

**Honeywell**



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F125IN Turbofan Engine

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Transforming the operational  
capabilities of jaguar

**INDIAN AIR FORCE JAGUAR  
RE-ENGINEING PROPOSAL**

## Re-engining of the Indian Air Force (IAF) Jaguar with Honeywell's F125IN Turbofan

Honeywell has proposed its proven F125IN turbofan engine as a replacement for the existing engines on the IAF Jaguar. The F125IN offers a significant increase in engine and aircraft performance, and will transform the Jaguar's mission capabilities, while greatly reducing maintenance costs.

### Transforms Jaguar's mission capabilities and performance

- Enhanced mission capabilities above 30,000ft
- Full hot-day capability, with over 25% more thrust
  - Reduces take-off distance by over 30 percent
  - Significant improvement in Jaguar's high/hot take-off capability
  - Faster climbs, improved single-engine safety
- Improved safety and lower pilot workload.

### Lowest cost approach to enhancing the Jaguar's capabilities

By matching a proven airframe with a proven engine, the IAF will have many of the capabilities of a new aircraft, at a fraction of the cost. At the same time, re-use of the majority of the infrastructure, training and experience associated with the current Jaguar fleet, will allow much more rapid entry into service than for a new aircraft. In addition, the F125IN's proven reliability, and durability will significantly reduce life cycle costs.

### Tested, proven and reliable engine

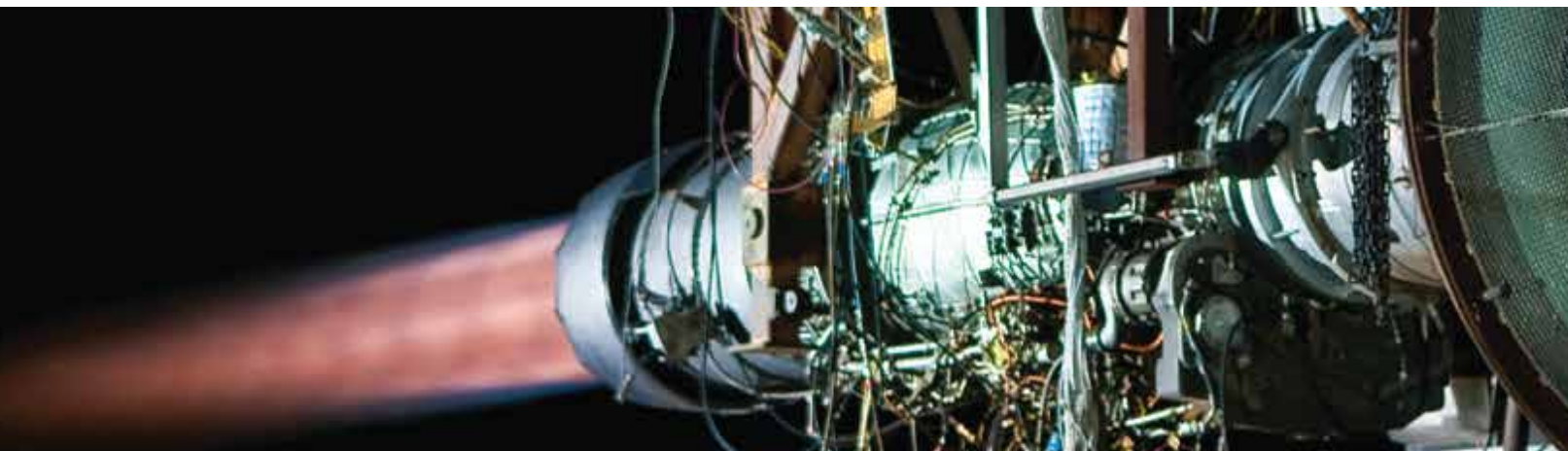
The F125IN is based upon the off-the-shelf, in-service F125 engine, with minimal external changes for the Jaguar installation. The F125IN has already been demonstrated in its production configuration at Honeywell's Phoenix test facilities and benefits from:

- Reliable: Increases time between overhaul to 2,000 hours, from current level of 500 hours
- Off-the-shelf: Existing engine performance meets/exceeds requirements
- Future-proof: F125IN has 30% of untapped growth potential remaining.

### Made in India

Honeywell's proposal maximizes the degree to which the program is 'made in India':

- Greater than 25% of the engine's components will be manufactured in India
- All airframe modifications, flight testing and certification will be conducted in India
- Production upgrades will be carried out in India
- An engine maintenance depot will be established in India
- IAF will be able to conduct engine support at operating bases.



## Transforming the operational capabilities and performance of IAF Jaguars, at a fraction of the cost of a new aircraft



### Honeywell has demonstrated its commitment to the re-engining of IAF Jaguars

Although the Jaguar re-engining program is only at the proposal stage, Honeywell has made significant investment in support of the program over the past 5+ years, to ensure that it can proceed rapidly and effectively should the IAF decide to proceed:

- Demonstration of an F125 engine at HAL in Bengaluru
- Purchase of two Jaguar airframes for use as integration facilities at Honeywell
- Completion of detailed aircraft-engine integration studies
- Demonstration of the performance of the production standard F125IN.

## F125IN – Modular, Reliable and High Performance Turbofan Engine

The F125IN is a high performance, low bypass-ratio turbofan engine that meets the most rigorous requirements of modern light combat and advanced trainer aircraft.

### Maximum Performance

The engine has the highest thrust-to-weight ratio in the 9500 lbf thrust class and allows unlimited operation at all power ratings. Incorporating a three-stage fan and five-stage axi-centrifugal high-pressure compressor, the unique design of the F125IN engine maximizes engine performance, while providing exceptional inlet distortion tolerance and stall resistance.

### 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. Pilot workload is, therefore, significantly reduced:

- Automatic start and ignition
- Continuous temperature and speed limiting
- Automatic control of the afterburner, including continuous thrust modulation from max dry thru max reheat
- Automatic relight after engine or afterburner flameout
- Transient fuel and nozzle scheduling to avoid engine surge.

The dual FADECs perform continuous diagnostics through built-in test (BIT) and fault-detection / accommodation logic.



F125IN fit-check installation  
in one of Honeywell's Jaguars

## Ease of Maintenance

The F125IN engine is a truly modular engine. All modules can be installed or removed from the engine, or interchanged with modules from another engine, without requiring special re-testing, balancing, or shimming.

An integrated Engine Monitoring System 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.

## 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

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