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Electrostatic charging system

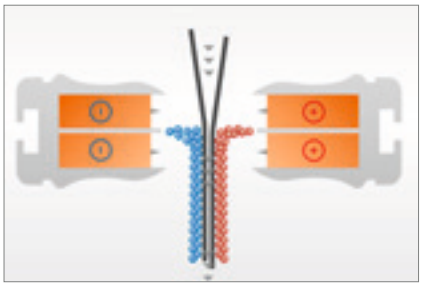
iONcharge 4.0 (0-20kV)

Industrie 4.0

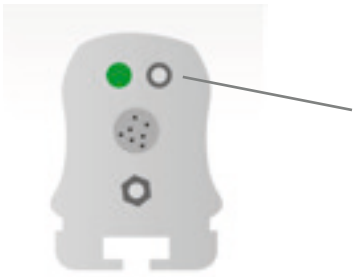
System description

iONcharge 4.0 is the latest generation of electrostatic charging systems. The high voltage power supply is integrated inside the charging electrode profile. High voltage cables with their problems and disadvantages are history and a simple 24 Volt DC-supply voltage of the charging bar is sufficient. The high voltage values can be very simply set via a programming button directly on the bar. The integrated CAN bus allows the bidirectional communication of all rated and actual values and process statuses to the higher-level overall control iONcontrol or to a control system provided by the customer.

The high voltage extraction takes place via resistors at the emitter tips and offers maximum efficiency with a high peak grid. Our unique Tungsten Steel-"Long Life"-emitter pins increase the life time of the emitter points and guarantees a constant high performance during its full life cycle. These emitter pins generate ions to produce a contactless charge on the substrate surface and as a result generate the so called " electrostatic gluing effect".

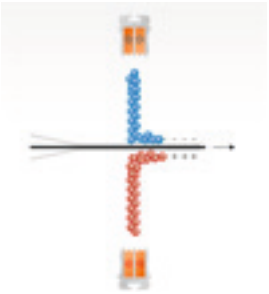


Functional principle of electrostatic charging, Example ribbon tacking



Programming button on the bar for setting high voltage values

Typical applications:

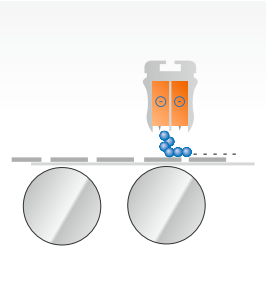


Ribbon tacking

Chill-Roll tacking

Edge pinning

Stack tacking



Bonding

Reel change

In-mould labeling

Laminating

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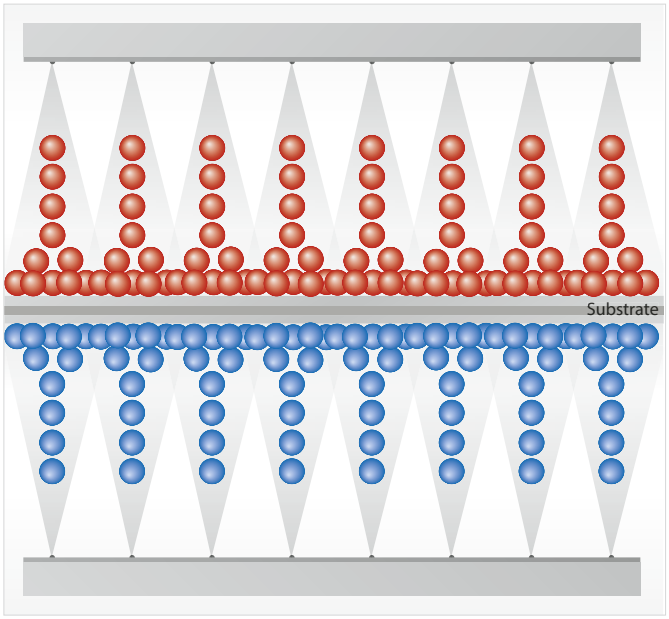
Technology

The iONcharge 4.0 charging system is designed to apply electrostatic charges to an insulating substrate surface. In order to charge the substrate a suitable opposite field polarity is essential. If this opposite polarity cannot be ensured via a machine metal/ground an opposite polarity charging electrode must be installed. The charging bar itself needs to be installed at a defined distance to the substrate surface depending on its use and application. The substrate will pass in between the two electrode polarities. Due to the high voltage generated at the emitter pins, the ions generated settle on the insulating substrate surface. They try to recombine with the opposite charge ion on the other substrate side and therefore generate, due to the insulation of the substrate in between, an electrostatic bonding.

The pin material and shape are optimized to achieve the longest possible life time and the most efficient ion emission for the complete life cycle of the electrode.



Ion flow

Features:

- 0~20kV adjustable on the rod or externally via CAN bus
- Positive or negative charging bars available
- Short-circuit-proof electrode design

Our experienced application engineers can assess your machine and advise on how to effectively install the iONcharge 4.0 into your production process to achieve the best possible electrostatic bonding.

iONcharge 4.0 System advantages

Application:

- High voltage generator integrated in the charging bar; 24V DC supply
- High density pin pitch for maximum charging power
- Tungsten „Longlife“ pin material
- No high voltage cables

Safety:

- Release of the high voltage via external 24V signal or CAN bus
- „Touch proof“ due to current limitation“
- CE & ATEX compliant
- ATEX certificate for zone 1 II 2G IIB T6

Economical:

- Perfect charging enables process stability
- Easy integration into production environment

HT009954-EN-03-2024

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