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An Important Message To You From The Vectrix Family

Congratulations and thank you for purchasing the Vectrix VX-2 electric scooter; we welcome you to the community of Vectrix scooter riders. This manual is designed to provide you with a better understanding of the operation, inspection, and basic maintenance requirements of this scooter.

Vectrix continually seeks advancements in product design and quality. Therefore, this manual contains the most current product information available at the time of printing. Because of this, your scooter may differ from the information supplied in this owner's manual. No legal claims can be made on the basis of data in this manual. When it comes time to sell your Vectrix VX-2, please remember to hand over this manual; it is, by law, an important part of the vehicle. If you have any questions concerning the operation or maintenance of your scooter, please contact Vectrix at service@Vectrixscooters.com. For 24 hour updates and additional information about your scooter, visit the Vectrix Website: www.vectrix.com.

Introduction

VX-2 is the kinder, gentler form of transportation.

Now you can leave the lumbering four-wheeler in the garage for those shorter trips everywhere from across town to across campus.

VX-2 is the perfect machine for lower-speed urban, neighborhood, and small town trips. It's also a natural for use with RVs, in retirement communities, and in large-scale venues like airports and convention centers. It has an impressive range of up to 88 kilometers (55 miles) that lets you zip past gas stations and even charging stations as you go.

The VX-2's easy-to-handle lower profile and lighter weight makes it perfect for any two-wheel rider. Its chassis has the responsiveness and maneuverability you need for tighter urban centers and congested traffic. And its advanced technology, intuitive controls, and solid, steel-tube chassis construction makes it just as reliable and exciting as it is affordable.

Index

A good place to locate information about the scooter is in the index in the back of the manual.

The terms “right” or “left” refer to the rider’s right or left when sitting on the scooter.

Useful Information For Safe Riding

This manual contains the word **CAUTION** to communicate something that could hurt you or others. It also contains the word **WARNING** to communicate things that could damage your scooter.

CAUTION: Please read this manual carefully and completely before operating this scooter. Do not attempt to operate this scooter until you have attained adequate knowledge of its controls and operating features, and until you have been trained in safe and proper riding techniques. Regular inspections and proper maintenance, along with good riding skills, will help you to safely enjoy the capabilities and the reliability of this scooter. Disregarding the aforementioned, however, may render the warranty invalid.

Plug in Your Scooter’s Battery

WARNING: Proper care of the scooter’s battery is essential! When not in use, the battery should be left on the charger even if fully charged. Failure to do so could damage the battery and therefore void your battery warranty. See page 4-6 for other important information about the battery.

Owner Information

Record important information pertaining to your scooter here. When contacting your authorized Vectrix dealer, you may need to provide this information.

Vehicle Identification Number (VIN)

Date of Delivery (Day/Month/Year)

Name: _____

Street: _____

City: _____

State: _____

Country: _____

Postal Code: _____

Telephone: _____

Email: _____

Dealer Number

Dealer Stamp

Th
of th

Key Code Number

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A. Vehicle Certification Plate

The VIN is located on the vehicle certification plate. See Location of Important Labels on page 2-3.

A

General Information

VX-2 Technical Specifications

PERFORMANCE	
Maximum Speed	45 km/h (30 mph)
Maximum Reverse Speed	3 km/h (2 mph)
Acceleration	0-45 km/h (0-30 mph) in 7.0 seconds
Range	Up to 64-88 kilometers (40-55 miles)*
Throttle	Patented Multi-Function Throttle provides regenerative braking and slow-speed reverse
COMPONENTS	
Braking	Front and rear hydraulic disc brakes
Tires	130/60-13 (Front) 130/60-13 (Rear)
Front Fork	Telescopic fork
Rear Suspension	Single-shock, oil/gas pressure, preload-adjustable

COMPONENTS	
Chassis	Powder-coated tubular-steel space frame
Battery	Maintenance-free sealed silicon/lead
BATTERY	
Capacity	2.8 kWh
Voltage	48V
Charger	48V/20A battery charger, 110V-220V (50/60Hz)
Charge Time	30-100%: Approx 3.5 hours** 100%: Switch OFF 1.5 hours**
Discharge Cycles	Up to 300 cycles (remaining capacity no less than 60%)

* Speeds and range vary based on riding conditions and operation.

** A pulse charge procedure continues after charging has been completed and the fan turns itself OFF. The charger's 100% LED and the green LED remain ON as well.

ELECTRONICS	
Controller	Electronic control with diagnostic software
Instrumentation	Central analog/digital display including battery charge, and system status speedometer, odometer
Data system	All-digital
Input	110V AC 60 Hz 220V AC 50 Hz
DIMENSIONS	
Weight	195 kg (430 lbs)
Wheelbase	1408 mm (55.4 in)
Seat Height	760 mm (29.9 in)
Storage Capacity	Underseat
Carrying Capacity	2 passengers

STORAGE (Maximum Load)	
Top Compartment	5 kg (11 lbs)
Underseat	5 kg (11 lbs)
Hook	3 kg (6.6 lbs)
WEIGHT	
Gross Vehicle Weight Rating (GVWR)*	341 kg (752 lbs)
Gross Axle Weight Rating (GAWR) Front**	133 kg (293 lbs)
Gross Axle Weight Rating (GAWR) Rear**	208 kg (459 lbs)
WARRANTY	
Warranty	24 months
EMISSIONS	
Emissions	Pollutants: Zero CO2: Zero Exhaust Noise: Zero

*The Gross Vehicle Weight Rating is the combined weight of the scooter, passengers and cargo.

**The Gross Axle Weight Rating is the maximum allowable weight that can be placed on an individual axle.

Vehicle Range

The range of an electric vehicle is defined as the distance the vehicle will travel on a single full charge of the battery. Just like EPA mileage estimates for an automobile, “your mileage may vary.” Your range results are a direct reflection of your riding habits. The more conservative you ride the better range you can expect from your Vectrix VX-2 scooter.

Some of the factors which affect range include speed, acceleration, number of starts and stops, as well as changes in elevation and temperature. The combination of these factors, as you travel from one point to another, defines your trip profile. In addition, tire pressure and payload are important considerations.

We suggest that you ride conservatively when you first get your Vectrix VX-2 scooter, and get to know your scooter and your commute. Once you become familiar with the range versus performance of your scooter, you can adjust your riding characteristics if you so desire. This applies mainly to riders with trip profiles which are at the edge of the performance envelope. Those individuals with relatively short commutes can expect to ride quite aggressively and reach their destination with energy to spare.

Frequently Asked Questions

Does Acceleration Affect Range?

Yes, acceleration is the rate at which you are attempting to increase the speed of your scooter. The greater the acceleration the faster you are depleting the energy in the battery pack. The harder and more frequently you accelerate the more adversely you will affect the range of your scooter. Being “first off the line” means you will also be the first to deplete your energy supply.
Hard Acceleration = Reduced Range

Does Weight Affect Range?

The more mass you are pushing/lifting the more energy it takes to accomplish the mission. Avoid keeping unnecessary items in your scooter since it will impact your range.
Added Weight = Reduced Range

Why Do I Get Less Range At Higher Speeds?

It takes more power to push a Vectrix faster because you encounter aerodynamic resistance. The faster you attempt to travel the more important this factor becomes. Energy (kWh) is power (watts) integrated over time. Also, it is a fundamental characteristic of battery energy storage systems, that the amount of energy you are able to extract (usable energy) is inversely proportional to the rate at which you draw out the energy. If a battery pack is rated for 30 Ah if you draw 10 amperes of current you will deliver more energy than if you are drawing 100 amperes of current. Bottom line is that the more conservative you drive the further you will travel on a single charge.

Faster Speed = Reduced Range

How Does Tire Pressure Affect Range?

As the scooter is ridden, heat is generated in the tires from deformation at the contact patch. Higher inflation pressure reduces the deformation, which results in reduced heating of the tire and reduced energy loss. A tire that is at 2/3 of the proper inflation pressure will have as much as 30% greater rolling resistance than a tire inflated to the specified pressure. This difference can easily be felt when moving the scooter manually. More force is required to move the scooter when tire pressure is low. Keep the tires inflated to the specified pressure to maximize range.

