

**ANTIGRAVITY BATTERIES**

# 16-VOLT VTX-20

**USER MANUAL**



**FOR RACE USE ONLY**

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### **DANGER! IMPORTANT SAFETY INSTRUCTIONS.**



PRIOR TO USE, READ AND UNDERSTAND PRODUCT SAFETY INFORMATION AND THIS USER MANUAL.

Failure to follow these safety instructions may result in **ELECTRICAL SHOCK, EXPLOSION, or FIRE**, which may result in a **SERIOUS INJURY, DEATH, DAMAGE TO VEHICLE or PROPERTY**. DO NOT DISCARD YOUR USER MANUAL.

## Introduction

### THANK YOU

Thank you for purchasing the Antigravity 16-Volt Lithium-Ion Battery. Please Note: This battery is intended for Race Use only, and must be charged with a 16-Volt approved Charger, specifically for 16V Lifepo4 Lithium Batteries. Please read the following information carefully.

### GUIDELINES

**Please read all WARNINGS before installing this battery!**

Antigravity Batteries Lithium-Ion Starter Batteries offer great performance benefits such as massive weight reduction, much higher cranking power, and longer service life than Lead/Acid batteries. They can improve the performance of your vehicle due to the weight reduction, stable voltage and better starting performance. But they are different from Lead/Acid in a few key areas. So please adhere to the following Guidelines carefully.

- 1) Do not use a Lead/Acid Charger/Maintainer on a Lithium-Ion Battery. Only use a Lithium (Lifepo4 16v) specific charger.
- 2) Make sure your Electrical System and Voltage Regulator is charging and operating correctly and is specific for a 16-Volt System. Over-Charging due to a bad/old voltage regulator/rectifier or improper voltage or current output could damage your battery, cause fire, or explosion! Your system must be in good working order and be SPECIFICALLY FOR 16-Volts!
- 3) Do not allow this battery to drain below 14-Volts. This can damage the battery cells and greatly diminish the lifespan of your lithium battery. This is not a warranty issue, you must monitor the voltage to prevent over-discharge.
- 4) Keep all connections protected from metals or areas that could cause a short-circuit on the battery terminals.
- 5) Check your vehicle for parasitic drains. A parasitic drain is a condition where an accessory, instrument cluster, ignition module, cooling fan or other items are drawing energy from the battery while the vehicle is not running. This can over-discharge the battery to below 14v and cause damage. Monitor your voltage always.
- 6) In very cold weather your lithium battery may seem sluggish on the first start attempt. If you leave a light on or do a short bump of the starter a few times it will self warm and get to full power again. The battery self warms on use.
- 7) If you plan to store your vehicle for long periods just disconnect your Antigravity Battery from your vehicle and it can hold a charge for over a year and be ready to start when you come back.

*For more information feel free to Contact us.*

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**IMPORTANT! READ FIRST!****DANGER!**

READ AND FULLY UNDERSTAND ALL SAFETY INFORMATION BEFORE USING THIS PRODUCT. Failure to follow these safety instructions may result in ELECTRICAL SHOCK, EXPLOSION, or FIRE, which may result in a SERIOUS INJURY, DEATH, or PROPERTY DAMAGE.



**Shock.** Product is an electrical device that may shock or may cause serious injury if not handled correctly. Do not wear jewelry or other metallic objects when working on batteries.



**Explosion.** Batteries can spark! The potential of Explosion exists if batteries are used around areas where flammable fumes or high dust content is present. Do not attempt to jump-start a damaged or frozen battery. Do not mix battery chemistries such as lead/acid and lithium batteries. Do NOT charge this battery with a LEAD/ACID Battery Charger. Use only approved Lithium-Ion Chargers.



**Fire.** Use Battery only as intended. Do not leave any battery unattended while charging. Do not jump-start damaged or frozen battery, or if below 10V. Do not mix battery chemistries. Use only approved Lithium Chargers.



**Eye Injury.** Wear eye protection when working with battery products. Batteries can explode and cause flying debris.

**CALIFORNIA RESIDENTS PROPOSITION 65:** Related accessories may contain materials that are known to the State of California to cause cancer and birth defects and other reproductive harm.



## Important Safety Warnings

### 1 PERSONAL PRECAUTION

Only use product as intended. When working on or around this battery, use caution. It can produce extremely high discharge currents when short-circuited. Someone should be within range of your voice or close enough to come to your aid in case of emergency. Wear complete eye protection and protective clothing while working near a battery. Always wash hands after handling batteries and related materials. Do not handle or wear any metal objects when working with batteries including tools, watches or jewelry. If metal is dropped onto battery, it may spark or create a short-circuit resulting in electrical shock, fire, or explosion which may result in injury, death or property damage.

