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## V2500-A1 SERIES PROPULSION SYSTEM SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin EV2500-72-0041 and the Initial Issue of the Supplement

### Document History

Service Bulletin Revision Status  
Initial Issue Mar.30/90

Supplement Revision Status

### Bulletin Revision 1

Remove  
Pages 1 to 6 of the  
Service Bulletin

Incorporate  
Pages 1 to 8 of the  
Service Bulletin

Reason for change  
To add installation  
procedures of the  
identification plate

### Supplement Initial Issue

Remove

Incorporate  
Page 1

Reason for change  
To add installation  
procedures of the  
identification plate

# V2500-ENG-72-0041

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

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# LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 to the Bulletin and the Initial Issue of the Supplement are as follows:

<u>Page</u>	<u>Revision Number</u>	<u>Revision Date</u>
Bulletin		
R 1	1	Sep.27/04
R 2	1	Sep.27/04
R 3	1	Sep.27/04
R 4	1	Sep.27/04
R 5	1	Sep.27/04
R 6	1	Sep.27/04
R 7	1	Sep.27/04
R 8	1	Sep.27/04
Supplement		
1		Sep.27/04

Printed in Great Britain

ENGINE – HP COMPRESSOR – INTRODUCTION OF A NEW REAR ROTATING SEAL AND A NEW REAR  
STATIC AIR SEAL ASSEMBLY

1. Planning Information

A. Effectivity

(1) Airbus A320

R V2500 A1 Engines prior to Serial No. V0362\*

R \* The serial number data shown is of a preliminary nature and is provided  
R for advanced planning only. A future revision to this Service Bulletin  
R will confirm final serial number effectivity.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

With the present configuration of a 14.1 inch diameter rear brush seal on the HP compressor, preliminary assessment of the axial loading on the number 3 location bearing, indicates that it is possible for the forward loading to change to zero or even rearward loading under certain conditions.

(2) Evidence

It is necessary to avoid zero loading and to maintain forward loading on the HP location bearing under all flying conditions, however the bearing must not be overloaded at take-off. It is estimated that the 12.4 inch nominal diameter rear brush seal will produce a minimum forward loading of 900 lbs at cruise and a maximum forward loading of 3,600 lbs at take-off which is within the acceptable range of 800 lb min at cruise and 4,400 lbs maximum at take-off

(3) Substantiation

The 12.4 inch dia rear brush seal together with the modified rotating seal has been cyclic endurance tested and successfully completed 2000 cycles with a total running time of 571 hours 10 minutes subsequent strip examination revealed that the visual condition of the static and rotating seals was typical of that of the current configuration and was therefore deemed to be satisfactory. The HP location bearing was inspected and found to be satisfactory and showed no evidence of bearing skid.

R



(4) Objective

The incorporation of this modification is designed to maintain engine reliability.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Not affected

(d) Repair Schemes

None.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

**NOTE:** An incorporation of this modification the HP compressor assembly (chapter 72-41-00 item number 01-001) changes from 4W6193 to 4W6407.

D. Description

(1) A new HP compressor rear bush seal assembly is introduced together with a new rotating seal assembly.

(2) The changes introduced by this Service Bulletin are as follows:

(a) The diameter of the brush seal has been reduced from 14.100in (358,14 mm) to 12.400in (313,96 mm)

(b) A modified rear rotating seal is introduced.

(c) The static brush seal has been repositioned from sealing on the diameter of the shaft nine disc, to sealing on the diameter of the modified rotating disc.

- (d) For effect on declared life, see V2500 Engine Manual, 5-10-1, Group 'A' Part Lives.

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. Approval

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 model(s) given.

G. Manpower

- (1) In service

Not Applicable.

- (2) At overhaul

R To prepare new module identification plate, remove existing plate, mark  
R new module part number onto new plate and to install new plate.

R 23 minutes

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

H. Material Price and Availability

Modification kit not required; parts supplied as single line items.

For prices and availability of future spares see supplement to this bulletin.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

Not applicable.

**K. Weight and Balance****(1) Weight Change**

None.

**(2) Moment Arm**

No effect.

**(3) Datum**

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

**L. Electrical Load Data**

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

**M. Software Accomplishment Summary**

Not applicable.

**N. References****(1) Internal Reference No.**

ECM88VR128

R (2) V2500 Engine Manual, E-V2500-1IA

R (3) Standard Practises Processors Manual, SPP-V2500-1IA

(4) ATA Locators - 72-41-14, 72-42-50.

**O. Other Publications Affected**

(1) V2500 Illustrated Parts Catalog, 72-40-00, 72-41-14, 72-42-50.

(2) V2500 Engine Manual, 72-41-00, Assembly and Disassembly, 72-41-10, Assembly and Disassembly, 72-41-14 and 72-42-50, Inspection/Check and Cleaning.

**P. Interchangeability of Parts**

New parts from any stage are freely and fully interchangeable with the replaced parts together with the redundant parts from that stage.

