



24 HOUR GLOBAL SUPPORT FOR ALL GENERATORS

Parts and Service for the **Global Power Industry**

GLOBAL
UNRIVALED
INNOVATIVE
RELIABLE
PROFESSIONAL
COMPREHENSIVE

- 05 Introduction
- 06 Rotor Services
- 07 Exciter Services
- 09 Stator Services
- 10 Services Facility



INSPECTION MAINTENANCE SERVICING MODIFICATION TESTING REPAIR



OUR COMPREHENSIVE SERVICE MAXIMIZES THE PERFORMANCE OF YOUR GENERATOR THROUGHOUT ITS LIFE

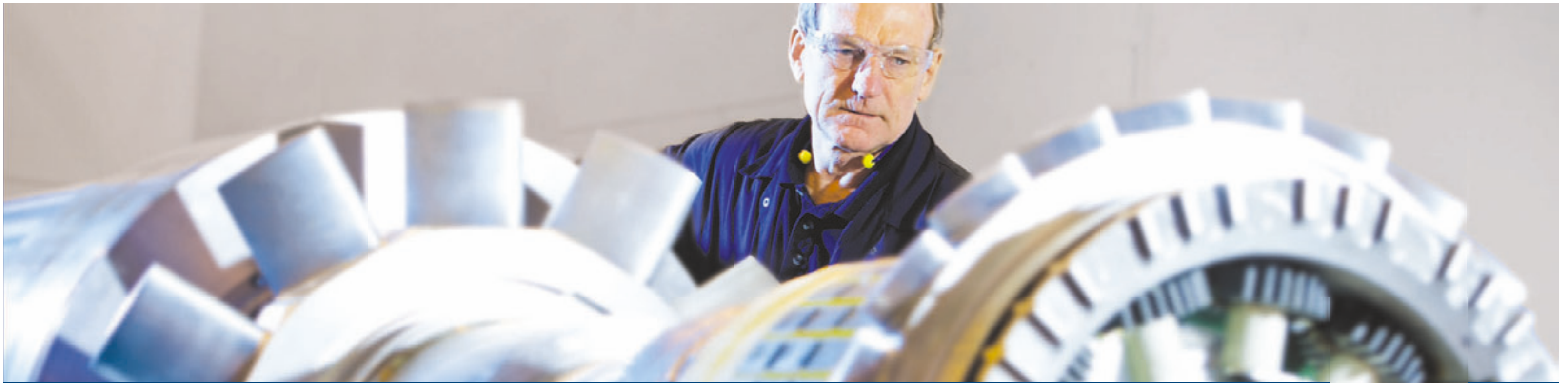
BRUSH GMS combine an expert and dedicated service with a value based approach. We provide engineering driven solutions for electric utility and industrial plants and handle any aspect of generator maintenance, from monitoring to repairs, for any make of generator. We pride ourselves on being thorough, working to the highest standards and reacting quickly to emergencies with support 24/7.

Our comprehensive capabilities focus on maximizing the performance of your generator, with the ultimate aim of extending its life, and include:

- Inspection
- Rotor, stator and exciter services
- On-line monitoring and diagnostic services
- Testing, including:
 - Stator Electrical and Mechanical Tests
 - ELCID Examination of Generator Stator Core
 - Rotor Electrical and Mechanical Tests
 - Exciter Electrical Tests Diode Wheel Tests
 - Exciter Rotor Tests
 - Exciter Stator Tests
 - PMG Tests
 - Insulation Tests
- Repair
 - Patented retrofits for generators and excitation systems
 - Custom engineering to redesign existing components or calculate designs to improve performance, including:
 - Life assessment studies
 - Metallurgic and materials engineering analysis
 - Fatigue stress calculations
- Consulting, including:
 - Impartial technical evaluations
 - Independent reviews
 - Expert opinions on conditions or pending projects
- Field services, to minimize outages and maximize efficiency
- Replacement parts
- Turnkey disassembly and assembly services
- Long term service agreements



SO MUCH DEPENDS
ON THE SMOOTH AND
CONTINUAL OPERATION
OF YOUR GENERATOR



ROTOR SERVICES

Complete servicing for any make of rotor

Our 50,000 square foot manufacturing plant in Turtle Creek, Pennsylvania is equipped with two heavy duty lathes and a complete compliment of milling machines, so we can confidently and competently handle any operation on any rotor of up to 100 tons.

