

# Safety Guidelines

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**Warning Notice:** This document is intended for educational use only! The project described in this document uses extremely high-voltage power-sources, and is intended for readers over 21 years of age who are experienced working with dangerously high-voltages. If you are not a legal adult, or are not proficient working with dangerously high-voltages, do not try to build this project without expert supervision. The author of this document is not responsible for any death, injury, or property damage resulting from or relating to the procedures shown or devices described in this document.

**Purpose of this Document:** This document provides an overview of safety procedures and concerns to be aware of while constructing a prototype Lifter.

## Safety Guideline 1: Author's Disclaimer

- The documentation on this CD-ROM or download is for educational use only! The author takes no responsibility for death, injury, or property damage that may occur as a result of the procedures or devices shown in this document or included with this documentation package.
- The author of the documentation on this CD-ROM or download is not an expert on fire-safety or high-voltage safety. The safety-guidelines that he outlines in this document are the minimum guidelines to reducing the chances of serious-death or injury, but they are by no means the only guidelines. Readers should ask a safety expert for additional advice before attempting to build anything outlined in this documentation.

## Safety Guideline 2: No Under-Age Tinkerers!

- If you are not a legal adult (21 years old) or experienced working with dangerously high voltages, do not attempt to follow any of the guidelines or procedures outlined in this documentation without supervision from an adult expert.

## Safety Guideline 3: High-Voltage Safety

- Be aware of the voltages involved with this project. The average computer monitor has a high-voltage output of approximately 25,000 to 30,000 volts – this is easily enough to kill or seriously injure you. If you do not feel comfortable working with high-voltages, then don't! Get someone with expertise in this area to assist you before continuing.
- Always wear a pair of heavy rubber gloves (lineman's gloves) when working with high-voltage power-supplies. Other types of rubber gloves will not provide enough insulation to prevent high-voltage electrical-charges from passing through them and shocking you.
- Always remember the electrician's rule of thumb – work with one hand only! Working on wires with dangerously high voltages with only one hand reduces the chance of death if you receive a shock. If you are grasping with both hands and receive a shock, the electricity will pass directly through your chest – this is more likely to cause heart-trauma than working with one hand only.
- Always be aware of the status of your power-supply. Remember if it is turned on or off. The author's failsafe method is to completely unplug his power-supply from the electrical-outlet and wait for the HV-charges to dissipate before working with anything that might potentially cause electrocution.

## Safety Guideline 4: Fire Hazards

- Be aware that the voltages and electrical procedures involved with this project are potential fire hazards. Due to the high-voltage nature of the Lifter power supply, the possibility of arcing and subsequent fire is a very real possibility.
- Keep a fire-extinguisher handy in the event that a fire does occur. Ensure that your fire-extinguisher is safe to use on electrical fires. Water-based fire extinguishers are not acceptable for this purpose, as the stream of water will conduct high-voltages back to the extinguisher and cause electrocution.

- Never leave any high-voltage project unattended, for any length of time, due to the risk of fire resulting from electrical arcing or short-circuits. Always remove the power and ensure that your work area is safe before leaving a high-voltage project area.
- Remove any and all combustible materials from your work area before testing any high-voltage projects. Be aware that high-voltage electrical charges will ignite combustible fumes. Examples of combustible materials and containers include, but are not limited to: gasoline cans, finger-nail polish, paint and painting supplies, heating-oil and kerosene, rubber-cement, most glues, etc. Check your work area to make sure that these materials are not in the vicinity before testing.

#### **Safety Guideline 5: Computer Monitor Tampering**

- The author's demonstration of how to modify a computer-monitor to obtain high-voltage current is for educational use only! Be aware that tampering with a computer-monitor is likely to void any warranties that you may have on the monitor as well as potentially damage or destroy the functionality of that monitor.
- Be aware of implosion-danger from computer-monitor picture-tubes. The picture-tube in a computer-monitor is vacuum pressurized by the outside atmosphere, and will shatter if dropped or damaged. Make sure to put the plastic monitor-shield back on the monitor after connecting high-voltage wires to reduce the chance of flying-glass if implosion does occur.
- Be aware of potential fire-danger from computer-monitor high-voltage power-supplies. Modifying a computer-monitor to operate in a manner in which it was not design may result in fire. Consult safety-guideline number for additional information on reducing the potential for fire-damage.
- Be aware of electrocution danger resulting from dangerously high-voltages

#### **Safety Guideline 6: Work at your own risk**

- The documentation on this CD-ROM or download is for educational use only! Any work conducted as a result of the information contained in this documentation is done completely at the reader's own risk. The author would like to re-iterate that the project described in this document can be very dangerous.

#### **Safety Guideline 7: Use Common-Sense**

- In addition to the safety-guidelines outlined in this document, the author would like to remind the reader to use his or her common-sense when working with high-voltages and fire-dangers.