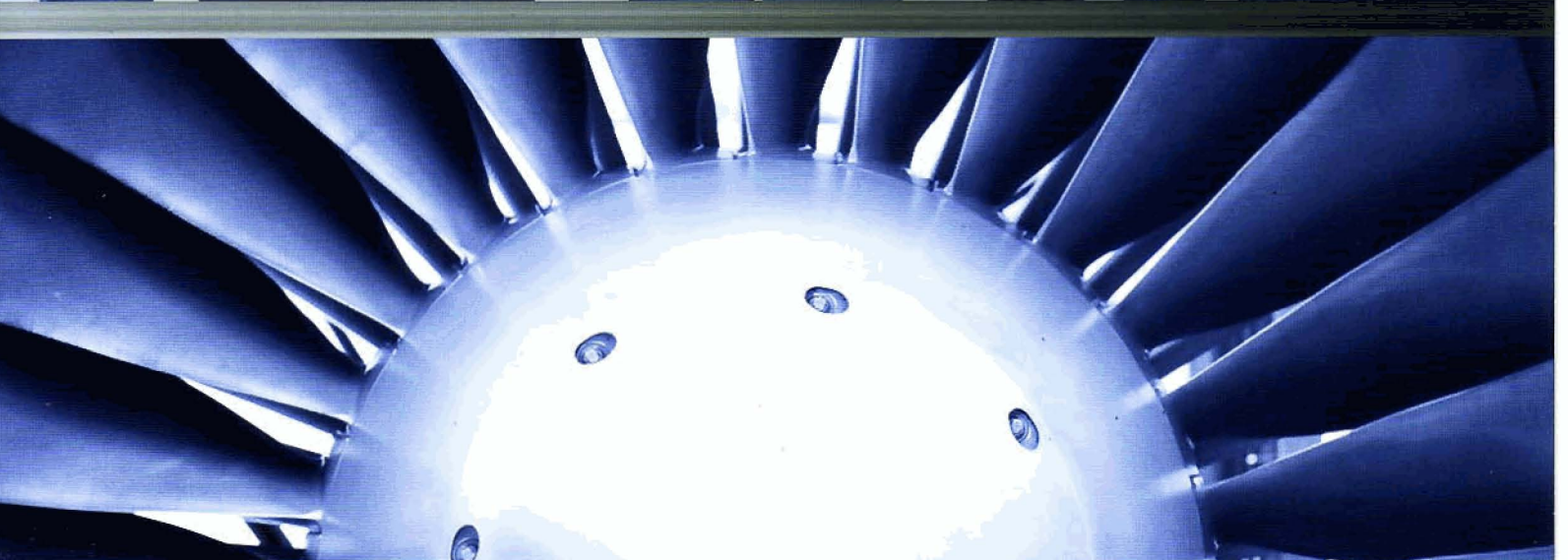




An MTU Aero Engines Company

MTU Maintenance Berlin-Brandenburg

Innovation and dedication



The company

MTU Aero Engines is Germany's leading engine manufacturer. The company designs, develops, manufactures, markets and supports aero engines for commercial and military applications as well as stationary industrial gas turbines (IGT). Its core competencies include commercial engine repair and overhaul, a market in which MTU – in terms of sales – is the world's largest independent engine maintenance provider.

The company's commercial engine and industrial gas turbine maintenance activities are pooled under the roof of MTU's maintenance segment. MTU operates engine shops in Canada, China, Malaysia, Brazil and Germany that are dedicated to providing operators of aircraft engines and industrial gas turbines around the world with comprehensive services 24 hours a day. MTU Maintenance has established itself as a reputable brand internationally, with all locations working to the same high quality standards that are constantly being reviewed and further refined. With its e.pool services the company provides airlines and operators of stationary gas turbines with spare engines quickly and efficiently. The pool that is continuously expanded includes the most popular GE, P&W, IAE and CFMI engines.

Based at Ludwigsfelde – south of Berlin – MTU Maintenance Berlin-Brandenburg is



In the best hands: A highly motivated and skilled team takes care of the various engine types – be it a CF34 (right) or an industrial gas turbine (rear).