Incorrect Tire Pressure = Reduced Range

Optimizing Your Range By Adapting Your Riding Style

- Apply the throttle slowly and try to match the scooter's acceleration with your throttle position.
- Hard acceleration will decrease your range.
- Coasting whenever possible makes a significant difference. The regenerative (regen) braking system on deceleration takes some of the energy from the motor and turns it back into electrical energy. This energy is then transferred to the battery. Use regen braking whenever safely possible to increase your range.
- Plan ahead for decelerations and coast whenever possible. For example, do not rush to traffic signals.

Emissions Information

The Vectrix VX-2 electric scooter is a Zero Emissions Vehicle (ZEV) under California Air Resources Board (CARB), U.S. Federal (EPA), and European Union standards. It uses no gasoline or other liquid fuel. It has no tailpipe and therefore no tailpipe emissions. It also has no exhaust or evaporative emissions. Since the Vectrix VX-2 runs solely on electricity, it is the only kind of vehicle which actually gets cleaner in terms of air pollution each year, as the electrical grid gets cleaner and more renewable.

WARNING: Please use only Vectrix approved parts and accessories for your Vectrix scooter. Parts and accessories for your Vectrix scooter have been checked and tested for safety and suitability. Vectrix is unable to accept any liability whatsoever for parts and accessories which have not been approved.

Transporting

WARNING: Do not use the handlebars to tie down the VX-2. Damage resulting from this tied-down method is not covered by the warranty.

It is recommended that the scooter be tied-down using ratchet straps. Place the ratchet straps around a frame contact point. Soft straps must be used to prevent scratches or other damage.

NOTES

General Safety Precautions

1. This is a performance scooter and should be treated with extreme caution.

2. Proper safety gear, including a regionally approved

WARNING: Charge the Vectrix battery with only the Vectrix supplied charger. Use of any other charger may cause a safety issue and will void the warranty.

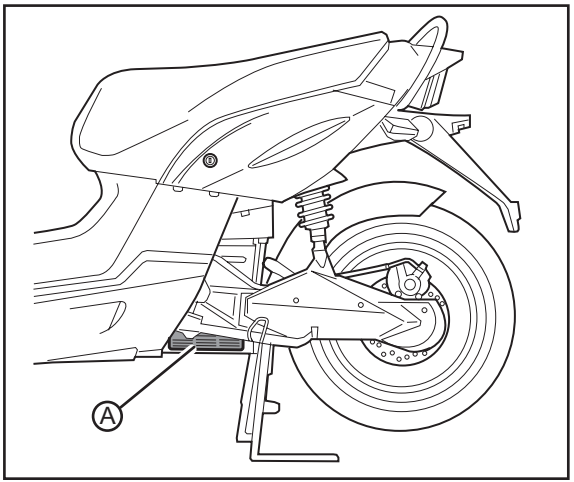
5. The battery must be charged within 24 hours if fully discharged, and charged within one month if stored fully charged. Vectrix recommends that you plug in your Vectrix scooter after one month even if charged. Please leave your Vectrix scooter plugged in whenever possible.

6. The battery does not require or tolerate deep discharging. To get the most battery life, recharge the battery immediately after each ride. Leaving the battery in a discharged state will cause damage. See Charging The Battery on page 4-6.

Location of Important Labels

Vehicle Certification Plate

The vehicle certification plate (A) is located on the left lower side of the frame behind the side stand.



This plate contains the following information:

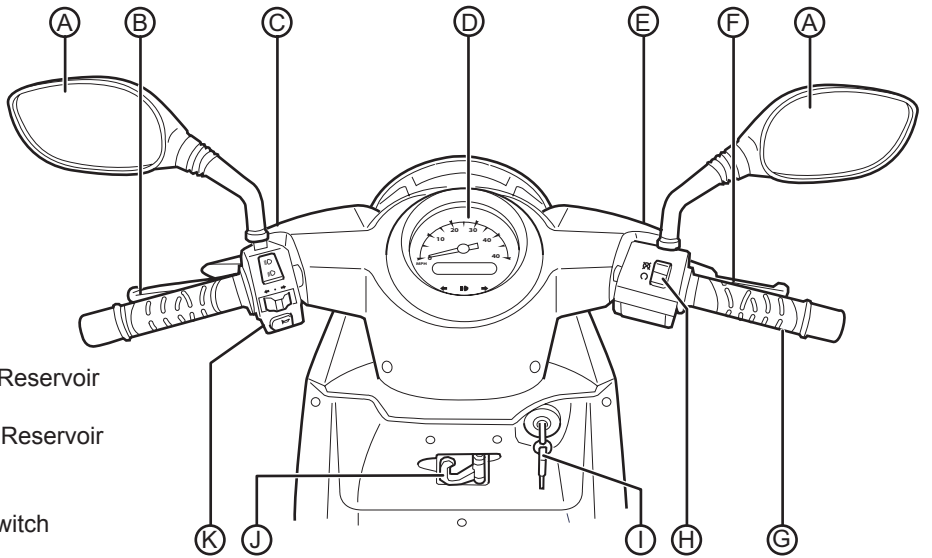
- Gross Vehicle Weight Rating (GVWR)
- Gross Axle Weight Rating (GAWR) Front and Rear
- Vehicle Identification Number (VIN)
- Rim Size
- Tire Pressure
- Date of Manufacture

Battery Warning Label

The battery warning label is located in the underseat storage compartment on top of the battery.

NOTES

Scooter Controls



A. Mirrors
B. Rear Brake Lever
C. Rear Brake Fluid Reservoir
D. Speedometer
E. Front Brake Fluid Reservoir
F. Front Brake Lever
G. Throttle Control
H. Power ON/OFF Switch
I. Key Switch
J. Storage Hook
K. Left Handlebar Control

A. Mirrors
Before riding, ensure that both mirrors are clean and adjusted correctly.

B.,F. Front and Rear Brake Lever
The front brake lever controls the front brake caliper; the rear brake lever controls the rear brake caliper. When braking, the throttle should be in the neutral position. The tail/brake light will illuminate when the brake levers are squeezed.

C.,E. Front and Rear Brake Fluid Reservoir
For description and operation see Brakes on page 5-2.

D. Speedometer
For description and operation see page 3-7.

G. Throttle Control
For description and operation see page 3-13.

H. Power ON/OFF Switch
For description and operation see page 3-12.

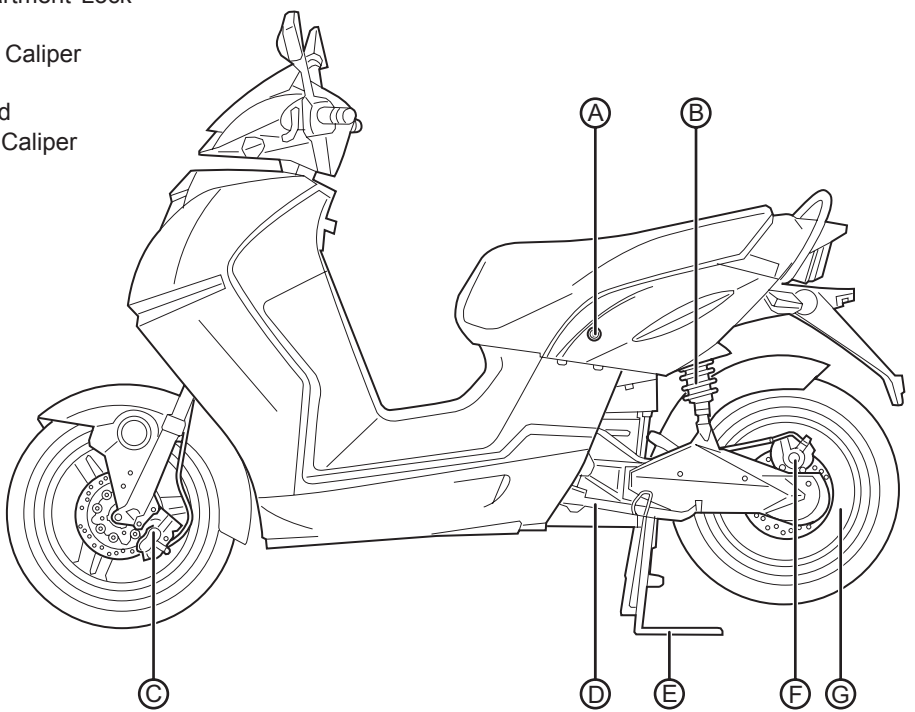
I. Key Switch
For description and operation see page 4-2.

