

The JuiceCan® Power Maximiser



The Juice Can is a huge advance in electrostatic precipitator electronics. The first device to simply convert a high voltage "pulsating" DC supply to a near "true" DC supply.

The JuiceCan® is basically a capacitor, but a very special type of capacitor. It is "spiral wound" which provides very high internal inductance. It therefore can be thought of as two components in one: a capacitor and an inductor. The capacitance of the JuiceCan® filters the output of the power supply. This provides a nearly equal peak, average, and minimum voltage. The inductance of the JuiceCan® limits high frequency spark currents so as not to increase spark intensity.

Why do you need one?

What is the problem?

- 🍊 The highest instantaneous voltage that can be applied to an electrostatic precipitator is limited by spark over.
- 🍊 Historically, electrostatic precipitators have been energized with high voltage transformer/rectifier systems that supply pulsating DC power.
- 🍊 These power supplies have a characteristic waveform that is highly rippled. The difference between the peak voltage, average voltage, and minimum voltage can be significant. For example, the peak voltage can exceed the average voltage by 40%.
- 🍊 Therefore, the average voltage can be significantly lower while spark over occurs at the peak voltage.

What is the solution?

- 🍊 If the power supply could be operated with nearly equal peak, average, and minimum voltages, then the average voltage would be significantly higher.
- 🍊 This can be accomplished by filtering the output of the power supply. This is a proven and reliable technique used in nearly all single phase power supplies.
- 🍊 This is the purpose of the JuiceCan[®].