V2500 International Aero Engines

Printed in Great Britain

Subject : Transmittal of Revision 2 to Service Bulletin No. V2500-ENG-72-0294

Service Bulletin Revision History :

Event	Date
Basic Issue	Nov.25/97
Revision 1	Jul.14/98
Revision 2	Mar.10/00

Reason for Issuance of Revision :

To revise the engine effectivity

Effect on Past Compliance

None

List of Effective Pages:

	Bulletin Page No	Rev No.	Effective Date
R	1	2	Mar.10/00
R	2	2	Mar.10/00
	3	Basic	Nov.25/97
R	4	2	Mar.10/00
	5	Basic	Nov.25/97
R	6	2	Mar.10/00
	7	Basic	Nov.25/97

V2500 International Aero Engines
SERVICE BULLETIN

ENGINE - LP TURBINE ASSEMBLY - DUCT SEGMENT INNER - REMOVAL SHEETMETAL FIN

MODEL APPLICATION

R

V22500-A1
V2522-A5
V2524-A5
V2527-A5
V2527E-A5
V2527M-A5
V2530-A5
V2533-A5
V2525-D5
V2528-D5

BULLETIN INDEX LOCATOR

72-50-00

Compliance Category Code

6

Internal Reference No.

97VM022
97VM022A
96VM002

ENGINE - LP TURBINE - DUCT SEGMENT INNER -
REMOVAL OF SHEET METAL RIM

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A319
Airbus A320
Airbus A321
Boeing Douglas Product Devision MD90

R (2) Engine: V2500 -A1
V2522-A5
R V2524-A5
V2527-A5
V2527E-A5
R V2527M-A5
V2530-A5
V2533-A5
V2524-A5
V2525-D5
V2528-D5

B. Reason

(1) Condition

Two (2) D5 engines were removed from service after boroscope inspection revealed numerous consecutive HPT 2nd blade rear platforms missing and damage on LPT airfoils. The inspection was carried out following significant degradation.

(2) Background

Tear down has shown that the liberation of the 2nd stage blade rear platforms was due to an interference with the sheet metal seal rims on the LPT inner diffuser transition ducts. Investigation concluded that this damage is due to bowed rotor conditions. Similar interaction between 2nd blade rear platforms and LPT inner diffuser duct segments has been seen on A1 engines, but to a less degree, with no liberated platforms.

(3) Objective

To avoid damage and loss off 2nd rear platforms and maintenance engine performance.

(4) Substantiation

In response to the recent D5 HPT blade/LPT inner duct segment sheet metal seal interaction, IAE has analytically reviewed the rotor hardware based on a secondary flow model of an LPT inner duct without the sheet metal seal. IAE has concluded that removing the sheet metal seal has no impact to the rotor hardware.

(5) Effects of Bulletin on Workshop Procedures:

Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information

Module interface will no longer require dimensional inspection of seal fin

C. Description

This Service Bulletin introduces a rework procedure to remove the sheet metal seal rim from the LPT inner diffuser duct segments. Rework can be done at the LPT module level and at piece part level.

D. Approval

The "compliance" statement and the procedures described in Section 2 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

E. Compliance

Category Code 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. Manpower

Estimated Manhours to incorporate the full intent of this Service Bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At Overhaul	TOTAL 5,0 hours

NOTE: The parts affected by this Service Bulletin are accessible at Overhaul.

(a) Accomplish rework procedure	5,0 hours

G. Material - Price and Availability

(1) Modification kit not required.

(2) See "Material Information" section for prices and availability.

H. Tooling - Price and Availability

Special tools are not required to incorporate this Service Bulletin.

I. Weight and Balance

(1) Weight change	None
(2) Moment arm	No effect
(3) Datum	Engine front mount centerline (Powerplant Station(PPS)100)

J. Electrical Load Data

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

K. References

R (1) Engineering Change 97VM022, 97VM022A and 96VM002

R (2) Service Bulletin V2500-ENG 70-0634

R (3) V2500 Engine Illustrated Parts Catalogue

R (4) V2500 Engine Manual

L. Other Publications Affected

(1) The V2500 Engine Illustrated Parts Catalogue, Chapter/Section 72-50-24 to add the new part.

(2) The V2500 Engine Manual, Chapter/Section 72-50-24 Cleaning, Inspection, Repair to add the new part number.

