

Battery Care and Maintenance

The RS-30 does not require maintenance for the most part, but as with any battery, it should be checked once every few months as a precaution. The RS-30 does not have any liquids/fluids to check. The basic check is a visual inspect of the Battery for any cracks, make sure 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 10.5v in general. Below 10.5v, damage to the cells may occur, and the lower the voltage, the more potential for damage.

Fortunately, with the RS-30's RE-START Technology and built-in BMS (Battery Management System) you should not have to worry about over-discharge or going below 10.5v. This is because our RE-START Technology senses the low-voltage of the battery and puts it to sleep well before damage can be caused to the battery. So, even if you leave your lights on, the battery will shut-off before damage occurs, yet still allow you to start the vehicle with a press of the RE-START button.

Even with the RE-START Technology, the battery can drain within a 6-8 months while in Sleep Mode. So when not in use, or in storage, you should check the batteries voltage every 3-4 months. Also note that even though the RS-30 has built-in protections, make sure to fully recharge the battery if you have used the RE-START feature. **The RE-START feature is for emergency use mainly, not as something to take the place of standard maintenance, and keeping the battery charged!**

To clean the RS-30, use a clean dry cloth. Do not use harsh chemical or solvents, DO NOT directly spray the battery with a Pressure Washer or Hose.

To store the RS-30 put in a cool dark place and put into Sleep Mode. Check Voltage once every 3-4 months when in storage.

Trouble Shooting

*** No Voltage at Terminals-** Check that you have "turned-on/awakened" the battery by pressing the "RE-START" button by holding it down for 5 seconds, the GREEN LED indicator light should be lit to show it is ON. If battery voltage is low then Connect a Lithium (Lifepo4 12.8v) specific charger to battery and re-charge battery fully.

*** Battery will not hold a charge in vehicle more than a few days without going into SLEEP MODE-** This is most likely caused by your vehicle having a fast "Parasitic Drain" on the battery. Many modern cars/vehicles have high milli-amp draws coming from onboard computers, theft alarms, interior lights, GPS systems and other accessories. These items use the battery's energy and, in some cases quite rapidly. If you are experiencing this effect, then you may have to connect the RS-30 to a Lithium specific Charger/Maintainer if you are not driving often enough to recharge the battery. For example some Sports Cars are not driven as the daily driver and sit for longer periods of time yet they have on-board computer systems or accessories that draw significant energy from the battery. In this you may be required to keep the battery on a Mainainer during low use times.

*** Battery is sluggish in cold temperatures-** Cold weather (39F and below) creates resistance in Lithium batteries. On the initial start attempt, you may notice sluggish starting performance. There is nothing wrong with the battery and with the next start attempt, the battery power will come back as the battery self-warms from the Current discharge during the initial start attempt. Another method to self-warm the battery is to turn you your lights for a few minutes to help the battery warm-up before attempting a start. Depending on the size motor you have, and the difficulty in turning-over that motor, the effect may vary.

Warranty

For full Warranty terms and information visit antigravitybatteries.com

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 offers a 3-year Limited Warranty. It warrants to the original purchaser that our batteries are free of defects in material and workmanship for the term of 2 years in stock vehicles using standard charging systems. Race use is a 1 year 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 original receipt in order to be eligible for a warranty claim. Warranties are non-transferable. Returns will only be accepted from the original Purchaser.

WARRANTY DOES NOT COVER ANY OF THE FOLLOWING PHYSICAL ISSUES

- Any physical damage caused by abuse, negligence, improper installations, or lack of general maintenance.
- Any modification to any part of the battery or its parts, any disassembly of the battery.

