



Expert solutions for industrial gas turbines

GE LM2500, LM5000 and LM6000



Efficiency is Power

MTU Power provides comprehensive maintenance, repair and overhaul solutions for all aspects of LM series industrial gas turbines and their packages. Services are performed at our gas turbine center of excellence in Berlin-Brandenburg, Germany, or on-site by field service professionals working within our worldwide network.

We are committed to reducing operational cost and maximizing performance and reliability. Our services are extremely flexible and customized.

Reliability is Power

MTU Power operates a highly advanced maintenance line. Along which gas turbines are torn down, inspected, repaired, and built up at dedicated module stations. We have one overriding goal: smartly moving the turbines through the shop so their operators can cycle them back into revenue service with minimum impact on operations.

Our shops work to the highest standards and with the most modern technology. For instance, our quality system is based on aviation norms. Additionally, we have processes such as electronic piece parts tracking and a proprietary rotor stacking procedure to keep engines sailing down the maintenance line.

We use intelligent parts solutions including new, overhauled and alternative material as a key cost-reduction measure for customers. You can rely on us for top notch engineering support for each and every turbine and maintenance event.



Flexibility is Power

MTU Power is on call 24/7 each day of the year. Through our global network, we have the unique ability to tailor any service and respond to the immediate needs of our customer—from field service repairs to comprehensive solutions, including rotables, lease engines and package services.

Our field service network includes level II service centers in Australia, Brazil, Norway, Thailand and USA. Also, we have a dedicated team who can be with you wherever and whenever you need.

On-site capabilities:

- Customer training
- DLE mapping
- Engineering support
- Engine control services
- Instrumentation/sensor calibration
- Level I and II on-site maintenance and repairs
- Package maintenance and upgrade
- Periodic inspections
- Preventive maintenance
- Rotables tooling and spare parts supply/management
- Remote monitoring and trend analysis
- Removal, installation and commissioning
- Vibration surveys, trim balancing, laser alignment

Additionally, MTU Power has a dedicated package team who takes care of the entire package around LM series gas turbines—including the various operating and auxiliary systems, the enclosure, as well as the generator and gearbox. In our experience, each package is different and brings new challenges with it. MTU Power tackles these hurdles with gusto. Specialized services range from supply of equipment and parts to customized package maintenance services or performance enhancing upgrades and modifications.

Package services:

- Commissioning of package systems
- Environmental solutions such as NO_x suppression and fuel system conversions
- Modifications, retrofits and upgrades such as engine uprate improvement, wet compression, inlet fogging and cooling
- Provision of resident engineers

Competence is Power

Eighty percent of repairs are performed in-house at MTU Power, resulting in better turnaround times and shop visit oversight. Our innovative high-tech repair techniques help customers save money without sacrificing quality. Repairing parts is always more cost-effective than replacing them with new material.

As engine experts, we are also able to develop customized repairs for customers upon request.

Examples of in-house repairs and processes:

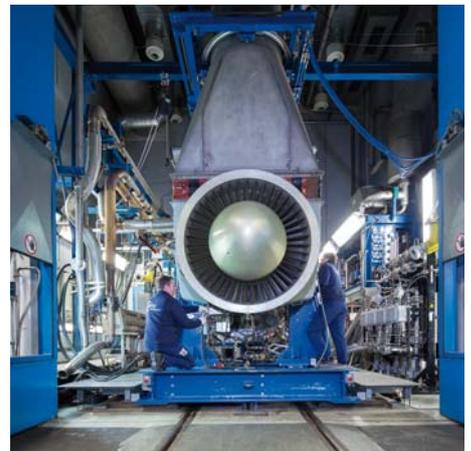
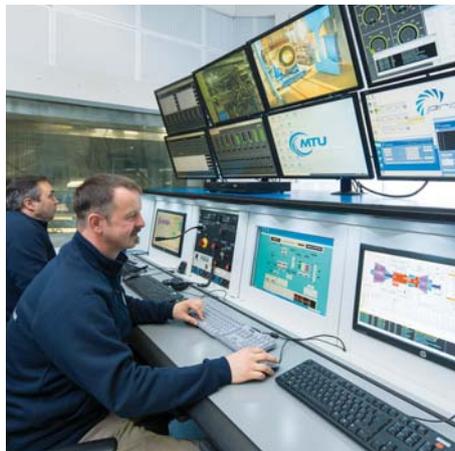
- Advanced corrosion protection and anorganic painting
- Heat treatment
- High-speed grinding for HPT rotor machining
- Laser cutting
- Shot peening
- State-of-the-art Trirex grinding of entire HPC/HPT stator modules for minimal tip clearances
- Thermal barrier coatings
- Thermal spraying
- Welding including laser and micro-plasma techniques

