

WELCOME!

THANK YOU AND CONGRATULATIONS

for purchasing the Vectrix Maxi Scooter! You are helping the environment and your daily commute as well! We hope that you enjoy the experience! If you need any repairs to your Vectrix or just want some friendly advice, please see your local dealer service center. This manual is provided to help you get to know your Vectrix.

Enjoy Your Vectrix Maxi Scooter

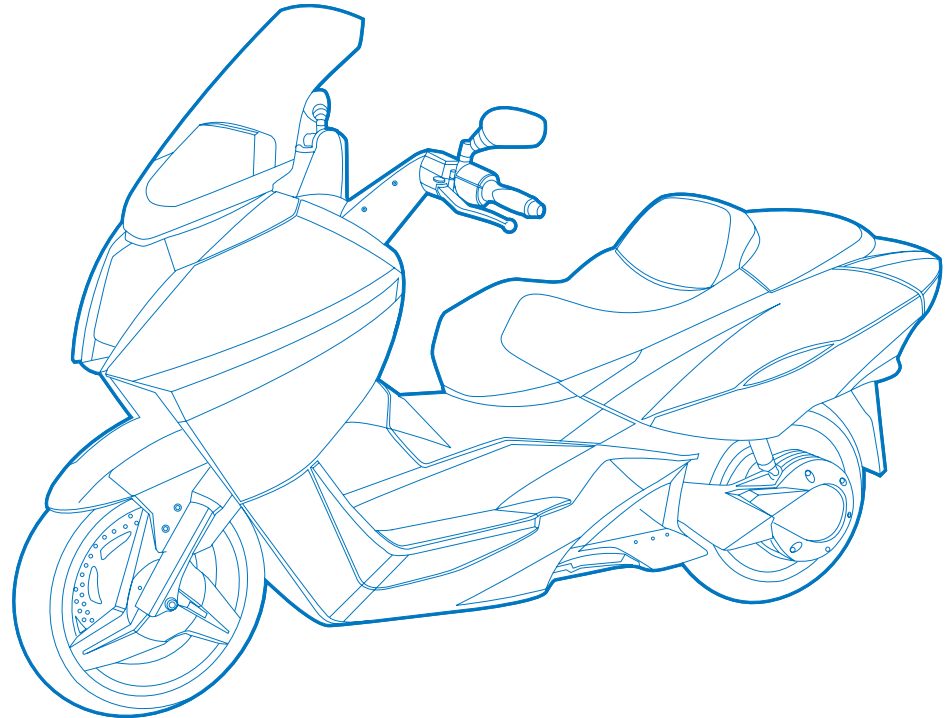


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WARRANTY

Your Vectrix is warranted for twenty-four months. To maintain the warranty you must comply with the servicing requirements called out in the *Vectrix Warranty Book*.

SYMBOLS CONTAINED IN THIS MANUAL:**WARNING!**

When this symbol is shown, it means that you must read this section. Failure to read this section could result in injury or death!

NOTE!

When this symbol is shown, it means that there is some important information that will help you enjoy your Vectrix even more!

SAFE RIDING

In order to operate your Vectrix properly, you must familiarize yourself with the bike's controls and movements.

- ALWAYS ride with your license and insurance certificate in your possession.
- ALWAYS wear a safety helmet.
- ALWAYS hold both ends of the handlebar/handgrips.
- ALWAYS remain seated while riding the Vectrix. Do not stand while riding.
- ALWAYS obey state- and local traffic laws.
- In the event of bad weather, adjust your speed to reflect the type of weather while obeying speed limits.
- Wear appropriate clothing to ride. A helmet, proper eye protection, boots and gloves are a must.
- Park in an area that is visible to others, and always have either your center or side stand down when parked. Do not leave the key in your ignition unattended.
- ALWAYS maintain control of your Vectrix when

parking to prevent it from tipping over. It is recommended that you put down the side stand before you dismount your Vectrix to park.

- ALWAYS avoid parking on sand, gravel or soft surfaces.
- Become familiar with the handling of the Vectrix before carrying a passenger. You should instruct your passenger about safety on a Vectrix. A passenger should have his hands on the passenger grab rail or wrapped around the driver of the Vectrix at all times that the Vectrix is in motion.
- Never permit an inexperienced rider to ride on or drive your Vectrix. You are responsible for telling them about Vectrix safety and safe handling.
- ALWAYS use your turn signals to identify your intent to change lanes or turn.

SAFETY RULES AND REGULATIONS

Traffic rules and regulations vary from jurisdiction to jurisdiction. Please become aware of those rules and regulations that apply to you before riding your Vectrix.

SAFE RIDING

These safety tips are useful and may save your life in case of a potential accident. Please read and understand these tips before riding your Vectrix. Defensive driving is more important on a Vectrix versus in a car. Always wear protective gear, but understand that protective gear cannot totally protect you in the event of an accident.

Always use turn signals to alert other drivers of your intentions. Use caution in bad weather when roads become wet and slippery. Sudden braking can cause the Vectrix to become unstable and cause an accident.

DO NOT DRINK ALCOHOL OR TAKE MIND-ALTERING DRUGS AND RIDE

PROTECTIVE APPAREL

When riding, Vectrix suggests that you always wear a safety helmet. Studies have shown that there is a direct correlation between head injury and a lack of helmet use (NHTSA Traffic Safety Facts, October, 2007). It is recommended that you wear above-ankle boots and that you wear eye goggles when not wearing a full helmet. Without eye protection wind and debris could get into your eyes and cause an accident.

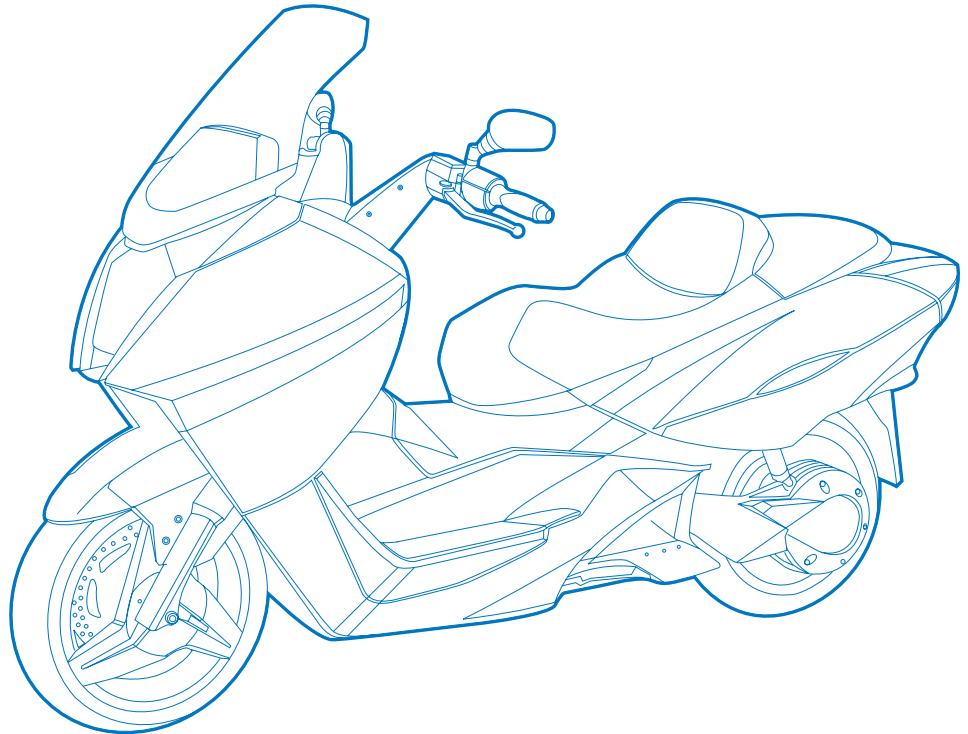
This vehicle is not intended for off-road use.

MAXIMUM WEIGHT ALLOWANCE

The maximum gross vehicle weight is 938 lbs. (425 kg), which includes the Vectrix, rider, passenger and cargo.

Make sure any luggage put on the Vectrix is firmly placed and secured. Do not overload your Vectrix or arrange heavy items higher up on the Vectrix. Do not attach items to the handlebars. Do not wear long or loose clothing while riding, as the pieces could get caught in components of the Vectrix. Do not jam any items in any openings on the Vectrix, as this could cause loss of stability and failure of the Vectrix.

Vectrix Underseat Trunk Capacity	26 lbs. (12 kg)
Vectrix Glove Box Capacity	4 lbs. (2 kg)
Cargo Box and Contents not to exceed	20 lbs (9 kg)



VEHICLE IDENTIFICATION NUMBER (VIN)

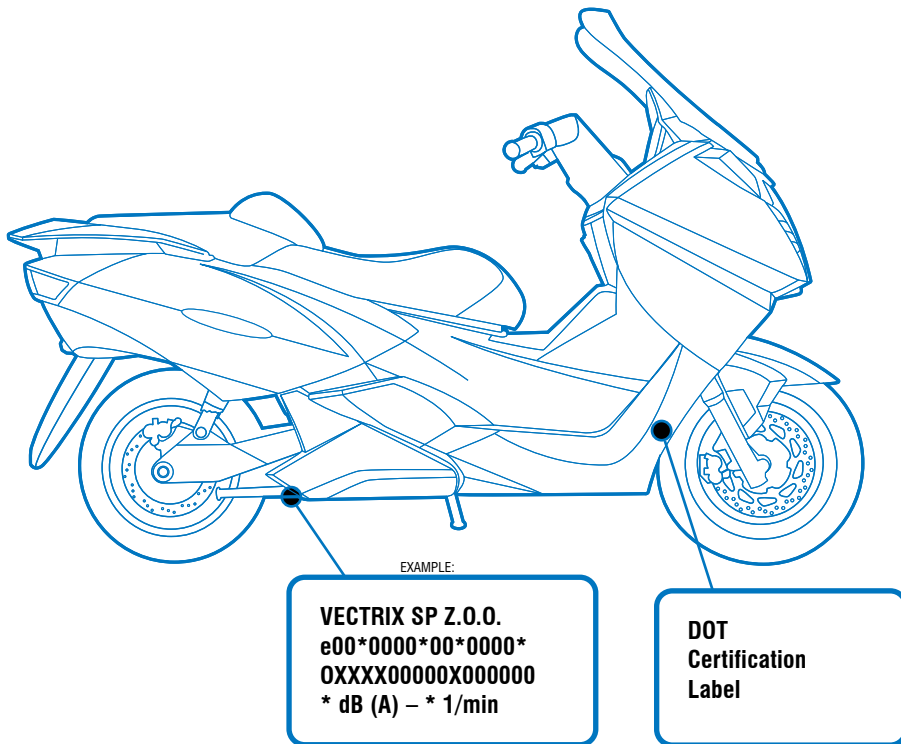
The VIN is located on the back of the frame in the right bottom corner. It is stamped into the metal.

The Manufacturer's Data Plate is located adjacent to the VIN stamping on the bottom right rear frame. This label displays the VIN (upper section), Manufacturer's name, type approval mark, the VIN printed again (lower section) and the Static Sound Level.

The VIN is a 17-digit alphanumeric code which uniquely identifies your bike. The VIN meets NHTSA (US) and ISO (EU) requirements. The VIN number should be used when ordering parts so that Vectrix can access its database to ensure that the correct and appropriate parts are provided.