WARRANTY DOES NOT COVER THE FOLLOWING ELECTRICAL ISSUES

- Damage from direct "short-circuiting" of the battery caused by improper use or installations, grounding problems or accidents.
- Use of any Chargers intended for Lead/Acid batteries- Trickle chargers, Battery Tenders, ect. **DO NOT USE LEAD ACID CHARGERS**
- Use of Chargers NOT intended specifically for Lifepo4 Lithium Motorsport Batteries, or with a maximum charge voltage over 14.6 volts
- Overcharging due to a defect with vehicle's voltage regulator or defective charging system, or performance charging systems
- Overcharging battery above 14.6volts OR Overdischarge of battery below 10.5 volts
- Excessive over cranking, or using the incorrect size battery for the ,(too small a battery where a larger battery is needed)
- Any non-standard electrical systems such as total-loss systems, 24v or 16v systems, Race Systems etc....(Only standard, stock 12-volt systems are warranted)
- Parasitic drains that discharge the battery to below 10v (please check your electrical system and accessories for parasitic drains)

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 pro-rated 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.

NOTE: 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.



USERS GUIDE AND SAFETY INFORMATION



**DANGER! IMPORTANT SAFETY INSTRUCTIONS.
COMPLETELY READ THIS MANUAL FIRST!**



**PRIOR TO USE, READ AND UNDERSTAND PRODUCT SAFETY INFORMATION.
Failure to follow the instructions may result in ELECTRICAL SHOCK, EXPLOSION,
or FIRE, which may result in SERIOUS INJURY, DEATH, DAMAGE TO DEVICE or
PROPERTY. DO NOT DISCARD THIS INFORMATION.**

Introduction

Thank you for purchasing the Antigravity Batteries RS-30 Intelligent Starter Battery with our exclusive "RE-START" feature. The RS-30 represents the latest in Lithium-ion Technology for Starter Batteries and offers great starting performance as well as incredible weight savings over Lead/Acid Batteries.

Our unique **RE-START** technology offers the following capabilities:

- 1) In the event your battery is drained (for example you left your lights on) the RS-30 will put itself into "sleep mode" and retain enough energy to start your vehicle without the aid of a Jump-Starter or needing to be charged. Simply press the **RE-START** button (for 5 sec.) located on the top of the battery and the battery will awaken and be able to start your vehicle.
- 2) During times of storage you can "turn-off" the RS-30 to prevent over-discharge, then "awaken" it after months of storage to a full charge.
- 3) Use the "Sleep Mode" as a Theft-Deterrent. Put the RS-30 into Sleep Mode during times of storage...with no power the car cannot be started or driven away.

Installation of RS-30 (Have a professional install the battery)

- 1) Before Installation make sure the location of the battery will be free from potential short-circuiting of the cables, terminals and other electrical connections. Be aware of other potentially dangerous situations such as moving parts or extremely hot parts such as headers. Make sure your Charging System is in good operating condition and not charging above 14.4v.
- 2) In many circumstances, the RS-30 will be much smaller than your current battery, or not fit exactly. You may have to modify your installation. Please make sure your installation is secure and safe. **NOTE: We offer battery mounts for the RS-30 that allow for a direct replacement fit for many vehicles.**
- 3) Install the Vehicles Positive Cable to the RS-30 Positive Terminal (RED "+" symbol), then install Negative Cable to the RS-30 Negative Terminal. The RS-30 is equipped to accept standard SAE-Type Battery Clamps. **Make sure the RS-30 is ON/AWAKE before attempting to start your vehicle!** Start Vehicle and check Installation and Operation for potential hazards.
- 4) When you get the RS-30, the Battery may be in SLEEP MODE. The battery is in Sleep Mode if the GREEN LED Light on the FUEL GAUGE is not showing. To wake-up the RS-30, press and hold down the RE-START Button (located on the top of the RS-30) for approximately 5 seconds. When awake, you will see the GREEN LED light lit. To put the RS-30 back into SLEEP MODE you can again press and hold the RE-START button for 5 seconds, you will then see the it turn off completely indicating it is OFF/ASLEEP.

ANTIGRAVITY BATTERIES

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IMPORTANT SAFETY WARNINGS

	DANGER READ AND FULLY UNDERSTAND ALL SAFETY INFORMATION BEFORE USING THIS PRODUCT! Failure to follow these safety instructions may result in ELECTRICAL SHOCK, EXPLOSION, FIRE, which may result in 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 if 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 un-attended while charging. 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 Chargers. Do not attempt to jump-start a damaged or frozen battery.
	Eye Injury -Wear eye protection when working with battery products. Batteries can explode and cause flying debris.

