

F124 TURBOFAN ENGINE

High Performance for the Advanced Trainer Aircraft
and the T-100 Training System



High performance, reliability, and readiness

The Honeywell designed F124 turbofan engine is an integral part of the T-100 aircraft. Honeywell and Leonardo provide the best solution for the pilots of the future.

The F124 is a high performance, low bypass-ratio turbofan engine that meets the most rigorous requirements of advanced trainer aircraft. The F124 engine was designed in accordance with U.S. Military specifications and standards, including the U.S. Air Force's Engine Structural Integrity Program (ENSIP), MIL-STD 1783. The F124 is flying in T-100 equivalent production aircraft today.

Maximum Performance

The engine has the highest thrust-to-weight ratio in its class. Incorporating a three-stage fan and a five-stage axial centrifugal high-pressure compressor, the unique design of the F124 engine maximizes engine performance while providing exceptional inlet distortion tolerance and stall resistance.

With only a single stage of variable geometry at the compressor inlet, the F124 design reduces complexity by utilizing axial turbines employing highwork single-stage designs that drive the fan and compressor rotors on concentric co-rotating shafts. Low HP turbine temperatures ensure long life and inherent growth capability for demanding military applications.

Advanced Control

Designed from inception to operate with a Full Authority Digital Electronic Control (FADEC), the engine includes all controls and sensors required for fully automatic operation and unrestricted throttle movement throughout the flight envelope. Pilot workload is significantly reduced through features such as automatic start and ignition sequencing, continuous temperature and speed limiting, autorelight,

and transient fuel scheduling to avoid engine surge. The dual FADECs (based on Honeywell's latest Aerospace Control architecture) perform continuous diagnostics through built-in test and fault detection/accommodation logic, are mounted to the engine in a durable electronic housing. Transfers to backup modes of operation are performed automatically with no pilot action required, and with no degradation in engine performance.

Ease of Maintenance

The F124 includes several features designed to ease maintenance. An integrated Engine Monitoring System (EMS) continuously monitors engine health and tracks life usage in order to alert the operator when a maintenance action is required. This on-condition maintenance philosophy helps to significantly reduce maintenance and down times. The EMS also records important data to be used for performance trend monitoring. EMS health monitoring and diagnostic information is integrated into the technical publications to ensure rapid post flight engine analysis and fault isolation. Engine life records are also automatically captured and transferred to engine maintenance records.

Other design concepts such as the elimination of safety wire, the elimination of shimming requirements, easy access to line replaceable units, excellent boroscope access, and color coding of wiring harnesses have been incorporated to simplify maintenance actions.

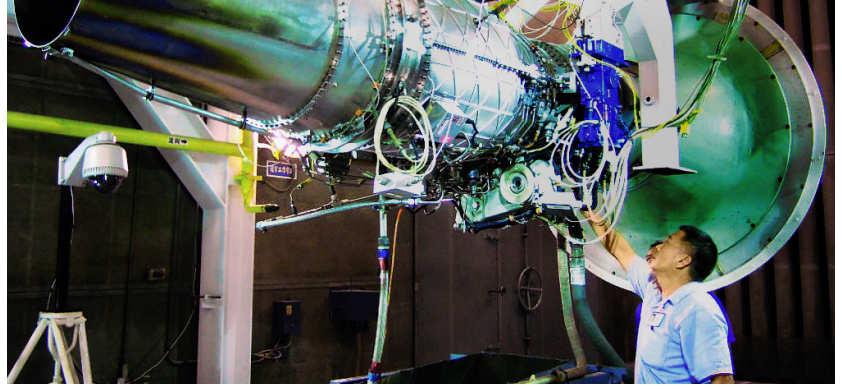
Features

- Highest thrust to weight ratio of its class
- High reliability
- High durability
- Modular engine design
- Dual Channel FADEC
- Non-afterburning design
- Single stage turbines (HP/LP) and centrifugal compressor

Benefits

- Higher payload available to aircraft
- High platform availability
- Lower maintenance costs
- Ease of maintenance
- Reduced pilot workload
- Significant fuel savings and reduced maintenance costs
- Reduced part counts and LCC benefits





The F124 engine is offered with a comprehensive and proven Integrated Logistics Support program. Packages can be tailored to meet the specific requirements of the operator and include Ground Support Equipment (GSE), Logistics Support Analysis (LSA), provisioning and spares management, maintenance training, and technical publications.

