

RB199

Power for the Tornado

The Turbounion RB199 is a collaborative engine between Rolls-Royce, MTU and Avio designed to power all variants of the Tornado multi-role combat aircraft. The RB199 was the first-ever three shaft military turbofan and incorporates an afterburner and integral thrust reverser. Tornado aircraft first entered service with the RB199 in 1980 and will remain fully operational until at least 2020.

The RB199 powers Tornados operated by the air forces of the United Kingdom, Germany, Italy and Saudi Arabia and the German Navy. Tornados of the United Kingdom's Royal Air Force powered by both Mk103 and Mk104 variants of the RB199 served in support of Operation Iraqi Freedom and proved the reliability and ruggedness of the RB199 engine in extremely harsh environmental conditions.

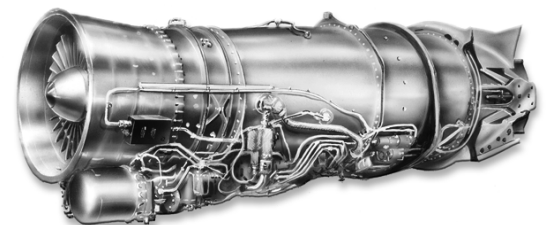
The versatile RB199 meets a wide range of operational requirements such as strike, reconnaissance, maritime attack and air defence. Its compact design gives high thrust-to-weight and thrust-to-volume ratios while maintaining good handling characteristics and low fuel consumption. The introduction of the new Engine Health and Usage Monitoring System (EHUMS) enables improved engine diagnostics and on-condition maintenance to be undertaken reducing life cycle costs.

Continuous development of the RB199 has taken place since it entered service and various upgrades are available to improve reliability and performance and reduce the cost of ownership.

- Combat proven reliability and ruggedness
- Thrust range from 9,100lbf non-reheated to 16,400lbf with reheat
- Over 2,500 engines produced with over 5 million flying hours accumulated to date
- Ongoing operations until at least 2020

Engine Specification

Engine	RB199-104
Thrust (lbf)	16,400 (reheated)
Bypass ratio	1.1
Pressure ratio	23.5
Length (in)	142
Diameter (in)	28.3
Basic weight (lb)	2,151
Compressor	3LP, 3IP, 6HP
Turbine	1HP, 1IP, 2LP
Applications	Panavia Tornado



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