Passion for engines

ENGINE PROGRAMS

MTU Aero Engines

Driven by visions of tomorrow

Quieter, more efficient, more economical—and, most importantly, more sustainable. MTU Aero Engines is actively shaping the future of aviation.

Emissions-free flight is the vision that drives MTU. Every day, over 12,000 employees worldwide work on innovative technologies, products and service solutions that will support an emissions-free future for the aviation sector. Claire, which stands for Clean Air Engine, is MTU's technology agenda. It lays out potential solutions and concepts for sustainable commercial engines with the aim of meeting global climate goals. MTU's experts are working on evolutionary and revolutionary technologies. Areas of focus include the water-enhanced turbofan (WET) and Flying Fuel Cell™ (FFC) concepts as well as further developing the gas turbine engine based on the geared turbofan.

In line with its technology roadmap, MTU is constantly introducing improved, more sustainable propulsion concepts.

MTU Aero Engines
at a glance

www.mtu.de/about-us

Driven by cutting-edge technology

MTU is working on concepts and technologies that bravely venture beyond the state of the art to provide pioneering solutions.

In the aviation industry, three letters stand for world-class technology: MTU. By providing top-notch technologies, high-tech products and comprehensive services, MTU is bringing efficiency, safety and sustainability to the skies. Its technological and innovative strength make MTU an indispensable global partner that is actively shaping the future of aviation. Through its role in Pratt & Whitney's GTF™ engine family, MTU is already helping to ensure the use of today's most eco-efficient engines. MTU secures its position as a technology leader through its committed, dedicated research and development work. Together with industry and research partners, MTU is hard at work making engines even more eco-friendly—up to and including emissions-free flight.

Drawing on its unique expertise, MTU spares no effort to make commercial engines even more efficient and environmentally friendly.

High-tech made
by MTU

www.mtu.de/technologies

Driven by perfection

As a technology leader, MTU has a reputation for reliability, sustainability and the highest standards of quality in all its products and services.

MTU Aero Engines is Germany's leading engine manufacturer. The company specializes in the design, development, manufacture and maintenance of commercial and military aircraft engines in all thrust and power categories as well as stationary industrial gas turbines.

MTU has established itself as a technology leader: its low-pressure turbines, high-pressure compressors and turbine center frames are among the finest to be found in the global marketplace–and the same applies to its manufacturing techniques and MRO processes. MTU expertise also extends to system tasks such as engine control and monitoring, which are playing an increasingly important role.

Digitalization offers a wealth of opportunities for the engine business in particular–and MTU is seizing them.

Our engine portfolio at a glance

www.mtu.de/engines

Driven by passion

When it comes to effecting lasting change in aviation, it is MTU's employees who provide the necessary passion and expertise.

MTU's top priority is to provide products and services that are safe, reliable and of the highest quality. Every day, the company strives to make its production even more resource-efficient and eco-friendly. MTU places a great deal of emphasis on sustainability. As a signatory to the UN Global Compact, MTU acknowledges its responsibility to protect the environment, tackle the climate crisis and combat corruption.

MTU's strength resides in its employees. Naturally, the company is also committed to providing them with fair and safe working conditions, equal opportunities, and excellent training and development. MTU creates a working environment that inspires and connects people. This includes a respectful leadership culture that supports employees' commitment, acknowledges outstanding performance, promotes flexible, hybrid and digital working arrangements and actively welcomes feedback.

The goal of conserving resources and protecting the environment applies to all MTU locations worldwide.

Your future at MTU starts here

www.mtu.de/careers

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Consolidated expertise in engines

Full power ahead for innovation: MTU's advanced technologies and first-class products are on board in all thrust and power categories.

State-of-the-art technology for commercial engines

One-third of the world's commercial aircraft takes to the skies with MTU technology on board. MTU's cutting-edge technology can be found in all common aircraft types–in engines for business jets, engines with geared turbofan technology for narrowbody aircraft, and in the world's most powerful propulsion systems. MTU secures its position as a technology leader through its committed, dedicated research and development work.