Proficiency is Power

MTU Power operates one of the world's largest and most advanced LM test cells. In Europe, it is the only one of its kind for LM2500 and LM6000 and is equipped with shaft load testing generating a true service test environment. Tests for all engine types, including LM2500+G4 and LM6000PF are available. LM5000 turbine test runs can be conducted on an aero engine test bed. Testing under real load conditions optimizes the quality of testing, ensuring that when the turbine is returned, it is performing reliably and at its best.

Our capabilities cover 47 subtypes:

- Combustor mapping
- Digital data recording of all relevant parameters
- Emission measuring for DLE gas turbines
- Natural gas supply
- Real load conditions using a 55 MW generator
- Remote access for test monitoring/witnessing
- Vibration analysis/trim balancing



Variety is Power

MTU Power provides MRO services for all versions of the following gas turbines:

LM2500

(incl. DLE, LM2500+ and +G4)



LM5000



LM6000

(all types incl. DLE)



Quality is Power

We are a GE-authorized shop and hold the following approvals:

- Quality management: DIN ISO 9000, 9001:2000 and 9100
- Environmental and health management: DIN ISO 14001, EMAS, OHSAS 18001 certification
- Field staff: SCC-approval

Further, we are a registered supplier within international and regional databases and systems (e.g. ACHILLES, ISNETWORLD, FPAL, UVBD, FPS)

Knowledge is Power

MTU Power is a leading provider of reliable, flexible and cost-efficient maintenance, repair and overhaul solutions for General Electric LM series turbines.

At MTU Power, we understand that gas turbine operators expect cost-efficiency and fast response times. Especially, when it comes to MRO and package services. Additionally, we know that oil, gas and LNG customers require high reliability to minimize cost-intensive and critical downtimes. And that power generation customers are also under growing pressure to control cost and increase flexibility in the changing energy market.

Dedication is Power

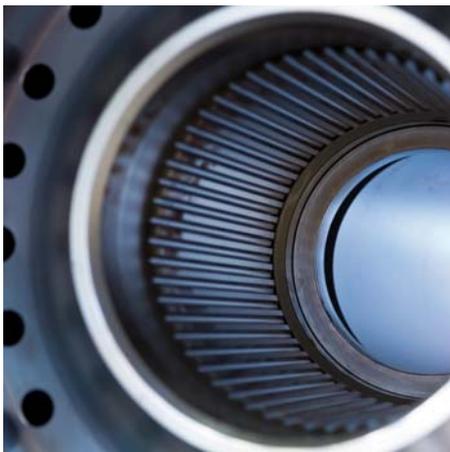
It is our people who make the difference: MTU Power teams are passionate about gas turbines and dedicated to meeting customer needs. We combine hands-on experience with new approaches and never give up until an optimal solution has been found—as demonstrated by our track record of great customer relationships. In short, we are your engine experts.

Experience is Power

The MTU group has performed over 5,000 LM/CF6 visits in its 36-year history and carries out over 150 LM/CF6 shop visits per year. MTU Power and its field service team has over 180 customers and is on-site for 350+ events annually, making us the largest independent provider for the LM series. Of all licensed depots, MTU Power has the widest range of GE LM subsystems in its portfolio (47) and tests under real load conditions.

Through our exceptionally high level of quality and technological expertise, we offer specialized repair processes, customized workscooping and fast turn-arounds. In turn, making us the best choice for customers in the oil and gas, LNG, power generation and marine propulsion industries.

We are part of MTU Aero Engines AG group, a world-class technology leader in the aviation industry, which develops, manufactures and services both aero engines and aero-derivative gas turbines. As such, we are at home in the aviation world, where the highest quality standards are the norm. The company operates a global service network with locations in the Americas, Europe and Asia-Pacific. More than 10,000 employees from over 50 nationalities are dedicated to serving MTU's customers.





MTU Maintenance Berlin-Brandenburg GmbH
Dr.-Ernst-von-Zimmermann-Straße 2
14974 Ludwigsfelde • Germany
Tel. +49 3378 824-00
Fax +49 3378 824-300
ludwigsfelde@mtu.de
power.mtu.de