

WARNING!!!

READ THIS BEFORE OPENING ANYTHING BEYOND THIS POINT!

This unit is packaged within two boxes. The outer carton contains shipping peanuts (chunks of foam) surround an inner carton. You may use a regular blade or implement to open the outer carton.

HOWEVER, the inner carton (retail carton) is packed tightly with the equipment. **USING A BLADE** carelessly to open this box could result in a cable being sliced or the unit being cut or scratched. **BE SURE TO ONLY CUT THE PACKAGING TAPE AND NOT ANY DEEPER** in when opening this carton.

BE SURE TO SET THE VOLTAGE SELECTOR ON THE BACK OF THE UNIT TO THE CORRECT OPERATING VOLTAGE FOR YOUR COUNTRY!

READ THE MANUAL BEFORE OPERATING! THIS IS A TOOL, NOT AN APPLIANCE. LOSS OF PROPERTY, PHYSICAL HARM OR DEATH COULD RESULT FROM IMPROPER USE!

****Version 1.3R****
IMPORTANT MUST READ!!!

ReVolt3000™

Model 1Exp & Model 1P

Guide and Operations Manual



“Warnings and Operating Notes For Experimenters”



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“Warnings and Operating Notes For Experimenters”

Disclaimer:

This information is for testers and researchers. The accuracy of the statements made within or any device depictions has not been verified. As a tester, your use is experimental. Proceed at your own risk!

Notice: Photos in this document may differ slightly from your device.

Attention Experimenter/Tester!

The ReVolt3000 is presently in an experimental stage. **It is highly recommended that you read this entire document, particularly the following information about suggested safety tips and operation of this experimental unit to avoid LOSS OF PROPERTY, PHYSICAL HARM, OR DEATH!**

*Reiterations of key points and topics are common throughout this document to emphasize relevance and importance.

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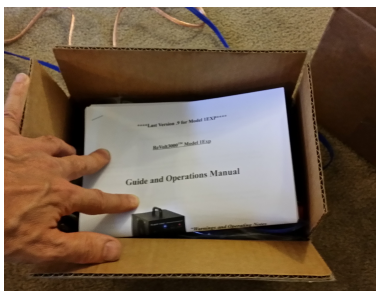
1 **IMPORTANT: Unpacking and Initial testing before operating unit.**

Before doing anything else, please follow these instructions.

Note: This unit was tested for at least 12 hours on maximum output prior packaging and shipping. If this unit fails to power up or appears to malfunction (does not respond as enumerated below), then it was likely damaged in the shipping process. Contact the maker at www.ReVolt3000.com immediately for exchange/repair options.

Your unit was packaged within two boxes. The outer carton contains shipping peanuts (chunks of foam) surround an inner carton. You may use a regular blade or implement to open this carton. **HOWEVER, the inner carton is packed tightly with the equipment. Using a blade carelessly to open this box could result in a cable being sliced or the unit being cut or scratched. BE SURE TO ONLY CUT THE PACKAGING TAPE AND NOT DEEPER when opening this carton.**

Note photos below for visual explanation of how your ReVolt3000 was packaged from inside out:



1. Remove ReVolt unit. Remove power cord.

Inspect unit and cables for physical damage. Contact the maker at www.ReVolt3000.com if a problem is discovered.

1.1 Verify Package Contents

- 1) This manual.
- 1) ReVolt3000 main unit.
- 1) 12' 110VAC USA power cord. Model 1P users at 220VAC will need to purchase the correct cord for their power receptacles separately.
- 2) Lead isolators.

1.2 Initial Testing

1. Make sure both leads are separated and all clamps are separated from each other. Each set of leads should have their clamps on opposite ends of the Lead Isolators (note how they were packaged initially).

2. Make sure power switch is off.

3. If using Model 1P, set the input voltage selector on the rear of the unit with a small flat blade screwdriver to rotate the selector to the proper voltage for range your country (110 or 220). The operating voltage is indicated by the tiny arrow on top of the selector pointing to the selected voltage. The setting as shipped is for 110VAC operation. Therefore make sure it is set to 220 if your country is not in the 110VAC range.



4. Install the power cord on the rear of the unit.

5. Install the A/C plug end into a power receptacle with proper fuse protection. The **Model 1EXP will only accept 110-125 VAC for an operating voltage. The Model 1P may be switched between 110 or 220VAC operating ranges (see step 3 above).**

6. Turn the unit on. You should immediately see the red 12V charge light and the Blue power light. If you do not, turn off quickly and press inward each breaker button on the rear of the unit and repeat this test. If there is still no power, contact the maker at www.ReVolt3000.com for further assistance.

7. **Make sure you hear the fan running freely** and without any interference (as if something maybe rubbing against the blades inside. If you do hear something rubbing inside, switch the unit off and contact the maker at www.ReVolt3000.com. Sometimes a strong shock force due to rough handling in shipping can cause a wire to wander into the fan or disconnect.

8. If the Red light is lit, the Blue light is lit, **and make sure the fan is running freely**, then your unit should function properly as indicated in the rest of this manual. Please proceed on to the Safety and Warnings section below.

