

A Wealth of Resources and Global Reach

Comprehensive Support

At Morgan, comprehensive support begins the first time we meet. Our team-based approach — including engineering, sales, customer service and training — sustains you at every level. In addition, we offer a wealth of resources to help you and your business succeed.

Engineering and Design are driven by expert insight into each solution, and we are committed to ongoing improvement, reduced lifetime cost and careful protection of your investment.

On-site Troubleshooting brings qualified, seasoned personnel to your site to provide diagnostic evaluations and creative solutions.

Field Training offers experienced regional sales personnel for onsite brush schools, and resource materials for ongoing education programs.

On-time Delivery, with our second-to-none process, ensures we have the products you need when and where you need them (same day, next day or next week shipping, as required).

Technology Expertise

We are dedicated to innovating value-added solutions by understanding the wind industry-specific needs, opportunities and challenges you face. We know wind turbines, and creating solutions that increase productivity and uptime is our highest priority.

Global Presence

Morgan offers you a network of engineering and production facilities around the globe. We can offer on-time, highly-engineered electrical turbine products designed to fit your applications — wherever you need them.



The Right Solution for Wind Products

From the piercing cold of Mongolia to the oppressive heat of western US deserts, Morgan is there. We understand the challenges your wind operations face, and our products deliver the right solution for optimizing your wind turbine performance.



Learn more about our complete portfolio of proven wind products by contacting your local Morgan representative. Or contact Morgan Customer Service at 1.800.543.6322.



Morgan AM&T (Advanced Materials & Technology) is a wholly owned subsidiary of Morgan Crucible, a global advanced materials technology company. We develop, manufacture and market technologically innovative solutions that enhance the performance of our customers' products or optimize our customers' operations.

WIND TECHNOLOGIES



WHATEVER THE CONDITIONS,
MORGAN HAS YOU COVERED

www.morganamt.com

WIND TECHNOLOGIES

-50°F. 90% humidity. Corrosive sea salt.
120°F. 5% humidity. Parching wind.

They may be extremes for humans, but the most hazardous landscapes are everyday environments for wind turbines.

Morgan Wind Technologies understands this world, and we fashion parts that thrive in demanding climates. Our proven, field-tested electrical components—application-specific brushes and holders, power slip rings and pitch control slip rings—are backed by unmatched application engineering, service and global reach.

Designed for the Challenge

No matter its environment, the heart of a wind turbine's performance is its generator. For over 100 years, Morgan has provided successful, engineered solutions designed to optimize generator performance for virtually any type of climate. With millions of in-field applications in our portfolio, we bring you an extensive knowledge base and a range of brush material grades suited for the harsh environments where wind turbines operate. Arid deserts. Sub-zero tundra. Corrosive, high-humidity seashores. None of these are a match for Morgan's superior materials.

When specifying for extreme environments, it is important to select materials formulated to maximize film formation between brush and slip rings, since that film is critical for extended brush life, protected slip-ring surfaces and reduced friction. Morgan's global brush grades are created to be environment specific, offering maximized performance in low or high load conditions. Our brushes are engineered to perform well in low-humidity atmospheres, a common setting for many wind farms. Our power slip rings and hub control slip rings are equally robust, given their crucial role in turbine performance.

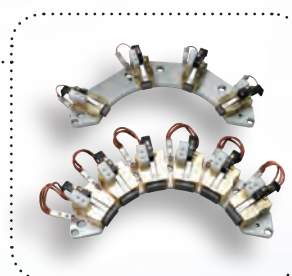
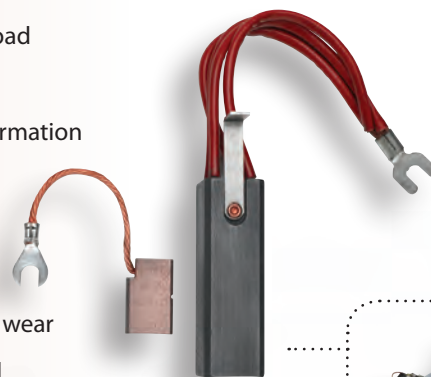
Engineered Solutions

Brushes

Supported by our intimate understanding of carbon and graphite materials science, our globally-located, world-class manufacturing and testing facilities, and our legacy of extensive application knowledge, Morgan brushes set the standard for operations with superior performance.

Morgan brushes feature:

- exceptional performance from no-load to high-load
- low friction through superior film formation
- endurance through extreme atmospheric conditions and low humidity
- contamination tolerance
- excellent lifespan with minimal ring wear
- low brush-to-brush wear differential
- engineering and performance specific to your application



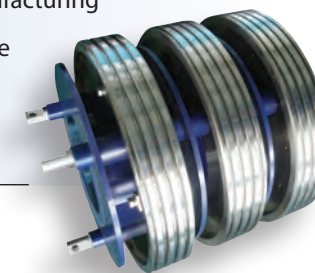
Selecting the correct carbon brush for your application can reduce slip ring wear, maximize brush life and contribute to outstanding generator performance. Our experienced application engineers can help you select the correct grade and design for your needs, or you can refer to our environmental selection matrix for environment-specific recommendations.

Power Slip Rings

Specify Morgan power slip rings for rotary performance built to handle any environmental conditions.

Morgan power slip rings feature:

- molded or built-up capabilities
- availability in steel, stainless steel, bronze or brass
- testing for high potential, overspeed, temperature extremes and more
- cost-efficient design
- complimentary quality brush holder and riggings
- availability from manufacturing plants across the globe
- design specific to your application



Hub Control Slip Rings

Morgan's rotary transfer systems are developed through our decades of experience in European markets. Our modular systems include advanced wire systems, slip rings, metal contacts, metal-graphite brushes and other components which can be engineered to suit any wind application.

Morgan hub control slip rings feature:

- a lifetime of 10 years or 70 million rotations
- 5-year maintenance and lubrication free operation
- data transmission capacity up to 400MBd
- shock and vibration resistance
- hybrid systems utilizing metal-graphite brushes
- availability with fiber optic rotary joints