J. Storage Hook
For description and operation see page 4-5.

K. Left Handlebar Control
For description and operation see page 3-10.

Left Side View

A. Seat Compartment Lock
B. Rear Shock
C. Front Brake Caliper
D. Side Stand
E. Center Stand
F. Rear Brake Caliper
G. Motor



A. Seat Compartment Lock
For description and operation see page 4-3.

B. Rear Shock
For description and operation see page 4-14.

C., F. Front and Rear Brake Calipers
The brake calipers take the mechanical action of the brake lever and turn it into hydraulic force. This hydraulic force pushes the brake pads against the brake rotor.

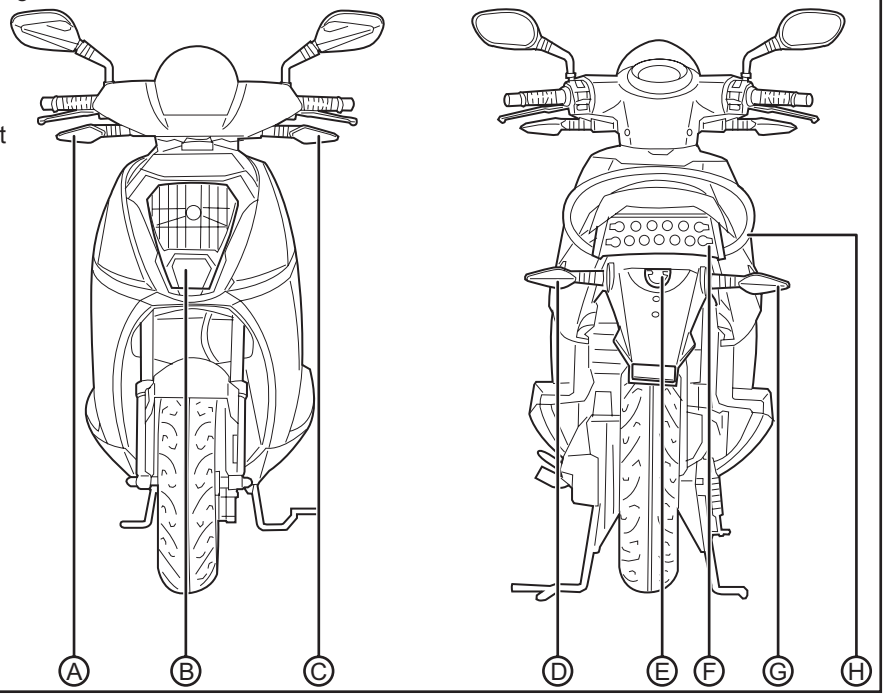
D. Side Stand
The side stand swings out from the side and supports the scooter when parked.
WARNING: Park only on a flat firm surface, otherwise the scooter could fall over causing damage.

E. Center Stand
For description and operation see page 4-15.

G. Motor
The brushless DC motor is mounted on the swingarm.

Front and Rear View

A. Right Front Turn Signal Light
B. Headlight/Daytime Running Light
C. Left Front Turn Signal Light
D. Left Rear Turn Signal Light
E. License Plate Light
F. Tail/Brake Light
G. Right Rear Turn Signal Light
H. Passenger Grab Handle



A.,G. Right Side Turn Signal Lights
These lights will flash anytime the key switch is in the ON position and the turn signal switch is moved to the right. The speedometer right turn signal indicator will also flash.*

B. Headlight
The headlight contains a dual filament high/low beam bulb and an LED daytime running light.*

C.,D. Left Side Turn Signal Lights
These lights will flash any time the key switch is in the ON position, and the switch is moved to the left. The speedometer left turn signal indicator will also flash.

E. License Plate Light
This light will illuminate any time the key switch is in the ON position.*

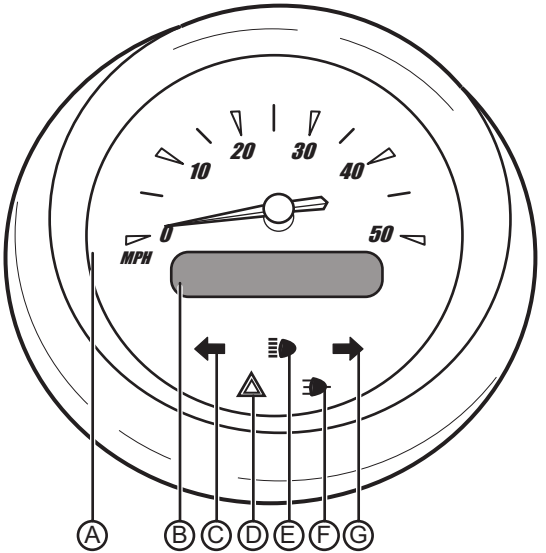
F. Tail/Brake Light
The tail light will illuminate any time the key switch is in the ON position. The brake light will illuminate any time either the front or rear brake levers are squeezed.*

H. Passenger Grab Handle
A passenger should have his or her hands on the grab handle or wrapped around the driver at all times when the scooter is in motion.
This handle is also used for setting the scooter on the center stand. It is not, however, intended to be used to lift the scooter.

*These are extreme long life light emitting diode (LED) lighting systems. See your authorized Vectrix dealer for replacement of these lighting systems.

Speedometer

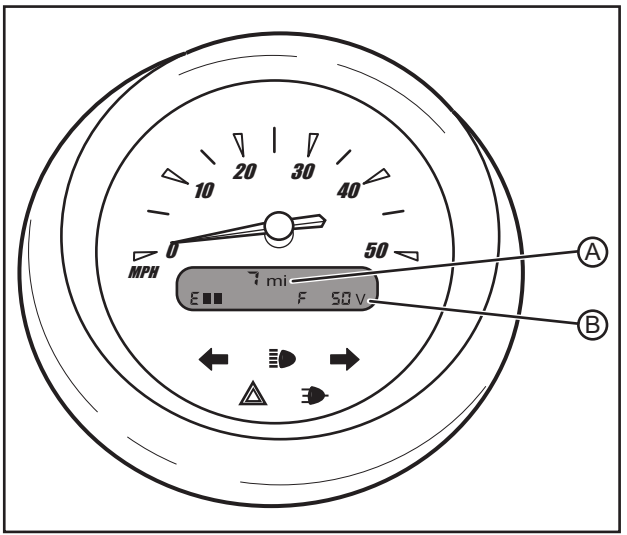
A. Speedometer
B. Message Display
C. Left Turn Signal Indicator
D. Warning Indicator
E. High Beam Indicator
F. Kickstand Down Indicator
G. Right Turn Signal Indicator



Indicators

A. Speedometer
The speedometer is an analog meter in kilometers per hour (km/h) and miles per hour (mph).

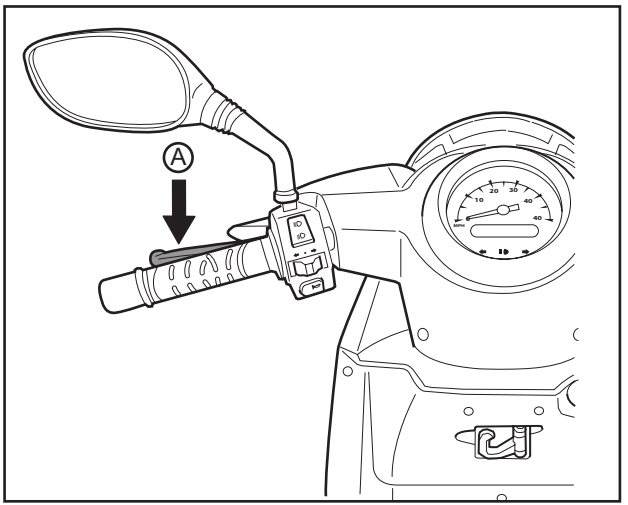
B. Message Display

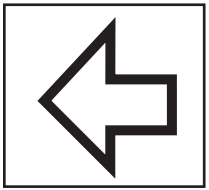


The bottom line of the display (B) “E through F” is an indication of voltage and not range or capacity.

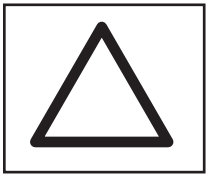
The top line of the display (A) is the trip odometer. This shows how many miles the scooter has been ridden since it was last set to zero. The reading can be viewed in either kilometers or miles. To change the reading between kilometer or miles:

- Power ON/OFF switch to the OFF position.
- To set the trip odometer to zero, squeeze and hold the left brake lever (A).