2 Safety and Warnings

WARNING! PLEASE READ THE FOLLOWING COMPLETELY:

This experimental version of the ReVolt3000 has not been tested for electrical safety, fire, electromagnetic radiation or interference. USE THIS DEVICE ENTIRELY AT YOUR OWN RISK!

The ReVolt3000 produces high instances of voltage and current. It is designed to be safe but does produce enough power for electrocution, serious injury or accident to occur in certain situations.

- **The following safety tips are based sensible precautions and the working principals of lead-acid batteries and the ReVolt3000. While many of these safety concerns are highly unlikely to occur, it is strongly recommended the user take time to read and understand these to avoid possible mishaps.**
- **Do not use this device on any battery which is still connected electrically to anything else! Damage, fire or explosion could occur to the connected device and/or the ReVolt3000.**
- **Always keep an operating fire extinguisher within reach.**
- **Be sure a fresh water source is available to flush yourself with in case you're contacted by battery acid.**
- **DO NOT USE ON LITHIUM-ION type cells!**
- **Do not use on leaking or cracked batteries.**
- **Always make sure the ReVolt3000 is off and unplugged and use insulating gloves with dry hands when handling the any of the power leads from the ReVolt3000.**
- **Do not use this device in a wet environment! Always use in a safe, dry area away from flammables and with plenty of ventilation.**
- **Always use proper safety gear when the device is operating or you are handling batteries. This includes safety goggles, protective clothing and gloves. Many batteries contain Sulfuric acid which is liquid and can cause serious harm to human tissue and damage to objects. Be sure your subject batteries are safely stored in a container which is ventilated to vent flammable/explosive gases but will trap acid droplets or overflows that may express while the ReVolt3000 is operating. See “Related Safety” section later in this document.**
- **Always operate this device with plenty of ventilation and with ambient air temperatures under 95 degrees Fahrenheit.**
- **The Model 1Exp is designed for 110 to 125VAC operation only!**

- **The Model 1P can be manually switched on the rear from 110/220VAC Operation. Be sure it is set correctly!**
- **Be sure your polarity is correct when connecting the ReVolt3000 to a battery. Otherwise, fire, burns or damage could occur to the device and/or the battery and anything in contact with the wiring. Red is Positive (+) and Black is negative (-).**
- **The ReVolt3000 is designed for 12 volt automotive lead acid batteries. Extra care must be taken to monitor excessive heat build up and venting in batteries which are physically smaller and/or of lesser voltage. Higher voltage batteries up to 24 volts may be treated with the ReVolt3000 but the treatment may not be as effective or rapid.**
- **Keep all the revitalizer and no-fault charger connecting clamps from touching each other at all times.**
- **Make sure battery cells are properly hydrated before ReVolt servicing any lead-acid type wet cell battery. This serves three purposes: 1. A proper fluid level allows for maximum battery power and ReVolt service effects. 2. Proper fluid levels prevent the availability of extra space to accumulate explosive gases in. 3. Proper fluid levels prevent a dry space between plates from occurring which is an opportunity for an ignition point to occur in the presence of an accumulation of explosive gases.**
- **If possible, leave any service caps open on the cells during ReVolt processing. This has four benefits: 1. If safety vents are plugged up, this will prevent a pressure breach in the event of too much gas buildup. 2. If fluid level is too high or too much power is applied, fluid may bubble to the top which is preferred to spraying out a vent under pressure. 3. Explosive gasses will not tend to accumulate in the cell cavity thus reducing opportunity for a combustive type of explosion if proper ventilation is provided. 4. Cell fluid levels are more easily observed and monitored. BUT MAKE SURE REVOLT UNIT IS OFF OR DISCONNECTED WHEN CHECKING LEVELS WITH CAPS OPEN!**

3 Theory of operation.



The ReVolt3000™ is intended to be used to improve the performance of, or rejuvenate dead, 12 volt lead acid automotive batteries and many others. Others include, NiCad, NiMH and Gel-types. Many similar devices use “Pulsing” to accomplish this. The ReVolt3000™ uses a proprietary bi-phase pulse method designed not only to de-sulfate the battery but to clear small, low resistance zones or short circuits which can occur between cell plates that are in a contaminated baths.

The ReVolt3000™ can not correct bad chemistry, dried cells or damaged plates. Therefore, it works best on batteries which have not fallen into these conditions.

The ReVolt3000™ has two primary features: The revitalizer and the no-fault charger. Both can be used simultaneously, but not simultaneously on the same battery. And generally, the revitalizer will perform better if the no-fault charger is not connected to anything. The revitalizer can de-sulfate, clear small or low resistance zones and charge the battery all at once. The no-fault charger will simply recharge a weak battery, but often will do so when modern chargers can not.

It is important that you understand that the ReVolt3000 is a TOOL for correcting battery maladies. It is NOT an APPLIANCE that provides a predictable outcome each time it is used. Battery condition, abilities and failure modes can vary too greatly for such an expectation. As such, this document will attempt to help you understand the various troubles batteries can have, but you should also seek information from other sources as well.

4 Safety background

The safety guidelines in the Safety and Warnings section above are intended to provide the most protection during use of the ReVolt3000 but may not be necessary or practical in many instances – they are “best practices”. This section is included here to provide the reader with a greater understanding of why those precautions were created. With this additional knowledge, the reader may be better equipped to make judgments regarding the necessity and extent of compliance with the above guidelines.

