

TECH TIPS

Why Should I use Electrostatic Charging?

Static is an excellent means of temporarily bonding materials. SIMCO and Eltex static charging systems can apply charges up to 50,000 volts using various applicators designed to meet the requirements of your specific application.

SIMCO Offers State-of-the-Art Equipment

SIMCO Chargemaster power supplies utilize high frequency switching technology. This technology offers three major advantages. First, it ensures that the voltage output from the power supply is equal to the voltage requested via the controls. Second, fluctuations on the AC input line will not affect the voltage output. Finally, variances in load, up to the recommended maximum, do not affect the voltage output.

Additional circuitry controls the duty cycle of an arcing condition, ensuring that little energy is created during arcing to prevent personnel injury and equipment damage.

Features

- High-frequency switching technology compensates for changing input/output conditions
- Regulated voltage, line and load eliminates "load down" effect which reduces performance
- Multiple applicator operation ports
- Current limited for operator safety
- Remote operation capability permits simple, hassle-free systems integration
- High-quality engineering

Charging Applicators

Each Chargemaster system consists of a CH Series or BP Series DC power supply and one or more of the following SIMCO charging applicators:

TETRA™ Charging Bar – Distinguished by high performance and rugged construction. The TETRA is not resistor limited.

Pinner® Arc Resistant Bars — Pins are resistor limited and removable, allowing safer operation and longer bar life.

Pinner Superbar — Resistor limited with removable pins, the Superbar is for the most difficult charging applications.

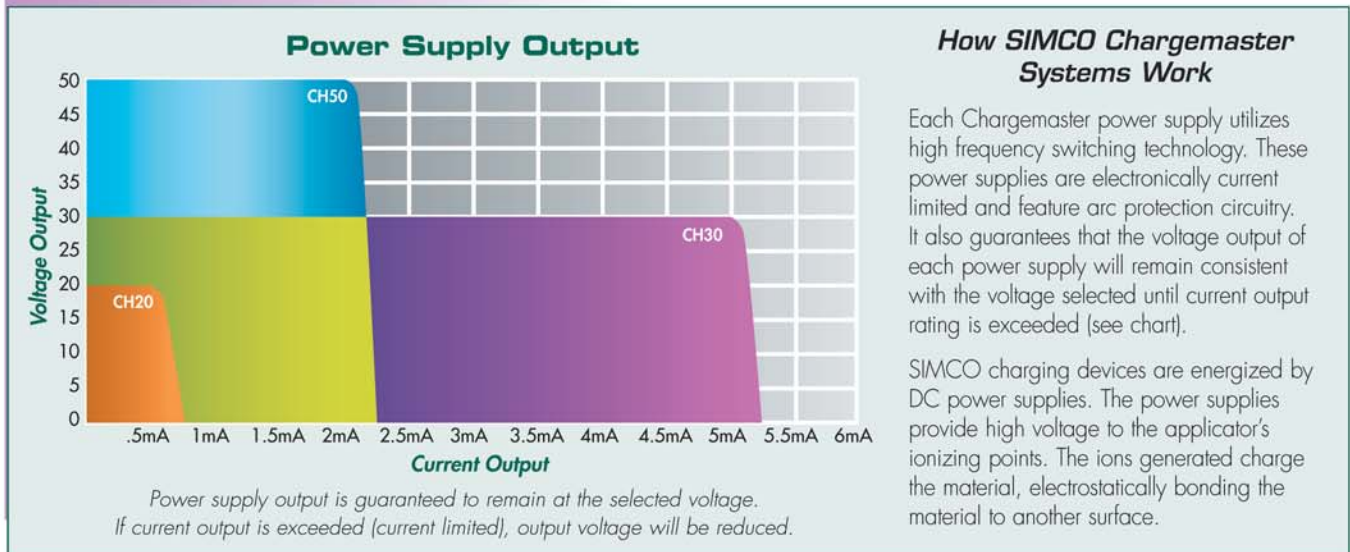
Charging Applicators — SIMCO offers a wide range of spot charging applicators including high temperature, resistor and non-resistor coupled versions.

Arc Resistant Technology

Resistance within a charging applicator enables the use of high voltage for temporary bonding while limiting the current to safe levels. It is an important feature because it ensures equipment and personnel safety.

To create ionization, an applicator with a sharp ionizing point is connected to the output of a power supply. At voltage levels above 4000 volts, corona onset occurs and the air is ionized. The voltage polarity — negative or positive — determines whether the ions generated are negative or positive. The level of current flow depends upon the applied voltage and proximity to a ground reference. The closer to the ground, the greater the current draw. Without in-line resistance, current levels can be drawn that abruptly break down the air, which becomes conductive and forms a blue arc.

During an arcing condition, the flow of voltage is disrupted, so there is no ionization and therefore no pinning action. If arcing is prevalent or unavoidable in an application, select a resistor-limited applicator, which will prevent arcing and supply a continuous, though lower, ionization level. When the ground reference comes too close to the ionizing point, more current is drawn from the power supply. By limiting the current in the applicator, a demand for increased current from the power supply is minimized. The resistor lowers the output pin current to prevent arcing. Voltage, however, is still flowing, and pinning action is still possible. A Pinner Arc-Resistant Bar has four points per each resistor. If one part of the bar is stressed, only one resistor (4 points) is in current limit. All other pins are still ionizing at peak efficiency.



How SIMCO Chargemaster Systems Work

Each Chargemaster power supply utilizes high frequency switching technology. These power supplies are electronically current limited and feature arc protection circuitry. It also guarantees that the voltage output of each power supply will remain consistent with the voltage selected until current output rating is exceeded (see chart).

SIMCO charging devices are energized by DC power supplies. The power supplies provide high voltage to the applicator's ionizing points. The ions generated charge the material, electrostatically bonding the material to another surface.