Innovative and capable: power for the military

Innovative, capable and reliable–with its first-class technologies, products and services, MTU ensures that its military partners can count on the full availability of their fleets at all times. The company brings its skills and expertise to the fore as the leading industrial company for practically all aircraft engines operated by the German Armed Forces. MTU is involved in the New Generation Fighter Engine (NGFE), which will power Europe's New Generation Fighter.

Tailored service for maintenance

In the commercial maintenance sector, MTU Maintenance is the world's leading provider of customized services for aircraft engine.

No two engines are alike, which is why MTU Maintenance offers tailored MRO services covering the entire engine lifecycle.

COMMERCIAL ENGINES

Development / Manufacture	Widebody jet	Narrowbody / regional jet	Business jet
	CF6	JT8D-200	PW300
	GE9X	GTF™ engine family	PW500
	GEnx	PW2000	PW800
	GP7000	V2500	
	PW4000		

Maintenance	Widebody jet	Narrowbody / regional jet	Business jet
	CF6-80C2[1]	CF34-8/-10E	PW300
	GE90-110B/-115B	CFM56-5B/-7B	PW500
	GE9X - TCF MRO (planned)	GTF™ engine family	PW800
	GEnx - TCF MRO	LEAP-1A/-1B	
	GP7000 - LPT MRO	PW2000	**Helicopter**
		V2500-A5[1]	PW200

MILITARY ENGINES

Development / Manufacture	Fighter aircraft	Helicopter	Transport aircraft
	EJ200	MTR390	TP400-D6
	F110	T408	
	F414	T64	
	Larzac 04		
	RB199		

Maintenance[2]	Fighter aircraft	Helicopter	Transport aircraft
		T64	TP400-D6

MRO under the cooperation with the German Armed Forces	Fighter aircraft	Helicopter	
	EJ200	MTR390	
	RB199		

[1] incl. military applications: F138 or V2500-E5 [2] Maintenance is carried out at MTU Aero Engines [3] Cooperation with the German Armed Forces = Maintenance, repair and overhaul under the cooperation with the German Armed Forces. LPT = low-pressure turbine, LPC = low-pressure compressor, HPC = high-pressure compressor, HPT = high-pressure turbine, TCF = turbine center frame, IPC = intermediate-pressure compressor, IPT = intermediate-pressure turbine

Commercial engines

CF6

Widebody jet

This success story is one of the best-selling engines in its class and is used in medium- and long-haul widebody aircraft. MTU manufactures parts of the CF6 turbine and compressor–and has now produced over a million of these components.

APPLICATION:	e.g. Airbus A300, Boeing 747, C-5M Super Galaxy
THRUST CATEGORY:	41,500–69,800 lbf
EIS:	1971
DEVELOPMENT:	—
MANUFACTURE:	Components of LPC/HPC and HPT
MAINTENANCE:	Engine MRO

CFM56 -5B/-7B

Narrowbody / regional jet

The CFM56 engine family comprises five different models, two of which are looked after by MTU Maintenance. CFM International, a 50/50 cooperation between GE and Safran Aircraft Engines, has delivered more than 30,000 engines to date.

APPLICATION:	e.g. Boeing 737, Airbus A320 family
THRUST CATEGORY:	18,500–34,000 lbf
EIS:	1982
DEVELOPMENT:	—
MANUFACTURE:	—
MAINTENANCE:	Engine MRO

CF34-8/ -10E

Narrowbody / regional jet

The CF34-family is the world's most common and best-selling engine familiy in its class. It has logged more than 200 million flight hours since its entry into service. MTU Maintenance Berlin-Brandenburg looks after the CF34-8 and CF34-10E models.

APPLICATION:	e.g. Embraer 170/190, Bombardier CRJ700/900/1000
THRUST CATEGORY:	13,800–20,400 lbf
EIS:	2001
DEVELOPMENT:	—
MANUFACTURE:	—
MAINTENANCE:	Engine MRO

GEnx

Widebody jet

The GEnx-1B version was designed for medium-capacity widebody aircraft, while the GEnx-2B version was developed for the Boeing 747-8. MTU is responsible for the development, manufacture and repair of the turbine center frame.

