

## Antigravity Batteries Lithium-Ion Battery Maintenance and Warranty Information

In an effort to educate Re-Sellers and Users of Antigravity Batteries Lithium-Ion Technology for Starter Batteries, and clarify our Warranty we have provided this document. You will find information on the most common causes for damage to Lithium-Ion Starter Batteries which will help to educate the Re-Sellers and End Users to better understand Lithium-Ion products

**Please contact us directly at 310-527-2330 or at the email [info@antigravitybatteries.com](mailto:info@antigravitybatteries.com) if you have any questions.**

### In simple terms related to Antigravity Batteries Products Warranty Claims, the following holds true.

- 1) If the Antigravity Battery fails as a result of workmanship, or if a component in your battery fails because of a defect in the materials used in production, then Antigravity Batteries will repair, replace or warrant the battery for a period of up to 3 years (please see Warranty for full details). This applies to Stock vehicles only. Racing, Customized or Modified vehicles using aftermarket stators, charging systems, that affect the battery charging are not covered in the 3-year warranty.
- 2) If there is an issue with improper installation or the maintenance of the battery or vehicle, such as allowing the battery to Over-Discharge below 10.5 Volts, or installing the battery in a vehicle with a faulty or improper type of Voltage Regulator or Charging system, then we cannot be held responsible for this. These are issues beyond our control and explained in the Users Manual. It is NOT due to a faulty battery, or component of the battery, but rather issues involved with the improper installation of the battery, the vehicle's maintenance, the vehicle's charging system, or other reasons. We do not warranty for these issues.
- 3) We want the User to get the best life and use out of our products, but our Batteries are often installed or maintained in ways beyond our control and we cannot be expected to be responsible for faulty installation, lack of battery maintenance, or a vehicle's potential problems. It is ultimately the Users responsibility to maintain, use and install the Antigravity Battery properly and in a safe manner as per our USER'S MANUAL provided with every battery. We make no claims of functionality in non-stock vehicles using aftermarket parts that can affect the battery or charging system, or when used in modified racing systems, or installed in Customized applications. In these applications, it is the Users responsibility for all potential issues that might arise... they are Custom and modified uses. Use the battery only as directed per the User's Manual.

Antigravity Batteries uses the highest quality components in the industry and builds our product to withstand the most vigorous uses and severe vibration, but something as simple as the battery over-discharging, or over-charging can damage or ruin the Lithium-Ion battery in a short period of time.

All batteries require some form of maintenance which includes proper and safe installation, and monitoring of voltage. It will be the User's/Installer's responsibility to make sure they maintain the battery in a state of charge that is never below 10.5 volts, and to install it in a safe manner away from high-heat, or near metal surfaces that can create short circuit situations. Additionally, it is necessary to make sure your Voltage Regulator and Charging System is in good operating condition. Older bikes or vehicles (over 20 years old) often have bad/defective Voltage Regulators that will "over-charge" the Lithium Antigravity Battery. If the Voltage Regulator goes bad this leads to spiking very high voltages and could potentially damage the battery and create a dangerous situation with potential for explosion, fire or vehicle damage in worst case scenarios. Over-Charge is usually indicated by a swollen, puffed, expanded battery.

In the overwhelming majority (90%) of cases of Warranty Claims seen by Antigravity Batteries, the battery has been over-discharged. This is not a Warranty issue... that fact is the battery has been drained of its energy by the vehicles accessories such as ECU, Instrument Cluster, Power Commander, theft alarm, other accessories or perhaps a potential "short circuit" on the vehicle that might draw energy from the battery while it is connected. A battery is NOT an endless supply of energy, the energy taken from the battery MUST be replaced or the battery can be over-discharged. So, the USER must ride the bike to charge the battery if it is showing a low voltage reading (anything below 12.5v), or they can use a Lithium (Lifepo4) specific Charger/Maintainer designed for use with our Battery. Keep in mind if you disconnect your Antigravity Battery it will easily hold its charge for up to a YEAR! Only when there is a "draw" on the battery will the battery be discharged of energy. If you store the vehicle, or don't ride for a period of time, simply disconnect the battery and it will hold its last charge for a year.