The DOT certification label is located on the front of the bike behind the front wheel well. (USA only)

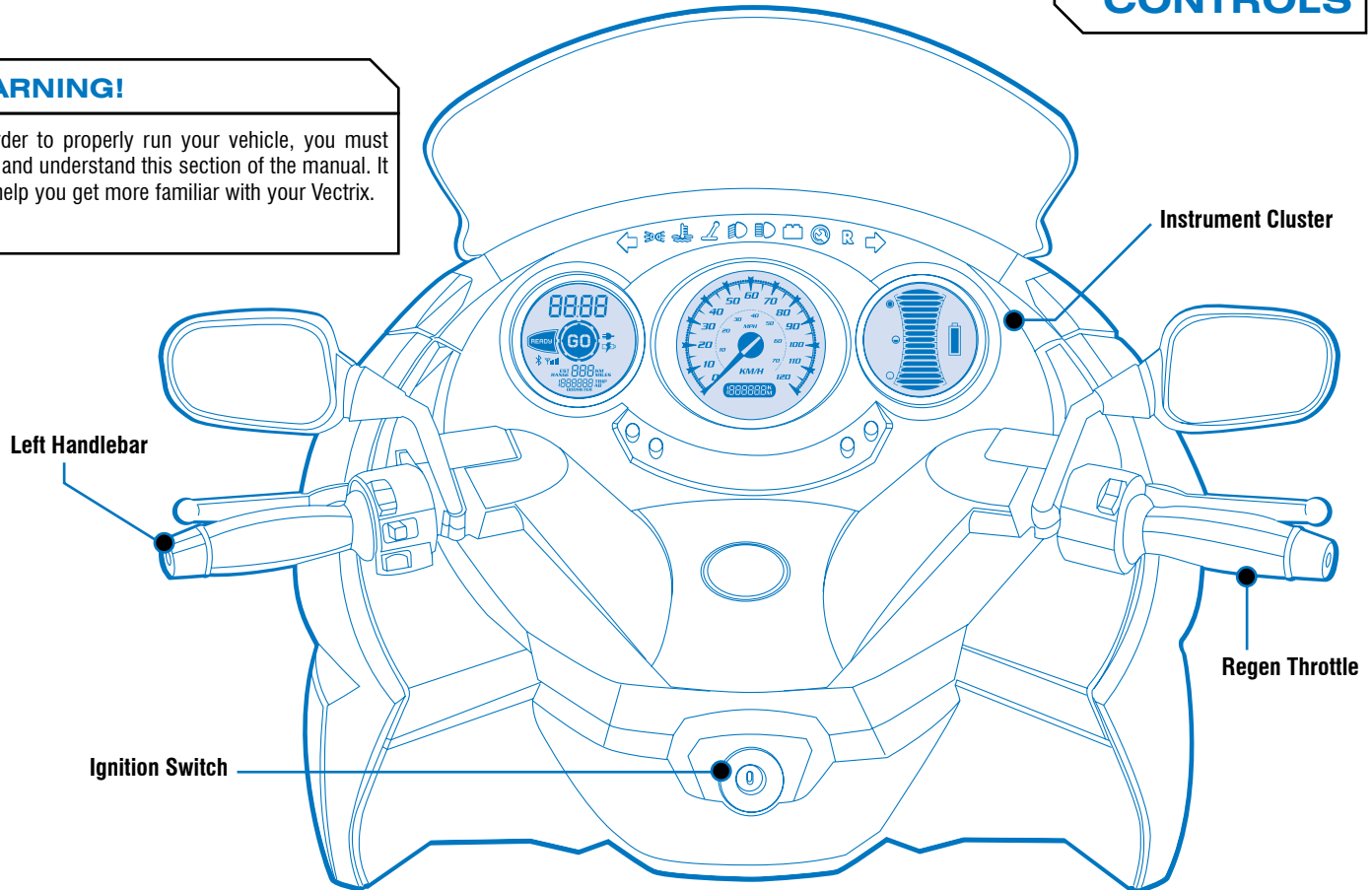
VIN #: OXXXX00000X000000



CONTROLS

WARNING!

In order to properly run your vehicle, you must read and understand this section of the manual. It will help you get more familiar with your Vectrix.



INSTRUMENT CLUSTER

Fig 1.0

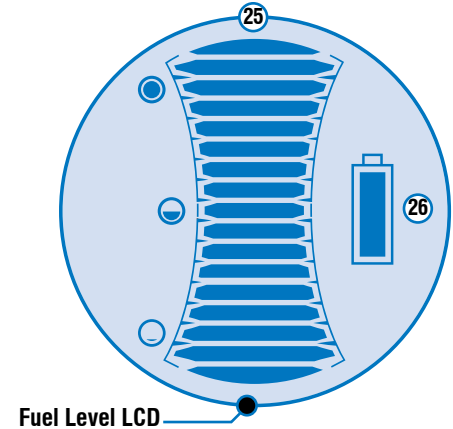
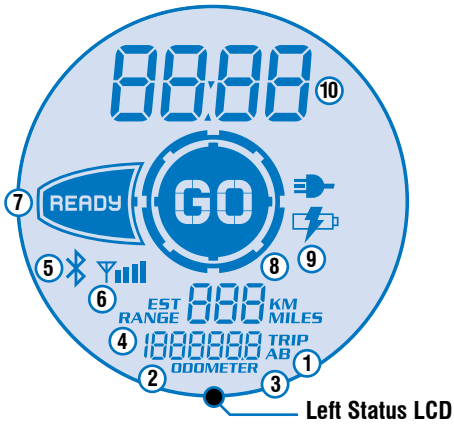
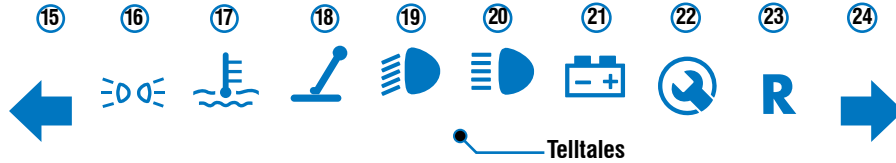


FIG 1.0 ILLUSTRATES WHERE ITEMS 1–30 ARE LOCATED

1. TRIP A-B OR ODOMETER INDICATOR

Indicates mileage reading is currently displayed. Use the select button (labeled 'S') to select between Trip A, Trip B or the odometer.

2. TRIP ODOMETER INDICATOR

Can be displayed in either miles or kilometers by selecting the button marked 'K/M'.

3. ODOMETER OR TRIP A-B READING

Displays the mileage of the currently selected trip or odometer. Use the button label "E/M" to switch between km and MILES. If the wrench icon is illuminated this will display an abbreviated fault code. During charging this will display the highest battery module temperature in C°.

4. ESTIMATED RANGE READING

Displays the estimated range available (km or miles) based on your recent driving profile. Hard accelerations and high speeds will decrease this value. Soft accelerations and slower speeds will increase this value. During charging this will display the battery voltage.

5. BLUETOOTH INDICATOR

This indicator is installed for future enhancements.

6. RF RANGE INDICATOR

RF signal strength for future enhancements.

7. READY INDICATOR

This is displayed when the system is ready to be enabled.

8. GO INDICATOR

The GO Indicator will light up when the system is enabled to accelerate.



9. BATTERY CHARGE/CHARGING INDICATOR

When the system is being charged by an external power source, the Battery Charging Indicator will illuminate.

10. CLOCK READING

Displays the time of day in either 12 or 24 hour format. This will display the total charge time while charging or the remaining cool down time during the transition mode.

11. SPEEDOMETER (KM/H – MPH)

The speedometer displays your current speed in both km/H and mph. During charging this indicates the charge current times 10. For example, if dial indicates 110, charge current is 11 amps.

12. ODOMETER READING

The odometer reading lets you see how many total miles or kilometers you have traveled on your Vectrix. During charging this will indicate the charge mode and the charge termination voltage. Modes are "CP" for constant power, "tr" for transition or cool down, "EC" for end of charge, and "CC" for constant current.

13. KM/H INDICATOR

Displays your speed in kilometers per hour.

14. MPH INDICATOR

Displays your speed in miles per hour.

15. LEFT DIR. INDICATOR LAMP TELLTALE

Flashes green when the left turn directional is on and functioning properly. Illuminates a steady green if one of the directionals is not functioning.

16. PARKING/POSITION LAMPS TELLTALE

Illuminates green when the position lamps are in use and working properly. If either is not working the icon will flash.

INSTRUMENT CLUSTER

17. HIGH TEMP TELLTALE

This will illuminate in red when the battery or key system components exceed safe operating temperature. If the telltale is flashing, see trouble shooting guide.

WARNING!

The Vectrix will continue to operate, but at a reduced performance level. Continued operation could result in permanent damage.

Allow to cool.

18. SIDE/CENTER STAND TELLTALE

An amber light will illuminate if the side stand is down or lowered.

WARNING!

The Vectrix will not operate when the side is in the down or lowered position. There is an interlock which prevents the Vectrix from being enabled unless the side stand is in the up position.

19. DIPPED-BEAM HEADLAMP TELLTALE

When the low beam is selected and operational, this icon will illuminate as a steady green light. If non-operational, this icon will flash.

20. MAIN-BEAM HEADLAMP TELLTALE

When the main beam is selected and operational, this icon will illuminate as a steady blue light. If non-operational, this icon will flash.

21. BATTERY TELLTALE

This icon will illuminate when the battery voltage is low, indicating that performance and range are limited. If the telltale is flashing, see trouble shooting guide.

WARNING!

If, after you have cooled and charged your Vectrix, the battery telltale continues to illuminate, contact an authorized dealer. Call authorized Dealer.

22. MAINTENANCE REQUIRED TELLTALE

When this amber colored light is illuminated, take your Vectrix to an authorized dealer to be checked.

WARNING!

You must get your Vectrix checked if this light is illuminated. See note on Trip Odometer about fault codes.

23. REVERSE TELLTALE **R**

Indicates that the Vectrix is in reverse mode.

24. RIGHT DIR. INDICATOR LAMP TELLTALE

Flashes green when the right turn directional is on and functioning properly. Illuminates a steady green if one of the directionals is not functioning.

25. BATTERY LEVEL INDICATOR

The battery level indicator is a 17-bar graphic chart that shows how much charge is left in the battery.

26. BATTERY INDICATOR

Indicates the Vectrix is running on battery.

27. LIGHT SENSOR

The light sensor detects the level of ambient light and adjusts the LCD backlighting.

INSTRUMENT CLUSTER

A1. KM/H – MPH SELECTOR

This allows you to switch between kilometers and miles. The pushbutton is labeled “K/M”. Simply push the button to switch to the desired measurement. Your desired measurement will be illuminated on the left LCD screen.

NOTE!

The default setting is kilometers.

A2. TRIP A-B ODOMETER SELECTOR

Labeled as an “S” on the switch assembly, it allows you to scroll through Trip A, Trip B and the normal odometer settings.

SCROLLING AND RESETTING TRIPS:

By pushing the A2 button you can scroll between the odometer, Trip A and Trip B. To reset Trip A or B, scroll to the desired trip and press the button for three (3) seconds.

A3. MINUTE ADJUSTMENT

This allows you to change the minutes on your clock. The push button is marked with an “M” to signify minutes.

A4. HOUR ADJUSTMENT

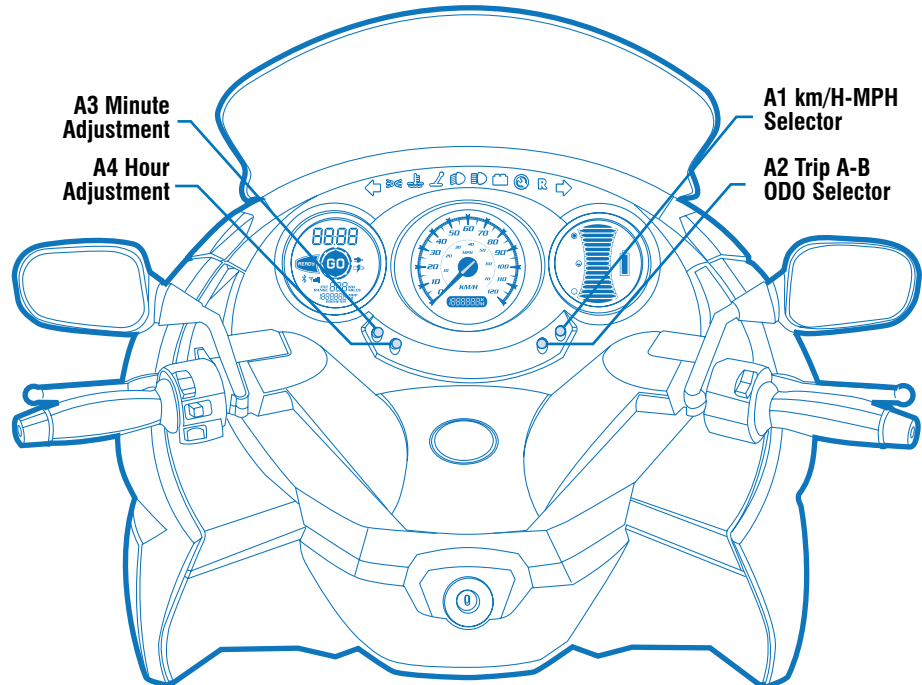
This allows you to change the hour on your clock. The push button is marked with an “H” to signify hours.

SETTING YOUR CLOCK:

Simply push the hour or minute button to the desired time.

NOTE!

You can switch from 12 hour to 24 hour modes by holding the hour button for three (3) seconds.



KEY LOCK / IGNITION

Only one key is needed to start your Vectrix, get into the storage area, open your glove compartment and lock your bike.

The ignition switch is located in the center of the Vectrix in front of the stepthrough. The ignition features a number of positions that allow you to lock and unlock areas of the Vectrix.

NOTE!

DUPLICATE KEYS

See your service center for duplicate keys.