Proposition 65. Related accessories may contain materials are known to the State of California to cause cancer and birth defects and other reproductive harm.

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, explosion which may result in injury, death or property damage.

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.

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 sub-merged, discontinue use, and contact Antigravity Batteries. Any modifications to the product will void your warranty.

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.

LOCATION. Make sure product is installed correctly. Position cable leads to avoid accidental damage by moving vehicles 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 guideline could result in fire, death, personal injury, or property damage.

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

RADIO FREQUENCY INTERFERENCE. Product is designed, tested, and manufactured to comply with regulations governing radio frequency emissions. Such emissions from this product can negatively affect the operation of other electronic equipment, causing them to malfunction.

OPERATING TEMPERATURE. This product is designed to work in ambient temperatures between -5°C to 60°C (-4°F to 140°F). For best performance do not operate outside of temperature ranges. Do not jump start a frozen battery. Do not charge a Frozen Battery. Only charge within the range of 0°C to 45°C (33°F to 113°F) Discontinue use of product immediately if the battery becomes excessively warm.

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 degrees C - 25 degrees C (average temperature). Never exceed 80 degrees C under any condition.

COMPATIBILITY. The product is only compatible with 12-volt stock systems in vehicles. Do not attempt to use product with any other types of batteries or in series or parallel, the interior electronics will be damaged. Use with, or Jump starting other battery chemistries may result in fire, explosion, injury, death or property damage. Contact the battery manufacturer 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.

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 product battery is excessively hot, emitting an odor, deformed, cut, or is experiencing or demonstrating an abnormal occurrence, immediately stop all use and contact Antigravity Batteries (info@antigravitybatteries.com).

BATTERY CHARGING. Use only approved Lithium-Iron Phosphate specific chargers for 12.8v LifePo4 Lithium Chemistries ONLY with this 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.

MEDICAL DEVICES. Product may emit electromagnetic fields. Product contains magnetic components which interfere with pacemakers, defibrillators, or other medical devices. These electromagnetic fields may interfere with pacemakers or other medical devices. Consult with your physician prior to use if you have any medical device including pacemakers. If you suspect the product is interfering with a medical device, stop using the product immediately and consult your physician.

CLEANING. Power off the product before attempting any cleaning. Clean and dry product immediately if it comes in contact with liquid or any type of contaminant. Use a soft, lint-free (micro fiber) cloth. Avoid getting moisture in openings.

SPECIFICATIONS

BATTERY TYPE: Lithium Iron-Phosphate (LifePo4) with built-in Battery Management System (BMS)

VOLTAGE: 12.8 Volt(nominal)

CAPACITY: 30 Amp Hours (50Ah Lead/Acid Equivalent)

CRANKING AMPS: 1200 peak

DIMENSIONS- L 9-5/8" x **W** 6-1/8" x **H** 8"

DIMENSIONS- L 243mm x **W** 158mm x **H** 243mm

WEIGHT: 11.5 Lbs (5KG)

MAX CHARGING RATE- 20 Amps

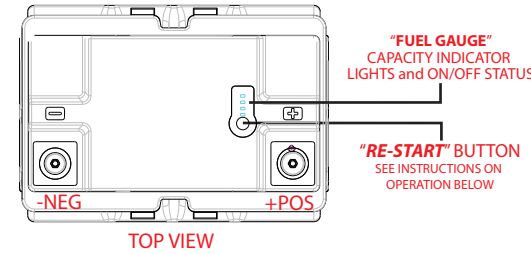
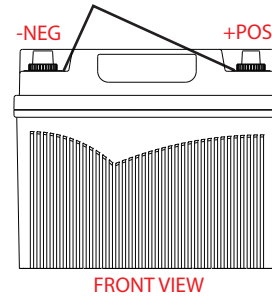
MAX CHARGING VOLTAGE- 14.6 Volts