### 2 HANDLING

Handle product with care. The product can become damaged if impacted. Do not use a damaged product, including, but not limited to, cracks to the casing or other physical damage. Do not handle product or any electrical components near any liquid. Store and operate product in dry locations.

### 3 MODIFICATIONS

Do not attempt to alter, modify or repair any part of the product. Disassembling product may cause injury, death or damage to property. If product becomes damaged, malfunctions or is submerged, discontinue use, and contact Antigravity Batteries. Any modifications to the product will void your warranty.

### 4 ACCESSORIES

This product is only approved for use with Antigravity Batteries accessories. Antigravity Batteries is not responsible for user safety or damage when using accessories not approved by Antigravity Batteries.

### 5 LOCATION

Make sure product is installed correctly. Position cable leads to avoid accidental damage by moving vehicle parts (including hoods and metal parts), moving engine parts (including fan blades, belts, and pulleys), or what could become a hazard that may cause injury or death. Do not install next to metal objects that could cause a short-circuit. Failure to follow guidelines could result in fire, death, personal injury, or property damage.

### 6 HIGH CONSEQUENCE/RISK ACTIVITIES

This product is not intended for use where the failure of the product could lead to injury, death or severe environmental damage.

### 7 CLEANING

Use a soft, lint-free (micro fiber) cloth. Avoid getting moisture in openings. Use only mild cleaners on product and no solvents or harsh chemicals.

## Safety Warnings (Continued)

### 8 OPERATION TEMPERATURE

This product is designed to work in ambient temperatures between -10°C to 60°C (14°F to 140°F). Do not operate outside of temperature ranges. Do not jump-start a frozen battery or battery with voltage below 12v. Do not charge a frozen battery. Only charge within the range of 0°C to 45°C (32°F to 113°F) Discontinue use of product immediately if the battery becomes excessively warm.

### 9 STORAGE

Store your product on a flat, secure surface so it's not prone to falling. Store your product in a dry location. The storage temperature is -20°C to 25°C (-4°F to 77°F), average temperature. Never exceed 80°C (176°F) under any condition.

### 10 COMPATIBILITY

The product is only compatible with **16-volt type systems** in vehicles. Do not attempt to use product with any other types of batteries, or in series or parallel with another battery; the interior electronics could be damaged. Use with or Jump-starting other battery chemistries may result in fire, explosion, injury, death or property damage. Contact Antigravity Batteries prior to attempting to jump-start the battery. Do not jump-start a battery if you are unsure of the battery's specific chemistry or voltage.

### 11 THE BATTERY

The built-in lithium-ion battery in the product should be replaced or serviced only by Antigravity Batteries, and must be recycled or disposed of separately from household waste. Do not attempt to service or replace the battery yourself and do not handle a damaged or leaking lithium-ion battery. Never dispose of battery in household trash. Disposal of batteries in household trash is unlawful under state and federal environmental laws and regulations. Always take used batteries to your local battery recycling center. If the battery is excessively hot, emitting an odor, deformed, cut, or is demonstrating an abnormal occurrence, immediately stop all use and contact Antigravity Batteries ([info@antigravitybatteries.com](mailto:info@antigravitybatteries.com)).

### 12 BATTERY CHARGING

Use only approved Lithium-Iron Phosphate specific chargers for 16-Volt LifePo4 Lithium Chemistries with this 16-Volt battery. Using damaged cables or chargers, or charging with other than intended battery chargers, could result in damage to battery, fire, or explosion which may result in injury, death or property damage. Never leave any battery being charged unattended.

### 13 IMPORTANT NOTICE ON CHARGING

The charging system in your vehicle may go bad or be charging at excessively high voltages if not operating correctly. This occurs most often in older vehicles, or vehicles with modified or aftermarket charging systems. This could result in damage to battery, fire, or explosion which may result in injury, death or property damage. It is important you check your vehicle's charging system BEFORE installing this battery. Make sure it is operating correctly and not charging above 17.5v.

