

Thousands installed or upgraded by Neundorfer!

- Improved ESP performance from proper material selection
- Reduced maintenance requirements and longer electrode life
- Fast installation with minimal downtime



All electrostatic precipitators (ESPs) employ discharge electrodes, connected to the high-voltage power source to generate corona discharge. Many ESPs use a weighted wire design, as opposed to rigid frame or rigid electrode options.

Weighted Wires

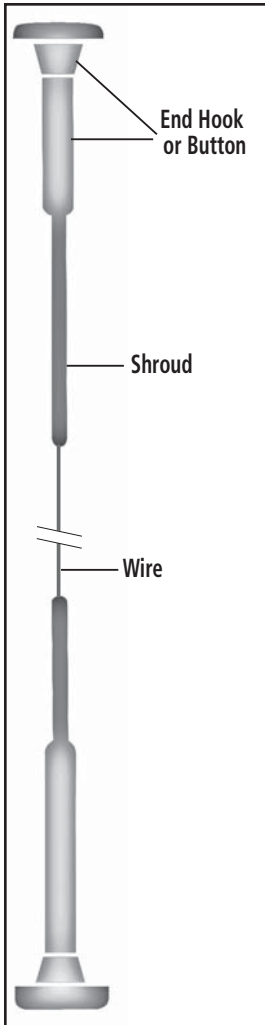
Wire discharge electrodes are less easily damaged by high-temperature excursions than more rigid electrodes. Wire discharge electrodes are also much easier to replace if they should become damaged. Well-designed and well-maintained, weighted wire designs often function effectively for 20 years without an electrode changeout.

For more than 20 years, Neundorfer has manufactured high-quality discharge-electrode wires in various sizes, shapes and materials for virtually any type of electrostatic

