

ES1005 501 fuel manifold upgrade

Extend combustion liner life by reducing second stage turbine metal temperatures



Engineered solution purpose

This engineered solution extends the in-service life of 501 combustion liners and first stage vane assemblies. The engine start sequence is also improved by utilisation of the new manifold design.

Applicability

All gas fuel 501 engines not using Dry Low Emissions combustion technology

Technical description

The new manifold is circular in design as opposed to the "L" section existing manifold. The new configuration improves fuel distribution and pressure balance whilst maintaining uniform combustion.

Benefits

The peak metal temperature experienced by the second stage turbine is reduced by 2.5% to 3%. Improvements in the combustion flame profile are also achieved.



Experience

The upgraded 501 fuel manifold has accumulated over a million hours operational experience.

Scope of work

Remove original manifold
Install new brackets, manifold, and jumper tubes plus manifold hosing between the fuel metering valve and the manifold.

Bill of materials

Circular manifold
Brackets
Clamps and hoses
Jumper tubes

Undertaken

At site

Bundling opportunities

501 combustion liner upgrade (ES1001)

New nozzle tips (to make nozzle compatible with LE3.2 liner)