Services include:

- Inspection
- Testing
- Rewind
- Machining
- Life extension
- Engineering

A ready supply of retaining rings

To make sure your generator is back up and running efficiently as quickly as possible, we make sure we're always well stocked with 18Mn-18Cr retaining rings to fit 1,000 different rotors.

Tooth-top cracking eliminated permanently

Tooth-top cracking under the retaining ring is a common problem. But BRUSH GMS has devised a patented procedure that doesn't just defer the issue, but permanently resolves it for the life of the rotor.

We also offer NDE examination and complete wedge land repair solutions for the length of the rotor body.



EXCITER SERVICES

From straightforward repairs to performance enhancements

Our expert teams are highly experienced in the design, manufacture, maintenance and testing of brushless exciters and they can re-engineer components to improve performance. If you're due an upgrade, we can now supply new brushless exciters to our clients too.

Our services include:

- Repairs
- Rebuilding components
- Refurbishment program to disassemble all removable components, testing each electrical component to identify its status
- Component replacement
- Rebanding services
- Complete rewinds of the stator and rotor winding assemblies
- PMG rewinds
- Full speed balance of all exciter rotors in a state-of-the-art balance facility
- Emergency excitation services, including a mobile exciter, which can be brought to site, and swap-out brushless exciters for use during refurbishments

- Electrical testing, including:
 - RTD Resistance Test
 - RTD Insulation Resistance
 - Thermocouple Continuity
- Supply of new brushless exciters
- Exciter Housing Modifications

Housing modifications reduce risks and improve operation

- BRUSH GMS can carry out a Positive Pressure Vent Modification (PPVM) to your existing exciter housing which has been proven to significantly reduce the rate of dirt contamination and mitigate the potential hazard of hydrogen ingress.
- Housings are modified so the inside pressure is at a higher level than the outside, which reduces the intake of dirt and contamination during operation.



WE CONFIDENTLY HANDLE ANY OPERATION ON ANY ROTOR OF UP TO 100 TONS



OUR SERVICES WILL ENSURE YOUR GENERATOR IS WORKING AS EFFICIENTLY AS POSSIBLE TO MAXIMIZE ITS PERFORMANCE AND PROLONG ITS LIFE



STATOR SERVICES

For every aspect of generator maintenance, our service is as thorough and well thought through as our approach. And we like to think our standard services are anything but standard, as they're carried out with such precision and expertise.

Services include:

- Inspections, electrical and mechanical testing
- Complete rewind
- EL-CID, loop test and end winding stiffness ("Bump") testing and analysis
- Patented end winding vibration services
- Vibration monitoring
- Full or partial rewedge

End winding vibration resolution services

To expand our services, we've developed a series of patented retrofit solutions to end winding vibration that do not require a rewind of the stator. These options have been developed on a building block approach and we've been using them successfully since 1993.

Vibration monitoring systems

Stator winding vibration monitoring systems provide information on both electrically and mechanically induced vibrations being experienced on the end windings. Depending on your set up, the systems can be configured to provide information at the generator itself or via continuous monitoring in the control room.



WE CARRY OUT OUR STATOR SERVICES WITH PRECISION AND EXPERTISE

SERVICE FACILITY

24/7 service from our advanced facility
BRUSH GMS has built up over 20 years of experience, providing a comprehensive range of services that covers generators from all the major OEMs.

Our expertise has led to us, not merely providing servicing and repairs, but also to devising patented solutions of our own regarding the re-engineering and design of generators and exciters to enhance performance.

We promise accuracy, precision and quality in everything we do, including our approach to customer service.

Our advanced high bay rotor and exciter facility is based in Turtle Creek, Pennsylvania and, with over 50,000 square feet of manufacturing space, we can handle multiple rotors and exciters at the same time.

As well as accuracy, we bring efficiency. To our own operations, and to yours.

BRUSH GMS facilities feature:

- 50,000 square feet of high bay space
- Capable of 100 ton lift
- Clean environment
- 24/7 security
- Truck and rail access
- Two 50" x 72" horizontal boring mills
- Two lathes
- 60" swing and 600" centers
- 90" swing and 480" centers (transportable)
- Two vertical boring mills, 54" and 78"



BRUSH GMS IS AVAILABLE 24-7
TO SUPPORT THE
INDUSTRY'S NEEDS

BRUSH
AFTERMARKET
GMS



For more information about
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