

**International Aero Engines****RR-DERBY**

400 MAIN STREET, MAIL STOP 121-10
 EAST HARTFORD, CT 06108, USA.
 TELEPHONE: 860 565 5515
 FAX: 860 565 0600

P.O. BOX 31, DERBY
 TELEGRAMS - 'ROYCAR' DERBY
 TELEX - 37645
 TELEPHONE - DERBY 242424

DATE ~~R~~ Oct.21/02**V2500-A1/A5/D5 PROPULSION SYSTEMS SERVICE BULLETIN**

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin EV2500-72-0282

Document History

Service Bulletin Revision Status
 Initial Issue Oct.26/01

Supplement Revision Status

Bulletin Revision 1

Remove
 All pages of the
 Service Bulletin

Incorporate
 Pages 1 to 9 of the
 Service Bulletin
 Pages 1 to 5 of
 Appendix 1

Reason for change
 To update engine
 effectivity.
 To update engine
 effectivity.

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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 are as follows:

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ENGINE – PROVIDE NEW FRONT AND REAR NO. 4 BEARING FACE SEALS1. Planning InformationA. Effectivity

(1) Airbus A319

R V2522-A5, V2524-A5, V2527M-A5 Engine Serial No. V10001 thru V11100,
R V11102, V11104, V11106, V11108, V11110, V11112.

(2) Airbus A320

(a) V2500-A1 Engine Serial No. V0001 thru V0361.

R (b) V2527-A5, V2527E-A5 Engine Serial No. V10001 thru V11100, V11102,
R V11104, V11106, V11108, V11110, V11112.

(3) Airbus A321

R V2530-A5, V2533-A5 Engine Serial No. V10001 thru V11100, V11102, V11104,
R V11106, V11108, V11110, V11112.

(4) Boeing-Longbeach Division MD-90

V2525-D5, V2528-D5 Engine Serial No. V20001 thru V20285.

B. Concurrent Requirements

There are no concurrent requirements.

NOTE: THIS SERVICE BULLETIN SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801.

C. Reason

(1) Problem: Multiple No. 4 refurbished carbon seals fractured during engine green run at overhaul. The root cause was suspected to come from the repair process. As a consequence of this, the repair process was removed and no refurbished carbon seal could be used.

(2) Background: The Finite Element Analysis (FEA) investigation carried out on the refurbished seal process concluded that excessive carrier out-of-round and carbon blank configuration was generating a high stress on the carbon nose during the refurbishment process. This stress can generate sub surface cracks progressing into seal fracture during engine green run.



(3) Objective: The carbon seal was redesigned to increase stress margin and improve robustness to process variation. The new design carbon seal will be repairable and a reviewed repair process with better control over out-of-round will be authorized.

(4) Substantiation: Changes will be substantiated through Finite Element Analysis and classified as a Class I minor engineering change.

(5) Effects of Bulletin on:

Removal/Installation: Not affected

Disassembly/Assembly: Not affected

Cleaning: Not affected

Inspection/Check: Not affected

Repair: Not affected

Testing: Not affected

(6) Supplemental Information

None

D. Description

New redesigned No. 4 bearing front and rear face seals are introduced

E. Compliance

Category 7

Accomplish when supply of superseded parts has been depleted.

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 model(s) given.

G. Manpower

Estimated man-hours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
In Service	Not Applicable
At Overhaul	Not Applicable

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H. Weight and Balance

Weight Change	None
Moment	No Effect
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-70-0801 (Engine - Information - Provide New Front and Rear No. 4 Bearing Face Seals).
2. IAE V2500 Service Bulletin V2500-ENG-72-0163 (Engine - No. 4 Bearing Compartment - Provide A New No. 4 Bearing Seal Assembly With Nuts Silver Plated On The Threads Only).
3. IAE V2500 Service Bulletin V2500-ENG-70-0115 (Information - Engine - Provide Additional Options For The No.1 And No. 4 Face Seal Assemblies).
4. V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA, S-V2500-2IB, S-V2500-3IA, S-V2500-3IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, and S-V2500-7IB), Chapter/Section 72-42-33 and 72-43-20.
5. V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-42-33 and 72-43-20.
6. V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-42-33 and 72-43-20.
7. V2500 Standard Practices/Processes Manual, 70-00-00.