POSITIONS:

1. LOCK STEERING

When the key is turned to this setting, you are able to lock the steering mechanism. You simply pull out the key and your Vectrix is fully locked until reinsertion of the key.

2. SYSTEM OFF

In this position the Vectrix will be off, including the motor and lights.

3. SYSTEM ON

In this position you will be able to ride the Vectrix.

4. GLOVE BOX

In this position you will be able to pop open the glove box. To do this, push the key down and turn it counter-clockwise to the glove box position. To lock the glove box, simply shut the door and it will automatically lock itself.

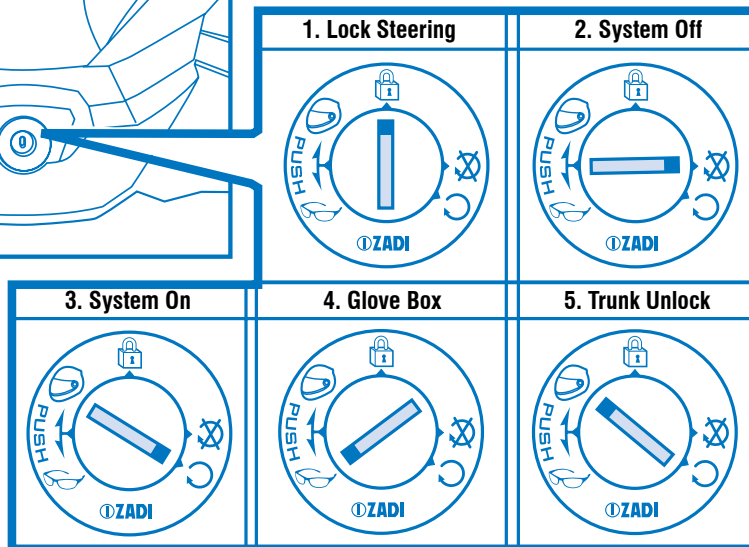
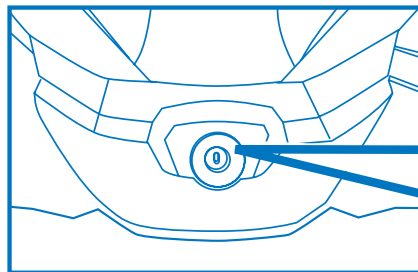
5. TRUNK UNLOCK

In this position you will be able to open the trunk.

To do this push the key down and turn it clockwise to the trunk position.

NOTE!

Do not attempt to open your trunk while someone is sitting on the trunk. This could cause the mechanism to break.



LEFT HANDLEBAR SWITCHES

1. MAIN/DIPPED BEAM SWITCH

This switch allows the user to switch from high to low beam. Push up to select low beam to high beam or push down to select high beam to low beam.

2. MAIN-BEAM PASS SWITCH

This switch is used to let other drivers know that you are passing. Pulse the switch to flash your main beam. The switch is located on the back side of the handlebar.

3. LEFT/RIGHT DIRECTION SWITCH

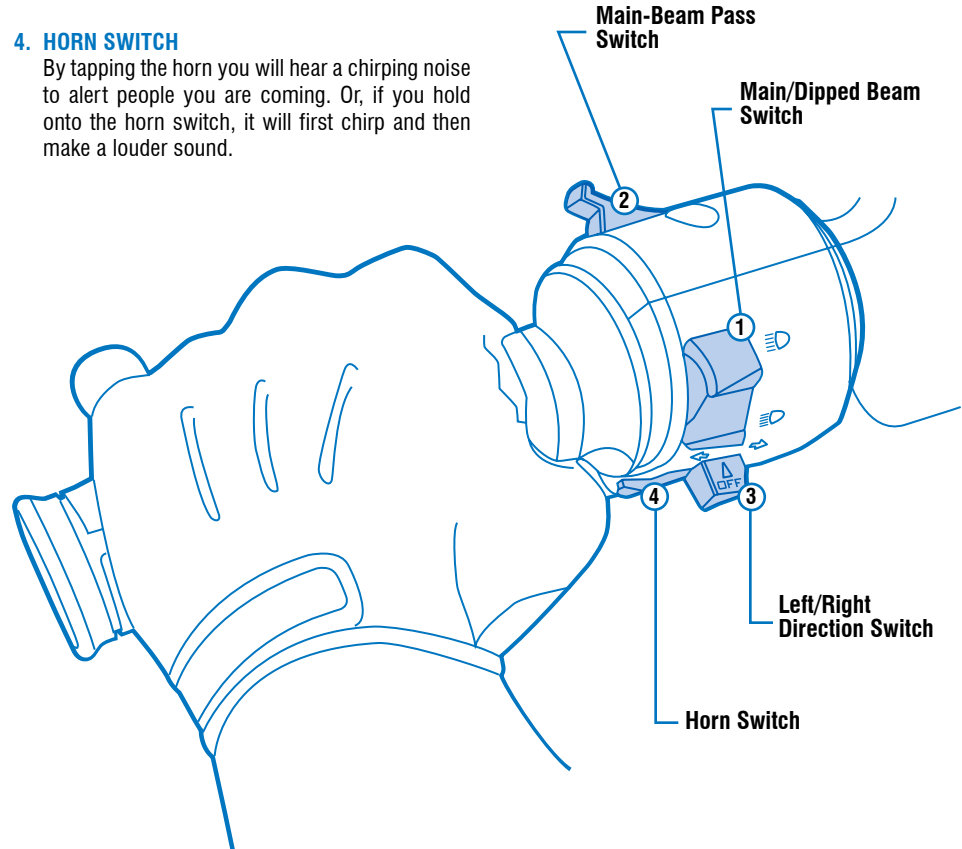
To engage the turn signal, move the switch to the right to signal a right hand turn and move the switch to the left to signal a left hand turn. Push the button back to reset the switch. If a directional is left on for more than 20 seconds and the bike is moving, the horn will chirp to alert the rider that the directional is still active.

NOTE!

Always use turn signals to make other motorists aware of your intentions.

4. HORN SWITCH

By tapping the horn you will hear a chirping noise to alert people you are coming. Or, if you hold onto the horn switch, it will first chirp and then make a louder sound.

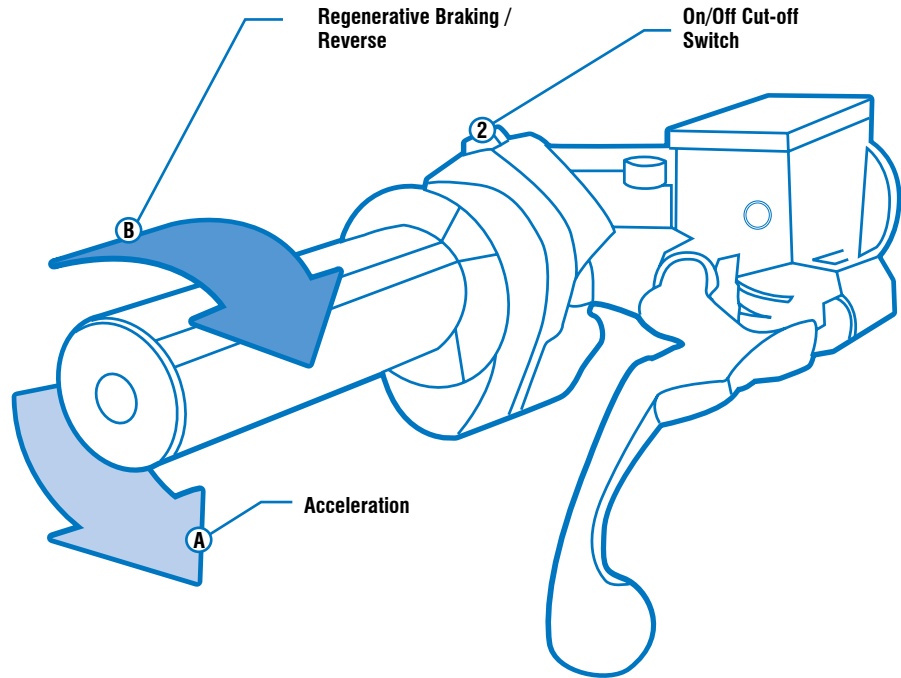


RIGHT HANDLEBAR SWITCHES/THROTTLE

1. THROTTLE/REGEN POSITION

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

- Roll the throttle downward (rearward) to accelerate in the forward direction. (A)
- Release the throttle and it returns to a neutral position.
- To activate regenerative braking simply roll the throttle forward beyond the neutral position and you will progressively engage in regenerative braking. (B) Always 'cover' the front brake lever with the index and middle fingers of your right hand when using regenerative braking to slow the vehicle. This will ensure that you are ready to apply the front brake if it becomes necessary to slow the vehicle more quickly. Never use the rear brake lever (on the left handlebar) by itself or with regenerative 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 pull both the front and rear brake



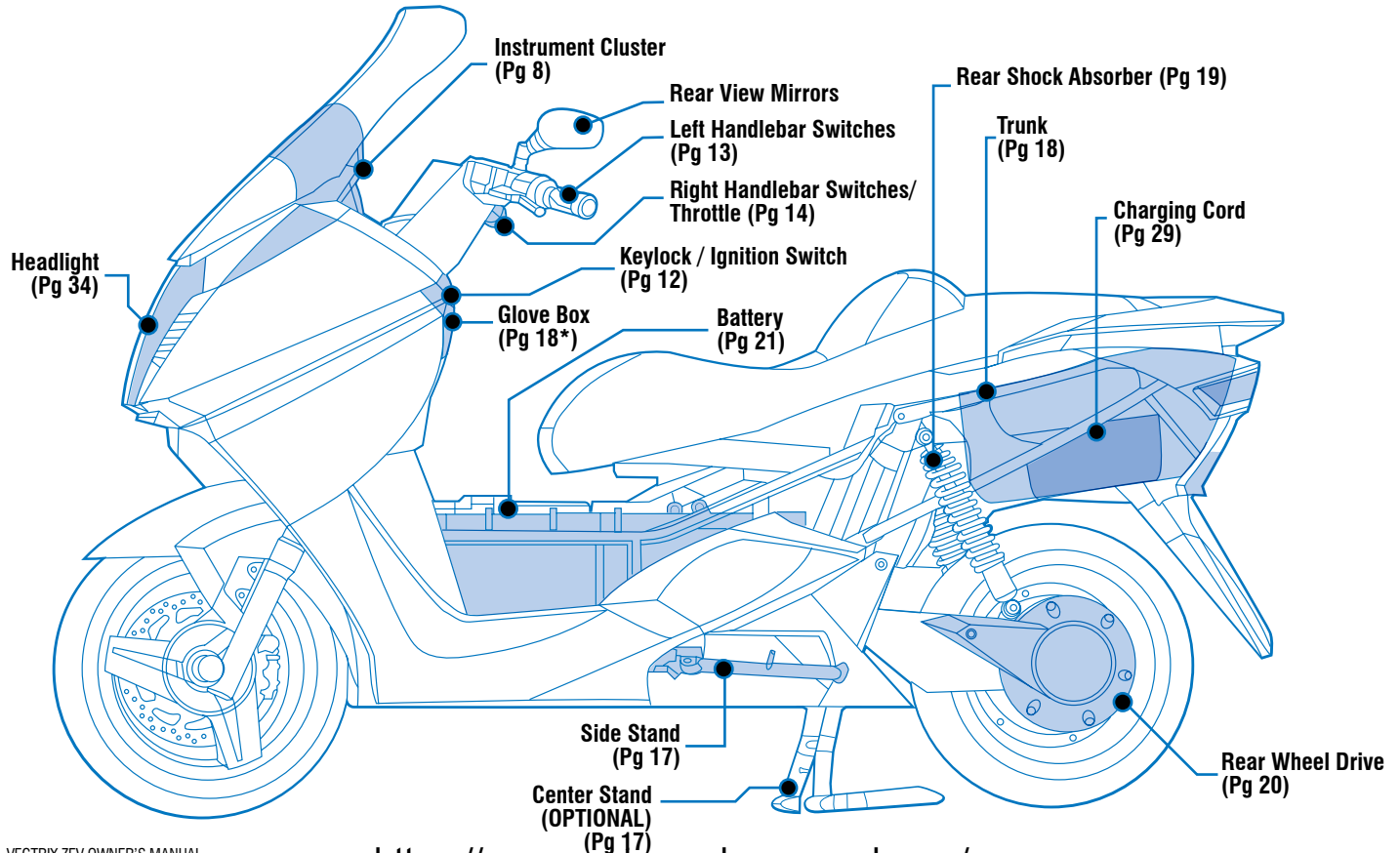
levers (which actuate the front and rear disc brakes) at all times while riding, including while using regenerative braking. See "Braking" on Page 26.

