

PHOENIX[®]

The Brush Holder Experts[®]

Proudly Introduces

The Phoenix Constant Force Cartridge Brush Holder[®]

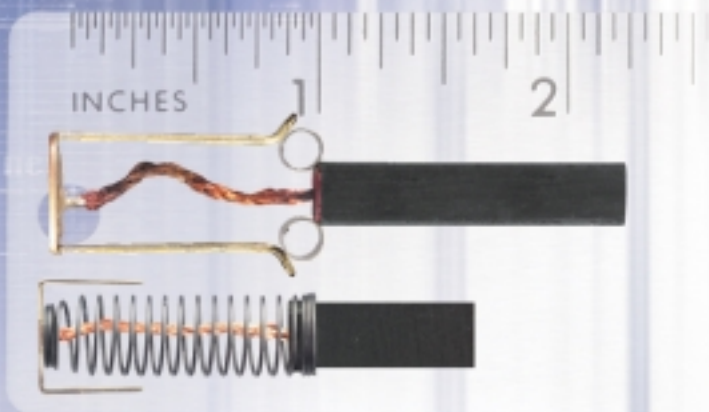
United States Patent No. 6,731,042

Foreign Patents Pending

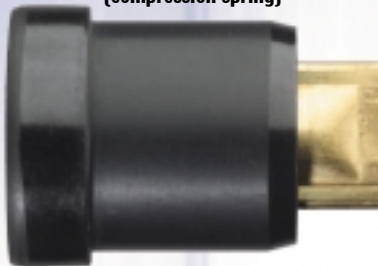
Delivering Dramatically Longer Brush Life and Superior Motor Performance



Phoenix Constant Force
Cartridge Brush Holder[®]
(constant force spring)



Standard Brush Holder[®]
(compression spring)



Our Revolutionary Patented Design Combines:

- ▶ Ease and Convenience Of A Cartridge-Style Brush Holder
- ▶ Externally Replaceable Brushes
- ▶ Extremely Tight Tolerancing
- ▶ Constant Force Spring

Our Unique Innovation Delivers:

- ▶ Significantly Longer Brush In Same Amount Of Space
- ▶ More Than Double The Brush Life
- ▶ Less Frequent Brush Replacement
- ▶ Even, Constant Brush Wear
- ▶ Superior Commutation
- ▶ Less Arcing
- ▶ Accurate Spring Pressure
- ▶ Better Motor Performance
- ▶ A Distinct Competitive Advantage In A Crowded Marketplace



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“Longer Brushes = Longer Life”

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Made in the USA Since 1938

The Phœnix Constant Force Cartridge Brush Holder®

United States Patent No. 6,731,042

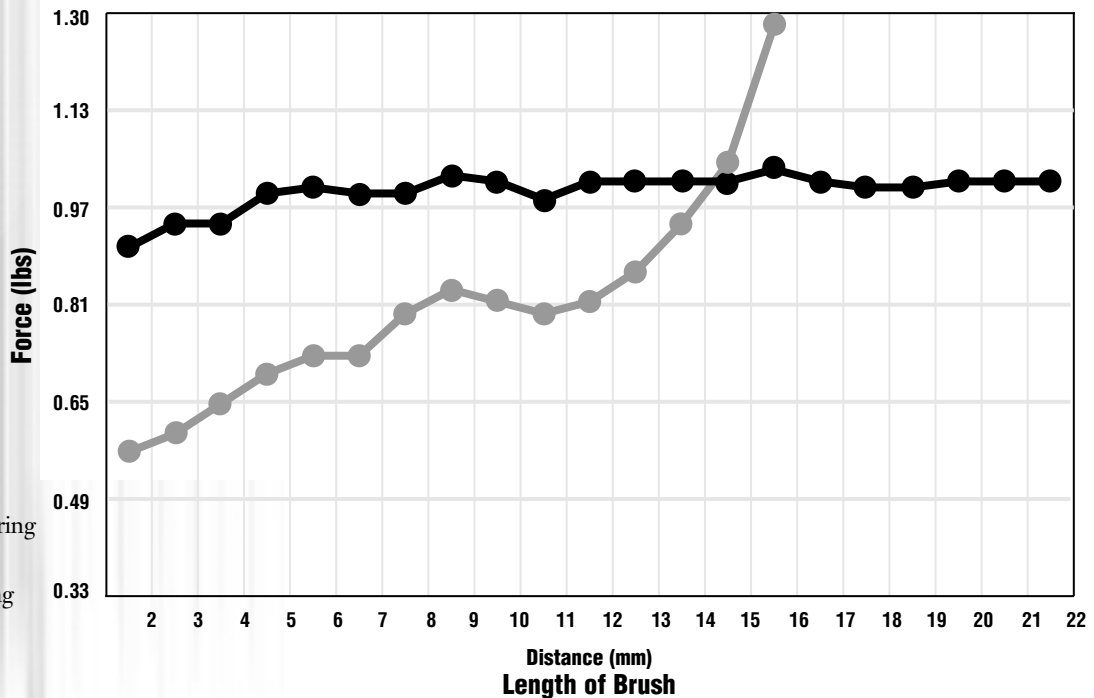
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Ideal For Applications Where Long Brush Life Is Paramount

The Phœnix Constant Force Cartridge Brush Holder® is a “first of its kind” brush holder offering the traditional benefits of a cartridge-style brush holder with the added advantages of a constant force spring. You benefit from the easy and convenient assembly, externally replaceable brushes, extremely tight tolerances, uniform brush wear, substantially longer brushes, accurate spring pressure and superior commutation.

Force/Distance Graph

The Phœnix Constant Force Cartridge Brush Holder® provides a consistent high force over the entire life of the brush. With the old compression springs, you are required to specify a wide range of acceptable spring pressure. Now, the Phœnix Constant Force Cartridge Brush Holder® allows you to pick the optimal spring force with precision and delivers predictable, optimal force for superior motor performance over the extended life of the brush.



“Longer Brushes = Longer Life”

Independent testing of brush wear between a standard brush holder and the new Phœnix Constant Force Cartridge Brush Holder® confirms that:

- ▶ Standard brush holders can lose more than 2/3 their usable life after just 100 hours.
- ▶ The Phœnix Constant Force Cartridge Brush Holder® has more than 2/3 of its brush life remaining at 100 hours.
- ▶ The Phœnix Constant Force Cartridge Brush Holder® provides for more than double the brush life of a comparable standard brush holder.
- ▶ There is no change to average commutator temperature when using Phœnix Constant Force Cartridge Brush Holder®.

Don't be left behind...Contact Phœnix Electric today to learn more about this revolutionary brush holder and how your company and products can gain a competitive edge from the Phœnix Constant Force Cartridge Brush Holder®.



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