## 2. Material Information

A. Applicability: For each V2500 Engine to incorporate this Bulletin.

### B. Parts affected by this Bulletin:

V2500-A1 Engines

72-41-14

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-800	6A4113	1	Seal, Rotating Rear HP Compressor	6A3305	(S1)(A)(B)

72-42-50

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
01-100	6A3932	1	Seal, Assy of Rear Static Air HP Compressor	6A3306	(S1)(A)(B)

### C. Instruction/Disposition Code Statements:

(S1) New parts coded (S1) must replace old parts coded (S1) as a COMPLETE SET per engine.

(A) New part currently available.

(B) Old part no longer available.

### 3. Accomplishment Instructions

#### A. Rework Instructions

- (1) None.

#### B. Assembly Instructions

- R (1) Refer to Figure 1. New PN6A4113 HP compressor rear rotating seal and new  
R PN6A3932 HP compressor rear static air seal are only interchangeable as a  
complete set with in use rotating and static seals.
- (2) Assemble in accordance with approved procedures, Engine Manual, 72-41-00,  
Assembly.

#### PROCEDURE

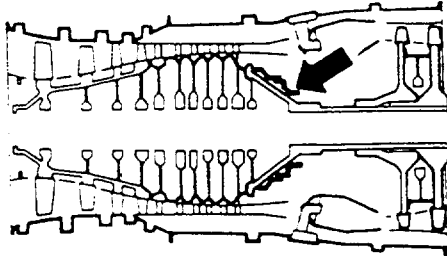
#### RELATED DATA

- R (3) Prepare the new module  
R identification plate See Figure 2
- R (4) Remove the two bolts and existing  
R module identification plate from  
R the HP compressor front case.
- R (5) Make a mark of the new module part 4W6193 to 4W6407  
R number 4W6193 and the existing Refer to SPPM 70-09-00, marking of  
R serial number 4W6407 on to the new parts  
R plate.
- R (6) Install the new module  
R identification plate with the  
R existing two bolts to HP compressor  
R front case.
- R (7) Torque the bolts to 36 to 45 lbfin

#### C. Recording Instructions

- (1) A record of accomplishment is necessary.