## Potential Reasons for Damage to your Lithium-Ion Batteries...

**Below are the common causes of damage to your Antigravity Battery. These conditions/situations WILL damage your battery or in extreme cases and conditions there could be a potential for Fire or Explosion!**

**Over-Charge due to faulty Voltage Regulator-** This usually happens on older Harleys, or Older 1960s-1990s Japanese bikes due to defective Voltage Regulators. The Voltage Regulator is very old and goes bad creating large spikes in voltage therefore over-charging the Lithium Battery. The tell-tale sign of this is a “puffed” battery, the battery become physically distorted and ballooned by overcharging. In worst case scenarios, the battery can be overcharged to a point that causes a meltdown (thermal runaway) of the battery and potential for fire. So please make sure the electrical system is operating correctly and not over-charging at any time over 14.4volts. Often times Aftermarket charging systems are not regulated as well as a stock system is, be aware of this if you use and aftermarket charging system. WE DO NOT SUPPORT AFTERMARKET CHARGING SYSTEMS BEING USED. IT WILL VOID THE WARRANTY ON OUR BATTERY!

**Over-Charge due to using a LEAD/ACID Charger or incorrect charger for Lithium-Ion Lifepo4 Specific Batteries-**

Antigravity Batteries have Lifepo4 based lithium battery cells rated at 12.8 Volts. They work perfectly fine with a stock vehicles charging system that is regulated to charge at a maximum of 14.4 volts. If you do need to charge your Antigravity Battery use only Chargers specifically designed for charging Lifepo4 Lithium-Ion Powersports Batteries and charging at the correct voltage. Never use 16- Volt Chargers on 12-Volt Batteries. Do not use Lead/Acid Chargers or Lead/Acid Maintainers/Tenders as they can enter Desulfinate modes which can spike the Voltage and create an Overcharge condition. DO NOT USE LEAD/ACID CHARGERS. Contact us for suggestions.

**Over-Discharge: Accessories are drawing energy while the bike sits with the Key off.** Most modern bikes since the 1990’s have an energy draw on the battery regardless if the key is off. The battery’s energy is being taken to power the ECU, Alarm, Instrument Cluster, heated gear, GPSs or other electronics you might have. These accessories on some vehicles draw a lot of energy out of the battery and can drain the batteries voltage down quickly to an over-discharged state. Alarms, GPS, Heated Grips can all be left on and discharge a battery fast. Additionally, note that too many accessories on a bike can overwhelm the wattage output on a vehicle’s charging system and create a drain on the battery even when riding. This is NOT a fault of the battery, nor a warranty issue. It is something the User is responsible for monitoring.

As stated, Over-Discharge is the #1 cause of battery damage for ANY Battery lead/acid or Lithium. When over-discharged the below 10.5v this is basically a “dead battery” and if allow to get to this state it damages the battery cells and diminishes capacity of the battery, ruins the ability to discharge high amperage to start the vehicle, and often results in batteries that won’t recharge. The user must check vehicle for how fast the parasitic drain is occurring on the vehicle. Even a short-circuit can case a Parasitic Drain. If you have many extra accessories, your battery can reach an over-discharge state quite quickly so watch the system.

**Too small of a battery for your motor size.** Some Users want the smallest lightest battery possible for their vehicle to save weight or to use the battery in a Custom Application. While we make very small batteries that can start large motors... the fact is you still cannot put a Small Battery into a large Electric Start V-Twin and expect it to turn it over as well as a properly sized larger battery. This puts additional stress on the battery and shortens the life of the battery dramatically. Make sure the Customer is sold the correct size battery for their application. Incorrect size battery selection is NOT a battery or warranty issue! We are glad to help with this so please contact us for suggestions.

**High Heat Damage.** High heat can cause damage to any battery and you can expect a much shorter lifespan. While this is NOT the concern of most Users there are many Custom Bike builders putting their batteries in an “OIL BAG”, or right next to a header. So, the battery is effectively sitting in a compartment surrounded by extremely and excessively high temperature oil or extremely high heat. This will surely damage the battery and could cause potential damage to the battery and worst case fire. A battery is not intended to sit in over 120 degree temperatures for a period of time. . Locate a battery in an area away from direct heat. This is dangerous and not a Warranty issue.