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V2500-A5 SERIES PROPULSION SYSTEM SERVICE BULLETIN

Printed in Great Britain

This document transmits the Initial Issue of Service Bulletin V2500-ENG-72-0576 and the Initial Issue of the Supplement

Service Bulletin Initial Issue

| Remove | Incorporate | Reason for change |
|--------|--------------------------------------|-------------------|
| | Pages 1 to 9 of the Service Bulletin | Initial Issue. |
| | Pages 1 to 2 of the Appendix | Initial Issue. |
| | Pages 1 to 2 of the Supplement | Initial Issue. |

V2500-ENG-72-0576

Transmittal - Page 1 of 1

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise Customer Data Services, Rolls-Royce plc, Derby, England
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ENGINE – TURBINE NOZZLE – PROVIDE A SELECTONE NEW HIGH PRESSURE TURBINE (HPT) 1ST
STAGE VANE ASSEMBLY –

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5, V2527M-A5 (SelectOne Retrofit Standard) Engines with Serial No. V15001.

(b) V2522-A5, V2524-A5, V2527M-A5 (SelectOne Production Standard) Engines with Serial No. V15002.

(2) Airbus A320

(a) V2524-A5, V2527-A5 and V2527E-A5 (SelectOne Retrofit Standard) Engines with Serial No. V15001.

(b) V2524-A5, V2527-A5 and V2527E-A5 (SelectOne Production Standard) Engines with Serial No. V15002.

(3) Airbus A321

(a) V2530-A5, V2533-A5 (SelectOne Retrofit Standard) Engines with Serial No. V15001.

(b) V2530-A5, V2533-A5 (SelectOne Production Standard) Engines with Serial No. V15002.

B. Concurrent Requirements

There are no Concurrent Requirements.

C. Reason

(1) Condition:

HPT 1st Vane outer platform cracking adjacent to the feather seal slots.

(2) Background:

The SelectOne endurance engine V12723 experienced some HPT 1st Vane outer platform cracking adjacent to the feather seal slots.

(3) Objective:

Redesign the SelectOne HPT 1st Vane by changing the feather seal and slots clearances similar to the A5 1st Vane Design. Issue a Service Bulletin to retrofit V15001 and V15002 to replace 1st Vanes with new design.

(4) Substantiation:

The design change is based on similarity to the current A5 1st Vane design which has successful field experience.

Additional feather seal slot depth and width will provide increased clearances similar to the A5 1st Vane design which has successful field experience.

Secondary flow, thermal, durability and structural modeling has analytically substantiated the similarity to the A5 1st Vane. The analytical models have been data matched to development engines X804-26 and X804-27 thermal and secondary flow data. Performance impact relative to Engines V15001 and V15002:

SelectOne A5

+0.07% LPC Operating Line

+0.05 SLTO EGT °F

The increase in secondary airflow leakage impact on performance and operability are negligible (<+1 degree in ET and <+0.1% LPC opline at take-off conditions) and is acceptable for SelectOne entry into service.

(5) Effects of Bulletin on:

(a) Removal/Installation:

Not affected.

(b) Disassembly/Assembly:

Not affected.

(c) Cleaning:

Not affected.

(d) Inspection/Check:

No affected.

(e) Repair:

Not affected.

(f) Testing:

None.

(6) Supplemental Information

Not affected.

D. Description

Provide a new HPT 1st Vane to minimize outer platform cracks adjacent to the feather seal.

E. Compliance

Category 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

F. Approval Data

The part number changes and/or part modifications specified in the Accomplishment Instructions and Material Information sections of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine models given.

G. Manpower

(1) In Service

Not Applicable.

(2) At Overhaul

Not applicable.

H. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No Effect.

(3) Datum

Engine Front Mount Centerline (Power Plant Station (PPS) 100).

I. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

J. Software Accomplishment Summary

Not Applicable.

K. References

- (1) IAE V2500 Service Bulletin V2500-ENG-72-0147 (Engine - HP Turbine Rotor And Stator Assembly - Provide A New Stage 1 HPT Support Assembly And A New Stage 1 HPT Vane Assembly).
- (2) IAE V2500 Service Bulletin V2500-ENG-72-0291 (Engine - Stage 1 HPT Vane Cluster Assembly - Provide A Fully Cast Stage 1 Vane Assembly).
- (3) IAE V2500 Service Bulletin V2500-ENG-72-0562 (Engine - High Pressure Turbine (HPT) - V2500 SelectOne Production And Retrofit - HPT Upgrade).
- (4) IAE V2500 Illustrated Parts Catalogues (S-V2500-2SA, S-V2500-2SB, S-V2500-5SA, S-V2500-5SB, S-V2500-6SA, S-V2500-6SB, S-V2500-7SA, S-V2500-7SB), Chapter/Section 72-44-10.
- (5) IAE V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-44-00.
- (6) IAE Standard Practices/Procedures Manual (SPP-V2500-1IA), Chapter/Section 70-09-00.
- (7) Internal Reference No. - 07VA077.
- (8) ATA Locator - 72-44-00