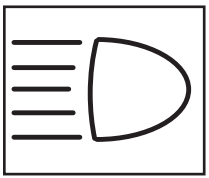




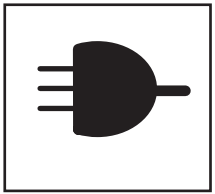
C.,G. Turn Signals
An arrow on the speedometer will flash green in the same direction as selected by the turn signal switch. This will remain on until the turn signal request has been canceled.



D. Warning Indicator
Not Used

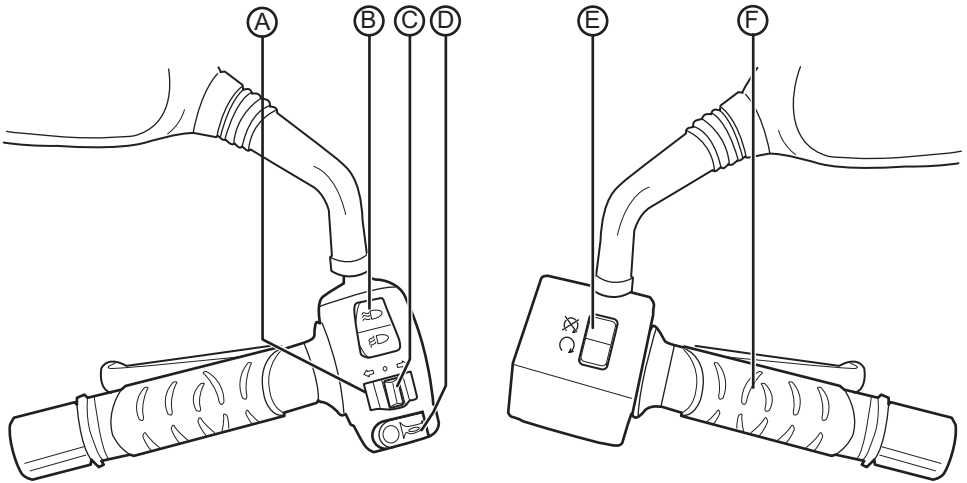


E. High Beam Indicator
When the headlight high beam is on, this indicator will illuminate blue, and will remain on until the high beam is turned off.

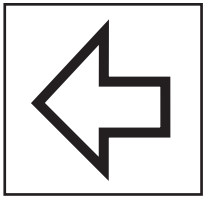


F. Kickstand Down Indicator
This indicator will inform the rider that the kickstand is down.

Handlebar Controls



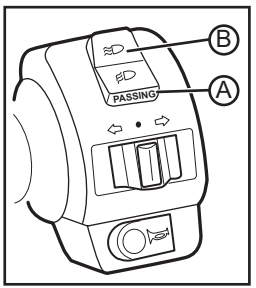
A. Turn Signal Switch
B. Headlight High/Low Beam and Flash-To-Pass Switch
C. Turn Signal Cancel Button
D. Horn Button
E. Power ON/OFF Switch
F. Throttle Control



A. Turn Signal Switch
When the turn signal switch is pushed in the left or right position, the corresponding front and rear turn signals will flash. When the turn signal switch is ON, the corresponding turn signal indicator on the speedometer will illuminate.

An audible signal will sound if the switch is left ON for 20 seconds or more while moving.

Always signal your turns and other maneuvers as required by law.



B. Headlight High/Low Beam Switch
When the end of the switch (B) is pushed, the headlight will change from low beam to high beam. It will stay in the selected position until it is switched back. When in high beam position, the high beam indicator on the speedometer will illuminate.

Flash-To-Pass
When the headlight is in the low beam position, push the end of the switch (A) and the high beam will illuminate and will stay illuminated until the switch is released. When released, this switch will default back to the low beam position; the high beam indicator will also illuminate.

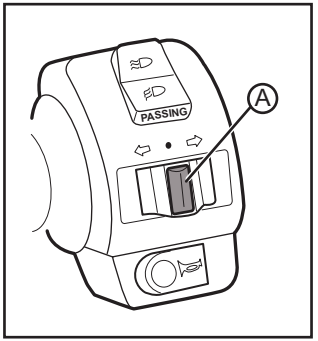
The headlight system also has settable features. To set the features:

Dual Beam

- Power ON/OFF switch in the ON position.
- Press and release the flash-to-pass switch three (3) times.
- Two (2) horn chirps will be heard. Both headlight beams will be ON when the headlight switch is pressed to the high beam position.

Turn Lights Off in Daytime Running Light

- Power ON/OFF switch in the OFF position.
- Press and release the flash-to-pass switch three (3) times.
- Three (3) horn chirps will be heard. Both headlight beams will be turned OFF.
- Any change in switch position will re-enable both beams.



C. Turn Signal Cancel Button
Unlike an automobile, the turn signals must always be cancelled manually on the scooter. Push briefly on the white turn signal cancel button (A), and it will return to the center, or, OFF position.

D. Horn Button
When the key is in the ON position, the horn will sound when the yellow button is pressed. Electric vehicles run quietly; the horn can be used to warn pedestrians or other motorists of your presence. The horn's chirp feature allows you to send a "short" horn sound to alert pedestrians you are coming.

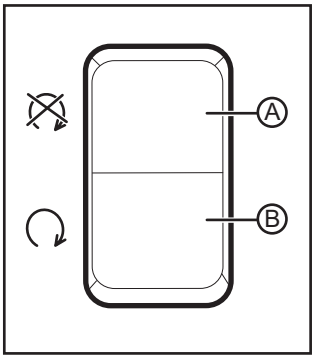
To enable the chirp feature:

1. Hold the horn switch in while turning the key from "OFF" to "ON."

2. Once the horn sounds, it is enabled. To disable, repeat the above steps.

3. Tapping the horn switch will also provide a "chirp."

4. Holding down the horn switch will provide a "short" horn sound than the longer horn sound.

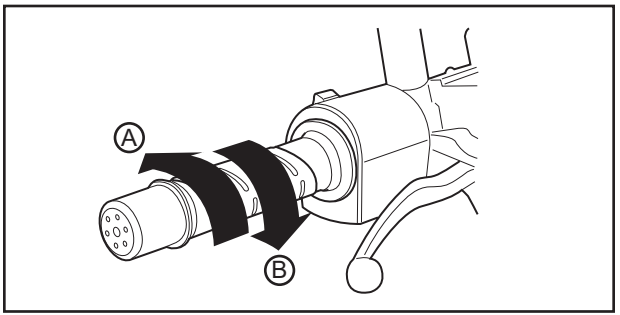


E. Power ON/OFF Switch
When the red switch is pressed up (A), it will stop power to the motor. The motor will remain in this state until the switch is pressed down (B). The switch does not turn off all electrical circuits, just the operation of the motor.

F. Throttle Control

Twist the throttle in a counter-clockwise rotation (A) to energize the motor and start the scooter in a forward direction. Release the throttle and it will snap back to the neutral position, de-energizing the motor.

When the scooter is moving, twisting the throttle control in a clockwise rotation (B) will start the regen braking feature. Use regen braking whenever safely possible to increase your range. Regen braking takes some of the energy from the moving scooter and turns it back into electrical energy. This energy is then transferred to the battery, contributing to increased energy efficiency. A slight drag is felt when regen braking is activated.



Your scooter has the ability to reverse at very low speeds to assist you with maneuvers such as backing out of parking spaces. Reverse is only enabled when the scooter is completely stopped. The VX-2 will reverse at a slow speed of 3 km/h (2 mph).

To activate reverse from a complete stop, return the throttle to the neutral position.

By requiring that the throttle returns to neutral before going into reverse, the VX-2 is prevented from going into reverse immediately after using regen braking to stop. Release the throttle control and the reverse drive ceases.

NOTES

General Operation

Pre-Ride Inspection

Before operating the Vectrix VX-2, check the following to make sure the scooter is secure and intact.

- **Battery**
  Make sure the speedometer display is indicating a charged battery. The scooter should not be used until at least 70% power has been achieved.

- **Brakes**
  Squeeze the brake levers individually while pushing the scooter to see if it rolls. You should be able to lock-up the wheels completely by applying the brakes.

  Ensure that there is sufficient brake fluid in the master cylinder reservoir, and that there are no brake fluid leaks.

- **Throttle**
  With the key switch in the OFF position, apply the throttle and release to verify that the throttle is smooth and returns correctly.

- **Steering**
  Ensure that the steering movement is smooth and tight.