- Your Vectrix has the ability to reverse at very low speeds to assist you with maneuvers such as backing out of parking spots. Reverse is only enabled when the Vectrix is completely stopped. The Vectrix will reverse at a slow speed of 2 mph (3 km/h). Release the throttle and the reverse drive ceases. To activate reverse from a complete stop, return the throttle to the neutral position or a slightly positive position (in the A direction). Now roll the throttle forward (in the B direction) to move in reverse. By requiring that the throttle returns to neutral before activating reverse, the bike is prevented from going into reverse immediately after using regen to stop.

2. ON/OFF CUT-OFF SWITCH

The power switch is a fast, convenient method of shutting down the Vectrix in either an emergency or under normal operation. Use your right thumb to operate the power switch. Push down to turn the switch on and push up to turn the switch off.

MAIN COMPONENTS



SIDE AND CENTER STANDS

SIDE STAND

The side stand is located on the left side of the Vectrix. To lower the stand, push down on the side stand bar, which protrudes out from the side stand.

Park on level hard surfaces. Avoid parking on hills or unstable ground.

To put the stand back up, move the Vectrix to a vertical position and lift the side stand bar with your foot.

WARNING!

Do not sit on the Vectrix while the stand is down.

NOTE!

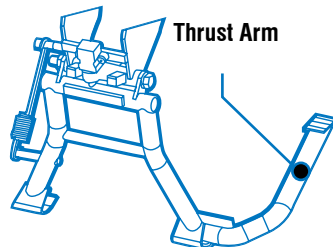
Always check the ground before putting the side or center stand down to ensure that the ground is stable. Hot temperatures can cause the stand to sink into the pavement, so it is recommended to have a small metal plate for the stand to rest on in high heat.

CENTER STAND (OPTIONAL)

The center stand is an optional feature of the Vectrix. To lower the center stand, push down on the thrust arm with your foot while slowly pushing the bike in the rearward direction. The Vectrix should “snap” onto the stand. To disengage the center stand, rock the Vectrix forward and make sure the center stand is properly retracted.

WARNING!

The side and center stands must be in the upright position in order to safely operate the Vectrix. Failure to move the stand up could result in injury to both you and the Vectrix. There is an interlock which prevents the Vectrix from being enabled unless the side stand is in the up position.



Never park your Vectrix on soft earth. You should make every attempt to park your Vectrix on a level, hard surface.

Always park in an area where you are visible to other motorists, so as to avoid possible damage to your Vectrix.

NOTE!

There is a telltale on the middle of the instrument panel that will illuminate when the side stand is down.

STORAGE COMPARTMENTS

UNDER-SEAT HELMET STORAGE/TRUNK

The Vectrix has a hidden storage area for your helmet located under the passenger seat. Your key controls the lock to the under-seat storage compartment.

OPENING TRUNK

Push down on key and turn clockwise to the "Trunk" position while off of the seat to open the trunk area. The passenger seat will lift up. Pull the seat upward to get it off of the latch. Inside you will see the charging cord and a place to store your helmet.

CLOSING THE TRUNK

After checking to ensure everything is secured properly and not overflowing, hold the passenger seat and bend the spring to lower the seat. The seat will automatically lock itself.

TRUNK COMPONENTS

The trunk storage area includes the charging cord for the Vectrix. The 8 ft (2.4m) charging cord is coiled in the trunk.

GLOVE BOX COMPARTMENT

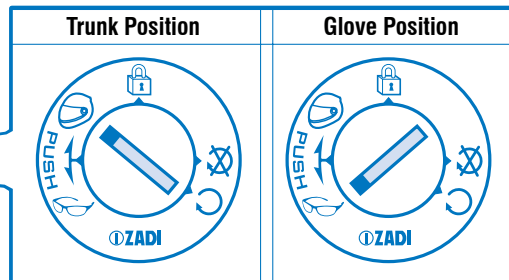
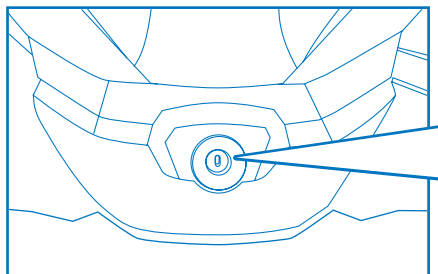
Your key will open your glove box. Push down on the key and turn it counter-clockwise to the glove box position.

To close your glove box, simply shut the compartment. The door locks itself with a click.

The glove box contains a panel-mounted 12 VDC, 0.5 AMP mobile phone power point for charging your mobile phone.

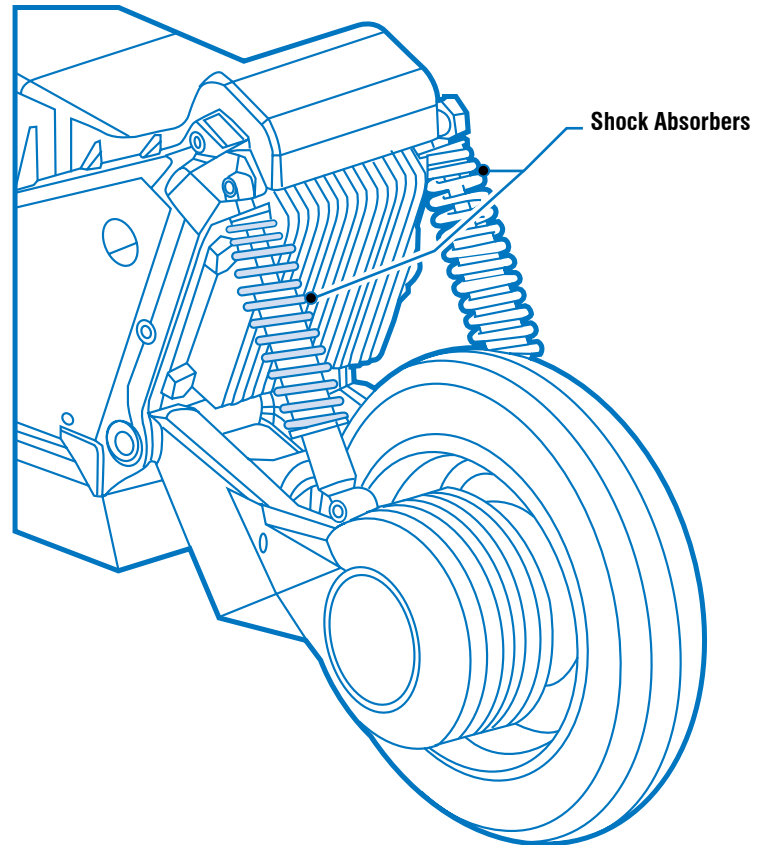
NOTICE

ACCESSORY PORT
12 VDC 0.5 AMPS (6 WATTS)
MAXIMUM



REAR SHOCK ABSORBERS

Your Vectrix is equipped with dual rear adjustable shock absorbers to enhance your riding experience. You should periodically inspect the exterior of the shocks for signs of fluid leakage. If a leak is indicated, see an authorized dealer at your earliest convenience.



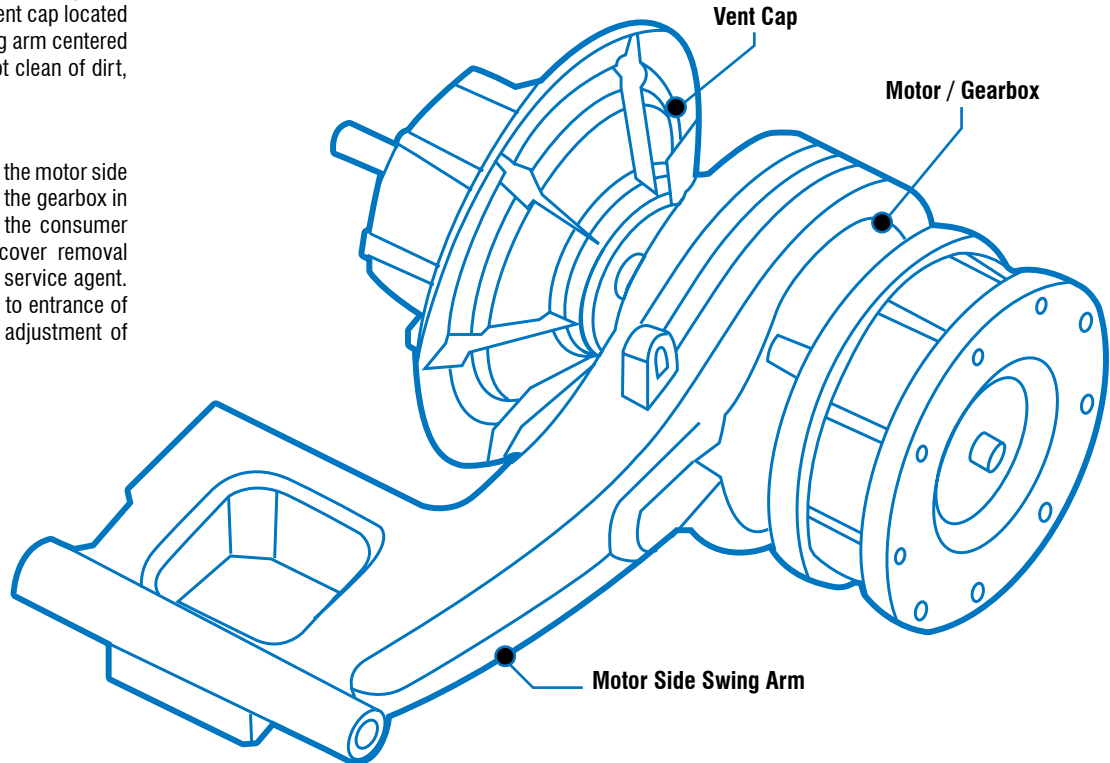
REAR WHEEL DRIVE

PLANETARY GEARBOX

The single stage planetary gearbox is permanently sealed and lubricated with no maintenance required. To vent the gearbox, there is a small vent cap located on the top side of the motor side swing arm centered on the motor. This vent should be kept clean of dirt, debris and excessive water.

BRUSHLESS DC MOTOR

The brushless DC motor is mounted in the motor side swing arm with its shaft connected to the gearbox in the rear wheel. There is no need for the consumer to remove the motor cover. Motor cover removal should only be done by an authorized service agent. Removing the motor cover could lead to entrance of dirt and moisture and/or disrupt the adjustment of the encoder.



DESCRIPTION OF BATTERY PACK

The proper care of your battery pack is essential for maximum Vectrix performance. The battery has a nominal bus voltage of 125 volts DC which, if not respected, could result in serious injury. Only an authorized service agent is qualified to have access to the battery pack.

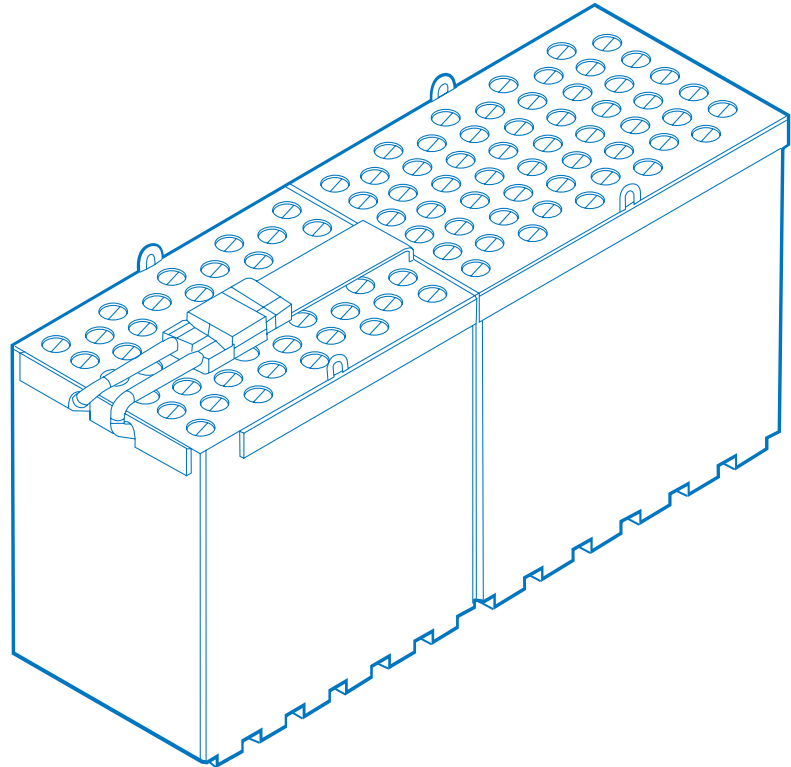
Your battery pack consists of two boxes located within the Vectrix frame. Each battery box weighs approximately 99 lbs. (45 kg). Only an authorized service agent is qualified to troubleshoot a battery related issue.