CHARGER TYPE- Lithium-Iron Phosphate for 12.8v Batteries



ANTIGRAVITY BATTERIES RS-30 OVERVIEW

POSITIVE AND NEGATIVE TERMINALS



About the RS-30

The Antigravity Batteries, Lithium-Ion RS-30 Battery is a fantastic replacement for Lead/Acid Starter Batteries used in Performance and Race Vehicles. It operates and charges fine in vehicles using the stock/standard Automotive 12-Volt Charging Systems. It offers extremely high cranking power in a compact size, while it's incredible weight savings can actually increase your vehicles performance in several areas such as handling, decreased braking distances, improved acceleration and even better gas mileage.

General Operation

The RS-30 operates and functions the same as any Lead/Acid Battery while in your vehicle. The key differences being you can turn the RS-30 "on/off", and if you need to Charge or Maintain the battery with an exterior Charger/Maintainer you should use a Lithium-Ion Charger/Maintainer rather than the Lead/Acid type. Lead/Acid Chargers will damage lithium batteries due to their different charging characteristics such as having a "De-Sulphate Mode". *Again, the battery will charge perfectly fine from the Vehicles Charging system, but if you need exterior Charging or Maintaining use a Lithium Specific Charger/Maintainer designed for 12.8v LifePo4 Lithium-Ion Batteries.*

Using the RE-START Button (built-in emergency reserve power)

The RS-30 has the RE-START feature which will put it to SLEEP, if the battery is over-discharged, yet retain enough reserve energy to start your vehicle and get you out of a "dead battery" emergency. For example, if you left the lights on over-night and came back to a dead battery, you would access the RS-30 and press the RE-START Button (5 seconds) to awaken it, when awake you will have about 3-5 start attempts left in the battery which will allow you to start your vehicle without the aid of a Jump-Starter or assistance. Prior to attempting to start the vehicle you should turn off all items like Lights, Air Conditioners, or other accessories before you attempt to start the vehicle. This will give you the most power for this emergency start attempt. **Please Note:** After starting the vehicle, you should immediately drive the vehicle for at least 30 minutes to get a good partial recharge on the battery, or fully re-charge the RS-30 on a Charger or by driving longer.

Turning the RS-30 "ON/OFF"

The RS-30 can be turned ON or OFF for storage purposes or as an anti-theft deterrent. The ON/AWAKE status of the RS-30 is indicated by a GREEN LED being lit on the first bar of the "Fuel Gauge". If there is no GREEN LED light on when viewing the battery, the battery is in SLEEP-MODE. To awaken the battery or to put it into sleep-mode it is the same process: PRESS and HOLD the RESTART Button for Approximately 5 seconds to achieve the GREEN LED on, or press and hold until the GREEN LED light goes off indicating the battery is in SLEEP MODE.

Checking the Battery Capacity

The RS-30 has an onboard Capacity Indicator (Fuel Gauge). This allows you to check it's "State of Charge". Whether the RS-30 is ON or OFF you can check the the remaining capacity of the battery.

To operate, simply press the RE-START Button one time quickly. You will see the BLUE LED indicator lights turn-on. There are four BLUE indicator lights. Each light represents what is listed below.

- 4 lights**= Being charged by Car or Charger in the 14.4v Range. (all is fine)
- 3 Lights**=Being charged by Car or Charger in the 13.8v Range. (all is fine)
- 2 Lights**= Charged and resting at approximately 13.7v Range. (all is fine)
- 1 Light**=Resting at 13.2v (typical voltage/sufficiently charged) (all is fine)
- Blinking Green or Blue LED Light** = Battery is in a low-voltage state of 12.8v or below. Place on Charger, or drive Vehicle to charge (30 minutes minimum driving to get a good partial recharge on the battery).

It is recommended that you recharge the battery if you note the Capacity indicator shows a Green Blinking LED. Though the RS-30 can be allowed to fully dis-charge and it will put itself to sleep, it should still be maintained properly for the best performance and life. The RE-START feature is an emergency feature and not a replacement for proper battery maintenance.

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