The primary dangers in operating the ReVolt3000™ revolve around two properties: heat and pressure. The ReVolt3000™ can provide too much power causing a battery to rapidly out-gas. Although VERY rare, if the battery has clogged vents, the particular cell that is plugged can have a pressure breach type of explosion. This is probably the most serious incident because it can cause bits of the battery to spray out. Hence, the above suggestion that batteries being treated are placed in a container which can breath but would contain the acid should a battery explode or erupt. A second but very rare cause of breach is an actual small explosion (enough to rupture the battery case) which could occur if a cell is barely wet and is partially corroded. The remaining bit of electrolyte can be gassed rapidly and the mostly vacant compartment could accumulate enough of an explosive mixture of hydrogen and oxygen to detonate if the cell sparks inside from the dry condition and the corroded plates short out. This is why it is highly recommended that in the case of wet lead-acid type batteries, you make sure the cells are mostly full of water/acid before treating.

A typical large tub-like storage container with a top which is not air-tight is suggested to hold the battery during treatment. There is a second explosion risk which is that the gases emitted are often flammable and may also present the danger of explosion if those gases are trapped and exposed to a spark. This would be an explosion external of the battery and therefore less likely to cause the battery to rupture and spread acid. Also, the volume of gas expressed this way is very little but could accumulate over time if the battery is held in a small sealed container.

Because the ReVolt3000™ can produce heat in the battery, the ReVolt3000 should be powered off and some time should be allowed to pass in order for the battery to cool before removing it from the safety container. It's common for batteries to express some acid during the process of treatment in the form a small mist near the batteries vent port. The acid may not be visible as it is sometimes just a little spattering that may lightly coat a small area of the battery. Thus, protective goggles, gloves and gear should be worn when handling the batteries.

The Test version of the ReVolt3000™ has no timing control to prevent unattended operation from going awry. It is wise to buy an in-line timer, which is typically available at hardware stores, to limit the amount of time the device is treating a battery.

The ReVolt3000 has 3 resettable fuses on the rear to protect the unit from out of bounds operation. However, it is recommend that the ReVolt3000™ be plugged into a power strip which has fuse protection as well as a final precautionary step.

The Revitalizer portion has a variable power output so that power can be scaled back to use on smaller batteries. However, the no-fault charger portion is designed for 12 volt auto batteries and shouldn't be used on anything but 12 volt batteries. The charger is also rated at 6 amps and so it is not recommended for batteries less than 15 pounds (6.8KG) as it is too strong and has no adjustment.

5 Typical Usage

The Safety & Warnings Section above is intended to offer the best suggestions for safe operation. Not all mishaps can be addressed nor are most of the mishaps addressed likely to occur. Thus judgment is prudent on both sides of convenience vs. safety. See the Safety Background section for more information.

5.1 Refreshing

The most typical application is to use the ReVolt3000 to extend the life of operating 12 volt lead-acid type automotive size batteries. A working battery which has never fallen into poor conditions can last 4 times or more its rated life with these treatments. The use of a typical plug-in style timer is highly recommended to prevent the ReVolt3000 from operating beyond your specified time requirements. These are commonly available at hardware stores.

Renewal cycle is recommended 2 to 4 times a year. This is performed with the Revitalizer side of the ReVolt3000. Recommend treatments are as follows for 12 volt Lead-Acid type batteries:

Weight Range (lbs)	# Times/Year	Power Level	Time	Notes
1-3 (.5-1.4 KG)	4	.5-1	4 hours	
3-9 (1.4-4.1 KG)	4	1-2.5	4 hours	
9-18 (4.1-8.2 KG)	2	2.5-6	6 hours	
18-27 (8.2-12.3 KG)	2	6-8	6 hours	
27-60 (12.3-27.3 KG)	2	8-10	6-8 hours	
60+ (27.3 KG+)	2	10	8+ hours	Add about 30 minutes for every 5 pounds (2.3 KG) over 60 pounds (27 KG) .

On batteries between 25 (11.4 KG) and 40 pounds (18.2KG) a treatment of 8 hours at power level 8 is recommended for twice a year, and 4 hours for 4 times a year. Smaller batteries should have the power levels and times reduced proportionately.

In these circumstances for simple refresh treatment, simply removing one of the battery terminals from the vehicle and covering the battery with a towel to prevent any possible misting from cosmetically damaging the vehicle is a practical balance between safety and convenience.

5.2 Charging

Charging is pretty straight forward for 12 volt lead acid batteries. Attach the charging leads to the battery to be charged like any other simple charger. Turn on the power switch and wait the appropriate charge time. At 6 amps, roughly 15 minutes per pound (.45 KG) is a normal charge time (about 8 hours for an average car battery). But this rate would be considered too high for small batteries. Thus batteries under 10 pounds (4.5KG) are not recommended.

Unlike the revitalizer side, it is not necessary to disconnect a battery terminal from the vehicle if charging the battery while in a vehicle.