## VTX-20 Models



**VTX-20-L**

LEFT NEGATIVE TERMINAL



**VTX-20-R**

RIGHT NEGATIVE TERMINAL

## Specifications

**BATTERY TYPE:** Lithium Iron-Phosphate (LifePo4)

**CASE FORMAT:** YTX12

**VOLTAGE:** 16V (nominal)

**CAPACITY and CRANKING AMPS:** see battery label

**DIMENSIONS:** 5.9 x 3.43 x 5.12 inches

**WEIGHT:** 5 lbs

**MAX CHARGING RATE:** 15 Amps

**MAX CHARGING VOLTAGE:** 17.5V

**APPROVED CHARGER TYPE:** Lithium-Iron Phosphate for 16V Starter Batteries at 15-Amps MAXIMUM. Please contact us at [info@antigravitybatteries.com](mailto:info@antigravitybatteries.com) if you need assistance in choosing the correct charger.



## Charging



### CHARGING WARNINGS

- 1) Do NOT use Lead/Acid Chargers/Maintainers on this Antigravity Battery or Lithium Batteries.
- 2) Do NOT use a 12-Volt Charger on a 16-Volt Battery.
- 3) Use only APPROVED LIFEPO4 Chargers for your Battery's specific Voltage, Chemistry and Maximum Charge Rate.
- 4) Check Vehicle for proper Charging System Operation. You may have a bad Voltage Regulator.
- 5) IF YOUR BATTERY HAS BEEN OVER-DISCHARGED BELOW 14-Volts, DO NOT ATTEMPT TO JUMP-START. CHARGE IT UP TO A MINIMUM OF 14.5v FIRST WITH THE PROPER CHARGER.



### CHARGING ANTIGRAVITY 16-VOLT BATTERY

The Antigravity Batteries VTX-20 batteries operate and are recharged correctly with the proper 16-Volt Lithium-Iron-Phosphate Charger rated not to exceed 17.5-Volts and 15-Amps Charge Rate. If you are not sure check with the manufacturer. DO NOT CHARGE THIS BATTERY IF YOU ARE UNSURE OF THE CORRECT CHARGER. THERE IS A POTENTIAL FOR FIRE, AND EXPLOSION.

**To Charge or Maintain your Antigravity Battery:** Only use a Lithium-Ion Charger designed specifically for 16-volt LiFePo4 Lithium-Iron-Phosphate Starter Batteries. Follow all Manufacturer's Instruction on Charger use. Contact Antigravity Batteries for suggestions on a Charger for your use, or visit our website.

**Antigravity Batteries 16-Volt Batteries are only for Race Use. Antigravity Batteries will not warranty the use of 16-Volt batteries in Custom Race and/or Total Loss systems. 16-Volt Antigravity Batteries are not to be used in 12-Volt vehicle Systems.**



### CHARGING SYSTEMS WARNING (OWNERS OF PRE-1990S VEHICLES TAKE NOTICE)

An Antigravity Battery can be over-charged if the vehicle's charging system is defective or goes bad. For example, the voltage regulator being defective or incorrect. In these cases the Lithium battery can be dangerously over-charged by spiking voltages (voltage should never go above 17.5v when charging) from the vehicle's system. It is imperative to check for proper operation of your vehicle's charging system. Many Pre-1990s vehicles have aged and by now have faulty voltage regulators. We recommend that a Professional checks your vehicle's system, especially on older vehicles (Pre 1990s) that are being used currently. Failure to check system could result in fire, explosion and damage to personal property.





## Installation



### INSTALLING THE BATTERY

Before Installation make sure the location of the battery will be free from areas of potential short-circuiting of the cables, terminals and other electrical connections. Be aware of other potentially dangerous situations such as moving parts, metal parts or extremely hot parts such as headers. Make sure your Charging System is in good operating condition and not charging above 17.5v for this 16v Lithium Battery.

- 1) Remove the Negative Cable then the Positive Cable from your old battery, and remove the battery.
- 2) Securely install the battery in a tray or other method that does not allow battery movement. Ensure the area is free from high-heat parts and areas of potential short-circuits. The battery can be installed in any orientation without issue.
- 3) After secure fitment of the battery, replace Positive then Negative cables and tighten the nuts. NOTE: A firm tightness is all that is needed (4.0 N-m or 3.5 lb-ft). Do not over-torque the battery terminals, damage could result!