WARNING!

Opening battery packs is dangerous. Doing so will void your warranty. DO NOT OPEN.

The battery pack needs to be kept within distinct operating temperature. The battery includes two fans, built into an air plenum, which draw cooling air through the battery boxes. The fans run in response to temperature and are active while the Vectrix is running and while charging the battery. You will detect the sound of the fans when they are operating.

The battery pack is connected to the motor controller



BATTERY PACK

through a 125 amp fuse. This fuse is only accessible to qualified service technicians.

Your battery likes to be charged. You should plug it in whenever it is convenient to do so. This is referred to as opportunity charging.

Occasionally the estimated range and fuel gauge may drop from a few miles/kilometers and a few bars to zero. This means your charger memory and battery level need to be synchronized – see troubleshooting guide.

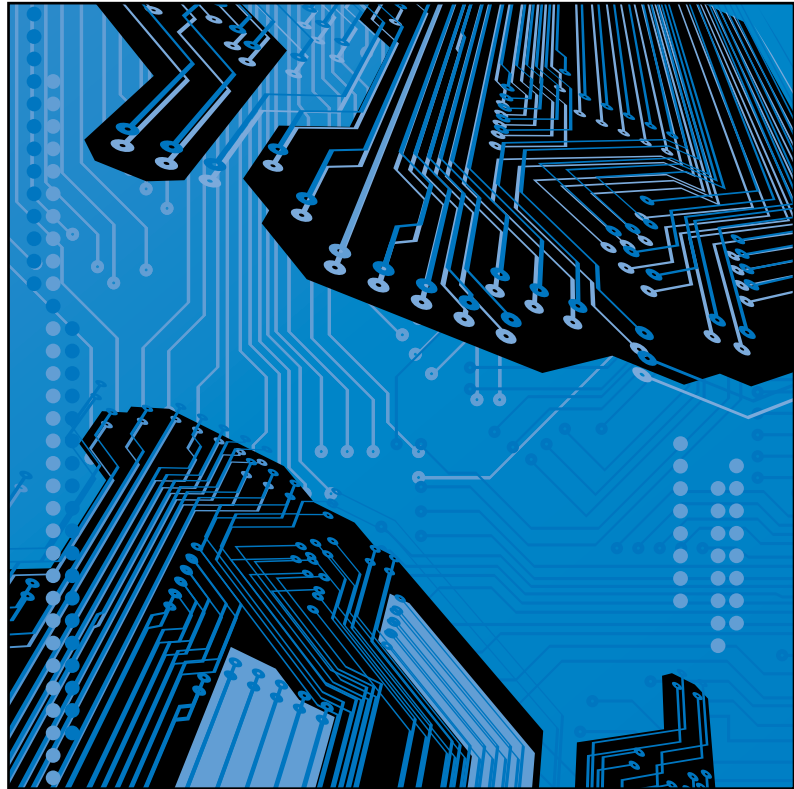
If this 'drop off' continues to occur on a regular basis it may indicate a problem with the battery contact an authorized dealer.

MOTOR CONTROLLER

The motor controller is the “brain” of the Vectrix and provides the interface between the battery pack and the motor. The design uses a single circuit board for power system interconnections as well as control components and onboard power supplies. The motor controller incorporates Digital Signal Processing (DSP) technology as part of the proprietary Electronic Control System (ECS), which provides the flexibility to incorporate additional features as required.

WARNING!

Only a Vectrix authorized dealer should troubleshoot or repair a motor controller. Removal of the cover and/or alteration of the motor controller in any fashion voids the warranty and is extremely hazardous.



USE

With any new vehicle you must first get used to the feel of the vehicle before driving in any dangerous conditions. Bad weather can cause even an experienced driver to get into an accident. You should use caution at all times while riding your Vectrix.

WARNING!

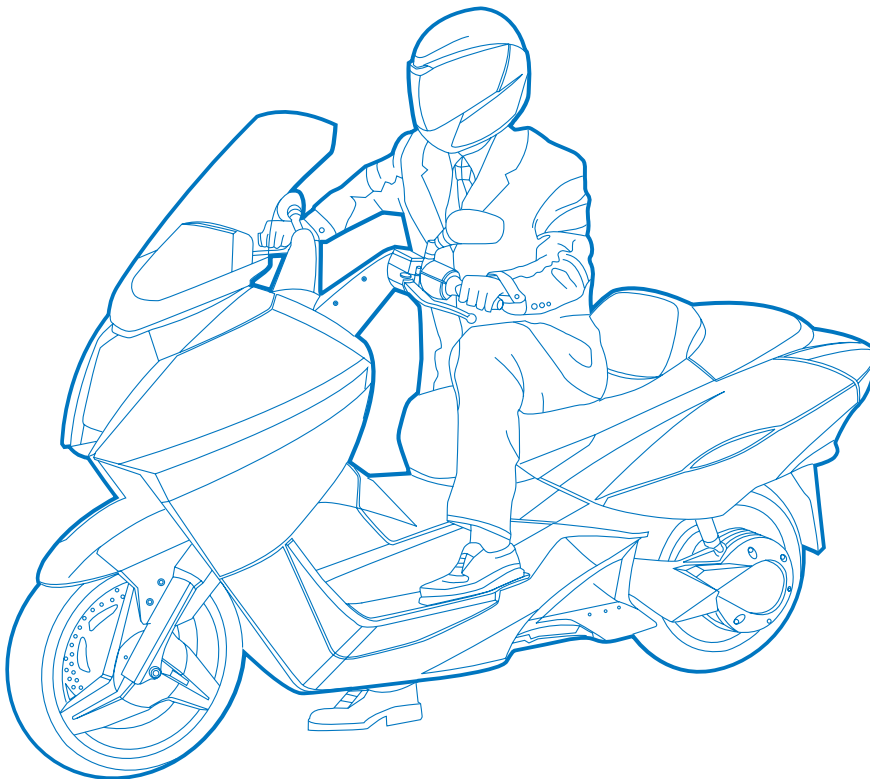
This Vectrix is designed for and limited to a top speed of 62 mph (100 km/h). You should avoid braking suddenly. Quick braking can cause you to become unstable and lose control of your Vectrix, especially on loose pavement and/or wet road surfaces.

BATTERY CONDITIONING

For maximum performance from the battery pack, the Vectrix needs to experience five (5) initial charge/deep discharge cycles. These cycles allow the battery to become fully conditioned and able to perform as designed.

NOTE!

Prior to the initial five (5) charge/deep discharge cycles, you may experience a lower Vectrix range. With each initial deep discharge/charge cycle, the range will improve.



WARNING!

For safety reasons it is extremely important that you read and understand this section. Failure to perform these pre-ride checks could result in serious injury or death.

CHARGE LEVEL

Look at the charge level on the right LCD module. If there are less than four (4) bars showing, we suggest you recharge before use.

STANDS UP

Make sure both the side stand and center stand (if applicable) are up (retracted).

LIGHTS AND INDICATORS

When you turn the key to "System On," you will notice that the entire instrument panel illuminates. After a few moments all malfunction light telltales should go off. If they do not go off, have your Vectrix checked at a dealer. Replace the headlight bulb if it has burned out before riding.

TIRES

Always check both tires for punctures, tears, or worn tread. Never ride on balding or bald tires. Maintain tire pressure at 33 psi (2.2 bar) for the front tire and 40 psi (2.8 bar) for the rear tire.

BRAKE FLUID LEVELS

Refer to the section on brake fluid level. Make sure that you have the required amount of fluid before starting the Vectrix.

INTERLOCKS

CUT-OFF SWITCH

The cut-off switch needs to be in the "on" (run) position.

SIDE STAND SWITCH

Make sure the side stand is in the upright position.

CENTER STAND (OPTIONAL)

Make sure the center stand is in the upright position.

"READY" INDICATION

When you turn your key to the "System On" position, you will see the "Ready" icon in the left Liquid Crystal Display (LCD), provided all of the interlocks are satisfied. The "Ready" icon means that the system is ready to be enabled.

BRAKE LEVER ENABLE SEQUENCE

Once the "Ready" icon is steady ON, you can begin the motor enable sequence. First, apply and hold the left brake, then apply the right brake. "GO" will appear on the left LCD. The Vectrix is now ready to drive.

CABLES AND HARNESSES

Can only be exchanged by technically trained authorized service agent and are not subject for exchange in the field.

BRAKING

The Vectrix Zero-Emission Vehicle includes a patented regenerative (regen) braking throttle which is easy to use and will improve your riding experience. In the regen mode the motor acts as a generator to apply a load/braking to the rear wheel while returning energy into the battery pack.

FRONT BRAKE LEVER

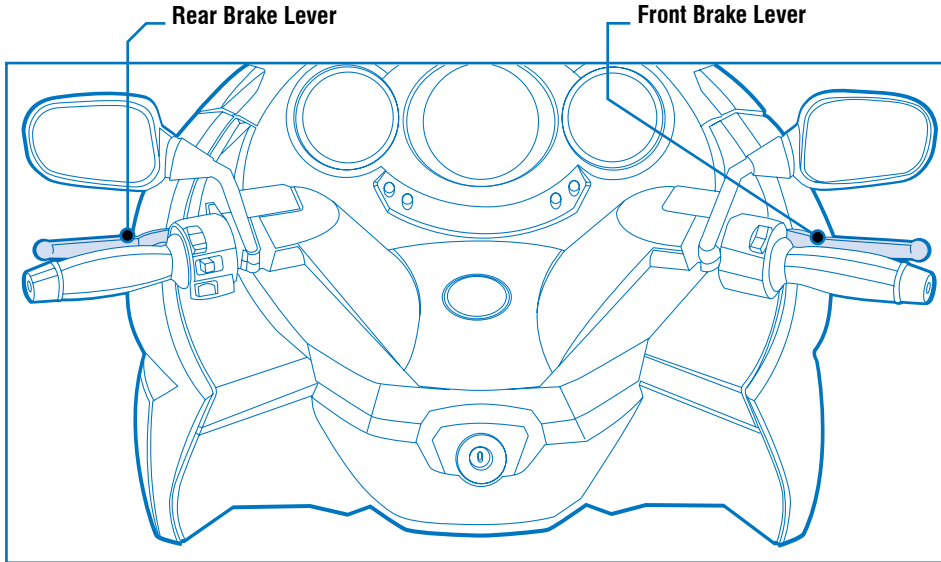
To operate the front brake, pull the right hand brake lever towards the twist grip. The braking is hydraulically operated, so you need not pull hard on the lever. Instead squeeze steadily and smoothly.

REAR BRAKE LEVER

To operate the rear brake, pull the left hand brake lever towards the twist grip. The braking is hydraulically operated, so you need not pull hard on the lever. Instead squeeze steadily and smoothly.

PROPER BRAKING

Always 'cover' the front brake lever with the index and middle fingers of your right hand when using regenerative braking to slow the vehicle. This will ensure that you are ready to apply the front brake if it becomes necessary to slow the vehicle more quickly. Never use the rear brake lever (on the left handlebar) by itself or with regenerative 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 pull both the front and rear brake levers (which actuate the front and rear disc brakes) at all times while riding, including while using regenerative braking. See the REGEN section of this Manual on Page 14 for proper use of regenerative braking.



WARNING!

You should always use both brake levers for the most effective braking. One lever will not provide you as effective braking power.