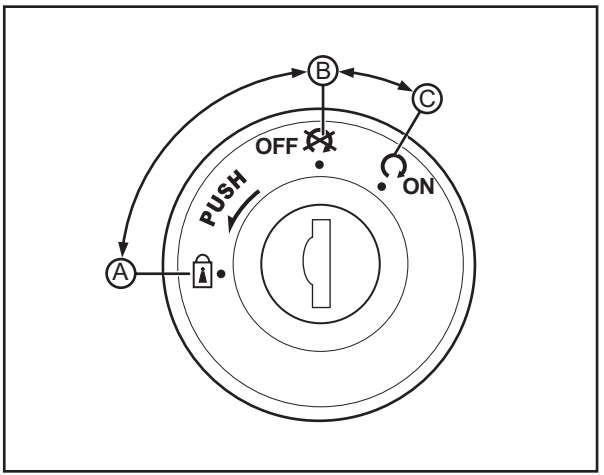
- **Tires**
  Check both tires for condition and tread depth. Check cold tire pressure frequently. Maintain correct tire pressure as specified on page 5-5. Replace the tires when the tread height is 2/32" or less.

CAUTION: Under-inflation is the most common cause of tire failure and may result in severe tire cracking, tread separation, “blowout,” or unexpected loss of scooter control causing personal injury and possible death.

- **Electrical System**
  Check for correct function of the headlight, turn signals, and the brake/tail light.

- **Horn**
  Check for correct operation of the horn.

Key Switch/Steering Lock Positions



This is a three-position switch that is located below the handlebar to the right of the storage hook. The switch positions are as follows:

A. Steering Lock

B. OFF

C. ON

The key should be removed from the scooter when parked to prevent theft. The key can be removed in either the OFF or steering lock position.

A. Steering Lock
Using the steering lock when parked will prevent unauthorized use and help prevent theft.

To Lock:

1. Turn the handlebar all the way to the right.
2. Push the key down from the OFF position and turn the key counter-clockwise while still pushing it in.
3. Remove the key.

To Unlock:

1. Install the key and turn clockwise.
2. Remove the key.

B. OFF
In this position:
- All functions are OFF
- Steering lock is not engaged
- Scooter can be moved

C. ON
In this position:
- All functions are ready
- Scooter can be enabled (ready to ride)
- Speedometer display turns ON
- Lights turn ON

Storage

Loading of Objects and Passengers

CAUTION: Do not load the scooter any heavier than the gross vehicle weight rating (GVWR). Exceeding the GVWR could cause parts on the scooter to break, and could change the way in which the scooter handles. Either of these occurrences could cause you to lose control. Overloading can also shorten the life of the scooter.

- Use only the underseat storage compartment or storage hook when transporting objects.
- Do not exceed the GVWR.
- The scooter is certified for a maximum of 2 people.

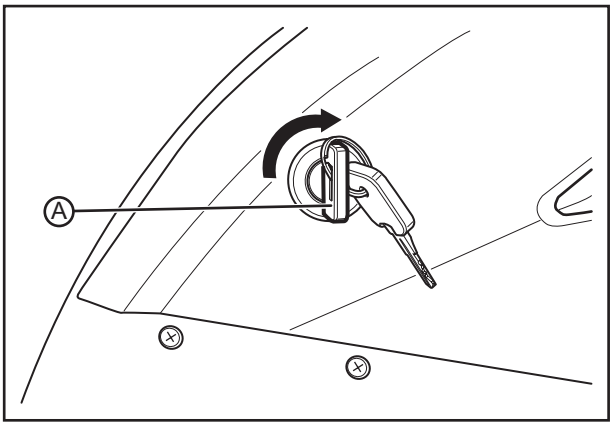
Seat Compartment Lock

The lock is located on the left side of the scooter, below the seat.

WARNING: Do not attempt to open the underseat storage compartment while someone is sitting on the seat. Possible damage to the latch assemble could result.

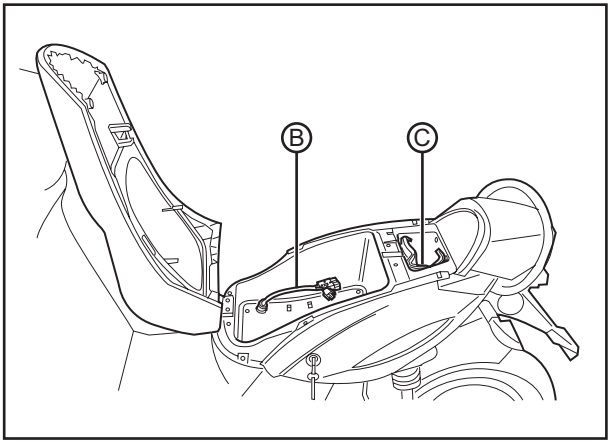
To open:

Insert the key (A) into the lock and turn clockwise. Lift the rear of the seat up.



The key can be removed; it is not necessary for the key to be in the lock in order to close the seat.

The under seat storage (B) and the top case storage (C) have a maximum load capacity of 5 kg (11 lbs).



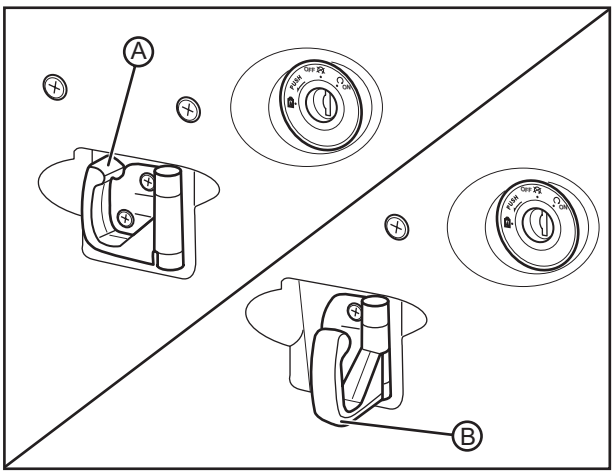
To close:

Lower the seat, pressing down on the rear of the seat until a click is heard. Pull up on the rear of the seat to verify it is secured.

Storage Hook

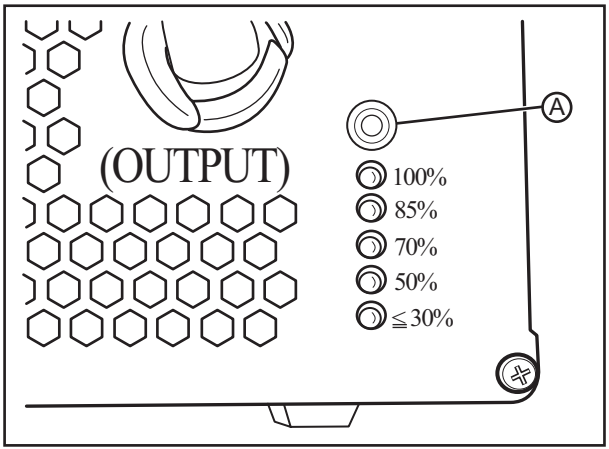
The storage hook (A) is located below the handlebar. Items placed on the hook should not hang below the rider's foot rest or hinder operation of the scooter. The hook should be folded in when not in use.

- To use the hook, turn to the right and fold out (B).
- A load of up to 3 kg (6.6 lbs) can be hung on the hook.



Battery Charge Level

The battery charger's green LED (A) and the battery charge level indicators are located on the end of the charger. The charge level indicators indicate the level of charge in the battery.



The battery charger's green LED is on solid when:

- The battery charger's AC power cord is plugged in but not connected to the battery.
- Or when the battery is fully charged or is pulse charging. The 100% charge level indicator will also be illuminated.

The charger's green LED will flash during the battery charging process until a 100% charge is reached.

LED Charge Level Indicators:

Green	100%	Battery has less than 100% of its capacity
Amber	85%	Battery has less than 85% of its capacity
Amber	70%	Battery has less than 70% of its capacity
Red	50%	Battery has less than 50% of its capacity
Red	< 30%	Battery has less than 30% of its capacity

Charging The Battery

CAUTION:

- Use extreme caution when dealing with electricity.
- Use residual current device (RCD) or ground fault circuit interrupter (GFCI) protected AC voltage outlet.
- DO NOT use non-grounded electrical plug adapters.
- DO NOT use the charging cord if any part of charging cord is damaged.

