

Battery Desulfator DA PIMP 2

DA PIMP v2 - POWER IN MY POCKET Battery Desulfator (extremely portable battery restorer, tester, charger)

Maybe you also know someone who gets excited about batteries, how bout frustrated about them? We all know that batteries are the most toxic thing in our landfills and yet we rely on batteries to run our electronics, boats, PV solar systems, and even our cars. DA PIMP uses high voltage and a pulse to break up the crystallization that forms in batteries and causes them to stop working. DAPIMP is easy to use and can save a household or business hundreds of dollars on batteries each year. It keeps batteries working and out of landfills. DA PIMP has been used by governments and recycling centers around the world. It is tested, loved, reliable, and as always, open source.



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Using capacitors instead of a transformer DAPIMP makes a highly efficient conversion from AC to DC voltages.

DP2 is ideal for the following:

- rapid testing of batteries, determine how sulfated they are
- recovering lead-acid car starting batteries
- recovering marine boat batteries
- recovering entire sets of lead-acid deep-cycle battery banks (golf carts, forklifts, other electric vehicles and PV solar systems)
- recovering power tool batteries (drills, weed wackers, saws)
- recovering iRobot batteries (vacuum / mopper)



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PURCHASE

Please use the drop down menu to choose between **Kit** (you assemble) or **Assembled** unit.

Priority Mail Shipping is built into the pricing and based on your location. Choose the correct item to avoid additional fees and delays.

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open source

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United States - \$6.10

- Canada - \$24.95
- International (Australia / Europe / etc.) - \$32.25

We are Currently sold out of DP2 units. Please use the form below to be notified when more Da Pimps are available.

DP3 Notification

e-mail notification for the next generation of da pimp availability

* Required

What is your e-mail address? *

Your answer

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Changes from Da Pimp version 1 to version 2:

- fuse protection for reverse connect
- robust connectors for both DC and AC wires
- three setable currents for charging (183mA / 366mA / 550mA) - double those values for 220v input
- diode protection for the 9v battery
- much more accurate voltage readings on display

Usage: [WARNING: SHOCK HAZARD]

- **Never handle the leads while black switch is set to 1 (on).**
- confirm that the black switch is set to the 0 position (off)
- connect the black lead to the battery negative
- connect the red lead to the battery positive
- turn on the silver slide switch (display should show battery voltage)
- plug power cord into outlet
- turn on black switch - set to 1 position (on)
- battery is charging
- watch to confirm voltage is slowly rising
- turn off silver toggle switch when charging for extended periods (this will save the 9V battery life)

- turn off the black switch - set to 0 position (off) to end charging

Best Practices:

- Charge for 15 minutes
- Periodically Check the Voltage (toggle silver switch)
- It will probably go well over the nominal (9v / 12v / 18v) of the battery
- You should see the voltage spike high maybe up to 99V, but then drop to the packs rated voltage
- The dropping voltage during charging is the sign of a battery being recovered
- Let the battery rest for a few hours or overnight and check on it the next day
- If it is below it's rated voltage charge again and increase from 15min to 1 hour
- Stop charging if there is significant heat
- Power Tools Charge for no more than 2-4 hours (charger outputs 500mA, and power tools battery are usually less than 2000mA)
- 12V batteries be sure to add water (even for sealed-lead-acid) before charging
- Full size car and golf cart batteries can take up to 4-5 days of charging
- Clip the small alligator clips into larger store bought clips when charging large batteries
- Return to factory charger once battery performance improves

Specs:

- Input: 120VAC or 220VAC
- Input: 50-60Hz
- Output: .5A constant current output dynamic voltage 1VDC - 100VDC
- Output for 220V connections is 1A

FAQ:

Question:What do you use for international shipping?

Answer:This item ships via USPS Priority Mail Intl. It provides full tracking and is usually less than 10 days for delivery.

Question:How does the desulfation part work?

Answer:Da Pimp is making use of a 60Hz AC signal for charging it still has a pulse after the DC conversion. It's the pulse that does the desulfation. This is a automatic process that occurs whenever a battery is charging with Da Pimp.

Question:Can all batteries of the chemistries you have described be recovered?

Answer:No. These are the most common three cases where a battery is not going to be recoverable:

1. Hard Sulfation - the battery has sat for so long that it cannot pass current through itself and starts to heat up during charging
2. Single Cell Failure - one battery cell has died within a pack so no matter how much you charge it the cell cannot maintain a reasonable charge
3. Internal Break - internal wiring between battery cells has been compromised and current cannot pass through the battery

Question:I live outside the US and have 220VAC can I use that with Da Pimp?

Answer:Yes. Da Pimp works with 120VAC or 220VAC. You will need a cheap prong adapter to convert the plug style, but you do not need to step down the voltage. The important difference to note is the output current will double when using 220VAC. In the US Da Pimp puts out 500mA internationally it will put out 1A.

Question:What do the jumpers [J2 and J3] do?

Answer:These are removable jumpers that can be use the adjust the current that Da Pimp2 is able to output. The DP2 comes configured with J2 and J3 on (white covers in place). The output current with these jumpers is 550mA on 120VAC input or double that 1100mA on 220VAC input. You can remove J3 to lower the current to 366mA with 120VAC. You can lower the current further by also removing J2 which will drop the current down to 183mA. Please only remove these jumpers when the unit is not in operation and using non-conductive tweezers to remove the possibility of a shock.