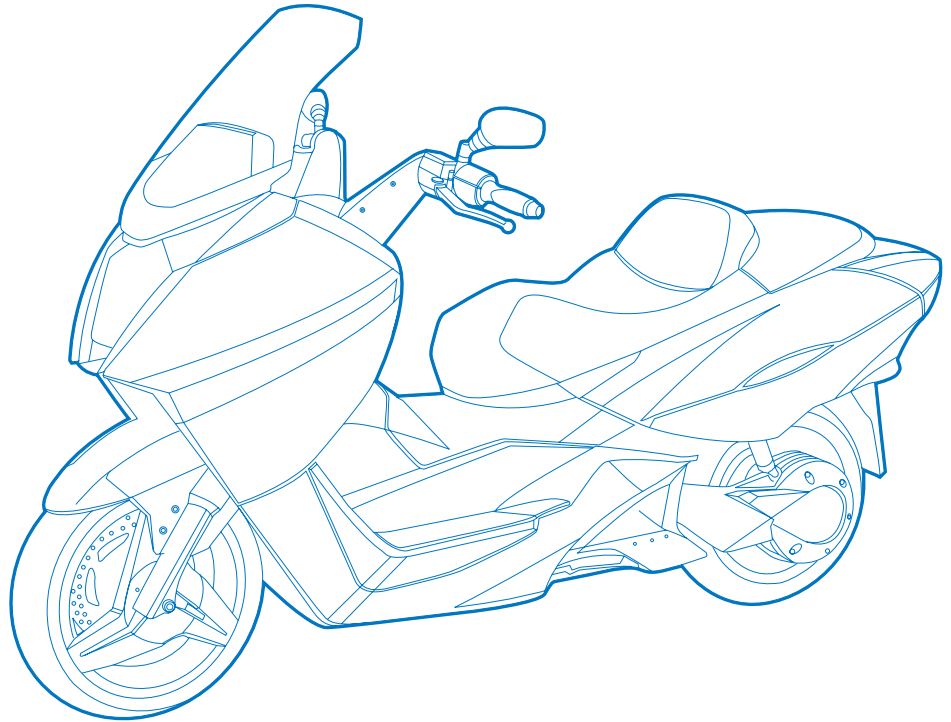
Never brake suddenly or in a harsh manner. This could cause the wheels to lock and you could lose control of the Vectrix. Bad weather, including slippery wet road, can cause braking to be less effective. Always use caution in wet conditions. Low tire pressure can reduce braking effectiveness, so checking your tire pressure is very important.

PARKING THE VECTRIX

- Stop the Vectrix and put either the side or center stand down for support
- Turn the handlebar all the way to the left and lock it there by turning the key to the “lock” position.
- Park the Vectrix in a area visible to other motorists.
- Never park on soft earth.

WARNING!

The use of padlocks that prevent motion is very dangerous and can affect the operation of the Vectrix. If you use a padlock to secure your Vectrix, the padlock must be removed before operating the Vectrix.



CHARGING THE BATTERY

The Vectrix includes an 8ft (2.4m) charging cord which is located in the trunk under the passenger seat.

The male connector on the charging cord is specific to the country of use. For instance, in Italy the plug consists of a 4-conductor assembly. This accommodates “hot,” “neutral,” “ground” and a “pilot” pin. In this case the pilot pin is used by the AC power source (charging station) to detect the presence of the Vectrix, which in turn enables the stationary power outlet.

To charge the Vectrix, open the trunk, remove the cord, close the trunk taking care to route the cord through the designated slot in the bodywork and plug the electric two-wheel vehicle into an appropriate 120v/60Hz 220v/50Hz outlet. Once plugged in, the onboard charger will automatically control the charging process. During the charging process, the battery charge icon on the left LCD will be active. As the charge progresses, the battery level indicator on the right LCD will increase in level.

The charge is complete when all bars have been filled on the right LCD on the instrument panel. It is perfectly fine to unplug the Vectrix from the outlet and interrupt the cycle. The Vectrix will benefit by any amount of charging you have time for.

WARNING!

Use extreme caution when dealing with electricity.
Use RCD or GFI protected outlet.

WARNING!

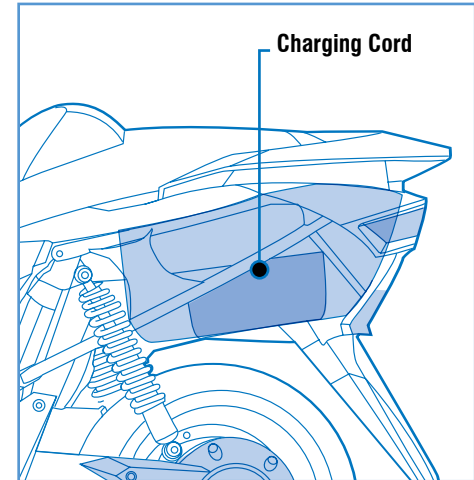
Though it is not recommended by Vectrix, if you use an extension cord to charge the bike, make sure that it is at least a 20A cord and it should be no longer than 25ft (7.6 m) in length.

While the bike is charging, the instrument cluster will display several charge status items. On the left LCD the ‘estimated range’ field indicates the battery voltage. The ‘trip’ field indicates the highest battery module temperature and the ‘clock’ field indicates total charge time or time remaining during the transition mode.

On the center LCD, the ‘odometer’ field indicates the charge mode and the voltage limit. The charge modes are:

- ‘CP’ = constant power,
- ‘TR’ = transition mode,
- ‘CC’ = constant current and
- ‘EC’ = end of charge.

The speedometer indicates the charge current times (X) 10 on the KPH scale.
For example, 110 KPH indicates 11 amps.



MAINTENANCE

Although your Vectrix requires little maintenance, it is important that you read and follow closely the maintenance items identified in this Manual as well as in the Warranty Book.

WARNING!

If you are unsure of the problem with your Vectrix, take it to an authorized dealer to get it checked out or call 1-877-VECTRIX (832-8749).










If you notice any discharge coming from your Vectrix take it to a service center to get the system checked.

WARNING!

The Battery Pack is rated at 125 Volts, 30 Amp hours. Contact with the terminals of the Battery Pack can result in injury or death.

The onboard smart battery charger monitors the status/condition of the Battery Pack during normal operation as well as charging. The Battery Pack is an integrated system of temperature/voltage monitoring as well as cooling airflow/control. The charger will detect any underperformance in the Pack and automatically perform an "Equalization Charge" of the battery. Such an event will be seamless to the operator, except that the charge time will be extended beyond the 3 to 5 hour typical charging time.

If you have been running the Vectrix for a long period of time and your battery is very hot, you should wait until it cools down before charging, as the battery will take longer to charge when it is very hot (optimal temperature for charging batteries 25° C/ 77° F). Depending on the conditions, waiting 1 – 2 hours after riding before charging is sufficient.

 DANGER	   
High Voltage Inside/ KOH	   
<p>To avoid injuries, burns or electric shocks:</p> <ul style="list-style-type: none"> • Never disassemble this battery unit or remove its covers. -Service by Qualified Personnel.- • Avoid contact of alkaline electrolyte with eyes, skin, or clothes. • In event of accident, flush with water and get medical help immediately. • Keep children away from this unit. • Do not puncture or impact on this unit when operating forklift, or expose to open flame or incinerate, or expose to liquids when storing this unit, as excessive heat may generate fire and electrolyte may leak out. 	
<p>To Qualified Service Personnel: Be sure to read the Repair Manual before servicing or replacing the battery.</p>	
<p style="text-align: center;">Battery Recycling Information</p> <ul style="list-style-type: none"> • Please transport this battery in accordance with all applicable laws. • Be sure to consult Vectrix dealer or the following address for replacing and disposing of this battery. 	
<p>CONTACT US: WWW.VECTRIX.COM PHONE USA: 508 992 5300-SERVICE, EUROPE: +39 06 71 28 02 98</p>	

CHECKING BRAKE FLUID LEVEL

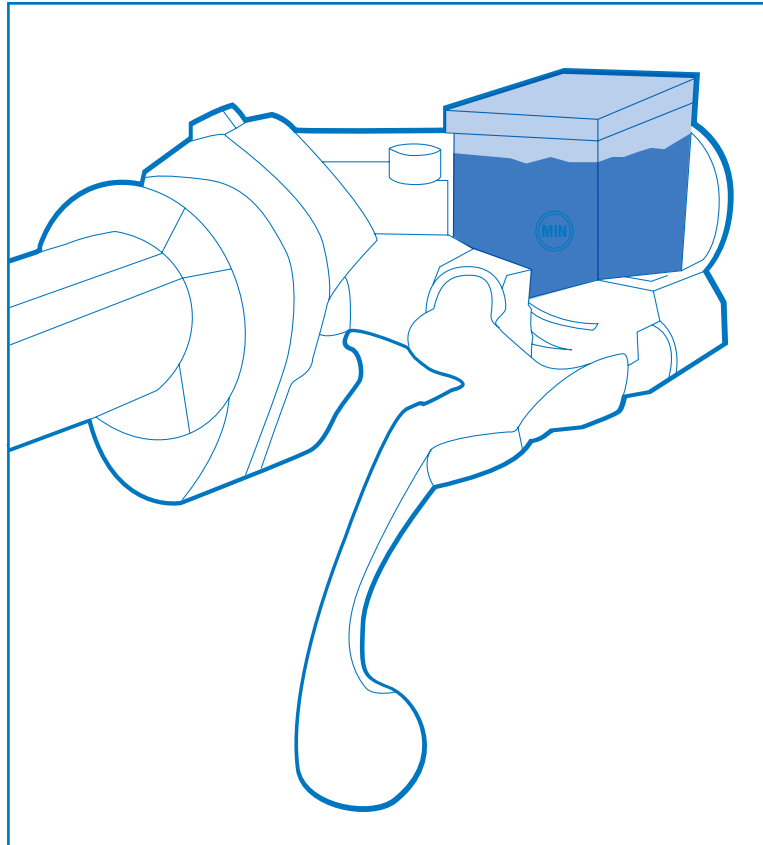
Your brake fluid should never go below the MIN mark on the reservoir. Air can enter the reservoir if the fluid level is below MIN. This could cause problems in your Vectrix system. Brake fluid should always be topped off and changed on a routine basis. The brake fluid reservoirs are located on the handlebar assembly.

It is recommended that the brake fluid be changed every two years.

If you find excessive play on the brake lever but the brake pads are still in good condition, you should go to an authorized dealer at your earliest convenience to get the system checked.

WARNING!

Brake fluid may damage the Vectrix paint and plastic parts if accidentally spilled. Brake fluid can cause damage and injuries if not handled properly and safely. If the brake fluid gets on your skin, you should wash it off immediately with running water. If the brake fluid gets into your eyes, flush them with running water and seek medical attention. Never mix old and new fluid. Always check for proper sealing.



CHECKING BRAKE PADS FOR WEAR

FRONT BRAKE

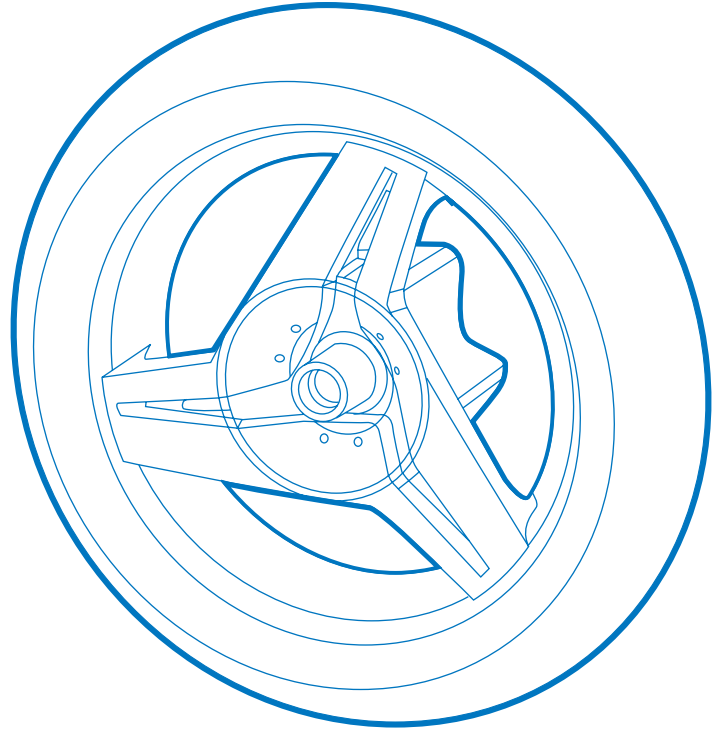
Brake pads have a wear mark. If the grooves in the friction material are visible, the pad is not worn.

REAR BRAKE

The rear brake pad material should be at least 1mm thick for effectiveness.

NOTE!

See your authorized dealer for brake replacement.



BULB REPLACEMENT

WARNING!

Do not change bulbs immediately after running your Vectrix. Let the lights cool off. Bulbs become hot when the Vectrix is running and need proper time to cool off. Hot bulbs can cause severe burns if handled.