6 Recovering Dead Batteries

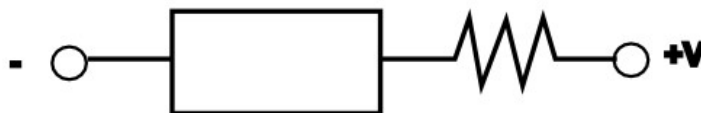
This has many more things to consider and some higher risks. Although the ReVolt3000 is designed for this, there is not a “typical usage” here. This chapter is dedicated to this but can only offer some generalizations. But it boils down to this: not all poorly performing batteries are useless, and not all dead batteries deserve a chance to be recovered.

If recovering dead batteries is your primary goal or even your business, a successful strategy is to be discriminating. For example, one policy gleamed from the details below might be, “No batteries over 10 years old, no bulging cases, no leaking or dry cells”.

The properties of concern for determining your grades of success on recovering dead batteries are these: Capacity, Longevity and Retention.

The “Capacity” of a battery to deliver “power” can be checked pretty quickly with a battery load tester like that mentioned in chapters below. It is essentially the number of “Amps” the battery can deliver when put under a maximum load. In a theoretical battery model, a resistor is always in series with the battery to simulate a real-world limit to the current the battery can provide – it's “internal resistance”. The higher the current it can deliver, the lower the internal resistance is and vice versa.

Theoretical Battery Model



However, the capacity to store that power is more difficult to check (watt hours or “energy”). In this case, the battery must be placed under a load for a period of time to see that it can supply the expected power for this period of time. Often times, putting the battery back into service will reveal whether it has sufficient energy capacity but will not provide quantitative data.

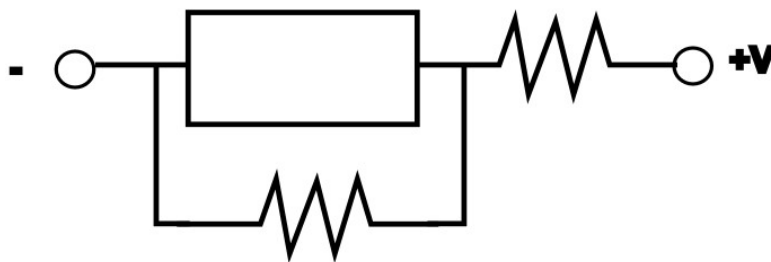
1. The causes of lower capacity are low fluid levels, corroded or damage plates, and bad chemistry (incorrect ratio of water to acid or contamination). Corroded or damaged plates can be likely if fluid level has been low for a long period or the battery has been fully discharged for a very long period. It can also be likely if the fluid in the cell appears very dirty or cloudy. Another indicator of damaged plates is bulging in the battery cell casing – this may have been caused by excessive sulfation which had become so severe it distorted and damaged the plates.

The “Longevity” is the battery's remaining life – how long will it continue to operate within usable parameters. Again, there is no strict answer here. It has been observed that every 3 to 6 months, a refresh revitalize charge the ReVolt will keep the battery in top condition.

2. Keeping fluid levels correct is paramount here. And clear, clean looking fluid, with no contaminates or debris floating in the fluids and again, no bulging on the cell casing.

The “Retention” is the battery's ability to retain its energy over time without a load. In a theoretical battery model, a resistor is in series with the battery to simulate a limit to the current the battery can supply. Additionally a resistor in parallel with the battery can simulate the battery's parasitic resistance. It's the parasitic resistance that can greatly reduce retention if it is low. In essence, a battery could store a lot of energy, deliver a lot of power, but if left on the shelf very long with low parasitic resistance, would discharge itself rather quickly.

Theorhetical Battery Model



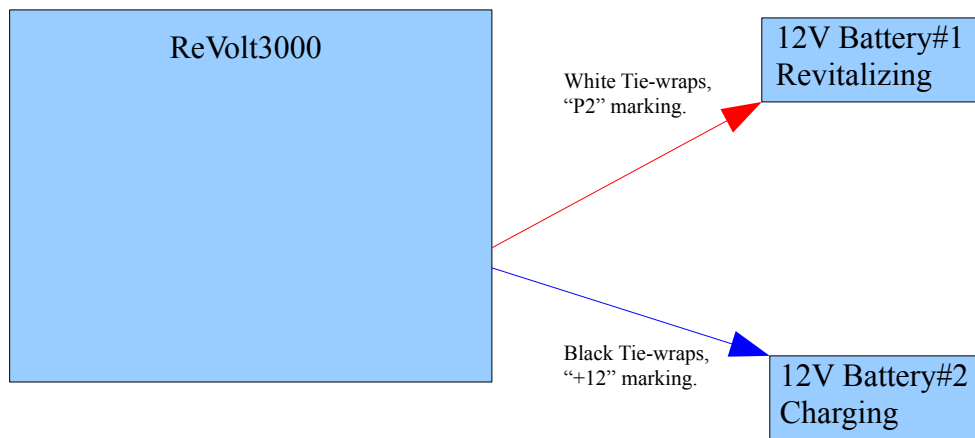
3. Often times, a conductive sediment maybe lying in the bottom of the battery and thus not show any real signs of trouble until the battery is shaken. At that point, the battery could rapidly discharge. Shaking the battery aggressively may cause this to become visible in the fluids if examined quickly after shaking the battery. Another cause is a cracked cell which can eventually leak fluid and dry up causing a similar effect.