R 8. Internal reference 00VA001, 00VA001-02, 00VA001-05.

R 9. ATA Locator - 72-00-00.

L. Other Publications Affected

1. V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA, S-V2500-2IB, S-V2500-3IA, S-V2500-3IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, and S-V2500-7IB), Chapter/Section 72-42-33 and 72-43-20, to add the new part.

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2. V2500 Engine Manuals (E-V2500-1IA and E-V2500-3IA), Chapter/Section 72-42-33 and 72-43-20 Cleaning, Inspection and Repair, to add the new part.

M. Interchangeability of Parts

Old and new parts are directly interchangeable.

NOTE: THIS SERVICE BULLETIN SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (Yes)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)



2. Material Information

A. Material – Price and Availability

1. The estimated price of new material is \$14,964.00 to do this Service Bulletin when the part modification procedure is used.
2. The estimated price of new material to do this Service Bulletin using new replacement parts is \$61,390.00
3. There is no kit provided to do this Service Bulletin.
4. Part availability information is provided in material data Instructions-Disposition.

B. Industry Support Program

Not Applicable.

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

NOTE: The prices shown are for estimating purposes only and as such are given in good faith without commercial liability for advanced planning purposes only. Refer to IAE Spares and/or current Price Catalog for current prices.

For V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions-Disposition
2A3525	1	36,630.00	.Seal Assy., No. 4 Brg, Front	2A2930 (72-42-33-01-001)	(1)(F)(N)
2A3517	1	7,482.00	..Seal, Carbon Assy., Of	2A2918 (72-42-33-01-220)	(2)(A)(N)
	REF		...Seal-Face, No. 4 Brg., Assy Of	2A2053 (72-42-33-01-241)	(N)
	12	Guide, No. 4 Brg. Seal Spring	2A0076 (72-42-33-01-246)	(N)
2A3499	REF		...Seal Assy Of-Face, No. 4 Brg.	2A2011 (72-42-33-01-248)	(2)(N)(NP)
2A3526	1	24,760.00	.Seal Assy, No. 4 Brg, Rear	2A2931 (72-43-20-01-001)	(1)(F)(N)
2A3517	1	7,482.00	..Seal, Carbon Assy., Of	2A2918 (72-42-33-01-180)	(2)(A)(N)



New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions- Disposition
	REF		...Seal-Face, No. 4 Brg., Assy Of	2A2053 (72-43-20-01-201)	(N)
	12	Guide, No. 4 Brg. Seal Spring	2A0076 (72-43-20-01-206)	(N)
2A3499	REF		...Seal Assy Of-Face, No. 4 Brg.	2A2011 (72-43-20-01-208)	(2)(N)(NP)

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D. Instructions/Disposition Code Statements:

(1) The new part can be obtained by modification of the old part as specified in the Accomplishment Instructions.

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

(A) The new part is available.

(F) The new part will be available on a Full Manufacturing Lead time quote basis only.

(N) The old part is not available.

(NP) The new part is a Non-Procurement detail and is not supplied as a spare item.

E. Tooling - Price and Availability

Special tools are not required to accomplish this Service Bulletin.

F. Re-identified Parts**Re-identified Parts Data**

New PN	Keyword	Old PN
2A3525	Seal Assy., No. 4 Bearing Front	2A2930
2A3526	Seal Assy., No. 4 Bearing Rear	2A2931

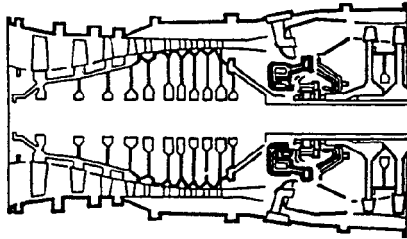
G. Other Material Information Data

Not Applicable.