HEADLIGHT

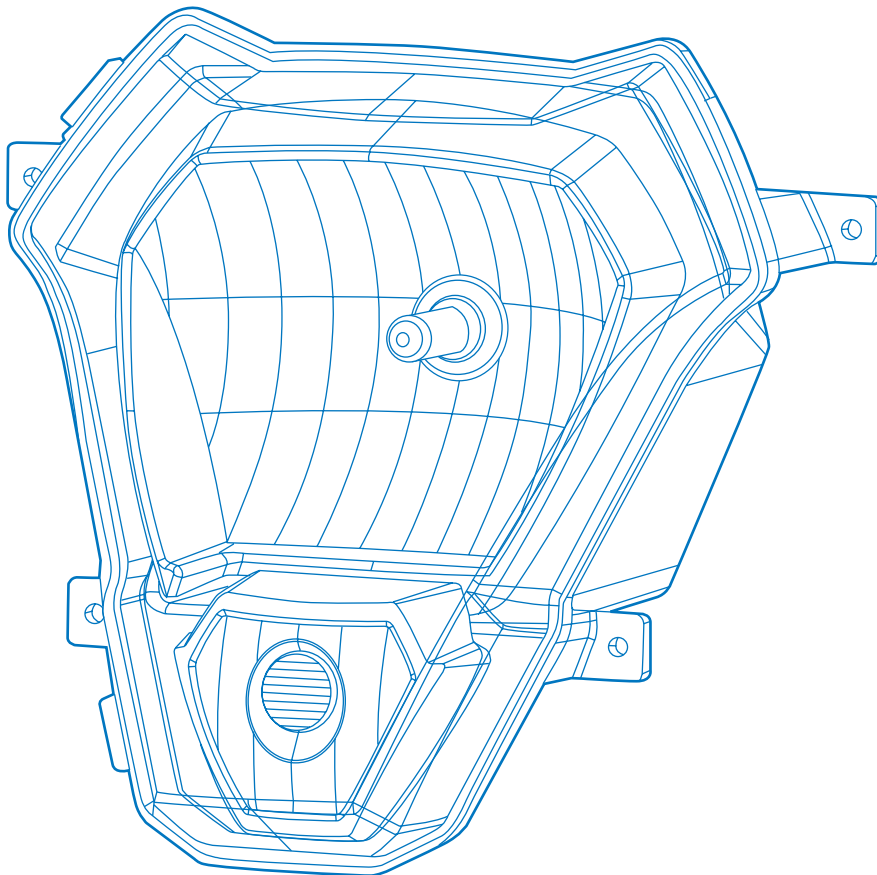
To replace the headlight bulb, you will need to work behind the headlight fairing. Remove the connector from the bulb. Pull the tab to remove the protective cap. Release the clip that holds the bulb in place and take the bulb out of the socket. The headlight is a dual filament 2 X 35 watt Phillips HSR-1.

NOTE!

Always hold the new bulb from the base. Oil from human hands can cause the bulb to turn black and become less brilliant.

LED LIGHTING SYSTEM

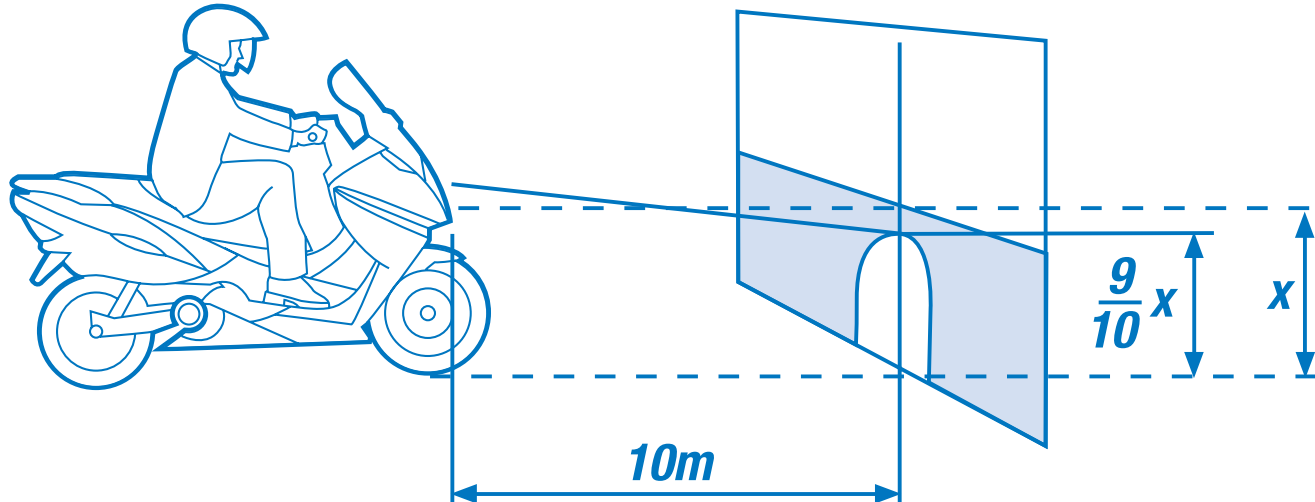
Due to the extremely long life of the LED lighting system, individual LED replacement is not expected. If a turn signal, stop/tail light, license plate light or trunk light fails, it is necessary to replace the entire lighting module which has failed.



The Vectrix must be in an upright position to check the beam setting. Make sure the tires are at the proper inflation. Have one person sit on the Vectrix. Place the Vectrix opposite a wall, about 10 meters away. Draw a horizontal line dictated by the headlight center and a vertical line in line with the Vectrix axis. It is better to perform this test in dim light. Switch on the low beam. The height of the light spot should not exceed $\frac{9}{10}$ of the height from ground to headlight center.

CORRECTING THE LIGHT BEAM

The Vectrix main/dipped beam has been precisely set at the factory. Please contact your authorized Vectrix dealer if resetting is required.



FUSES

WARNING!

Any and all fuses need to be serviced by an authorized dealer. Do not attempt to change these fuses, or you could cause injury or death to yourself and others.

The fuse protection scheme for your Vectrix limits access to the fuses to an authorized dealer. You should not attempt to change any fuse on your Vectrix.

PROPER PRESSURE FOR YOUR FRONT AND REAR TIRE

Tire pressure changes with the temperature and by altitude. You should check the pressure on your tires often to ensure a safe ride. The front tire should be at 32 psi (2.2 bar) and the rear wheel should be at 40 psi (2.8 bar). If you find that the pressure in your tire is always low and quickly changes from high to low after being filled with air, see your authorized dealer to inspect the tire.

REPAIR AND REPLACEMENT OF TIRES

Tires should be checked by an authorized dealer on a regular basis to ensure that they have enough tread and are not damaged or punctured in any way. If you have any questions about your tires, see your service agent for advice and help.

WARNING!

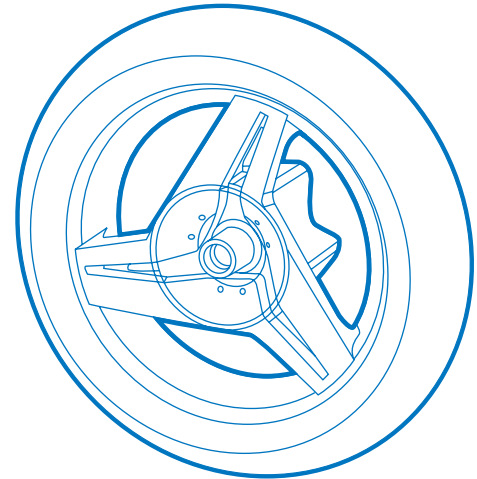
You should replace tires with the standard size recommended. You should avoid larger tires than the recommended size. Failure to do this could result in injury or death.

NOTE!

Always have the tires balanced after replacing them.

NOTE!

Low tire pressure can result in decreased range performance. Always check tire pressure to keep at optimal performance.



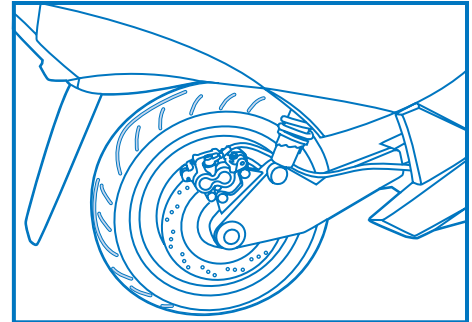
TIRES

PROPER TREAD DEPTH

It is recommended to replace the tires when the tread is below 2 mm.

WARNING!

Driving on tires with little or no tread is dangerous and could cause an accident. Checking your tread depth is extremely important. Failure to do so could result in riding on bald tires, which can cause injury or death, especially in wet conditions.



WASHING YOUR VECTRIX

As with any vehicle it is important that you wash your Vectrix on a regular basis to keep the finish in good condition. Never use harsh detergents or abrasive cloths on your Vectrix.

When washing your Vectrix, follow the instructions below:

Remove dirt and mud from your Vectrix with running water. You may use a soft sponge or brush. Do not use hard materials which can scratch the paint.

Wash the entire Vectrix with a mild detergent or car wash soap using a sponge or cloth. The sponge or soft cloth should be frequently soaked in the soap solution.

CAUTION

When cleaning, you should avoid using a pressure washer or high pressure water unit. These units could damage your Vectrix.

NOTE!

Avoid spraying or allowing water to flow over the following places:

- Ignition Switch
- Break master cylinders

Once the dirt has been completely removed, rinse off the detergent with running water.

After rinsing, wipe off your Vectrix with a wet chamois or clean cloth (clean cloths will minimize scratching) and allow it to dry in the shade.

Check carefully for damage to painted surfaces. If there is any damage, obtain “touch-up” paint and “touch up” the damage.

WINDSHIELD CLEANING

Clean the windshield with a soft cloth and warm water with a mild detergent. If scratched, polish with a commercially available plastic polish. Replace the windshield if it becomes scratched or discolored so as to obstruct view. When replacing the windshield, use a replacement windshield from Vectrix.

CAUTION

Cleaning with any alkaline or strong acid cleaner, gasoline, brake fluid, alcohol or any other solvent will damage the windshield. Clean only with a soft cloth and warm water with a mild detergent.

WAXING YOUR VECTRIX

After washing your Vectrix, waxing and polishing are recommended to further protect and beautify the paint.

- Only use waxes and polishes of good quality.
- When using waxes and polishes, observe the precautions specified by the manufacturer.

WARNING

Wet brakes can cause poor braking performance and may lead to an accident.

Avoid a possible accident by expecting longer stopping distances after washing your Vectrix. Apply brakes several times to let heat dry the brake pads or shoes.

NOTE!

Always allow your Vectrix to fully dry before using it.

STORING

If you plan on storing your Vectrix for an extended period of time, follow these procedures:

- Clean the Vectrix and allow it to dry before storing.
- Place the Vectrix on a service stand.
- Check the Vectrix for problems every few weeks.
- A cover protects the Vectrix from the elements and is a good investment.
- The Vectrix must be fully charged and turned off prior to storage.
- You should not store your Vectrix for more than three months without re-charging the battery.

The Vectrix battery will become damaged if the above precautions are not followed.

TRANSPORTING:

If you need to secure your Vectrix onto a pallet or another vehicle for transporting, it is recommended that you make use of the two 'D' shaped rings at the base of the front fork triple clamp for securing the front end of the bike and the rear of the bike can be secured through the swing arm.

NOTE!

Do not use the plastic around the handlebars or the throttle area to secure the Vectrix for transporting.

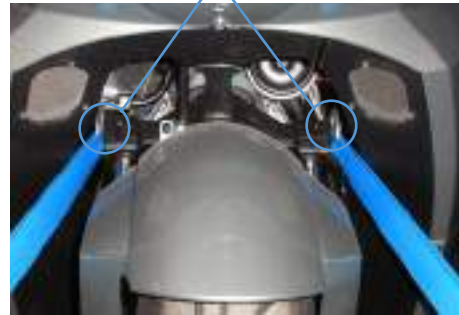
TRANSPORTING

WARNING!

Take special care of the brake hose DO NOT CRUSH or place the belt above the swing arm. This can cause possible damage and may result in unsafe conditions. Carefully place the belt under the hose and take special care NOT to pull the brake hose too hard to weaken the connection. See photo



Representative tie down - front and back.



D-ring locations as seen from under the bike.



Rear non-brake side: Protect the swingarm cutting edges (one side)



Rear brake side

Brake
Hose

TROUBLESHOOTING

All of our bikes are carefully inspected before they are delivered to the customer. Even after the bikes are inspected, some technical problems can occur. The following chart offers a guide for you to identify a problem and, if possible, fix it yourself. If you are unable to solve a problem with your Vectrix, take it to an authorized Vectrix technician at your convenience.