Question:How about rechargeable AA cells of NiMH or NiCD chemistry can I charge those?

Answer:Yes, but you must remove the J2 and J3 white jumper covers. Those small types of cells generally like to be charged around 200mA and Da Pimp will put out 2x to 4x the amount of current they "like" to be charged at if those jumpers are in place.

Question:How does Da Pimp know what voltage to output?

Answer:Da Pimp outputs whatever voltage is necessary to get over a batteries internal resistance. A good 12V sealed lead acid battery might have a voltage of 12.6V. Da Pimp will slowly increase that voltage to 12.9V, 13.0V, 13.1V, etc. You will want to turn off Da Pimp off when voltage reaches 14V.

Question:Why capacitors instead of a transformer?

Answer:Capacitors provide many advantages over a transformer.

- they are efficient (60% more so than comparable transformers)
- there is no noise, no heat
- they are light
- they produce a nice pulse (ideal for desulfating old batteries)
- they can be inexpensive

Question:Did you invent this?

Answer:I did not invent the concept of capacitive charging. A friend turned me onto a white paper from 1996 entitled "Capacitive Battery Charger" written by George Wiseman's of Eagle Research. I was skeptical, but intrigued. I wanted to add more to his design making it safer and more accesible to the masses. Thus this project was born.

Question:How do I test a battery?

Answer:Connect Da Pimp using the above instructions. When the black switch is turned on does the voltage rapidly jump? If so, you have a bad battery. A good battery will have a slow voltage climb maybe just a few 1/10ths of a volt when the charger is enabled. The voltage difference before and after the charge is started indicates how much resistance has built up inside the battery (sulfation).

Question:How do I recover a battery?

Answer:Connect Da Pimp using the above instructions. Note the voltage jump that occurs when the black switch is enabled (1) causing Da Pimp to be charging. The difference in voltage jump should become reduced between charges. A desulfating pulse will occur during the charge process.

Question:How do I know when to stop charging?

Answer: On a good battery I like to stop the charge at 120% the nominal voltage. If we look at a 12V battery that would be 14.4V ($12V * 1.2 = 14.4V$). On a weak or bad battery it is possible to exceed the 120% rule for brief periods, but please be mindful of heat and that a battery can explode if overcharged for too long.

Question:Will Da Pimp automatically stop charging?

Answer:No. It will charge until you shut off the black switch (0).

Question:Can I charge lithium batteries?

Answer:Yes, lithium can be charged. It is one of the easiest chemistries to bring back to normal voltages. However, please be very careful. Never exceed 10% over nominal with Li packs. They can take up to 20% over nominal, but let's avoid blowing up batteries. Once you have charged the pack to 10% over let the devices standard charger take over. Do not leave lithium unattended while recovering.

Question:My display is just reading 0.00

Answer:

1. *Check the 9v - battery* with a multimeter and make sure that reads over 9.00v
2. *Check the fuse* - with a multimeter and make sure that there is continuity or that the ohms reading is very low
3. *Check the R4 resistor* - the 4th resistor from the top can be damaged if the circuit is left charging while not connected to a battery. Make sure it reads roughly 25k ohms. If the reading is way off this resistor will need to be replaced.

Step by Step Kit Assembly:

Instructables: DP2 - Da Pimp 2 Assembly Instructions [<http://www.instructables.com/id/DP2-Da-Pimp-2-Assembly-Instructions/>]

Video Playlist

Sealed Lead Acid Battery Recovery



Da Pimp Design Files

- **schematic** (pdf [\[https://drive.google.com/open?id=0Bx5Als-UeiZbN0F5RIJUdXhsWXM\]](https://drive.google.com/open?id=0Bx5Als-UeiZbN0F5RIJUdXhsWXM) | [sch](https://drive.google.com/open?id=0Bx5Als-UeiZbX1k4eTlqSi1QeEk) [\[https://drive.google.com/open?id=0Bx5Als-UeiZbX1k4eTlqSi1QeEk\]](https://drive.google.com/open?id=0Bx5Als-UeiZbX1k4eTlqSi1QeEk))
- **pcb** [\[https://drive.google.com/open?id=0Bx5Als-UeiZbc1NoVm4xSEh6b2M\]](https://drive.google.com/open?id=0Bx5Als-UeiZbc1NoVm4xSEh6b2M)
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- **gerbers** [\[https://drive.google.com/open?id=0Bx5Als-UeiZbSkx6SUttblktaTg\]](https://drive.google.com/open?id=0Bx5Als-UeiZbSkx6SUttblktaTg)
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Warranty

In accordance with manufacturer, guarantees to the original purchaser that products chosen from our site will be free from defects in materials and workmanship for a period of 90 days from the purchase date. If you discover what you believe to be a defect, send it to us for inspection. We may either repair, replace, or return it to you at the sole discretion and direction of the manufacturer. Of course, normal wear and tear, alteration, or misuse, (as determined by the manufacturer) is not covered by any warranty. Except as provided above, no warranty of merchantability, fitness for particular purpose, or any other warranty express or implied.

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