APPLICATION:	Boeing 787 Dreamliner, Boeing 747-8
THRUST CATEGORY:	66,500–76,100 lbf
EIS:	2012
DEVELOPMENT:	TCF
MANUFACTURE:	TCF
MAINTENANCE:	TCF MRO

GE9X

Widebody jet

The GE9X will be the engine for the new Boeing 777X long-haul aircraft. MTU is responsible for the development, manufacture, assembly and repair of the turbine center frame.

APPLICATION:	Boeing 777X
THRUST CATEGORY:	100,000 lbf
EIS:	planned
DEVELOPMENT:	TCF
MANUFACTURE:	TCF
MAINTENANCE:	TCF MRO (planned)

GE90-110B/-115B

Widebody jet

The GE90 Growth is one of the largest and most powerful engines in the world. MTU Maintenance Hannover is one of the first maintenance providers worldwide licensed to repair and undertake overhaul of the GE90 Growth. And provides comprehensive MRO and ON-SITE^{Plus}.

APPLICATION:	Boeing 777-200LR/-300ER/ Freighter
THRUST CATEGORY:	100,000 lbf
EIS:	2004
DEVELOPMENT:	—
MANUFACTURE:	—
MAINTENANCE:	Engine MRO

GP7000

Widebody jet

The GP7000 is used in the long-haul sector and powers what is currently the world's largest passenger aircraft, the Airbus A380. It is lead developed, produced and distributed by the Engine Alliance. MTU is involved in the development and manufacture of various components.

APPLICATION:	Airbus A380
THRUST CATEGORY:	70,000–81,500 lbf
EIS:	2008
DEVELOPMENT:	LPT, TCF
MANUFACTURE:	LPT, TCF, HPT components
MAINTENANCE:	LPT MRO

GTF™ engine family

Narrowbody / regional jet

The Pratt & Whitney GTF™ engine family is among the most eco-efficient engines on the market today. It has so far saved more than 14 million tons of CO_2. MTU's contributions include the high-speed low-pressure turbine and the forward four stages of the high-pressure compressor.

APPLICATION:	Airbus A320neo, Airbus A220, Embraer E-Jets E2
THRUST CATEGORY:	14,000–33,000 lbf
EIS:	2016
DEVELOPMENT/ MANUFACTURE:	Various stages HPC, LPT, brush seals
MAINTENANCE:	Engine MRO

JT8D-200

Narrowbody / regional jet

The JT8D family is one of the world's best-selling jet engine families and has already logged more than 673 million flight hours since entering service. MTU is involved in the -200 series and is responsible for manufacturing individual parts of various assemblies.

APPLICATION:	Boeing MD-80
THRUST CATEGORY:	18,500–21,700 lbf
EIS:	1980
DEVELOPMENT:	Modifications on LPT
MANUFACTURE:	Range of LPT parts, HPC parts, HPT parts, housings
MAINTENANCE:	—

LEAP-1A/-1B

Narrowbody / regional jet

CFM International's LEAP engine family is used in the Airbus A320neo (LEAP-1A) and the Boeing 737 MAX (LEAP-1B)), among others. Maintenance of both models is performed by MTU Maintenance Zhuhai.

APPLICATION:	Airbus A320neo, Boeing 737 MAX
THRUST CATEGORY:	28,000–35,000 lbf
EIS:	2016
DEVELOPMENT:	—
MANUFACTURE:	—
MAINTENANCE:	Engine MRO

PW200

Helicopter

Pratt & Whitney Canada's PW200 is an engine for light and medium helicopters. Its features include a simple and robust design and digital control.

APPLICATION:	Airbus Helicopters H135/ EC135P1, Bell 427
MAXIMUM POWER:	700 shp
EIS:	1998
DEVELOPMENT:	—
MANUFACTURE:	—
MAINTENANCE:	Engine MRO

PW300

Business jet

The PW300 family offers a wide range of applications for business and regional jets. MTU has been collaborating with Pratt & Whitney Canada on this engine family since 1985. MTU's involvement covers the PW305, PW306 and PW307 models.