MTU's second repair shop in Germany, alongside MTU Maintenance Hannover. The company has over 60 years of experience in the engine business and emerged from the former Daimler-Benz Flugmotorenwerk Genshagen. After 1945, the Ludwigsfelde facility, where aircraft propulsion has a long tradition, started repairing military engines. MTU Aero Engines absorbed the shop in 1991, making it its center of excellence for industrial gas turbine services. Moreover, the shop overhauls and repairs small aircraft engines and assembles all of the low-pressure turbines made by its parent company, including the

low-pressure turbine for the GP7000 engine to power the upcoming A380 mega-transport.

The most recent addition to the company's engine portfolio is the PW500. This Pratt & Whitney engine powers Cessna's Citation series of aircraft and other business jets. Another highlight in Ludwigsfelde's portfolio is the CF34: Manufactured by GE, this engine is the bestseller in its class. As an "Authorized CF34™ Service Provider" MTU Maintenance Berlin-Brandenburg supports the CF34-3 and CF34-8 models and, starting in 2007, also the CF34-10. Apart from the manufacturer

General Electric (GE), MTU Maintenance is the only maintenance company capable of providing full repair and maintenance services for the entire CF34 engine family.

Center of excellence for industrial gas turbines

The MTU maintenance network has been repairing industrial gas turbines for nearly 25 years. To set up a center of excellence MTU pooled all of its industrial gas turbine repair activities at the Brandenburg location in 1995. Main applications are power generation and marine propulsion as well as on- and off-shore compressor stations. MTU Maintenance Berlin-Brandenburg is a licensed Level IV Depot for all types of GE's LM2500, LM2500+, LM5000 and LM6000 series gas turbines. Its customers benefit from individually tailored solutions picked from the company's vast portfolio of MRO capabilities.

Industrial gas turbine repair

- LM2500
- LM2500+
- LM5000
- LM6000

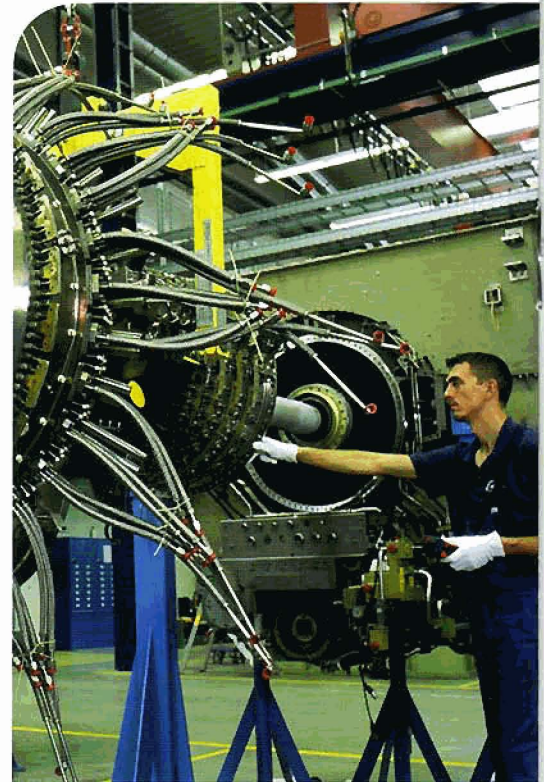
The company's offerings include:

- Modification, upgrade, repair and overhaul of GE's LM2500, LM5000 and LM6000 series of gas turbines
- Engine testing
- State-of-the-art repair of gas turbine components and parts
- On-site inspection and repair through a globally available field service organization, provided within 24 hours, 365 days a year

- Remote engine condition & trend monitoring
- Engineering support
- Engineering hotline with 24/365 service availability
- Provision of lease engines through MTU's e.pool services
- Control system support
- Spare parts support
- Maintenance management
- Customer familiarization and training

The Ludwigsfelde industrial gas turbine test facility counts among the world's most advanced and largest facilities. It is one of the only two test cells worldwide that allows testing of the LM2500 and LM6000 gas turbines at rated load. It is designed for test runs up to 55 megawatts.

The MTU maintenance network performs 80 percent of the maintenance and repair work itself. The techniques used are continuously being further developed and refined to enhance the availability and reliability of the industrial gas turbines in the shop's care and achieve best value for the customers' money.



The LM6000 is the most powerful model of GE's LM series of gas turbines.

The LM2500, in operation all over the world, is overhauled at MTU Maintenance Berlin-Brandenburg.