(3) The V2500-D5 Engine Manual, Chapter/Section 72-50-24 Cleaning, Inspection, Repair to add the new part number.

2. Accomplishment Instructions

Part 1: Inner Diffuser Segment Installed to LPT Module

A. Pre-requisite Instructions

(1) Remove the LPT Module from the Engine by the approved Engine Manual procedure.

(2) Turn the LPT Module in a vertical position front end down.

B. Rework Instructions

(1) Protect the LPT transition duct and the spline and thread at the front end of the shaft. Use local manufactured cover or tape.

(2) Machine off the Sheet Metal Rim Seal

(a) Use Pneumatic Hand Held Grinder and Rotary Files or equivalent. Refer to Fig 1.

(b) Break sharp edges

(3) Re-identify the Inner Diffuser Ducts at the optional marking position. Refer to Fig 1.

Part 2: Inner Diffuser Segment as single part

A. Rework Instructions

(1) Machine off the Sheet Metal Rim Seal

(a) Use Pneumatic Hand Held Grinder and Rotary Files or equivalent. Refer to Fig 1.

(b) Break sharp edges

(2) Re-identify the Inner Diffuser Ducts at the marking position and cross out the old part number. Refer to Fig 1.

3. Material Information

Applicability: For each V2500 engine to incorporate this Service Bulletin.

A. Kits associated with this Bulletin

None

B. Parts affected by this Bulletin:

	New Part No. (ATA No.)	Qty.	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
R	3A2493 (72-50-24)	12	2,170	Duct, A/O Segment Inner	3A0771 (01-010)	(A) (1D)
R	DELETED (72-50-24)		N/A	- Seal, Air	3A2429 (01-036)	

C. Consumable required to incorporate this Service Bulletin:

Tape, Masking	No specific

D. Instruction/Disposition Code Statements:

(A) Old part is no longer available for sale

(1D) You can do a modification to the old part and identify it with the new part number.

R NOTE: The estimated 2000 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.

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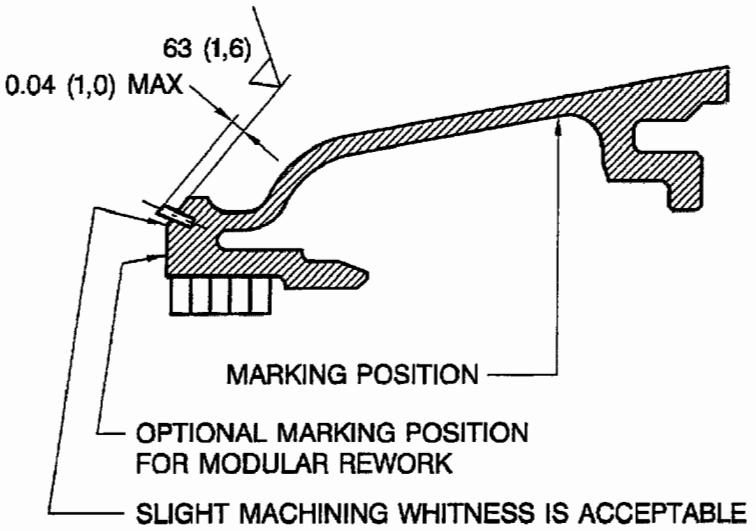

NOTES FOR REWORK

-THIS REWORK IS BASED ON APPROVED ENGINEERING CHANGE EC97VM022 AND CAN BE DONE ON PART NUMBER 3A0771 AS A PIECE PART OR IN MODULAR ASSEMBLED CONDITION.
-GRIND OFF SEAL LIP. 0.04 (1,0) MAX PROTRUSION PERMISSABLE AFTER REWORK.
-AFTER REWORK CHANGE PART NO. FROM 3A0771 TO 3A2493. USE THE MECHANICAL VIBROPEEN METHOD AS PER SPM-TASK 70-09-00.
IF THE REWORK IS PERFORMED ON A SEGMENT ASSEMBLED TO THE MODULE THEN MARK THE PART AT THE OPTIONAL MARKING POSITION WITH 3A2493 AND THE SERVICE BULLETIN NO. V2500-ENG-72-0294.
AT NEXT OPPORTUNITY OF ACCESS CROSS OUT THE OLD PART NO. 3A0771 AND REPLACE BY PART NO. 3A2493.

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LPT Inner Diffuser duct - marking position
Figure 1