APPLICATION:	e.g. Dassault Falcon 7X/8X
THRUST CATEGORY:	4,700–7,000 lbf
EIS:	1992
DEVELOPMENT:	LPT, housing
MANUFACTURE:	LPT, housing
MAINTENANCE:	Engine MRO

PW500

Business Jet

The PW500 engines are two-shaft turbofans. MTU is contributing the development and production of the entire low-pressure turbine, including the exit case and mixer, for the PW530 and PW545 models.

APPLICATION:	e.g. Cessna Citation Bravo/ Excel/XLS
THRUST CATEGORY:	3,000–4,500 lbf
EIS:	1997
DEVELOPMENT:	LPT, exit case, mixer
MANUFACTURE:	LPT, exit case, mixer
MAINTENANCE:	Engine MRO

PW800

Business jet

The PW800 engine features the same proven core technology as the efficient Pratt & Whitney GTF™ engine family. MTU's workshare in this engine encompasses the high-pressure compressor and the low-pressure turbine–its flagship products.

APPLICATION:	Gulfstream G400/G500/G600, Dassault Falcon 6X
THRUST CATEGORY:	10,000–20,000 lbf
EIS:	2018
DEVELOPMENT:	LPT, various stages HPC
MANUFACTURE:	LPT, various stages HPC
MAINTENANCE:	Engine MRO

PW2000

Narrowbody / regional jet

The PW2000 engines are used in commercial and military applications for medium- and long-haul operations. MTU's low-pressure turbine for the PW2000 was the first the company had developed independently for a commercial application.

APPLICATION:	e.g. Boeing 757, Boeing C-17 military transport
THRUST CATEGORY:	37,500–43,000 lbf
EIS:	1984
DEVELOPMENT:	LPT, turbine exit case
MANUFACTURE:	e.g. range of LPT parts, turbine exit case, HPC parts
MAINTENANCE:	Engine MRO

PW4000

Widebody jet

The PW4000 is one of the largest and most powerful engines in the world. MTU is responsible for its seven-stage low-pressure turbine–the largest ever developed by MTU.

APPLICATION:	Boeing 777-200/-200ER/-300
THRUST CATEGORY:	74,000–98,000 lbf
EIS:	1995
DEVELOPMENT:	LPT, turbine exit case
MANUFACTURE:	Range of LPT parts
MAINTENANCE:	—

V2500

Narrowbody / regional jet

MTU develops and manufactures the IAE V2500 in cooperation with Pratt & Whitney and Japanese Aero Engines Corporation. The engine has already logged more than 280 million flight hours and is maintained at various MTU locations.

APPLICATION:	Airbus A319/320/321, Boeing MD-90, C-390 Millennium
THRUST CATEGORY:	22,000–33,000 lbf
EIS:	1989
DEVELOPMENT:	LPT, housing, accessories, externals
MANUFACTURE:	Range of LPT parts, housing
MAINTENANCE:	Engine MRO

Military engines

EJ200

Fighter aircraft

The EJ200, which powers the Eurofighter, is built by EUROJET Turbo GmbH, a consortium with MTU, Rolls-Royce, Avio Aero and ITP Aero as stakeholders. It was for the EJ200 that MTU first engineered compressor stages in blisk design; these are now also used in MTU components for commercial engines.

APPLICATION:	Eurofighter Typhoon
THRUST CATEGORY:	20,000 lbf
EIS:	2003
DEVELOPMENT/ MANUFACTURE:	LPC, HPC, digital engine control and monitoring unit
MAINTENANCE:	Cooperation with the German Armed Forces[3]

F110

Fighter aircraft

The F110-GE-129 powers the Boeing F-15 and Lockheed Martin F-16 fighter aircraft and has established itself as one of the most successful engines for combat aircraft in the history of the U.S. Air Force. MTU manufactures turbine disks for the low-pressure compressor for the F110-GE-129.