### PLEASE USE SAFETY! FOLLOW THESE PRECAUTIONS

- 1) Battery MUST be securely mounted into vehicle to prevent movement.
- 2) Be careful not to directly short-circuit the Battery connections on the frame, or other metal parts.
- 3) Battery and Cables should not be installed near hot pipes, sharp objects, or metal parts.
- 4) Battery Cables should have some slack and not be tightly stretched.
- 5) Do not install close to Carbon Fiber... Carbon Fiber can conduct electricity!
- 6) Test for Parasitic Drains on your vehicle after battery installation (VERY IMPORTANT, see "Troubleshooting" section).
- 7) If you have an older bike/vehicle (1990s and earlier) with a voltage regulator, update to a modern solid-state voltage regulator for the correct voltage.

## Battery Care & Maintenance



### CHECKING THE BATTERY

Antigravity Batteries do not require maintenance for the most part if they are kept in a good state of charge, but as with any battery, they should be checked once every few months, or weeks as a precaution. Visually inspect the product for any cracks, check the mounting is secure, and check the voltage. The key to long life for any battery chemistry is to not allow the battery to get below 14v. Below 14v, may cause damage to the cells, and the lower the voltage and longer the time over-discharged the more potential for damage.



### CLEANING

To clean the Antigravity Battery, use a clean dry cloth. Do not use harsh chemicals or solvents, DO NOT directly spray the battery with a Pressure Washer or Hose.



### STORING

The Antigravity Battery can hold a charge for over a year provided there are no parasitic drains taking the battery's energy. If you are going to be storing your vehicle it is best to disconnect the battery completely, and it will maintain its charge for over a year. If you will be storing it out of the bike, place the battery in a cool dark place.



## Troubleshooting

### 1 SLUGGISH PERFORMANCE ON INITIAL START IN VERY COLD WEATHER

This is a normal effect of Lithium-Ion due to increased "resistance" in very cold weather. The battery is not damaged. A Lithium battery can be self warmed by either a couple quick engagements of the starter, such as a short blip on the starter button, or a short turn of the key to engage the starter for a second only, or by leaving the vehicle lights on for 1-3 minutes. This gets current to flow from the battery and it will self-warm and have more power available for starting in low temperatures. Once warmed, the battery's full power is available. For freezing weather, we recommend a battery warmer.

**Do not try to charge, or jump-start any frozen battery.**

### 2 BATTERY LOSING VOLTAGE WHILE IN VEHICLE (PARASITIC DRAIN)

A Parasitic Drain is a condition where the battery's energy is used up by the electronics, or accessories on the vehicle. For example, when the vehicle is not being driven enough to recharge the battery items like accessories, then instrument panels, cooling fans and ignition modules will continue to draw the energy from the battery even with the key off. Even a shorted wire on the vehicle can cause this condition. If the battery is drained below 14v, it can damage your 16v battery. This is why it is important to check your voltage after racing or before storing the vehicle. We suggest a Lithium-Battery Maintainer, or best is to disconnect the the Antigravity Battery from the vehicle if you will not be riding/driving enough to keep the battery charged up. It will hold a charge for up to a year and a half when not connected.

A mistake such as leaving the ignition "on", or not disconnecting the battery before storing it can drain your battery and damage it. Most vehicles do have a mild parasitic drain that will not pose a problem in the short term, but adding accessories is usually where excessive parasitic drains occur. Be sure to keep the battery charged or drive enough to keep the battery in a fully charged state to get the longest life from your battery. You battery has a limited supply of energy to give before being over-discharged. Over-Discharge is not the fault of the battery.

We understand many Race Cars use Total Loss systems, a system where there is no alternator to recharge the Battery. It is imperative to make sure you keep the battery fully charged as often as possible to get the best results. We do not warranty for Over-Discharged issues. This is not a fault of the battery, it is a required maintenance for the Battery.

### 3 GETTING THE LONGEST LIFE OUT OF YOUR ANTIGRAVITY BATTERY

You can expect many years of performance out of your Antigravity Battery. But there are things that will damage your battery and cut its life-cycle down severely or ruin it quickly. The following are the main reason a lithium-battery will be damaged or have a short life-cycle. This is not a faulty or defective battery, this is due to lack of maintenance. Please maintain your battery correctly.

- 1) Over-Discharging the battery below 14-Volts:** If you are not driving enough to recharge the battery the vehicle's electronics will be taking energy from the battery and discharging it. Maybe you left the lights or ignition on accidentally. These circumstances will allow the battery to drain below 14 volts and shorten, or ruin the life of the battery. You **MUST** make sure you are keeping the battery charged, or putting the battery on a Charger/Maintainer when leaving it connected to the vehicle's electronics. Or just disconnect the battery and it will not lose its voltage for over a year.
- 2) Over-Charging the battery:** Using the incorrect charger that is charging above the Maximum Charge Voltage of 17.5 Volts. This will damage the battery rapidly and could cause fire or explosion. So you **MUST** make sure you are using the proper charger. And also that if your vehicle has a charging system for 16v Batteries, that it is regulated to not exceed the maximum charge voltage.



