



APPLICATION NOTES FOR USE WITH SPELLMAN HIGH VOLTAGE POWER SUPPLIES

Application Note Number: AN-03
Revision: 01/07/04

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You wouldn't use a pickaxe for dental surgery: When over specifying a power supply can be a bad thing.

Selecting the right power supply for the task at hand will reward you in several ways like: reduced size, weight, cost and superior performance. Over specifying and purchasing "more supply than you need" can actually result in degraded system performance in some circumstances.

All Spellman power supplies are designed, built and tested at their full rated output voltage and current. Our engineers have applied the appropriate component deratings for reliable long term operation at full rated voltage and current. No additional deratings of our power supplies are required.

If you need 30kV, buy a 30kV unit and run it at 30kV; it's what it was designed to do. The same goes for current and power. You will get the most bang for the buck buying a supply that closely fits your requirements. If you can afford a larger, heavier and more expensive supply there is nothing wrong with having a bit more capacity, but, over specifying is NOT required to get reliable operation. Minor over specifying can result in additional weight, size and cost. Gross over specifying can actually degrade system performance.

You wouldn't use a 4 inch wide exterior house paint brush to touch up delicate interior wooden trim molding. A large brush is great for quickly applying a lot of paint to a big area, but a smaller brush allows better application and control when painting smaller items. Size the tool for the intended job to get the best results.

Power supplies are similar. A 30kV supply can operate down at 250 volts, but when running at less than 1% of its rated output, it can be somewhat hard to control with great resolution. A 500 volt or even 1kV rated maximum output supply would more adequately address this requirement.

None of our supplies have any "minimum load requirements". But keep in mind if excellent low voltage or low power operation is required select a supply with maximum ratings that are close to your needs. It's easier to obtain precision operation when the power supply is properly scaled and selected for its intended usage. If not, issues like miniscule program and feedback signals, signal to noise ratios, feedback divider currents can make operating a supply at very small percentages of its maximum rated output very difficult.