Any degree of success is possible which means that a lot of batteries could have performance of Capacity, Longevity or Retention at or below your required minimums. But not all uses need each of these properties at maximum levels. For example a car driven every day may not require much retention as it is being charged constantly while driven. A battery used in a trailer to just power lights may not need much power capacity but may still require energy capacity.

Keeping in mind the intended usage of your recovered batteries may allow batteries which might have otherwise been discarded due to poor performance in one of the three primary properties above to still be plenty useful.

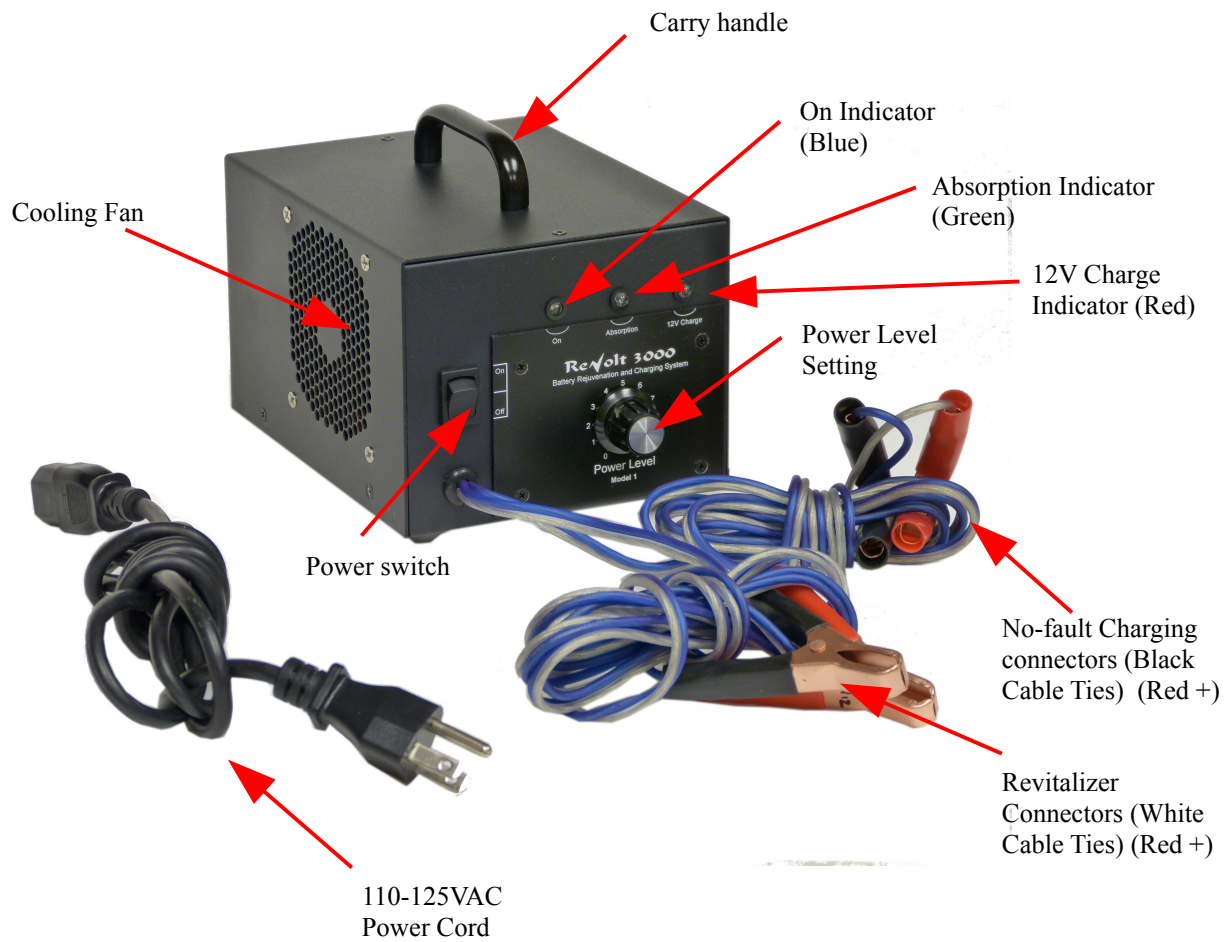
Conditions 1, 2 and 3 above should be checked before determining if a battery is a good candidate for recovering. A battery which does not grant access to its cell's fluid levels is more risky in terms of prospects for recovery and could also be a risk for the very rare but unexpected case breach (see Safety Background section above). Avoiding batteries with these conditions in advance will improve your yield and rejuvenation success results.