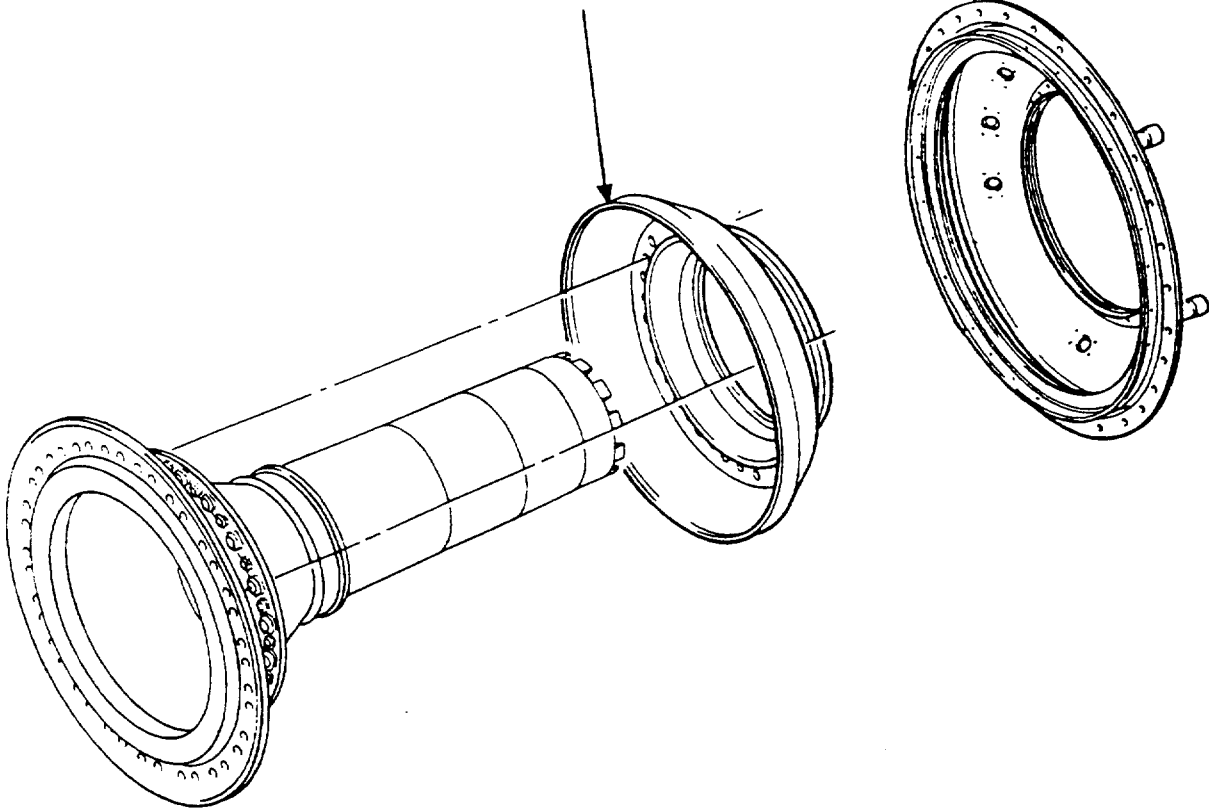




MODULE 40

REMOVE 6A3306 SEAL AND  
INSTALL 6A3932

REMOVE 6A3305 SEAL AND  
INSTALL 6A4113 SEAL



17492

Figure 1  
Location of HP compressor rear brush seal assembly

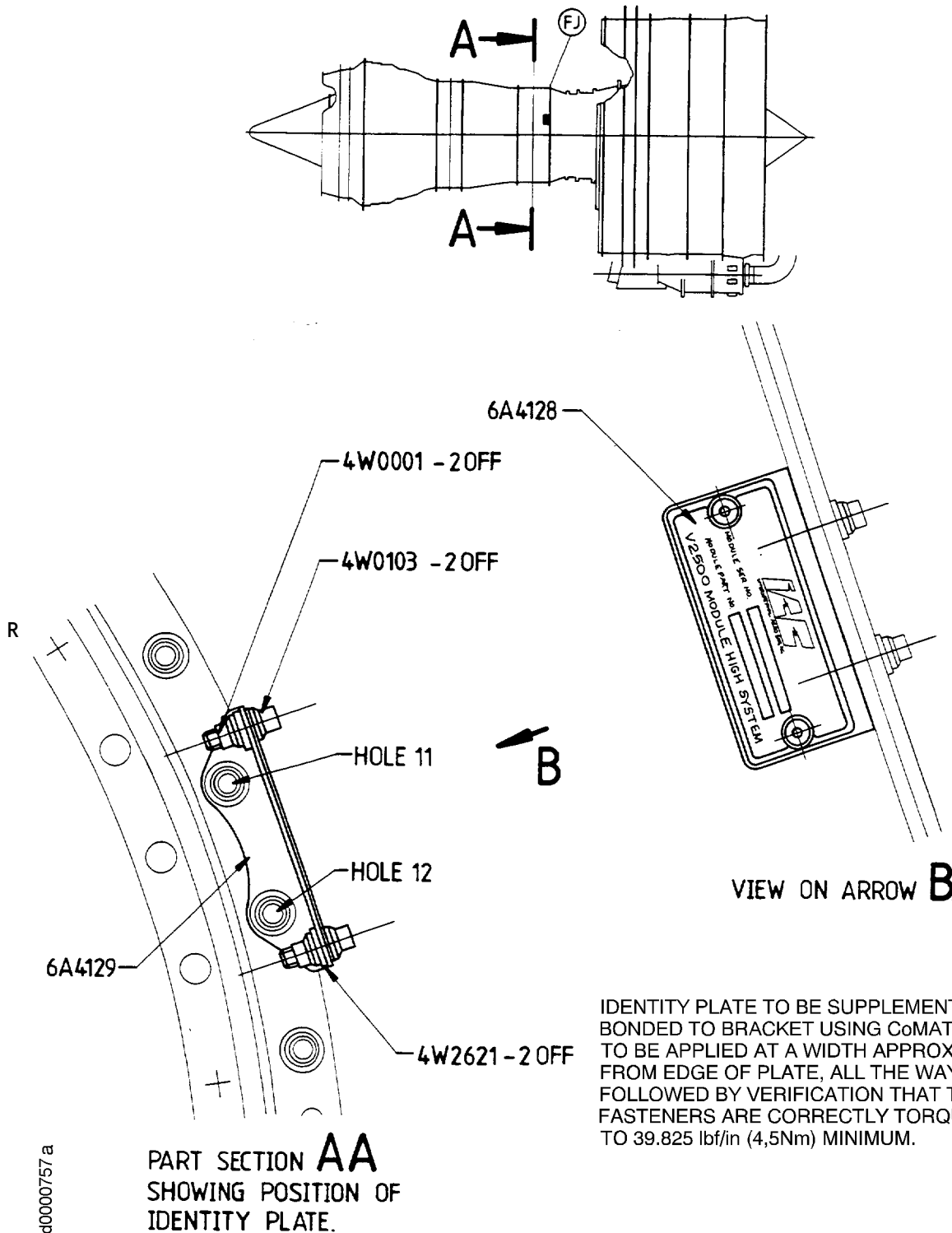


Figure 2  
Install the Identification Plate

ENGINE - HP COMPRESSOR - INTRODUCTION OF A NEW REAR ROTATING SEAL AND A NEW REAR  
STATIC AIR SEAL ASSEMBLY

R SUPPLEMENT - PRICES AND AVAILABILITY

R The prices if shown are for estimating purposes only and as such are given in good  
R faith, without commercial liability for advanced planning purposes only. Refer to  
R IAE Spares and/or current price catalogue for current prices.

R 1. Modification Kit:

R Not applicable.

R 2. New Production Parts:

R			Unit Price
R	Part No.	Desc.	US Dollars
R	6A4113	Seal, rotating	37420.00
R		rear - HP	
R		compressor	
R	6A3932	Seal, assy of	56380.00
R		rear static air -	
R		HP compressor	

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