L. Other Publications Affected

- (1) IAE V2500 Engine Illustrated Parts Catalogues (S-V2500-2SA, S-V2500-2SB, S-V2500-5SA, S-V2500-5SB, S-V2500-6SA, S-V2500-6SB, S-V2500-7SA, S-V2500-7SB), Chapter/Section 72-44-10.
- (2) IAE V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-44-00, Cleaning, Inspection and Repair, to add the new part.

M. Interchangeability of Parts

Old and new parts are interchangeable in complete sets.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

Supplement (Yes)

Added Data (Yes)

2. Material Information

A. Material – Price and Availability

(1) Modification kit is not required.

For Price and availability of spares refer to the supplement of this Service Bulletin.

B. Industry Support Program

Not Applicable.

C. The material data that follows is for each engine.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5
SelectOne Production Standard Engines:

| FIG- ITEM NUMBER | NEW PART NUMBER | QTY | PART TITLE | MAT | OLD PN | INSTR – DISP |
|---------------------|--------------------|-----|------------|-----|--------|--------------|
|---------------------|--------------------|-----|------------|-----|--------|--------------|

72-44-10

| | | | | | | |
|--------|--------|---|--------------------------------|---|--------|--------------|
| 01-240 | 2A4271 | 1 | 1st Stage HPT Vane Assembly | - | 2A4081 | (2)(B)(N)(I) |
|--------|--------|---|--------------------------------|---|--------|--------------|

D. Instructions/Disposition Code Statements:

Parts Modification Conditions

(2) The new part is an replacement part only, and cannot be obtained by modification of the old part.

Spare Parts Availability

(B) The new part will be available approximately September 2008.
(N) The old part is not available.

Cleaning, Inspection and Repair Information

(I) The cleaning, inspection and repair requirements are the same for the old and new part. The applicable engine manuals will be revised.

E. Tooling – Price and Availability

Special tools are not required to accomplish this Service Bulletin.

F. Reidentified Parts

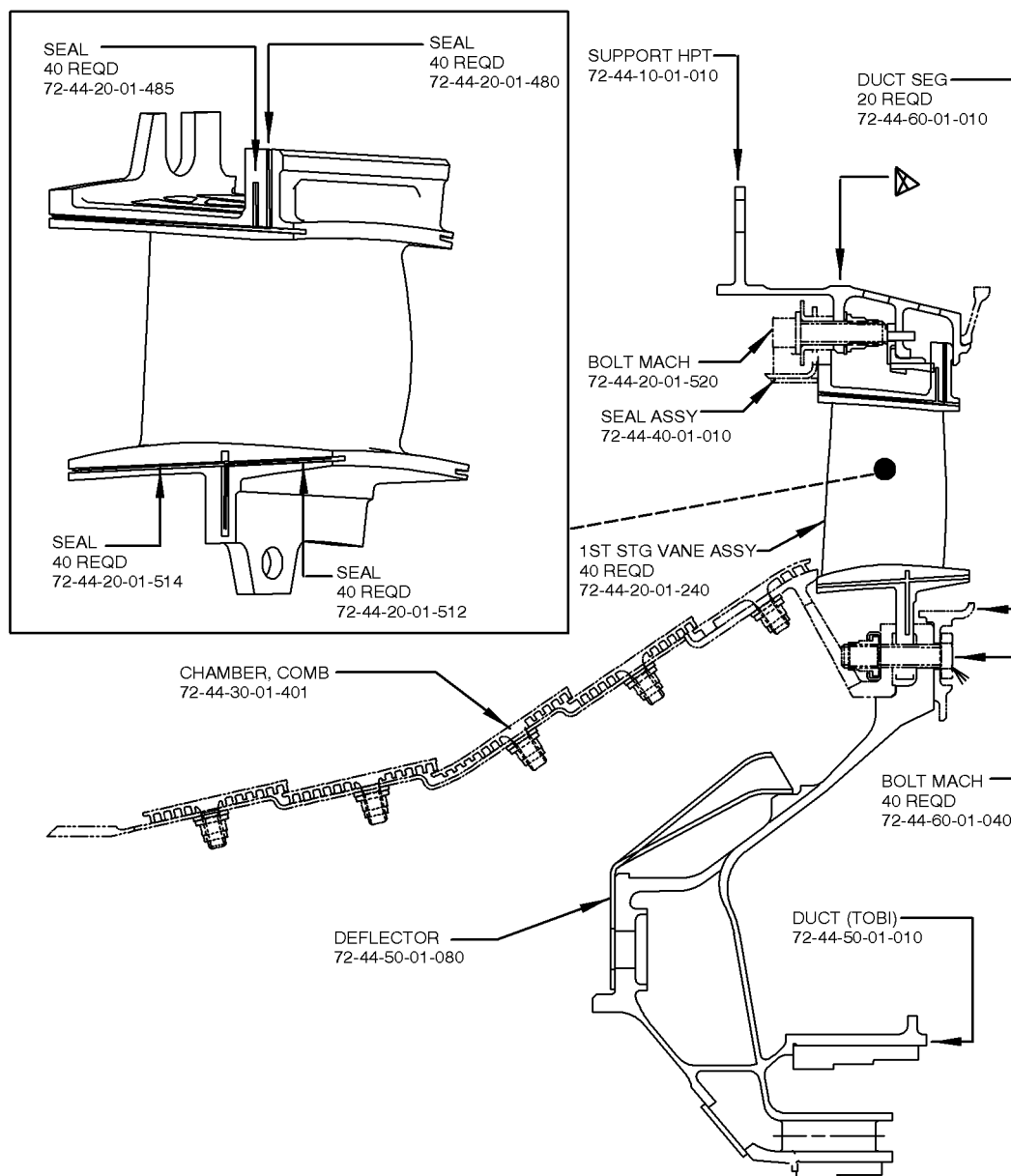
Not applicable.