WARNING:

- Do not use portable or stationary backup generating equipment to charge the scooter. This may damage the scooter's charging system. Only charge the from utility supplied voltage source. The appropriate AC voltage should be 120v/60Hz or 220v/50Hz.

- Vectrix does not advise the use of extension cords to charge the scooter. If you use an extension cord, it must be of the correct size to avoid excessive voltage drop. The extension cord should be rated for 20 amps and NO longer than 7.6 m (25 ft).

WARNING: Charge the Vectrix battery with only the Vectrix supplied charger. The use of any other charger may cause a safety issue and will void the warranty.

It is not possible to overcharge the battery when using the Vectrix VX-2 charger.

It is recommended to charge in a location that is away from combustible materials and in a well-ventilated area. If charging your Vectrix scooter outdoors, avoid charging in the rain.

Frequent charging of the battery will significantly increase its life.

Charging Times:

- 30-100% - approximately 3.5 hours
- 100% - switch OFF - approximately 1.5 hours*

The charging process can be interrupted at any time.

The scooter should not be used until at least 70% charge has been reached.

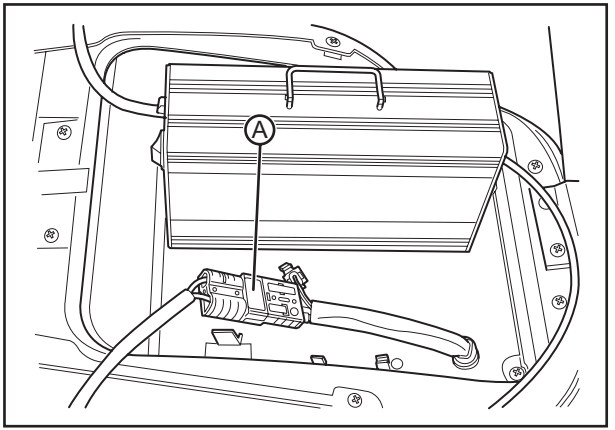
* A pulse charge procedure continues after charging has been completed and the fan turns itself OFF. The charger's 100% LED and the green LED remain ON as well.

Note: Frequent top-off charging is good for the battery's life span, so do not hesitate to charge frequently. The charger's sensing electronics will stop/pause the charging process automatically.

1. Ensure that the key switch is in the OFF position. Do not turn the key switch ON at any time during the charging process.

2. Open the seat; see Seat Compartment Lock on page 4-3.

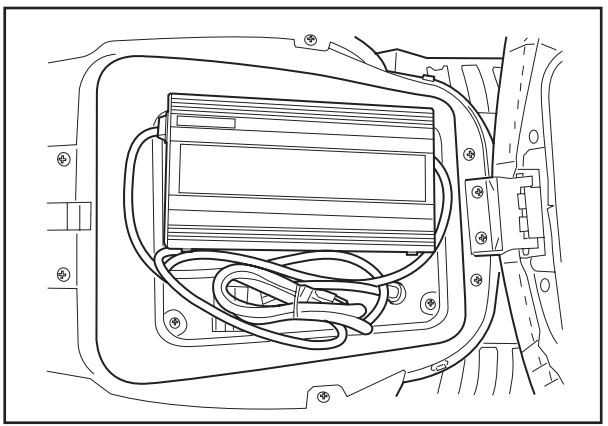
3. Locate the VX-2 blue battery charging plug (A).



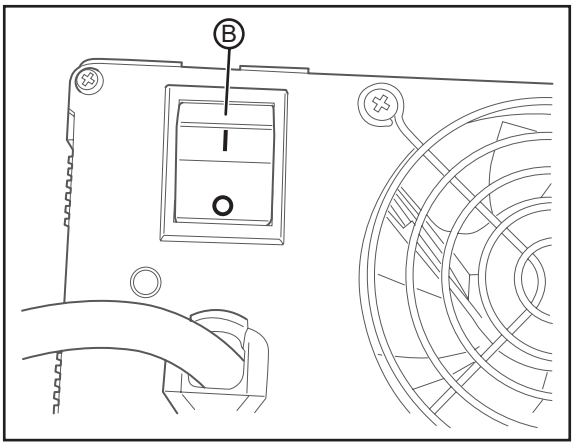
4. Connect the blue charger plug to the blue battery plug.

5. Connect the charger. Always connect the charger to a GROUNDED outlet. When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 7.6 m (25 ft). The charger can be used on 110 V AC or 220 V AC current. The voltage does not change the amount of time that the scooter takes to charge.

   The charge can be stored in the under seat storage compartment.



6. Press the switch (B) on the charger to the “I” position.



The cooling fan will start and the respective battery charger level indicator LED will illuminate.

7. Upon completion of the charge, press the switch on the charger to the “0” position.

8. Disconnect the charger from the scooter and the AC power source.

Operating Your Scooter

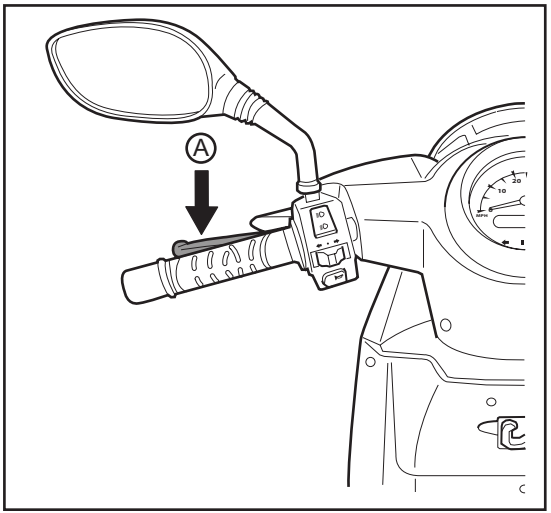
Starting

1. Turn the key switch to the ON position.

2. Verify that the charge level indicator reads fully charged. The scooter should not be used until at least 70% charge has been reached. Riding on a partially charged battery will significantly reduce its life.

3. Press the power ON/OFF switch to the ON position.

4. Squeeze in on the left brake lever (A) and hold.



Braking

On the right handlebar is the hand operated brake lever. The brake lever controls the front brake when the lever is squeezed. On the left handlebar is the hand operated brake lever that controls the rear brake. When braking, the throttle should be in the neutral position.

CAUTION: If you apply the front or rear brake hard enough, it is possible to lock the wheels. This could cause you to lose control of the scooter. We suggest progressive use of the brakes to bring the VX-2 scooter to a complete stop without locking the wheels. Your VX-2 scooter is a light-weight performance product and therefore practice is recommended to safely perfect emergency stops.

Regenerative (Regen) Braking

A distinctive feature of your Vectrix scooter is the regenerative braking; this feature is part of the throttle control.

Coasting whenever possible makes a significant difference. The regen braking system on deceleration takes some of the energy from the motor and turns it back into electrical energy. This energy is then transferred to the battery. Use regen braking whenever possible to increase your range.

Throttle Control

The throttle on the right handlebar is a distinctive feature of your scooter. The throttle is the user interface which determines forward motion as well as implementing regen braking and the reverse feature. The bi-directional throttle is very simple to use.

- Twist the throttle counterclockwise to accelerate in the forward direction.
- Release the throttle and it returns to a neutral position.

To activate regen braking:

- Simply twist the throttle clockwise beyond the neutral position and you will progressively engage in regen braking.

- Always “cover” the front brake lever with the index and middle fingers of your right hand when using regen to slow the vehicle. This will ensure that you are ready to apply the front brake if it becomes necessary to slow the scooter quickly.

- Never use the rear brake lever (on the left handlebar) by itself or with regen braking, without also using the front brake lever (on the right handlebar). Using only the rear brake may result in the rear tire sliding, particularly when regen is used. Be ready to apply both the front and rear brakes.

Your scooter has the ability to reverse at very low speeds to assist you with maneuvers such as backing out of parking spaces. Reverse is only enabled when the scooter is completely stopped.

The VX-2 will reverse at a slow speed of 3 km/h (2 mph). To activate reverse from a complete stop, return the throttle to the an<tral position, then twist the

By requiring that the throttle returns to an<tral before negotiating reverse, the VX-2 (Br has the ability to 1020 BDC ≤0

Rear Shock Adjustment

The rear shock spring pre-load can be adjusted for rider's comfort and cargo load. It should be adjusted so that the shock does not bottom out or top out when going over bumps.