TROUBLESHOOTING

SYMPTOM	POTENTIAL CAUSE	POTENTIAL SOLUTION
Scooter does not turn on	Key not properly engaged	Recheck key in ignition, turn off/on again
Scooter on but no 'ready' light	Power on/off switch not engaged	Recheck switch, turn off/on
	Scooter plugged in to AC	Unplug scooter and store plug fr riding
	Throttle not set	Call Vectrix authorized dealer for instructions
Ready light flashing	Side stand switch not engaged	Check stands/deploy and retract/check connection
Charger not working	A/C power missing	Check A/C outlet for power, A/C source check fuse/voltage
Premature charge termination	Charger and battery unsynchronized	Run bike until battery icon blinks and fuel gauge resets to '0' and charge bike.
	Charger firmware out of date	Call dealer for service. Technician must determine charger firmware revision and update minimum Rev 2012, or thereafter.
Handlebars wobble (shimmy)	Tire pressure	Inflate to correct tire pressure (see tire section)
	Deformed front tire	Replace / balance front tire with the same tire supplied from the factory
	Bald tire (excess wear)	Replace / balance tire with the same tire supplied from the factory
	Cargo box installed	Check the bike behavior without cargo box. Never exceed the maximum load allowed in the cargo box.
Flashing wrench / battery	No charger output	Contact your authorized dealer
Flashing wrench / battery / temperature	Battery air-plenum	Contact your authorized dealer
Flashing temperature / battery	Battery temperature greater than 50°C Or Battery temperature sensor data error	Contact your authorized dealer
Flashing battery	Shorted cell Or 15°C temperature difference at once sensor compared to the average temperature of the battery pack	

SPECIFICATIONS

WARRANTY:

Standard is twenty-four months

EMISSIONS:

Zero*

WEIGHT:

515 lbs. (234 kg)

SEAT HEIGHT:

30.5" (774 mm)

STORAGE CAPACITY:

Under-seat storage for one full-faced helmet, glove compartment below dash

MOTOR TYPE:

Brushless DC radial air-gap motor
Peak Power: 21 kW peak power at motor shaft
Max Current: 275 Amps
Max Torque: 65 Nm

GEARBOX:

Integrated rear-wheel mounted planetary gear drive

BATTERY TYPE:

Nickel Metal Hydride (NiMH)

RATED BATTERY CAPACITY:

30 Ah, 3.7 kW-h

RATED BATTERY VOLTAGE:

125V

CHARGER:

1.5 kW on-board battery charger

RECHARGE REQUIREMENTS:

110V-230V (50/60Hz)

RECHARGE TIME

3-5 hours

BATTERY DEEP DISCHARGE CYCLES

(80% CHARGE):

1,700

ESTIMATED BATTERY LIFE:

50,000 MILES / 80,000 km

BRAKING:

Patented multi-function throttle provides regenerative braking and slow speed reverse with Brembo mechanical brakes front and rear

GROSS VEHICLE WEIGHT:

= 938 lbs. (425 kg)

TIRE PRESSURE

Front: 32 psi (2.2 bar)

Rear: 40 psi (2.8 bar)

*in operation

FUNDAMENTALS OF VECTRIX RANGE

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

Some of the factors which affect range include speed, acceleration, number of starts & stops, as well as changes in elevation. 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. Our range testing involves the equivalent of a 180 lb (82 kg) driver with no passenger or cargo driving on a flat/level surface.

Since there are an unlimited number of potential trip profiles we provide typical range estimates based upon driving the Vectrix at a constant speed. We have tested the Vectrix at constant speeds both on test tracks and dynamometers to establish the range performance estimates of the bike. Remember that a constant speed trip/test involves a single acceleration to the constant speed and a simple stop at the end. No one actually drives on public roadways under these conditions however it does provide a basis for comparisons.

Operating under constant speed conditions our data indicates the following averages:

Constant Speed	Range
25 mph (40 km/h)	65 miles (105 km)
35 mph (56 km/h)	54 miles (87 km)
40 mph (64 km/h)	48 miles (77 km)
45 mph (72 km/h)	44 miles (71 km)
50 mph (81 km/h)	36 miles (58 km)
60 mph (97 km/h)	20 miles (32 km)

In a typical urban driving environment with traffic, traffic lights and varying driving conditions you should expect to travel between 30 to 45 miles on a single battery charge. During constant speed driving on a level surface the Vectrix consumes approximately 39 wh/km @ 40km/hr.

We suggest that you drive conservatively when you first get your Vectrix and get to know your bike and your commute. Once you become familiar with the range versus performance of your bike then you can adjust your driving characteristics if you so desire. This applies mainly to drivers with trip profiles which are at the edge of the range envelope. Those of you with relatively short commutes can expect to ride quite aggressively and reach your destination with energy to spare.

1. DOES ACCELERATION AFFECT RANGE?

Acceleration is the rate which you are attempting to increase the speed of your Vectrix. 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 Vectrix. Being “first off the line” means you will also be the first to drain your energy supply.

Hard Acceleration = Reduced Range

2. DOES WEIGHT AFFECT RANGE?

The Vectrix at approximately 500 lbs (226.8 kg) plus a 180 lb (82 kg) driver equates to a gross vehicle weight of 680 lbs. (308 kg) If you add 50 lbs (23 kg) of cargo the total weight you are attempting to move is 730 (331 kg) pounds or 7.3% increase in weight. If then you add a 175 lbs (79 kg) passenger the total weight is 905 lbs (411 kg) or a total weight increase of 33%! The more mass you are pushing/lifting the more energy it takes to accomplish the mission. Avoid keeping unnecessary items in your Vectrix since it will impact your range.

Added Weight = Reduced Range

RANGE

3. WHY DO I GET LESS RANGE AT HIGHER SPEEDS?

It takes more energy to push a Vectrix faster because you encounter aerodynamic resistance. The faster you attempt to travel the more important this factor becomes. Also it is a fundamental characteristic of battery energy storage systems that the amount of energy you are able to extract from the battery is inversely proportional to the rate at which you drawing out the energy. If a battery pack is rated for 30 Ah if you draw 10 amperes of current you will deliver more energy that 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

4. HOW DOES TIRE PRESSURE AFFECT RANGE?

As the Vectrix is ridden, heat is generated in the tires from deformation at the contact patch. Higher inflation pressure reduces this deformation, which results in reduced heating of the tire and reduced energy loss. A tire that is at 2/3 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 vehicle manually. More force is required to move the vehicle when tire pressure is low. Keep the tires inflated to the specified pressure to maximize range.

Incorrect Tire Pressure = Reduced Range

At Vectrix we understand the exhilarating feeling you get from aggressive acceleration in either the forward or regenerative braking modes. This is very special machine with unique performance characteristics. However, if maximizing range is your primary objective, we suggest you drive sensibly and conservatively since it will extend your range and provide a safer ride for you and those around you.

MAX SPEED:

62 mph (100 km/h)

OPERATING TEMPERATURE:

14°F - 122°F (-10°C to 50°C)

ACCELERATION:

0-50 mph (80 km/h) in 6.8 seconds

RANGE:

35 miles (56 km/h) -55 miles (89 km/h) in average driving conditions

MAX RANGE:

65 miles (105 km) @ 25 mph (40 km/h)

FRAME:

Lightweight aluminum frame

WEIGHT ALLOWANCES:

Underseat / Trunk Capacity

26 lbs. (12 kg)

Glove Box Capacity

4 lbs. (2 kg)

Cargo Box and Contents

not to exceed 20 lbs (9 kg)

WHEELS:

Front: 120/70 -14"; Rear: 140/60 -13"

WHEELBASE:

60" (1,525 mm)

CONTROLLER:

DSP and IGBT based all-digital electronic control and motor drive system

INSTRUMENTATION:

LCDs display speed, odometer, energy consumption, battery status, estimated range and system status

FOR USA VERSIONS ONLY

SAFETY DEFECTS

Contact the National Highway Traffic Safety Administration (NHTSA) if you believe that this vehicle has a defect that could cause an accident, injury or death. Also contact Vectrix Corporation immediately. If the NHTSA receives multiple complaints, it could lead to an investigation. The NHTSA may opt to recall vehicles if it perceives a safety threat. The NHTSA cannot deal with individual problems with dealerships or Vectrix Corporation.

THE NHTSA CAN BE REACHED AT:

1-800-424-9393

OR YOU CAN WRITE TO THEM AT:

NHTSA
US Department of Transportation
Washington, DC 20590

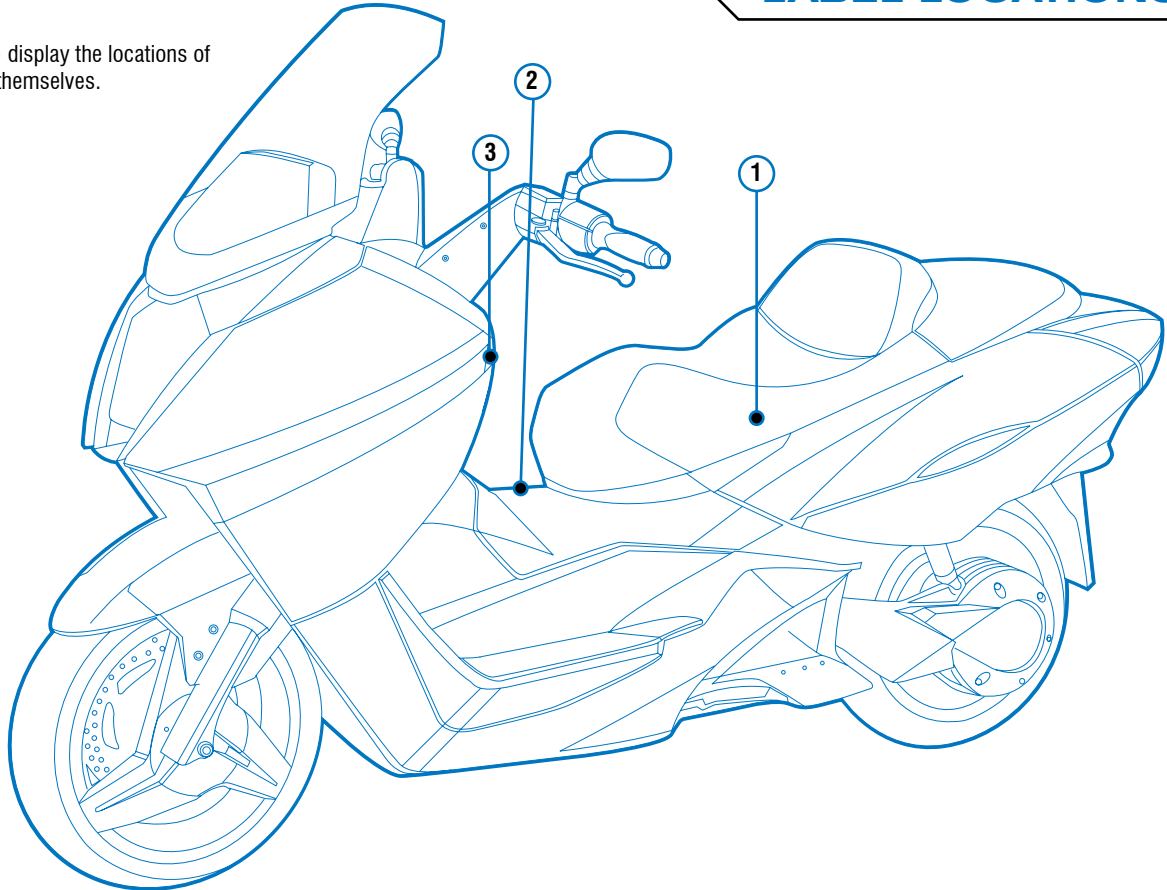
END OF US REQUIREMENTS

SWITZERLAND CUSTOMERS

The key switch turns off all of the power supplies that feed the control electronics. This makes it impossible for the control electronics to synthesize the waveform required to make the motor run.

LABEL LOCATIONS

The following pages (50-51) display the locations of safety labels and the labels themselves.



FOR USA VERSIONS ONLY



DANGER

High Voltage Inside/ KOH



To avoid injuries, burns or electric shocks:

- Never disassemble this battery unit or remove its covers.

-Service by Qualified Personnel.-

- Avoid contact of alkaline electrolyte with eyes, skin, or clothes.
- In event of accident, flush with water and get medical help immediately.
- Keep children away from this unit.
- Do not puncture or impact on this unit when operating forklift, or expose to open flame or incinerate, or expose to liquids when storing this unit, as excessive heat may generate fire and electrolyte may leak out.

To Qualified Service Personnel:

Be sure to read the Repair Manual before servicing or replacing the battery.

Battery Recycling Information

- Please transport this battery in accordance with all applicable laws.
- Be sure to consult Vectrix dealer or the following address for replacing and disposing of this battery.

CONTACT US: WWW.VECTRIX.COM

PHONE USA: 508 992 5300-SERVICE, EUROPE: +39 06 71 28 02 98



WARNING

Your Vectrix is equipped with a warning light when the side stand is lowered (on).

However, it is the rider's responsibility to ensure that the side stand is stowed completely before starting out.

Failure to observe this warning could result in an upset and consequent bodily injury.

2

NOTICE

Accessory Port

12 VDC 0.5 AMPS (6 WATTS)

MAXIMUM

3

1

Label not visible without removing seat.

