

CFM56-5A FADEC 1

Recommended First Overhaul Actions

Reasons to overhaul FADEC 1

- In service since 1988
- Continued on wing reliability is at risk after 30,000 flight hours
- Minimizes unscheduled removals
- Reduces chances of operational event problems
- Fleet reliability declining before overhaul was introduced in 2002

Benefits of first overhaul

- Refreshes product and provides three-year or 10,000-hour extended warranty on covered items
- Incorporates lessons learned from investigations and repair history
- Replaces at risk components and parts
- Provides expanded test coverage (sub-assembly test), complete tear down, and detailed inspections

Scope

- Details in FADEC International Service Letter SL-FI-0013, S/B 73-0220
- Recommended soft time interval of 20,000 hours or 9,400 cycles
- Key reliability service bulletins included in base overhaul:
 - Digital interface unit reset modification
 - Chassis front/rear cover seal improvement
 - Boost power supply C501 capacitor pack inspected and replaced if needed
 - Inspection of pressure sub-system J16 and J17 connector screws
 - Software updates
- Fixed cost includes test, evaluation, and repairs:
 - Includes component replacement and repairs
 - Excludes major power supply unit (PSU) repair, pressure transducers, mounting hardware, covers, chassis or subassembly replacement

Additional highly recommended overhaul options (not included in the cost of baseline overhaul, but special packages are available)

- BLK4 and BLK6 boost PSU replaced with new Flybuck PSU (P/N 112E9379G1) - S/B 73-0196



A FADEC overhaul performed by FADEC International will extend the life of your unit.

FADEC International designs, develops, and manufactures highly reliable full authority digital engine controls (FADEC) and supports them to ensure optimal performance throughout the technology's life cycle. Our robust overhaul process has been developed based upon extensive knowledge of severe engine environments, design attributes, and repair history to increase the reliability of aging FADEC.

Why overhaul?

- Extends the serviceable lifetime
- Lowers maintenance costs and fleet disruptions
- Minimizes unscheduled removals and future major failures
- Updates hardware and software for enhanced system performance, efficiency, and reliability
- Preemptive repairs lessen expensive in-service failures

What have we learned?

Through regularly conducted reliability reviews, we focus on gathering and analyzing field performance data to understand how the harsh engine environment and cycling affect operation. This process allows us to identify any potential aging or reliability issues that need to be addressed during an electronics overhaul.

- Expected failure times and rates are calculated using original configuration data, shop history repair information, and fleet hour data
- Analyzing gathered data using Six Sigma tools allows us to identify strategies to extend product life cycle

Knowledge gained from critical investigations of repetitive failures, system verification request, and age related deterioration allows us to identify:

- Failure root causes (cracked solder joints, sub-assemblies) can be determined by correlating data from systems with common failures
- Sub-assembly circuit verification and inspection have uncovered issues undetectable at the system level
- Passive front-panel circuitry verification of the shielding/grounding systems allow us to identify any missing resistive paths or paths that should not be present

We develop a tailored overhaul scope of work by collecting, analyzing, and investigating data to develop value added reliability and life extension solutions. The scope of work is reviewed, approved, and recommended by the original engine manufacturer type certificate holder.

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