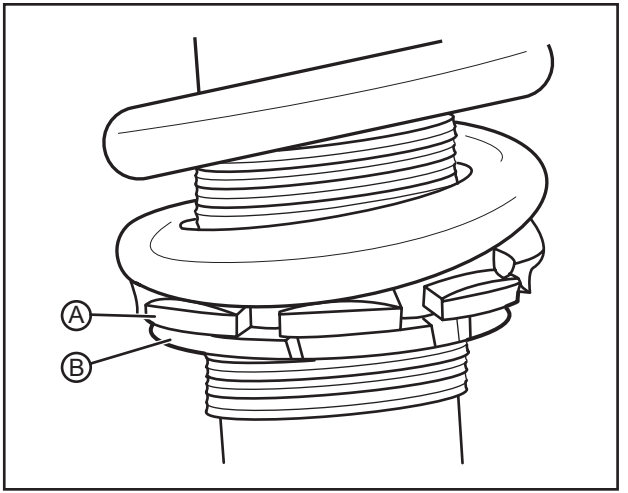
Spring Pre-load Adjustment:

1. Clean any dirt or debris from the threads of the shock near the lock ring. The lock ring is located on the lower portion of the rear shock.

2. Using a lock ring wrench, loosen the lock nut (B).

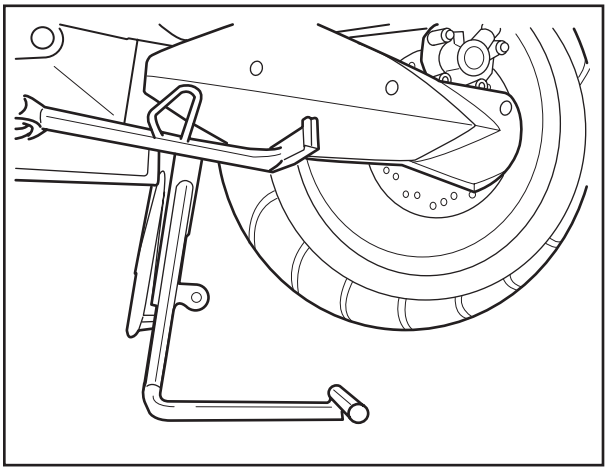
3. To decrease the pre-load on the spring, turn the spring nut (A) clockwise on the shock. To increase the pre-load on the spring, turn the spring nut (A) counter-clockwise on the shock.

4. Tighten the lock nut (B) when the adjustment is complete.



Center Stand

The center stand holds the scooter in an upright position.



When to use the center stand:

- During a long stop
- When the ground or surface is too unstable for the side stand
- During servicing

Placing the VX-2 on the center stand:

1. Grasp the left side of the passenger grab handle with your right hand (A). See next page for image.

2. Hold the VX-2 level with your left hand on the left handlebar grip.

3. Place your right foot on the lower edge of the center stand and push downward while guiding the VX-2 backward.

To fold the side stand in:

1. Straddle the scooter.

2. Set the scooter upright.

3. Use your left foot to return the side stand upward into the chassis.

Note: When the side stand is out and the key is in the "ON" position, the throttle is disabled.

NOTES

Owner's Responsibilities

1. This owner's manual should be considered a permanent part of this scooter and should remain with it even if the scooter is subsequently sold.

2. Perform routine care and maintenance of your electric scooter as detailed in this owner's manual.

3. Use only Vectrix approved parts and Vectrix scooter accessories.

4. The operator is responsible for learning and obeying all country, federal, state, and local laws governing the operations of an electric scooter.

5. Always wear a regionally approved helmet, goggles, appropriate boots, and all other appropriate safety equipment when operating an electric scooter.

Battery

WARNING: You must leave your scooter on the charger if you expect it to sit in storage or unused for more than one (1) month.

Please leave your Vectrix scooter plugged in whenever possible.

1. The battery is a sealed silicon/lead power system. While it does require charging, it does not require maintenance.
2. The battery should be kept away from excessive heat. The silicon/lead cells should not get above 71°C (160°F). Do not store in a hot trailer or leave the battery in direct sunlight.
3. Only an authorized service agent is qualified to have access to and troubleshoot the battery.
4. Dispose of the battery according to your state and local laws.

General Maintenance

Brakes

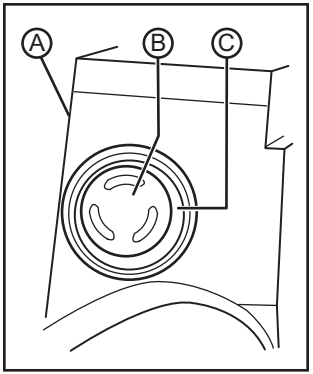
Brake Fluid Level Inspection

WARNING: Do not spill brake fluid on painted surfaces, the finish could be damaged. Spilling brake fluid on the body plastics will cause them to crack. Clean off any brake fluid spills immediately.

Always place a shop towel under the master cylinder reservoir prior to removing cover.

Low fluid levels may indicate worn brake pads or a leak in the hydraulic system. Inspect the brake pads for wear and/or the hydraulic system for leaks. Use only new DOT 4 brake fluid from a sealed container.

The brake fluid should be flushed out and replaced every two (2) years.



Inspect the level of the brake fluid through the sight glass (B). If the fluid level is visibly below the low level indicator (C), brake fluid must be added. Clean any dirt or debris from the cover (A) before opening the reservoir.

1. Remove the top trim panel.
2. Remove the two Phillips screws, securing the cover onto the reservoir.
3. Add new DOT 4 brake fluid.
4. Inspect the cover seal, ensuring that it is free of any wear or damage and that it is positioned correctly.
5. Install the cover and tighten the Phillips screws.
6. Install the top trim panel.

Suspension

Front

- Visually inspect the front fork seals for any leakage.
- Visually inspect for scratches or damage on the inner front fork tubes.

Rear

CAUTION: The shock absorber assembly contains highly pressurized gas.

- Do not attempt to tamper with or open the shock.
- Do not subject the shock to high temperature or open flame.

Doing either of these can cause the shock to rupture causing personal injury or death.

For maintenance, see Maintenance Schedule on pages 5-8 through 5-9.

Wheels And Tires

CAUTION: To avoid serious personal injury, fully deflate the rear tire before removing the rim fasteners.

Inspect both wheels for the following:

- Bent or cracked rims
- Impact marks on the rims

Inspect both tires for the following:

- Cuts, cracks, splits, or missing tread lugs in the tread or sidewall area
- Bumps or bulges within the tire body
- Uneven tire tread wear. Wear on one side of the tire tread or flat spots in the tire tread indicate a problem with the tire or scooter.
- Exposed tire thread or cords

If either of the wheels or tires are found to have any of the above conditions, replace the wheel and tire immediately.

CAUTION: You must replace tires with the standard size recommended. You should avoid larger tires than the recommended size failure to do so could result in injury or death.

Replacement Tire Size

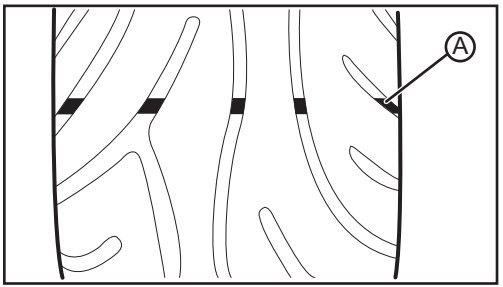
Replacement tires must be of the same size and meet or exceed the load and specification capability of the original tires as well as being the same size.

- Front 130/60-13
- Rear 130/60-13

Tire Wear Indicators (TWI)

TWI indicators are marked in various locations around the side wall of the tire.

TWI (wear bars) are located at the base of the main grooves and are equally spaced around the tire. Always replace the tire when they reach a remaining tread depth of two thirty-seconds of an inch (2/32"). If not corrected, wet weather accidents are more likely to occur due to skidding on bald or nearly bald tires. Also, excessively worn tires are more susceptible to damage from road hazards. Built-in tread wear indicators (A), or “wear bars,” which look like narrow strips of smooth rubber across the tread, will appear on the tire when that point of wear is reached. When you see these wear bars, the tire is worn out and it’s time to replace the tire.



Tire Inflation

CAUTION: Under-inflation is the most common cause of tire failure and may result in severe tire cracking, tread separation, “blowout,” or unexpected loss of scooter control causing personal injury and possible death.

Riding on tires that are low can result in decreased range and performance.

