

# RTM322

EH 101 - NH90 - WAH64 APACHE



The RTM322 is a 100% Turbomeca engine powering medium-heavy helicopters. It is designed and certified to equip both civil and military platforms.

The RTM322 currently powers the three-engine AgustaWestland EH101 Merlin military helicopter, as well as two twin-engine military helicopters: the NH 90 and the UK Apache.

The RTM322 engine has contributed to aviation history in achieving a speed record of 255 knots during level flight, on the Eurocopter twin-engine X3 hybrid helicopter.

The engine offers a competitive retrofit solution for same-class aircraft thanks to its simple and compact architecture.

Its state-of-the-art technologies give to the RTM322 the ability to operate in the harshest environments, and have made it a leader on the European rotorcraft defence market.



## The RTM322 family

- > Entered in service in 1995.
- > Maturity: **1,000,000** operating hours.
- > **1,000** engines delivered.

## Generating Power and Performance

### > The RTM322 experience

- State-of-the-art technology designed to meet requirements of very demanding environments, with full marinisation.
- In all applications the RTM322 gives more power than competitors.
- The RTM322 01/9A version offers up to 15% power increase in ISA +35°C, sea level.

### > Missions

- Military maritime operations, medical evacuation, CSAR, mine sweeping, attack, tactical troop transport, and more.

### > Simple modular design

- 6 separate modules built to tolerances which allow them to be wholly replaceable.
- First and second line maintenance performed in field, only one special tool.
- Top mounted LRUs for easy access and ballistic tolerance.
- Full boroscope access on installed engine.

### > Dual Channel FADEC

- Automatic pre-start built-in-test and fast automatically controlled engine start.
- Automatic matching of engine torques, together with rotor governing at constant speed.
- Automatic fault management and diagnostics.
- Power response to match fastest power demands.
- Engine and torque limits applied by FADEC, so pilots can use power aggressively when needed.
- Fail-safe turbine overspeed protection.

# RTM322

## > Helicopters:



**EH 101 Merlin MK1/MK3**  
powered by three RTM322 01-8/02-8



**NH90**  
powered by two RTM322 01-9/01-9A



**WAH 64 - Apache**  
powered by two RTM322 01-12

### Dual channel FADEC

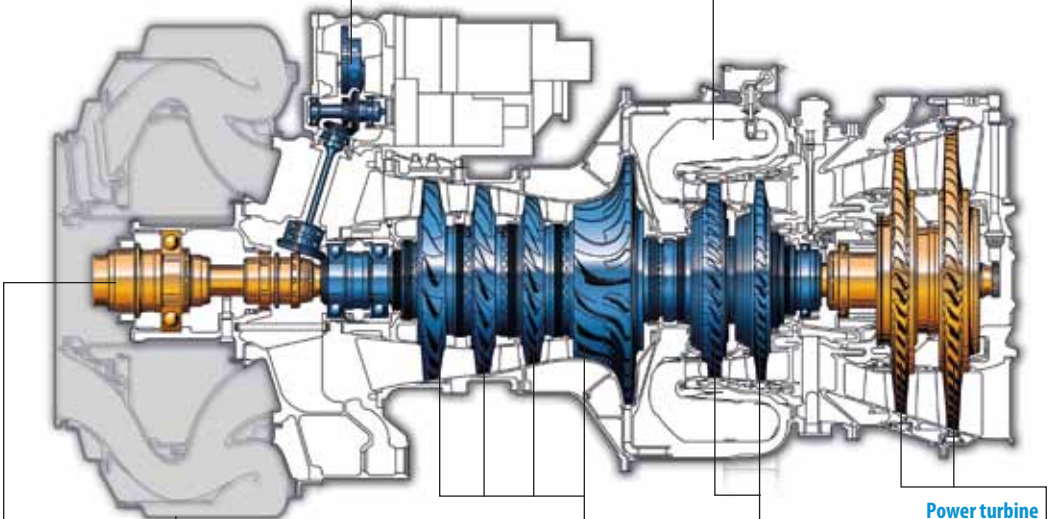
- More than 30 years of experience.

### Accessory gear box

- Reduced number of external piping for ballistic impact tolerance.

### Reverse flow combustion chamber

- Simple and robust, for a more compact engine.



### Power output shaft

- 20,900 rpm.

- On rotorcraft not fitted with sand protection inlet, the engine is offered with an optional inlet particle separator (IPS) protecting the engine from sand ingestion.
- Internally: titanium in all compressor stages for optimal resistance to corrosion erosion and FOD.
- Externally: engine casing and dressings in anodised aluminum and stainless steel corrosion-resistant parent materials.

### Compressor

- With wide chord blades
- Capable of surge-free acceleration from flight idle to maximum power in less than 3 seconds.

### Power turbine

- Conservative temperature and stress levels, which offers substantial, low risk power growth.

### Gas generator turbine

- With cast single crystal blades and outstanding turbine temperature margins and low exit temperature offering substantial low risk power growth potential.

	WAH-64 Apache (UK Apache)	EH101	NH90	NH90
<b>RTM322 kW/Shp</b>	<b>MK 120 (or 01/12)</b>	<b>01/8 &amp; 02/8</b>	<b>01/9</b>	<b>01/9A</b>
OEI 30 seconds	/	/	2,206/2,958	2,220/2,977
OEI 2 minutes	1,673/2,242	1,791/2,400	1,962/2,631	2,069/2,775
OEI continuous	/	/	1,811/2,429	/
OEI 30 minutes	/	/	/	2,019/2,708
Take-off	1,568/2,101	1,694/2,270	1,799/2,412	1,897/2,554
60 minutes	(60min)1,491/1,998	1,604/2,150	1,799/2,412	1,897/2,554
Max. continuous	1,375/1,842	1,493/2,000	1,664/2,232	1,805/2,421

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 **2,500** customers in **155** countries, Turbomeca provides a proximity service thanks to its **16** sites (**and one subsidiary**), **30** Maintenance Centers, **18** Repair & Overhaul Centers and **90** Field representatives and Field technicians.



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