

CHARGE5000, 2000, 500 Series Operating Instructions

Available in 500volt/2000volt/5000volt Contact bob@amazing1.com for optional parameters.

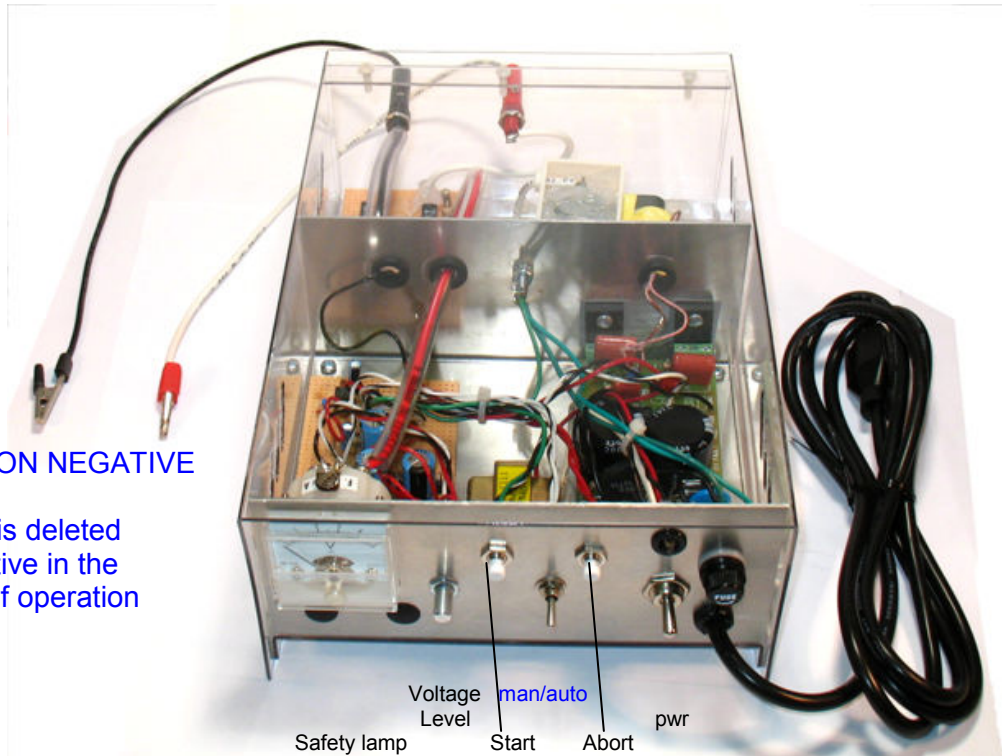
**DANGER Do not use this unit unless you fully understand high voltage and its hazards.
DANGER A SERIOUS DEADLY SHOCK HAZARD WILL EXIST WHEN USING WITH HIGH ENERGY CAPACITORS ABOVE 50 JOULES.**

Calculate JOULES by squaring the charge voltage, then multiplying by $\frac{1}{2}$ the capacitance in microfarads and dividing by 1 million. If over 50 JOULES use extreme caution as improper contact can electrocute or cause serious burns.

Output Leads

SPECIAL NOTE ON NEGATIVE OUTPUT UNITS

Man/Auto switch is deleted
As unit is only active in the
MANUAL mode of operation



Electronic circuit charges up high energy banks of electrolytic, photoflash or other type storage capacitors from 500 to 5000 volts. Recommended capacities are between 100 to 10,000 mfd. This equates out to many thousands of joules! Note the kinetic energy of a 30-06 is 750 joules. Units are manually voltage controlled by an external front panel pot. The front panel meter indicates the charging voltage and allows presetting the target charging voltage. This feature helps prevent over charging and potentially dangerous explosions. Charging is current controlled by our unique circuitry and does not require power robbing resistor. Unit operates from direct 115 vac power. Charging rate is over 200 (watt-sec) joules but will depend on load impedance. Size is 10 x 7 x 3 $\frac{3}{4}$ "

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OPERATION STEPS

Explanation of controls

The **safety lamp** indicates that the capacitor being charged has a charge exceeding 60 volts and will glow until it discharges below that value. *This lamp is placed at the rear of units with clear covers.*

The **lamp adjacent** to the fuse indicates the unit is on and also will continue to glow until the circuits internal capacitors discharge. **The low voltage control circuitry remains on until the unit is unplugged.**

The **mode switch** allows two settings where the capacitor will charge. In the **manual down** position it charges to its selected voltage and turns off. This setting is for larger capacitors that are scheduled to be discharged before

much of the charge leaks off. The other **upper auto** setting of the mode switch allows the capacitor to slightly discharge and then automatically turns on again to replenish any lost charge thus keeping the capacitor always charged up indefinitely. The **auto mode is deactivated on neg output units**.

Note if the mode switch is left in the “auto” position the capacitor will immediately start to recharge. This feature is for repetitive firing modes but can be dangerous if user is unaware. You can push the “abort” switch to cease this recharging action. You now can continue the charging action for the next event or manually discharge the capacitor as a safety issue.

The **start switch** is a push button that must be depressed to start the charging action independent of the mode switch setting. You may also repress this switch to restart the charge in either mode. This is convenient when charging a large storage capacitor and topping it off should it drop too far. The system still will go in the off mode once the preset target charge is reached in the manual mode.

The **abort switch** is a push button that can abort the charging action at any time and requires re-pushing the start switch to resume.

Re-verify a positive earth ground. If in doubt run a separate heavy gauge #14 wire from the frame of the charger to a known earth ground. This is very important for safety. Never discharge capacitor via the charger connection points. It is assumed the user is aware of discharge ground loops and is experienced in high energy technology

1. Select capacitor and use above formula to calculate the joules for determining if hazardous. Always verify that the capacitor is discharged and remove safety shorting wire. Connect leads cross capacitor and observe polarity if any. Electrolytics are polarized.

If you need to prematurely discharge, you can use an insulated screwdriver for small electrolytic under 5 joules or a discharge resistor shorting wand. **Larger capacitors require a properly made discharge probe dependent on voltage and energy.**

2. Connect a proper range voltmeter across capacitor to monitor charging voltage if you require higher accuracy than our 3% panel meter

3. **IMPORTANT** Verify all controls are in their “off” position and plug into a grounded 117 vac jack. **Unit will prematurely start charging if the “voltage level” control is not turned off. Place “mode” switch in manual down position.**

4. Turn unit on and push “start” button. Rotate **voltage control** and repeat until you reach the required setting as indicated on the front panel meter. Capacitor will slowly discharge with the mode switch in the **manual** position and eventually totally discharge over a long period of time.

Do not allow to charge beyond the capacitor volt rating as indicated by the range voltmeter. Obviously larger values take longer charging time

5. Always remember to verify that capacitors are full discharged and have a shorting wire across their terminals. This is important if units are left exposed to contact or handling. Connect leads cross capacitor and observe polarity if any. Electrolytics are polarized.

6. There is no more data we can give as to the safety of handling the charged capacitors. We have no idea what your application is.

You are on your own and are assumed to understand the hazards of handling these very DANGEROUS and lethal amounts of electrical energy.

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