Tire pressure should be checked and adjusted before each ride. Tire pressure is checked using an accurate gauge when the tires are cold. This means that the tires have not been ridden on for 3 hours. Always replace the valve stem cap when finished.

FRONT	REAR
230 kpa (34 psi)	230 kpa (34 psi)

Lights

Since body panels need to be removed, all lights must be changed by an authorized Vectrix Dealer.

Cleaning

To prolong the life of your scooter it should be washed periodically. Regular cleaning, using correct methods, is an important factor in maintaining the value of your scooter. It also ensures that safety-relevant parts remain in full working order.

CAUTION: After cleaning and before starting your journey, always test the brakes.

A scooter that is constantly parked outdoors must be covered with a protective covering in order to prevent weathering of painted panels and to prevent cracking of seats and other plastic parts.

If tar, bugs, or other similar deposits have accumulated, wash them off as soon as possible. Do not use an insect sponge as this can result in scratches. Do not use high pressure or steam cleaners; they can cause water intrusion of bearing, seals, and electrical components. Avoid spraying water of great force around the speedometer. Avoid using strong acidic wheel cleaners. If such products are used on hard-to-remove dirt, do not leave the cleaner on the affected area any longer than instructed.

Also, thoroughly rinse the area off with water, immediately dry it, and then apply a corrosion protection spray.

WARNING: Improper cleaning can damage electrical components, cowlings, panels, and other plastic parts. Use only a soft, clean cloth or sponge with mild detergent and water to clean plastic.

Do not use any harsh chemical products on plastic parts. Be sure to avoid using cloths or sponges which have been in contact with strong abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.

After gently washing the scooter, be sure to allow all of the electrical components to dry prior to operation. If the scooter is ridden immediately after being washed, apply both brakes several times in order to remove any moisture from the brake pads. Do not use products such as tire dressings on tires as this will deteriorate traction.

Parking And Long Term Storage

1. It is recommended to always leave the battery on the charger, while in long term storage. The Vectrix VX-2 charger is designed to maintain a balanced and complete charge at all times without wasting any energy.

2. To prolong the life of your battery you should store your scooter in a cool area. Storing your scooter in a hot area will cause your battery's life to be shortened.

3. If, for some reason, your scooter was not plugged in for several days, you should always charge it up before riding.

For more information on the battery and the electrical system see Charging the Battery on page 4-6.

CAUTION: Opening the battery is for authorized Vectrix dealers. Please be aware that incorrect handling of a Vectrix battery can be dangerous.
DO NOT OPEN!

Dealer Inspection 483 km (300 mile)

This inspection is very important and must be performed in a time period that is as close to 483 km (300 miles) as possible but not in excess of 563 km (350 miles), and no longer than one (1) year from the date of delivery.

- ☐ Charge Batteries (note Battery Guidelines) and check contacts
- ☐ Check Tire Pressure and correct if necessary
- ☐ Check all Main Screws for the stipulated torque
- ☐ Check Screws, Nuts, and Fastening Points
- ☐ Check the functioning of the Front and Rear-wheel Suspension
- ☐ Check that all working parts are in operating order
- ☐ Check Lights/Headlight setting
- ☐ Check Directional Stability, Front and Rear Brakes, and handling

483 km (300 mile) Inspection

Performed at Mileage: _____

Date/Signature/Stamp VECTRIX Dealer

Maintenance Schedule

The scheduled maintenance must be performed in accordance with this chart to keep the Vectrix VX-2 scooter in top running condition. The initial maintenance is vitally important and must not be neglected.

NO.	ITEM	Routine
1	Front Brake	Check operation, and for fluid leakage. Replace brake pads if necessary.
2	Rear Brake	Check operation, and for fluid leakage. Replace brake pads if necessary.
3	Brake Hose	Check for cracks or damage. Replace if necessary.
4	Wheels	Check runout, and for damage. Replace if necessary.
5	Tires	• Check tread depth, and for damage. Replace if necessary. • Check air pressure. See page 5-5. Correct if necessary.
6	Wheel Bearings	Check bearings for smooth operation. Replace if necessary.
7	Steering Bearings	Check bearing assembly for looseness
8	Chassis Fasteners	Check all chassis fittings and fasteners. Correct if necessary.
9	Front Brake Lever Pivot Shaft	Apply silicon grease lightly
10	Front Fork	Check operation and for oil leakage.

Maintenance Schedule, cont'd

NO.	ITEM	Routine
11	Rear Shock Absorber Assembly	• Check operation and for oil leakage. Replace if necessary
12	Throttle Grip	Check operation and free play.
13	Kickstand Pivots	• Check operation • Apply silicon grease lightly
14	Center stand Pivots	Check operation

Vectrix Scooter Accessories

Vectrix accessories are designed to complement and function with other systems on your scooter. Your authorized Vectrix dealer can accessorize the scooter using genuine Vectrix accessories.

VX-2 Routine Maintenance Record

DATE OF SERVICE	MILEAGE	SERVICE DESCRIPTION	COMMENTS

All of the scooters are carefully inspected before they are delivered. However, even after the scooters are inspected, some technical issues can occur. The following information offers a guide to help you to identify an issue, and if possible, repair it yourself. If you are unable to solve an issue with your Vectrix scooter, take it to an authorized Vectrix dealer at your convenience. If there is no dealer in your area, e-mail Vectrix at service@vectrix.com.

Troubleshooting

For the topics described here, we assume that only the components are the cause of the malfunction. If the fault still occurs after the component(s) have been replaced, then it is necessary to visit your authorized Vectrix dealer.

Brakes

Squealing noises while braking indicates worn brake pads or that there is a foreign object (e.g. a stone/ pebble/rock) in the brakes. If any abnormal brake noises are heard, contact your authorized Vectrix dealer as soon as possible.

Tires

The pressure can be checked and adjusted if necessary at any service station.

- Front tire normal air pressure is 230 kpa (34 psi)
- Rear tire normal air pressure is 230 kpa (34 psi)

Note: Low air pressure can result in decreased range. Always check tire pressure to keep at optimal performance. Worn tires will affect handling and range!

CAUTION: You should replace VX-2 tires with the standard sizes recommended. You should avoid larger tires than the recommended size. Failure to do this could result in injury or death. See Replacement Tire Size on page 5-4.

General Troubleshooting

SYMPTOM	POTENTIAL CAUSE	POTENTIAL SOLUTION
Squealing noises while braking	• Worn brake pads • Contaminated brake pads • Foreign object in the brake system (stone, pebble, rock, etc.)	Contact your authorized Vectrix dealer.
Handlebars wobbly (shimmy)	Incorrect tire pressure	Inflate to correct tire pressure. See page 5-5.
	Deformed front tire	Replace/balance front tire with the same tire supplied from the factory. See Replacement Tire Size on page 5-4.
	Bald tire (excess wear)	Replace/balance tire with the same tire supplied from the factory. See Replacement Tire Size on page 5-4.
	Loose headset bearings	Inspect the headset for wear or damage. Contact your authorized Vectrix dealer.
Speedometer displays “vehicle battery empty”	Battery must be charged	Charge battery. Scooter will not move under its own power.

- With all other messages that appear, turn the key switch to “OFF” and then back to the “ON” position.
- If the message remains, then a visit to an authorized Vectrix dealer is needed.

Customer Assistance

Vectrix can be contacted via the contact methods listed below. Please have the following available as they are essential to effectively and efficiently answer your questions or resolve your concerns.

- Owner's name and address
- Owner's telephone number
- Vehicle identification number (VIN)
- Date of purchase
- Motor serial number

An owner information chart is provided on page 1-3 to record this information.

Vectrix USA

Corporate Office:
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Phone: 508-717-6510
FAX: 508-721-6846

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Fleet:..... fleet@vectrix.com
Media:..... media@vectrix.com
Marketing:..... marketing@vectrix.com
Service:..... service@vectrix.com
Sales:..... sales@vectrix.com

Warranty Information

Warranty Registration

- Refer to the Vectrix dealer to register your VX-2 scooter with Vectrix at time of sale.
  - ♦ Failure to do so may result in Warranty claims being delayed or not paid.
- Liability for Warranty cases is determined by the legal regulations beginning at the time of delivery to the end user (two years).
- Defects that are not reported to an authorized Vectrix dealer within the above time period are not subject to Warranty claims.
- Vectrix, LLC and its appointed dealer shall decide whether faulty parts will be replaced or repaired.

- Warranty is voided when:
  - The end user has treated the VX-2 contrary

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