## Warranty (Non-Transferable)

### 1 WARRANTY PERIOD

For full Warranty terms and information visit our [Warranty page](#).

All warranty claims are handled by Antigravity Batteries directly. All warranty claims must be accompanied by the original receipt from your retailer or your Antigravity Batteries Invoice. Antigravity Batteries LLC warrants to the original purchaser that our batteries are free of defects in material and workmanship for the term of 6 months. Race use is a 6 month warranty, but not covering Total-Loss Systems. All batteries must be registered within the first 30 days from the original purchase date or original purchaser must provide copy of original receipt in order to be eligible for a warranty claim. Warranties are non-transferable. Returns will only be accepted from the original Purchaser.

### 2 WARRANTY DOES NOT COVER

- 1) Any physical damage caused by abuse, negligence, improper installations, or lack of general maintenance.
- 2) Any modification to any part of the battery or its parts, any disassembly of the battery.
- 3) Damage from direct "short-circuiting" of the battery caused by improper use or installations, grounding problems or accidents.
- 4) Use of any Chargers intended for Lead/Acid batteries: Trickle chargers, Battery Tenders, etc. **DO NOT USE LEAD ACID CHARGERS.**
- 5) Use of Chargers NOT intended specifically for Lifepo4 Lithium Batteries, or with a maximum charge voltage over 14.6 volts.
- 6) Overcharging due to a defect with vehicle's voltage regulator or defective charging system, or performance charging systems.
- 7) Overcharging battery above 17.5 volts, or Overdischarge of battery below 14 volts.
- 8) Excessive over-cranking, or using the incorrect size battery (too small a battery where a larger battery is needed).
- 9) Any non-standard electrical systems such as total-loss systems, 24v systems, Race Systems etc. (Only standard, stock 16-volt systems are warrantied.)
- 10) Parasitic drains that discharge the battery to below 14v (please check your electrical system and accessories for parasitic drains).

### 3 REPLACEMENT

Antigravity Batteries are only eligible for one warranty replacement of a battery. Once a battery has been repaired or replaced under warranty, the replacement item only holds the remainder of the warranty period from the date of the original purchase of the battery, and covers only physical defects. The prorated discount toward the purchase of a new battery will be applied. Antigravity Batteries LLC reserves the right to deny any and all claims if all conditions and terms are not met.

ANTIGRAVITY BATTERIES LLC LIABILITY IS LIMITED TO REPLACEMENT OF THE BATTERY ACCORDING TO THE TERMS STATED ABOVE. ANTIGRAVITY BATTERIES WILL NOT BE RESPONSIBLE FOR ANY EXPENSES FOR INSTALLATION, TOWING, ELECTRICAL SYSTEM TESTS, CHARGING A BATTERY, LOSS OF TIME, OR OTHER EXPENSES WHICH WOULD BE CONSIDERED AS INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THIS WARRANTY DOES NOT COVER DAMAGE TO THE BATTERY CAUSED BY ABUSE OR NEGLIGENCE, A FAILURE TO KEEP THE BATTERY PROPERLY CHARGED OR MAINTAINED, FIRE, COLLISION, EXPLOSION, FREEZING, THEFT, OVERCHARGING, OR DAMAGE CAUSED BY MODIFICATIONS.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY or fitness for a particular purpose.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER LEGAL RIGHTS, WHICH MAY VARY BY STATE.



## Warranty (Continued)



### REGISTERING YOUR BATTERY

You must register your Antigravity Battery product in order to validate the Limited Warranty. You can register the product Online at our [Registration](#) page. Complete the requested information and click "send".

## Contact Us

When you need help or have questions, our knowledgeable support team is here for you! Please feel free to call us during our Office Hours 7:30am-4pm Pacific Time, Monday-Friday; or you can write to us any time!

310 527 2330

[Info@AntigravityBatteries.com](mailto:Info@AntigravityBatteries.com)

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VISIT OUR WEBSITES FOR MORE COOL PRODUCTS, ACCESSORIES AND INFO

[ANTIGRAVITYBATTERIES.COM](http://ANTIGRAVITYBATTERIES.COM)

[THEMICROSTART.COM](http://THEMICROSTART.COM)