Modular Design

The F124 engine is designed to be truly modular. All modulars are individually serialized and can be installed or removed from the engine, or interchanged with modules from another engine, without requiring special re-testing, balancing, or shimming. This feature of the engine provides significant maintenance and logistics benefits to the operator.

Fuel Savings

The F124 uses a "dry" exhaust configuration, avoiding the use of a costly and complex afterburning system, resulting in significant reductions in fuel consumption and improvements in overall system reliability and availability.

Twin-Engine Safety

The T-100 uses two F124 engines to provide additional safety margin for the USAF training instructors and student pilots, while delivering the thrust needed to meet the demanding training syllabus performance requirements.

Customer Focus

The F124/F125 engine family has a proven track record of meeting critical customer requirements for both OEMs and operators. In addition to powering the Leonardo M346, the F124/F125 engine family is in service with the Taiwan Airforce (ROCAF) on the Indigenous Defense Fighter (IDF), the Czech Airforce on the L-159 Advanced Light Combat Aircraft, and powered the Boeing X-45A Unmanned Combat Air Vehicle (UCAV). More than 550 engines in the F124/F125 family have been produced. These engines have accumulated over 1 million operating hours.

The F124 is ready to take on the demanding U.S. Air Force requirements for training of the next generation of pilots.

T-100 Training System

The F124 is a key enabler for the U.S. Air Force's requirement for a new generation trainer aircraft. Training is more than the aircraft, and it's subsystems – "we don't just build planes, we build pilots" is a philosophy that has flowed down to all of Leonardo's partners on the T-100.

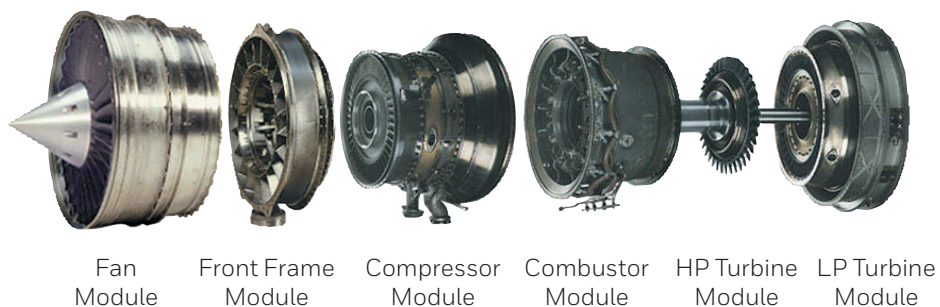
Advanced Technologies

Honeywell utilizes the newest processes, materials and concepts to design its propulsion system high reliability solutions with improved performance, and cost effective operation.

Global Network

Worldwide resources that span the Americas, Europe, Middle East, Africa, Asia and the South Pacific, providing 24/7/365 support and a full range of maintenance, repair and overhaul, and customer service options.

Modular Engine Components



Key Performance Data

Engine Performance, Sea Level Static, Standard Day, Nominal Engine, Max Power

F124	Maximum Thrust, lb.....	6280
	TSFC, lb/hr/lb.....	0.78
	Bypass Ratio.....	0.49
	Corrected Airflow, lb/sec.....	92.6

Honeywell Aerospace

Honeywell is a leading global provider of integrated avionics, engines, wheels and brakes systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations.

For more information on Honeywell Aerospace, visit us online at aerospace.honeywell.com.

Honeywell Aerospace

1944 East Sky Harbor Circle
Phoenix, AZ 85034
aerospace.honeywell.com

N61-1632-000-001 | 05/17
© 2017 Honeywell International Inc.

Honeywell