7 Operating Diagrams, Notes and Suggestions



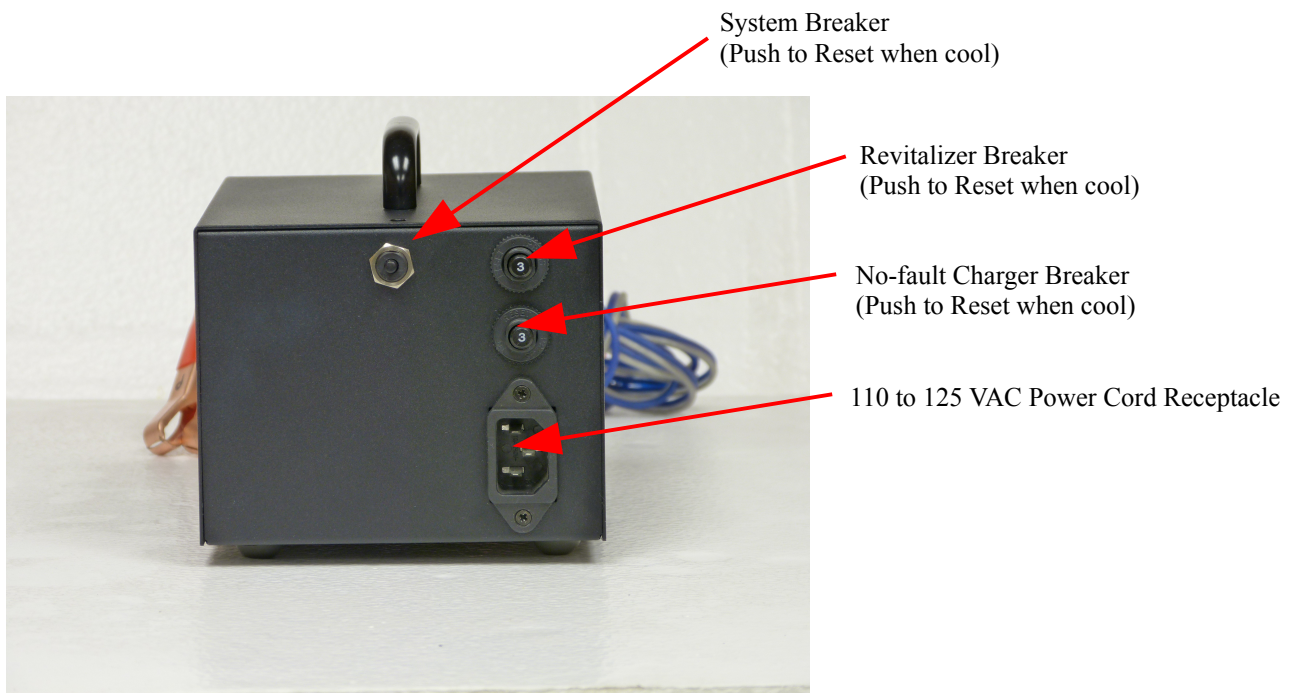
Like in the figure above, the ReVolt3000™ can charge and revitalize two separate batteries simultaneously. But **DO NOT connect the charger or revitalizer to the same battery at the same time.**

7.1 Controls and Features.

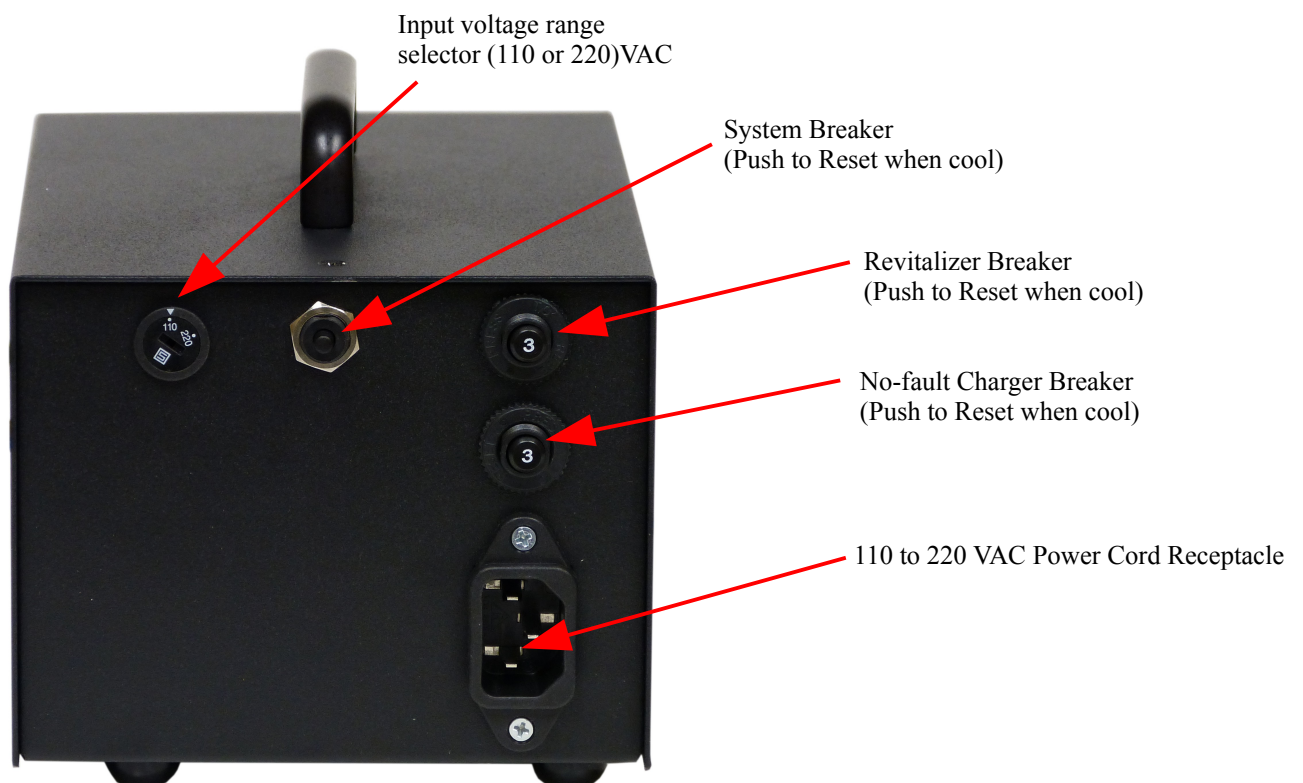


Back side.