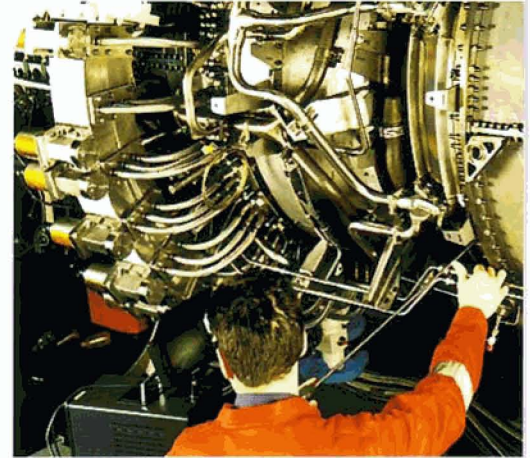


Customer orientation, the first priority

No matter when, no matter where; outstanding service and unrelenting insistence on quality work are the trademarks of all MTU subsidiaries. Expert engineers at MTU Maintenance Berlin-Brandenburg can draw on the entire range of repair and testing technologies available through MTU's maintenance network to provide customers with individually tailored service packages at their doorstep. The company provides full service support for engines and industrial gas turbines from removal to reinstallation. For contingencies, a hotline service is available 24 hours a day, 365 days a year to dispatch specialists on repair missions to any location around the globe. Furthermore, the Ludwigsfelde test center is unique in its kind: Following repair or overhaul, all industrial gas turbines, turbojet and turboshaft engines are put through their paces in one of the five test cells before they are returned to their operators.

Offshore oil and gas rigs are major applications for industrial gas turbines. MTU Maintenance Berlin-Brandenburg has a number of customers in the oil and gas industry.

MTU Maintenance Berlin-Brandenburg's mainstay business is the repair of aircraft engines and industrial gas turbines: In the aircraft arena, the Brandenburg facility is a competent and experienced partner of Pratt & Whitney Canada and General Electric, repairing engines of P&WC's PT6A, JT15D, PW200, PW300 and PW500 series as well as those of GE's CF34 series. As regards the industrial gas turbine field, MTU Maintenance Berlin-Brandenburg overhauls and repairs GE's LM2500, LM2500+, LM5000 and LM6000. The company's customer base includes all major oil and gas companies, such as BP, Shell, ConocoPhillips, ExxonMobil, Statoil, Petronas, National Grid Transco, as well as the electric power companies E.ON, Electrabel, PPL, Eletronorte or Operational Energy Group (OEG). In the marine sector, the company has been providing maintenance services for the German Navy, the



An LM2500 at MTU Maintenance Berlin-Brandenburg.

U.S. Navy and numerous operators of high-speed ferries for many years.



Commercial engine repair

The Ludwigsfelde shop provides commercial engine services in the low- to medium-thrust range. The highlight in the company's engine portfolio is GE's CF34. This engine is the most popular propulsion unit for 50-seat regional jets and is the sole engine choice for Bombardier's and Embraer's new 70 to 100 seat jets. MTU Maintenance Berlin-Brandenburg acquired a CF34 repair and overhaul license in late 2001.

As an "Authorized CF34™ Service Provider" the company offers comprehensive MRO services and customer support for the CF34-3 and CF34-8 engines. The CF34-10 model will be included in the product portfolio soon.