G. Other Material Information Data

Not Applicable.

3. Accomplishment Instructions

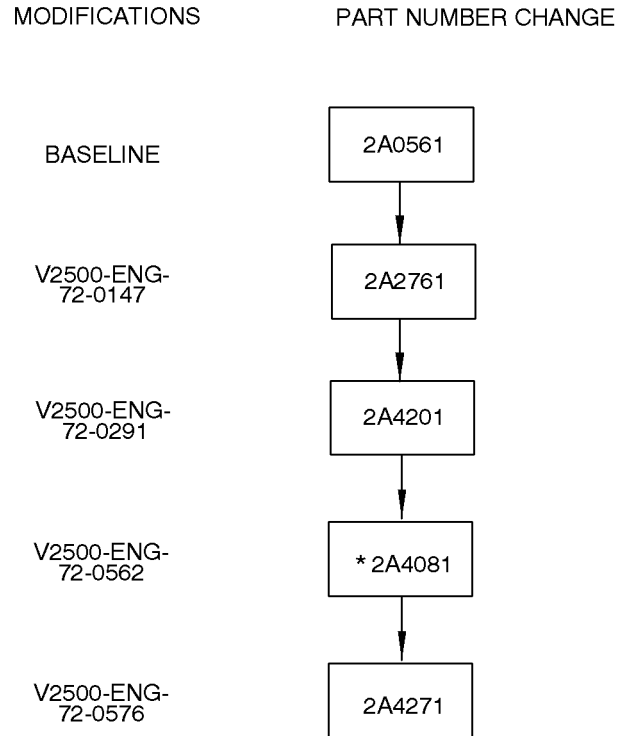
A. None.



LOCATION OF STAGE 1 HIGH PRESSURE TURBINE VANE ASSEMBLY
FIGURE 1

APPENDIXParts Progression To Show the Changed Part in Relation to Other Parts

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* FOR ENGINES V15001 AND V15002 ONLY.

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FAMILY TREE – 1ST STAGE HPT VANE ASSEMBLY REF. CATALOG SEQUENCE NO. 72-44-10
FIGURE 01 ITEM 240
CHART A

ENGINE - TURBINE NOZZLE - PROVIDE A SELECTONE NEW HIGH PRESSURE TURBINE (HPT) 1ST
STAGE VANE ASSEMBLY -

Supplement

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 (SelectOne
Production Standard) Engines

1. Modification Kit

A. There is no kit provided to do this Service Bulletin.

2. Material Cost

A. There is no kit provided to do this Service Bulletin.

3. New Production Parts

| New Production Parts | Description | Unit Price US Dollars |
|----------------------|-------------------------|-----------------------|
| 2A4271 | 1st Stage Vane Assembly | |

Added Data

Internal Reference Information

| Revision No. | Reference Document | Origination |
|--------------|--------------------|-------------|
| Original | EC07VA077 | JP/TR |

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