If breakers trip, turn unit off, wait to cool and press to reset.



Rear of Model 1EXP



Rear of Model 1P

7.2 *Other useful accessories, recommended but not necessary.*

- An auto battery load tester is very important in determining the results of revitalizing your battery. These can typically be purchased from auto parts stores, tool stores or on-line.
- A volt meter for checking the voltage of the battery (many load testers include this function).
- An infrared thermometer for measuring battery temperature.
- Battery terminal cleaning brushes – same sources as above.
- A spray bottle with a light mixture of baking soda and water to neutralize any vented acid.
- A battery Hygrometer will tell you if the chemistry in your cells is correct. These can be purchased at auto parts stores.
- A bottle of distilled water and a funnel for filling.
- A weight scale (80 lbs or more) for weighing batteries. A bathroom scale works well.
- A flashlight to see the fluid level in the cells.
- A screw driver for lifting the caps to check fluid levels.
- A large plastic tub with cover that is not airtight for placing the battery in during charging or treatment to contain any unintended battery emissions.
- A notebook or pad for logging the progress of treatments on batteries (log book). This is important for determining when to give up a recover attempt.
- A 20 Watt or higher, 12V light bulb (head lamp) with clips leads for discharging batteries with.

7.3 *Suggestions for Revitalizing (recovering dead batteries)*

Log the conditions of the battery before and during revitalization as a guide for treatment (see suggested log near the end of this document). You will need a suitable volt/load tester for the battery type your revitalizing. Tool and auto part stores often carry auto battery load testers. Before to read the previous section (Recovering Dead Batteries).

7.3.1 Related Safety

If possible, check that the fluid level in the battery is at an acceptable level. Place the battery in your protective bin (typically a large plastic storage bin that breaths well is suitable). Be sure to use protective gloves, eyewear and other protective clothing when handling batteries. Read the Warnings page again!

7.3.2 Recommended Power Level

This is based on the weight of the 12 Volt lead-acid type battery:

Weight of Battery (lbs)	Power Level	Cycle Time	Notes
1-3 (.5-1.4 KG)	1-2	3 Hours	
3-9 (1.4-4.1 KG)	2-3	4 Hours	
9-18 (4.1-8.2 KG)	3-7	6 Hours	
18-27 (8.2-12.3 KG)	7-10	8 Hours	
27-60 (12.3-27.3 KG)	10	8-12 hours	
60+ (27.3 KG+)	10	12+ Hours	Add 30 Minutes for every 5 pounds (2.3KG) over 60 pounds (27 KG).

7.3.3 Suggested Steps when Revitalizing.

1. If you suspect the cells of the battery may not be full, top them off to the recommended level on the battery with distilled water before revitalizing.
2. Record the condition of the battery with the load tester.
3. Be sure the terminal of the battery are clean and free of acid and corrosion. Use baking soda and water to clean the battery and a wire brush to clean the battery terminals.
4. With power off, and the power level at 0, connect the revitalizer connectors to the battery Red to + (positive) and Black to - (negative). You can identify the revitalizer connectors as the ones which have white nylon tie-wraps securing the wire at the separation for the connector leads, or the tags labeling them as such.
5. Turn the power on, the blue indicator should light indicating power is on. The Red indicator should light indicating the no-fault charger is either not connected, or the battery it is connected to is charged or nearly charged. Now, based on the weight of the battery, turn the Power Level clockwise to the Recommended Power Level (8 to 10 for a typical auto batteries – see table above). The green absorption indicator should light indicating the battery is accepting treatment.

If after sometime, a breaker in the back trips, then the power level was too high or the condition of the battery is extremely poor. Turn the power off, wait for the unit to cool (a few minutes). Turn the Power level to halfway between 0 and the last set point. On the back of the unit, press to reset all the breakers. Then turn the power on. If the breakers trip again, repeat the process, again setting the power level to half way between 0 and where it was, until the unit no longer trips a breaker. After a ½ hour or more has passed, try returning to the recommended power level. Repeat this step as necessary.

6. A typical treatment cycle for average auto batteries should be 8 but no more than 12 hours with no less than an hour cooling period between cycles. Use a load tester to check the health of the battery between treatments and log your progress (see log sheet at the end of this document). If the battery ceases to improve and remains at an unsatisfactory performance level, consider checking fluid levels again, or trying the full discharge procedure described below.

Typical recovery is 1 to 6 cycles. If the battery is a typical car size and you have exceeded 6

cycles it is likely it won't recover completely. But if you are still seeing progress with load testing after each cycle, it probably won't hurt to keep trying.

