

MTR390

FOR THE TIGER HAD - TIGER UHT - TIGER HAP/ARH



Developed in a partnership between MTU, ITP, Turbomeca and Rolls-Royce, the MTR390 is specially designed to offer excellent performances in very demanding environments. With high growth potential, the engine powers helicopters in the 5 to 7 ton class.



The MTR390

- > Production launched in 2000.
- > Maturity: 80,000 operating hours.
- > 300 engines delivered.

> The MTR390 design

- 30 seconds OEI power cleared for Class 1 performance.
- Enhanced version with 14% power increase for hot and high conditions.
- Extensive use of high tech materials.
- Exceptional power to weight ratio.

> Simple modular concept

- 3 separate modules built to tolerances allowing them to be wholly interchangeable.
- First or second line maintenance performed in field.
- Top-mounted LRUs for easy access and ballistic tolerance.
- Easy handling and low cost of ownership.

> Reduced maintenance costs

- On condition engine with integrated monitoring system.
- Average removal time: less than 30 minutes.
- Full boroscope access with engine installed.
- Monitoring system in ECMU offering Automatic Engine Power Check, limit-exceedance monitoring and life usage monitoring.

> Engine Control Monitoring Unit

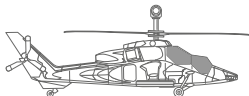
- Designed with an ECMU from start phase.
- Numerous pilot aid functions to reduce pilot workload.
- Engine and torque limits applied by ECMU, so pilots can use power aggressively when needed.
- Turbine overspeed protection.
- Automatic matching of engine torques.
- Automatic fault management and diagnostics.
- Electrical back-up.

MTR390

> Helicopters:



Tiger HAD
powered by two MTR390 E



Tiger UHT
powered by two MTR390 2C



Tiger HAP/ARH
powered by two MTR390 2C

Engine Control Monitoring Unit

Gas generator turbine

- Air-cooled with outstanding turbine temperature.
- Cast single crystal blades.

2-stage power turbine

- Conservative temperature and stress levels.

Accessory gear box

- Reduced external piping for ballistic impact tolerance.

Power output shaft

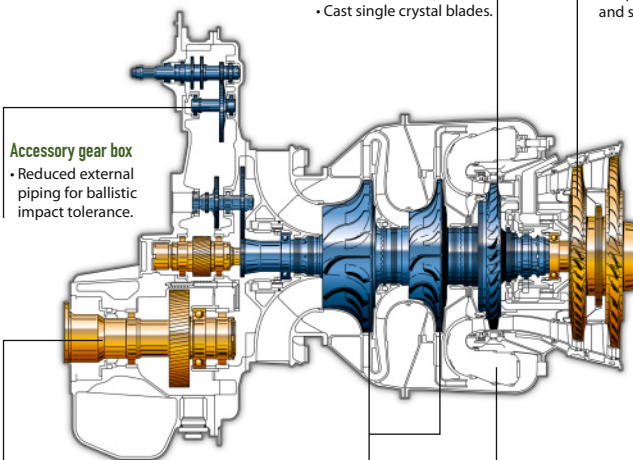
- 8,000 rpm.

Twin centrifugal compressor

- With wide chord blades.
- Capable of surge-free acceleration from flight idle to maximum power in approx. 2 seconds.

Reverse flow combustion chamber

- Simple and robust, for a more compact engine.



Turbomeca is dedicated to the design, production, sale and support of gas turbines for helicopters. Turbomeca offers the world's most comprehensive range of engines, along with strong industrial cooperation associated to close-by customer services structures. Dedicated to 2,350 customers in 155 countries, Turbomeca provides a proximity service thanks to its 16 sites, 26 Maintenance Centers, 24 Repair & Overhaul Centers and 90 Field representatives and Field technicians.



This document is intended for general information purposes only. Turbomeca reserves the right to modify the products and services described in this document without prior notice.

> Power rating (ISA, sea level, kW/shp):

| | MTR390 2C | MTR390 E |
|--|--------------------------|------------------|
| > Application | Tiger HAP/ARH/UHT | Tiger HAD |
| > One Engine Inoperative (OEI) | | |
| OEI 30 seconds | 1,160 / 1,556 | 1,322 / 1,773 |
| OEI 2 minutes | 1,027 / 1,378 | 1,171 / 1,570 |
| OEI 30 minutes | 958 / 1,285 | 1,094 / 1,467 |
| > All Engines Operative (AEO) | | |
| Take-off (5 min.) | 958 / 1,285 | 1,094 / 1,467 |
| Max. continuous | 873 / 1,171 | 1,000 / 1,341 |

> Description:

The MTR390 has a twin-centrifugal compressor driven by a single-stage gas generator turbine. The combustor is reverse flow annular and the two-stage power turbine drives the output shaft through to the front of the engine where drive can be either direct or through a reduction gearbox. Engine control is by an ECMU system.

TURBOMECA

64511 Bordes CEDEX - France
Tel. +33 (0)5 59 12 50 00 - Fax +33 (0)5 59 53 15 12
www.turbomeca.com

