surfaces - pavement may seriously affect handling and control

**PLEASE REFER TO YOUR OWNERS MANUAL
FOR FURTHER CLARIFICATION**

The VQ comes with a 3 year warranty on the battery and 2 years on all other aspects of the bike.

Please note that an annual service by a VQ-approved technician is required to validate the warranty.

The warranty covers failure of the bike and its component parts under standard operations. It is not an insurance contract for repairs or replacement parts resulting from collision damage, neglect, or misuse. It does not cover the cost of delivering a damaged bike to a repair centre.

It is recommended that separate insurance cover is arranged if this is a concern.

Frame and motor numbers

Please record the Frame and Motor number for further reference.

Date:

Frame number:

(stamped on the frame)

Motor number:

(is the nearside on the motor casing)

Pre-delivery inspection

- ☐ Record the frame and motor number into the owners handbook
- ☐ Attach the 'Cut-out link'
- ☐ Check that all tyres have correct pressure specified on the tyre or in the owners handbook
- ☐ All brakes are adjusted properly
- ☐ Check the suspension and drive chain for proper setup
- ☐ Check that all electrical components and lights are working properly
- ☐ Make sure that the bolts and nuts are fastened properly

Date:

Signed:

Support is available Monday to Friday 9am to 5pm excluding UK bank holidays. For technical/operating queries please contact

Gareth Jones +44 7305607235 UK

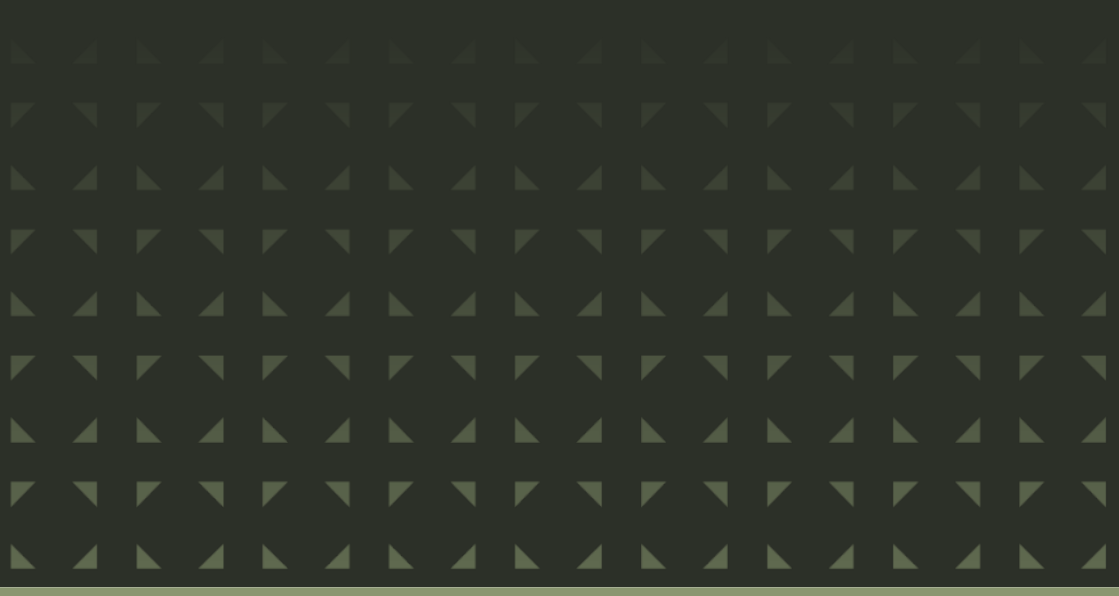
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Out of hours, or for all other queries,
please email info@voltquads.com

**Scan for the latest version
of the digital Handbook**





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