If at any point between cycles the battery is getting worse and not better. Stop! Check and refill fluid levels in the battery. If this is not possible to do then recovery is not likely. And pursuing such may become dangerous as the battery dries out.

7.3.4 Smaller and non-automotive type batteries.

If using smaller batteries. Follow the procedure above, except, turn the dial clockwise until the green LED (absorption) is at its brightest (appears to get no brighter) then turn back half way between that point and 0.

A typical treatment cycle for average auto batteries should be 8 but no more than 12 hours with an hour or more cooling period between cycles. But, smaller batteries should be timed proportionally less based on their size also. Carefully monitor the temperature of the battery and check it frequently until you have some certainty that it's not overheating.

After a cycle, load test the battery again. If the condition improved, repeat the treatment and test again. When improvement has ceased, the battery is likely in the best condition it can be in without flushing the cells and replacing the acid and water.

7.3.5 Battery Shelf-Life

It's important to remember that the revitalizer, while making the battery strong again, can not do anything to remove contaminants in the cells. Contaminated cells may cause the battery to self discharge more rapidly. Therefore, after a treatment is considered successful, the battery should be left uncharged for several weeks to confirm that the battery's discharge rate is acceptable.

For example if the battery self discharges within a month, but will be used in a vehicle that is started and run at least every few days, then it should be fine as it will be recharged frequently. But if the battery is left for a period of time without charging, and that period is longer than the discharge rate you observed, then the battery may no longer be suited for its purpose although it maybe fine in others.

You should frequently check your log book (sample log book page at the end of this document) and see when that last time it was that your battery was checked. If it's beyond your top-off window (the time you think is reasonable for the battery to retain a useable charge), you should use the no-fault charger to top-off the battery and update your log book.

7.3.6 Full discharge to equalize.

If the battery shows no improvement or only improves modestly, there is a possibility that discharging the battery by connecting it to a load (a light for example) until nearly dead and then repeating treatments may help. This is because cells can become unbalanced and this will help equalize them. This allows all cells to accept a more even distribution of the power when being charged again. This technique works well sometimes but is hard to predict. It is a technique of last resort because fully discharging the battery can often kill it quickly. So if you choose to try this method, attempt to revitalize immediately after the discharge, do not let the battery sit.

7.3.7 Importance of temperature.

Keep an eye on the temperature of the battery while revitalizing. If it gets above 110 degrees Fahrenheit, it could lose (bubble off) a lot of electrolyte quickly and go dry then damage the cell(s). Try not to run the revitalizer on a battery that is at 85 degrees F or above. Results will be better at lower temperatures. So operation in a cooler area is recommended.

Often with severely neglected batteries there is a cell or two within the battery which is contaminated much more so than the others and thus has a much lower parasitic resistance (sometimes shorted). Often you can feel that the temperature is higher and centralized in the area of the faulty cell (or read with an infrared thermometer). If these are low R zones, the revitalizer maybe able to clear them over time. But, if it is due to contamination or damage, unfortunately, in this case, one bad apple can ruin the whole basket. You can try flushing the bad cell and refilling it, but otherwise, the ReVolt3000™ can do nothing about this.

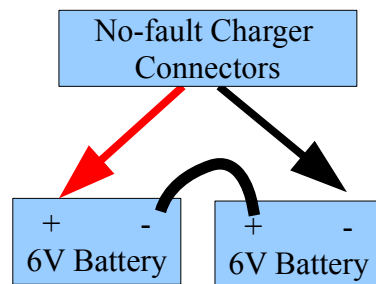
7.4 ***Suggestions for Charging***

The No-fault charger won't give up on a battery the way modern chargers do. This is important to have when you're using the revitalizer. Often, a charge from this is all it takes to top off a battery that has been revitalized.

But a modern charger may not do that. It may not initiate a charge because of the extra high terminal voltage on some batteries after being revitalized. Or, if the battery gets too low, a modern charger may give up on the battery because of its lower internal resistance.

As stated earlier, the low internal resistance can cause a battery to self-discharge at a higher pace, but that doesn't mean the battery isn't useful, particularly in situations where it's being used and then charged back again frequently. For example, if you were using a car every three days or so instead of letting it sit for a month without using it.

Again, remember the No-fault charger is for 12 volt batteries only! It is possible to put lower voltage cells in series to charge them by placing them in series. This can be done with a jumper connection between the two batteries. See diagram below:



8 Specifications:

Model 1Exp

Power Input: 110-125 VAC 60 Hz.

Revitalizer output: bi-phase current/voltage, 30 volt center, 2.5 Amp phase 1, 800 amps < 1uS to 36V (8J max) phase 2 @ between 1.7KHz and 2.4 KHz.

No-Fault charge output: Unfiltered 14.2 VDC @ 6 amps

Cooling: 35+ CFM Dual ball bearing fan.

Weight: 6 Pounds (2.7KG)

Dimensions (L X W X H): 7" X 5.1" X 4"

Fuses: All external, Thermal resettable

Model 1P

Power Input 110-125 / 220-250 VAC 60/50 Hz (switchable on rear of unit)

All else same as above.

Battery Revitalization Log

[illegible]