

MTR390 turboshaft engine

The innovative power



MTR390 – technology features

The MTR390 engine was developed and is currently being produced by MTR GmbH, in an international consortium formed by MTU Aero Engines (Germany), Safran Helicopter Engines (France) and Rolls-Royce (UK). It has been designed to satisfy the challenging requirements set for Airbus Helicopters' Tiger weapon platform for the German and French armies.

The engine's reliability has been proven in more than 180,000 flight hours and various combat deployments in Airbus Helicopters' Tiger since 1991. The production investment phase was launched in 1997, and 294 engines have been delivered between 2002 and 2010.

The service phase started in the first quarter of 2005. Maintenance, repair and overhaul (MRO) capabilities have been set up at AIA Bordeaux for the French customer and at MTU Aero Engines in Munich for the German customer.

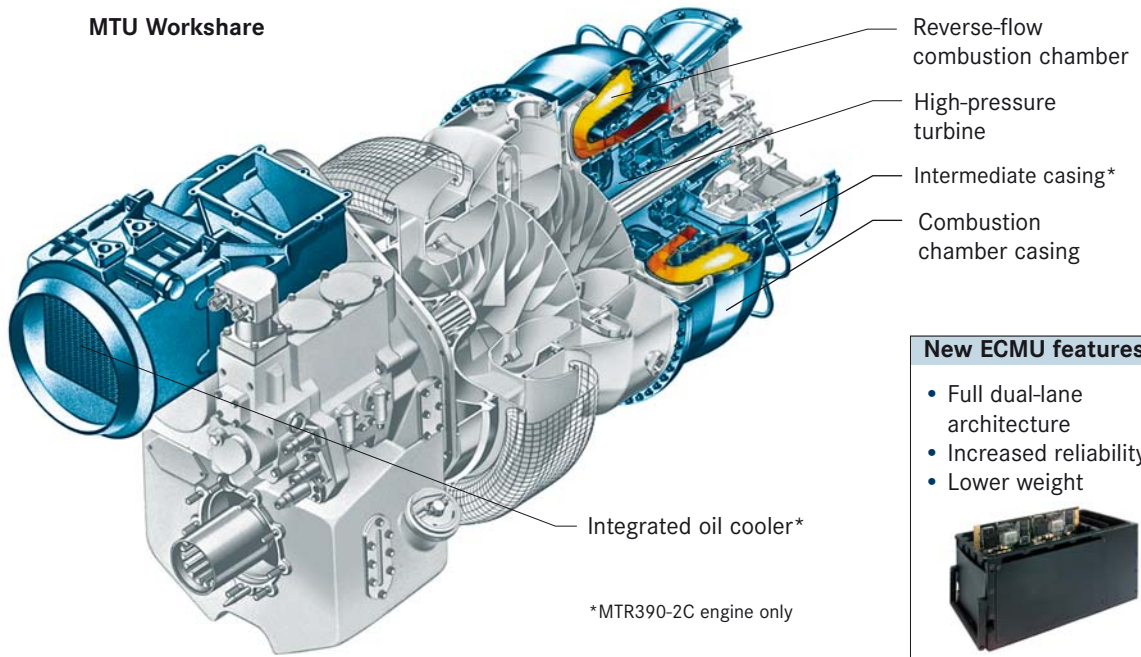
Another 52 engines have been ordered by Australia. The Australian ARH Tigers powered by MTR390 engines started operational service at the end of 2004.

In late 2004, a four-year development program was launched with participation of the Spanish company Industria de Turbo Propulsores (ITP) covering the 14-percent growth version of the MTR390 engine, called MTR390-E. ITP also joined the new engine consortium MTRI as fourth company. In late 2006 MTRI signed an agreement with OCCAR, the European organization for joint armament cooperation, concerning the delivery of MTR390-E (Enhanced) engines. Till today 193 engines have been ordered and production started in 2009 to equip the Tigers of the Spanish and French army's light aircraft groups from 2013 on. Part of the agreement is also the full scale development of a new state-of-the-art Engine Control and Monitoring Unit (ECMU) for the "Enhanced" engine version to meet future operational needs.

Key features:


- Modular design
- Low specific fuel consumption
- Low weight
- Multimission capability
- Solid customer base

MTU Workshare



New ECMU features:

- Full dual-lane architecture
- Increased reliability
- Lower weight



MTR390 engine specifications	MTR390-2C	MTR390-E
ISA, sea level (minimum, new engine, uninstalled)		
Take-off power	958 kW	1,094 kW
Super emergency rating (30 s)	1,160 kW	1,322 kW
Max. continuous power	873 kW	1,000 kW
Spec. fuel consumption at max. continuous power	284 g/kWh	< 299 g/kWh
Spec. fuel consumption at take-off power	280 g/kWh	< 293 g/kWh
Air flow rate at take-off power	3.2 kg/s	3.6 kg/s
Pressure ratio at take-off power	13:1	14:1
Output shaft speed	8,320 1/min	8,320 1/min
Length	1,078 mm	1,078 mm
Width	442 mm	442 mm
Height	682 mm	682 mm
Weight	169 kg	< 179 kg



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