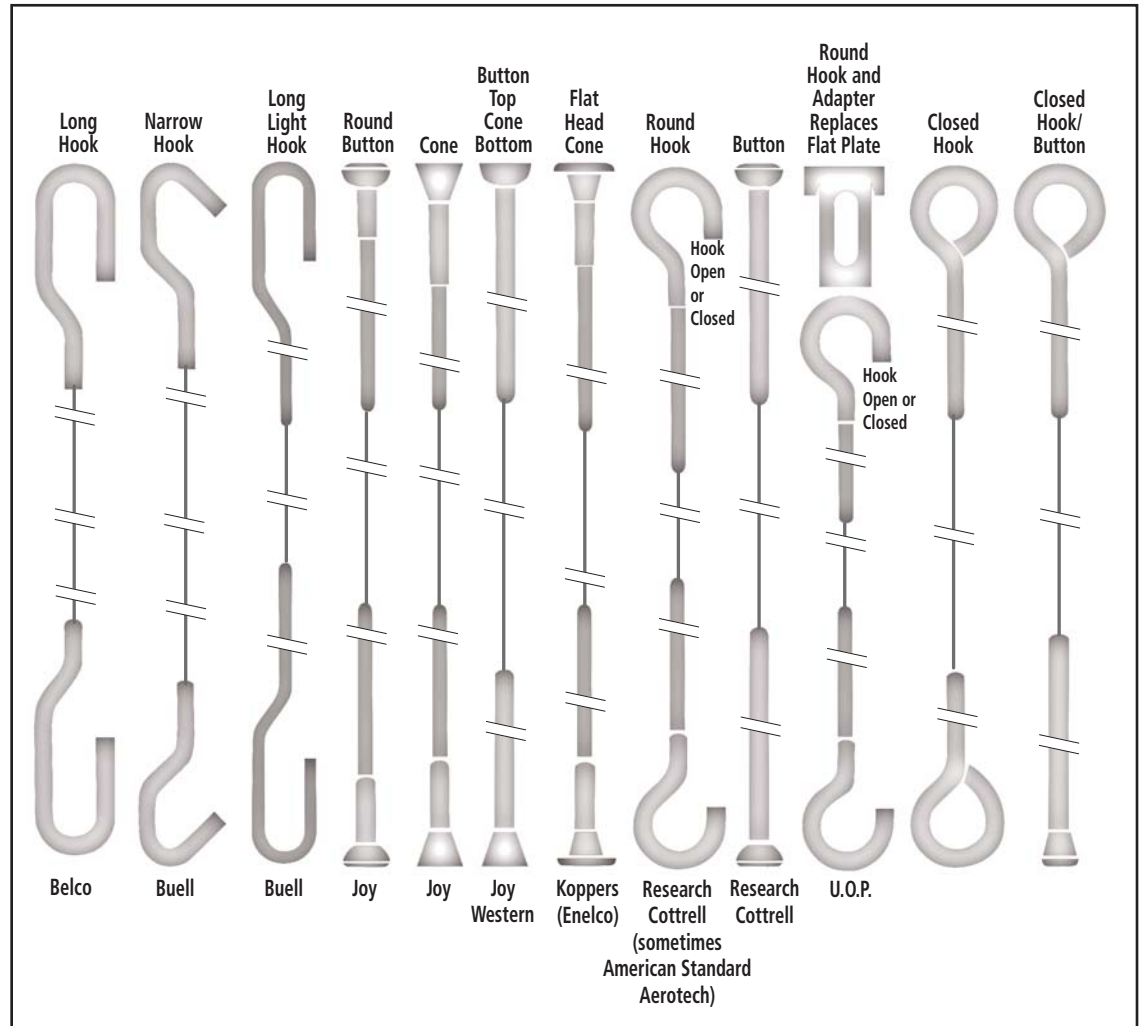


precipitator. Neundorfer can retrofit ESPs with new discharge electrodes or provide a precision-engineered upgrade to enhance ESP performance.





◀ Precipitator discharge electrode wire designs vary in terms of material type, shroud and end attachments. A typical discharge wire design includes an end hook or button, a shroud at the top and bottom, and hanger wires.



▲ End Hooks or Buttons

End connections or terminations for discharge electrodes vary by original equipment manufacturer (OEM). Some common configurations, available from Neundorfer with solid or spring shrouds, are illustrated here.



Spring and Solid-Shrouded Wires

Discharge electrode wires typically include a shroud at the top and bottom. The shrouds effectively increase the wire diameter, protecting the wire from electrical or mechanical erosion and reducing sparkover at points of close electrical tolerance and reduced wire to plate clearance. Shrouds are offered in either solid or flexible spring configurations.

Solid-Shrouded Wires

Solid-shrouded wires are the industry standard for discharge electrode systems. Neundorfer manufactures high-quality solid-shrouded wires, delivered with short lead times and usually less expensively than spring-shrouded wires.

Spring-Shrouded Wires

Neundorfer also manufactures patented spring-shrouded wires as a more flexible alternative to a solid-shrouded design. With the patented spring shroud, the wire and shroud flex together to eliminate concentrated stress and avoid potential fatigue and breakage where the wire joins the shroud. This extra level of flexible protection ensures the longest possible wire life for precipitators.



Solid-Shrouded Wires



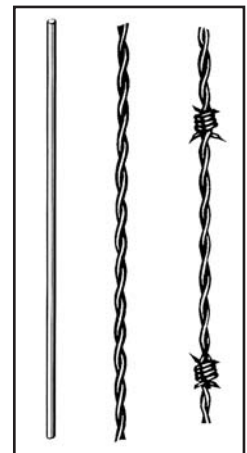
Spring-Shrouded Wires

Hanger Wires

Hanger wires support the lower wire guide frame which hangs in suspension. The lower wire frame maintains centered alignment of the wires from top to bottom between collecting plate electrodes, and acts as a retainer to prevent fall-through of weights in the event of discharge wire breakage. Neundorfer designs, fabricates and installs new or replacement lower wire frames to work in conjunction with discharge electrode weighted wires. The number of hanger wires used on each lower wire frame varies with the size and design. Wires are available from Neundorfer in round, twisted pair and barbed twist configurations. Neundorfer also supplies a full selection of wire weights – both proprietary and OEM designs. Accurate specification of wire material, lengths and terminations is essential to optimize ESP performance derived from a discharge electrode replacement or upgrade.



Wire Weights



Wire Configurations



Important Considerations for Discharge Electrode Retrofit or Upgrade

Electrostatic precipitator designs vary according to the available technology at the time of manufacturer as well as subsequent design improvements or modifications. These variables often affect dimensions that are critical to accurately engineering further improvements or upgrades.

ESP Environment

The chemistry, structure and temperature unique to each ESP environment affect wire life and performance.

- Chemical interactions or corrosives
- Differential expansion of structural components
- Temperature range and fluctuation

Material Selection

Discharge electrode weighted wires should be engineered and constructed of materials with resistance to specific chemical, structural and temperature conditions:

- Carbon steel
- Chrome molybdenum
- Stainless steel

Wire Length

Wire length must be accurately measured to attain the correct position within the discharge electrode system and ensure effective performance. Wire measurements can be taken from the top or bottom position:

- From inside hook (IH)
- From under button (UB)
- From lug center (LC)
- From end of thread (ET)
- From top of hook (TH)
- From hook center (HC)

With accurate, specific dimensions for an electrostatic precipitator, Neundorfer designs and precision engineers a discharge electrode retrofit or upgrade for many years of outstanding precipitator performance.

Rigid Discharge Electrodes

In addition to weighted wire configurations, Neundorfer also offers Rigid Discharge Electrode systems which are preferable for certain applications or conditions and offer long-term reliable performance. Contact Neundorfer for more in-depth information and evaluation.



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