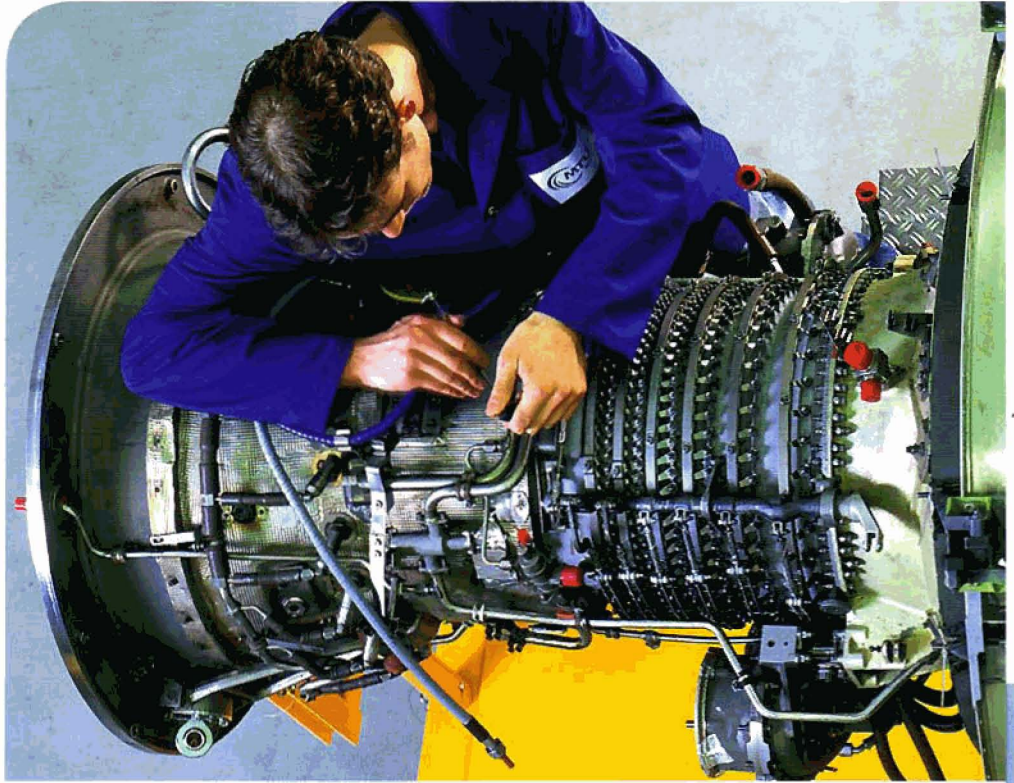
Commercial engine repair

- CF34
- JT15D
- PT6A
- PW200
- PW300
- PW500

The company's offerings include:

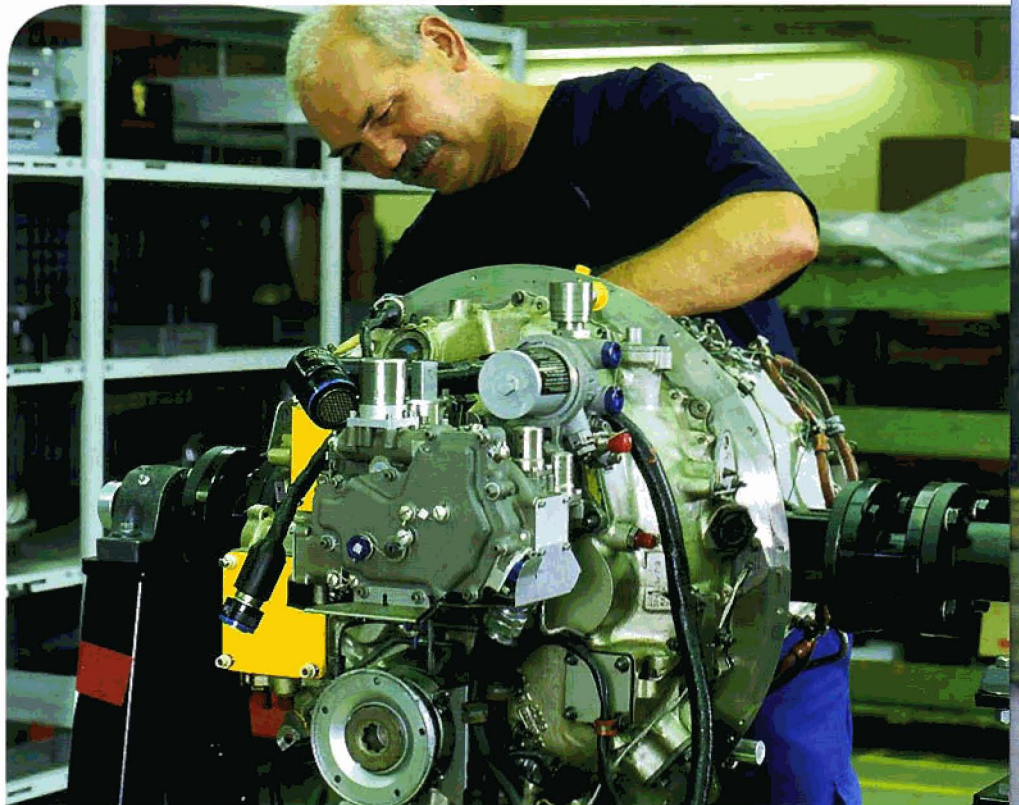
- Modification, upgrade, repair and overhaul of the CF34 series
- Warranty processing vis-à-vis the OEM (1st run warranty)
- State-of-the-art repair service for engine components and parts
- On-wing support by the mobile repair team
- Engine condition & trend monitoring
- Engineering support
- AOG hotline with 24/365 service availability
- Provision of lease engines through MTU's e.pool services
- Spare parts deliveries in AOG cases
- Individually tailored maintenance programs