APPLICATION:	Lockheed Martin F-16, Boeing F-15
THRUST CATEGORY:	29.000 lbf
EIS:	1986
DEVELOPMENT:	LPC disks stage 2+3
MANUFACTURE:	LPC disks stage 2+3
MAINTENANCE:	—

F414

Fighter aircraft

The F414 powers Boeing's F/A-18 Super Hornet twin-engine fighter and the E/A-18G Growler electronic warfare version, among others. MTU produces various parts of the F414's high- and low-pressure turbine.

APPLICATION:	e.g. Boeing F/A-18 Super Hornet, Boeing EA-18G Growler
THRUST CATEGORY:	22,000 lbf
EIS:	1995
DEVELOPMENT:	—
MANUFACTURE:	HPT+LPT parts
MAINTENANCE:	—

Larzac 04

Fighter aircraft

The Larzac 04 powers the Alpha Jet trainer and light ground-attack aircraft. MTU took over the production of about 25 percent of the parts and the development engineering support. MTU's manufacturing share primarily covers the hot section of the engine–from the combustor inlet to the turbine exit.

APPLICATION:	Dornier-Dassault Alpha Jet
THRUST CATEGORY:	3,000 lbf
EIS:	1979
DEVELOPMENT:	—
MANUFACTURE:	Combustor, HPT, housing
MAINTENANCE:	—

MTR390

Helicopter

This turboshaft engine powers the Tiger support helicopter co-developed by France and Germany. In 2011, an uprated version of the engine (the MTR390-E) was developed that delivers 14 percent more power. MTU develops and manufactures the high-pressure turbine and combustor, among other things.

APPLICATION:	Airbus Helicopters Tiger
MAXIMUM POWER:	1,467 shp (MTR390-E)
EIS:	2013 (MTR390-E)
DEVELOPMENT:	Combustor, HPT, TCF, engine control and monitoring unit (-E)
MANUFACTURE:	Combustor, HPT, TCF, engine control and monitoring unit (-E)
MAINTENANCE:	Cooperation with the German Armed Forces[3]

T64

Helicopter

The T64 powers medium-weight transport helicopters. A total of 247 T64 engines were delivered. MTU manufactured its high-pressure turbine and high-pressure compressor, among other components. Today, MTU's T64 activities focus on maintenance.

APPLICATION:	Sikorsky CH-53G, GS, GA
MAXIMUM POWER:	4,330 shp
EIS:	1972
DEVELOPMENT:	HPC, combustor, HPT, gearbox
MANUFACTURE:	HPC, combustor, HPT, gearbox
MAINTENANCE:	Engine MRO[2]

T408

Helicopter

The T408 is a turboshaft engine that has so far been installed in the U.S. Marine Corps' Sikorsky CH-53K heavy-lift helicopter. MTU contributes the power turbine.

APPLICATION:	Sikorsky CH-53K
MAXIMUM POWER:	7,510 shp
EIS:	2019
DEVELOPMENT:	Power turbine
MANUFACTURE:	Power turbine
MAINTENANCE:	—

TP400-D6

Transport aircraft

The TP400-D6 is the most powerful turboprop in the West. It offers impressive robustness, efficiency and low lifecycle costs in tactical and strategic operations. MTU developed the TP400-D6 with ITP Aero, Rolls-Royce and Safran Aircraft Engines as part of the Europrop International (EPI) joint venture.

APPLICATION:	Airbus A400M
POWER (AT SEA LEVEL):	11,000 shp
EIS:	2013
DEVELOPMENT:	Intermediate-pressure compressor, turbine and shaft
MANUFACTURE:	Intermediate-pressure compressor, turbine and shaft
MAINTENANCE:	Engine MRO[2]

RB199

Fighter aircraft

The RB199 was developed and produced to power the Panavia Tornado multirole fighter jet. This successful engine marked the first time that MTU had contributed independently developed and built components, such as the intermediate-pressure and high-pressure compressor and the intermediate-pressure turbine.

APPLICATION:	Panavia Tornado
THRUST CATEGORY:	16,000–17,000 lbf
EIS:	1979
DEVELOPMENT/ MANUFACTURE:	e.g. IPC, IPT, HPC, digital engine control and monitoring unit
MAINTENANCE:	Cooperation with the German Armed Forces[3]