

ES1001 501 combustion liner upgrade

Extend operational life by up to 50%



Engineered solution purpose

By upgrading from either LE2 or LE3 combustion liner to the new LE3.2 standard of combustion liner, peak metal temperatures in the turbine can be reduced. Additionally, liner barrel modifications have reduced liner wall temperatures. These improvements can extend the working life of the liner and potentially reduce overall engine maintenance costs and unit down time.

Applicability

This engineered solution applies to all 501 series engines not employing Dry Low Emissions combustion technology.

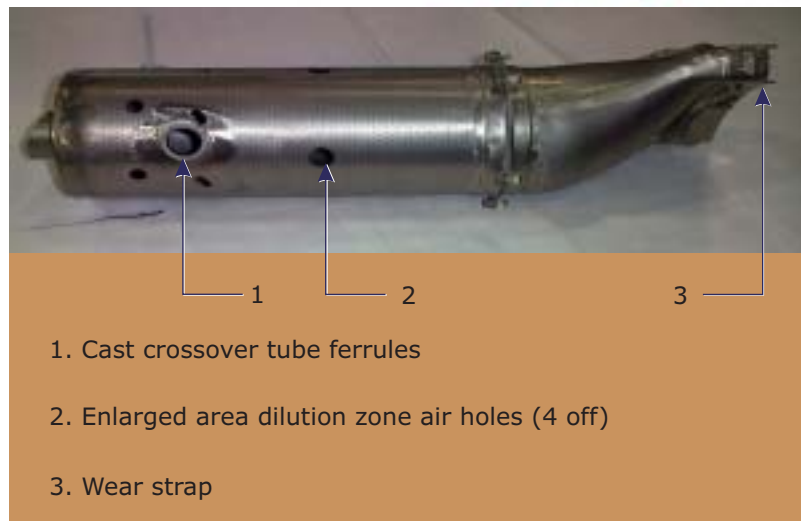
Technical description

LE2 to LE3.2

The LE3.2 combustion liner utilises far superior effusion cooling technology rather than the convection based cooling arrangement of its predecessor.

LE3 to LE3.2

The LE 3.2 combustion liner further refines effusion cooling technology and improves the durability of the crossover tube ferrule. The LE 3.2 also provides an improved flame profile.



1. Cast crossover tube ferrules
2. Enlarged area dilution zone air holes (4 off)
3. Wear strap

Benefits

The re-designed LE3.2 liner has demonstrated a reduction in peak metal temperatures in the turbine, when compared to earlier standards. Additionally, the new liner's ability to operate cooler wall temperatures can potentially extend the service life of the liner by as much as 30% to 50%. An improved flame profile may also improve turbine vane life.

Experience

The LE3.2 combustion liner is embodied in the current 501 build standard.

Scope of work

- Replace LE3.2 combustion liners
- Replace nozzles (if required)

Bill of materials

- LE3.2 combustion liners
- Nozzles (if required)

Undertaken

At site

Bundling opportunities

- 501 pilotless nozzle conversion [ES1006]
- 501 fuel manifold upgrade [ES1005]