The Customer Service Centre Europe (CSC) is a 50-50 joint venture of MTU Maintenance Berlin-Brandenburg and Pratt & Whitney Canada (P&WC). It was launched in 1992 and since that time has been supporting customers in Europe, Africa and the Near and the Middle East. The CSC provides comprehensive MRO and after-sales service for small commercial P&WC engines. Long-standing experience, more than 1,700 engine repairs since 1992 and the fact that the company is part of the global P&WC network make MTU Maintenance a competent and reliable partner for engine maintenance, repair and overhaul.



A star in MTU Maintenance Berlin-Brandenburg's product portfolio: The CF34, the bestselling engine in its class.

The PW200 powers helicopter and turboprop aircraft all over the world.



Repair rather than replace

Across all of MTU's maintenance shops, great effort is made to repair components before reverting to replacement as a last resort. However, to provide customers with the cost benefits of repair without diluting the high quality level customers expect, innovative repair technologies are needed. The development of such advanced repair techniques is one of MTU's core competencies. The company has carved out a leading position in this field worldwide. Such novel repairs can, for example, extend the service life of engine blades by up to four times. This saves the customer up to two thirds of the cost of new blades.

Like the other MTU shops, MTU Maintenance Berlin-Brandenburg is committed to the new alternative approach. It offers its customers the option of having their parts repaired using the company's high-tech methods. Complementing more conventional approaches, these new repair techniques include in particular:

- High-pressure water jet stripping of coatings
- Laser drilling
- Laser welding
- Welding high-alloy materials using inductive preheating
- Fluoride ion cleaning
- Chemical vapor deposition of coatings
- Low-vacuum plasma spraying
- Torching off blade coatings

Extensive exchange among the shops of "lessons learned" and "know-how gained" makes refinement of the company's repair techniques an ongoing effort. In this process, the shops can draw on the capabilities of various centers of excellence, each focusing



Optical inspections are among the important tools of stringent quality control.



on their respective components. This way the process engineers can build on the experience and expertise MTU Aero Engines as a parent company has amassed over decades of commercial and military engine construction. The repair of military engines has been part of the company's service portfolio since the mid-sixties.

The PT6A – here seen during assembly – is one of the most popular engine in its class.



Investing in the future

By thinking global and maintaining regional presence through its network of repair shops, MTU has become the world's largest independent provider of commercial engine maintenance services in terms of sales. The top priority of all of MTU's maintenance facilities is to serve its customers faster and provide more value at a consistently high quality level. To this end, the company further improves existing repair procedures and develops new and innovative ones.

MTU Maintenance Berlin-Brandenburg is devoted to investing in its workforce, its most valuable asset. In the process, MTU realizes that it takes motivated and well-trained em-

ployees to deliver the level of quality, reliability and responsiveness the company needs to survive in the repair business. The company is also a nationally licensed and recognized apprentice training center. To maintain and develop MTU's know-how, the company's apprentices are familiarized with the challenges they will have to face in engine repair from their very first day in the shop.

For MTU Maintenance Berlin-Brandenburg, the TP400-D6 to power the emerging Airbus A400M military transport is a program that reaches far into the future. The Ludwigsfelde shop will not only assemble the modules of MTU's workshare but also assume sole res-

ponsibility for final assembly and testing of all TP400-D6 production engines delivered to customers in Europe. The company will be heavily involved in the repair of the engine as well.

Thus, MTU remains a reliable driving force for the economy of the federal state of Brandenburg and keeps to its pledge to contribute substantially to the further economic growth of the region.

The A400M forms the backbone of Europe's future airlifter fleet.





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