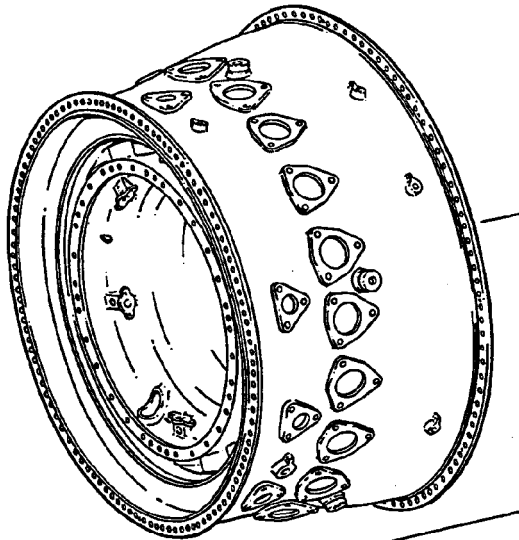


3. Accomplishment Instructions

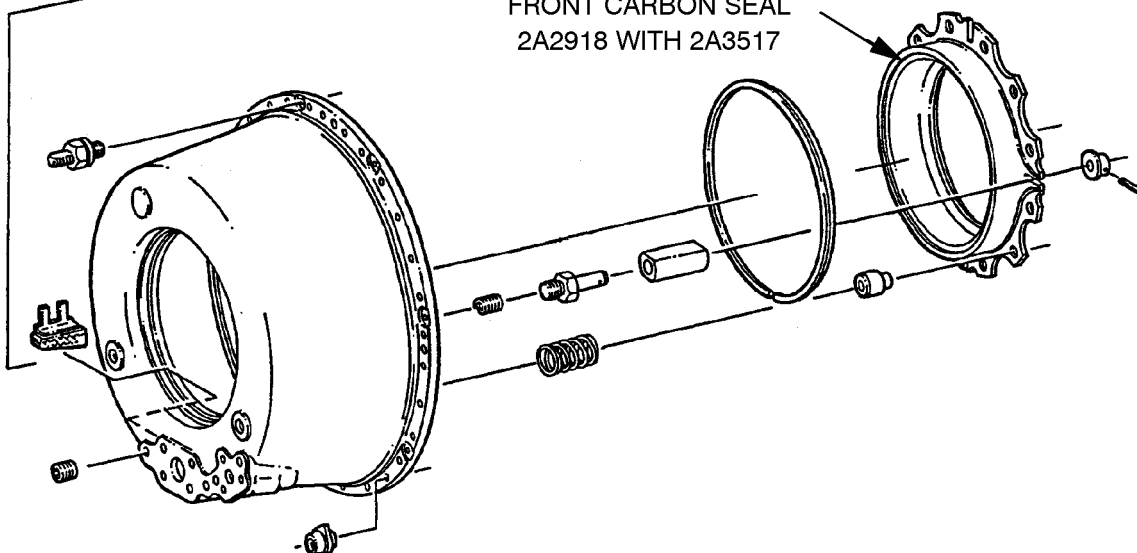
- (1) Disassemble the No. 4 Front Seal Assembly by the approved procedures in reference (5) or (6), Chapter/Section task 72-42-33-040-001.
 - (a) Replace the Carbon Seal Assembly PN, 2A2918 with PN, 2A3517.
 - (b) Assemble the No. 4 Front Seal Assembly by the approved procedures in reference (5) or (6), Chapter/Section task 72-42-33-440-001.
 - (c) After modification identify the No. 4 Front Seal Assembly PN, 2A2930 as PN, 2A3535 by the approved procedure in reference (7) Chapter/Section 70-09-00.
- (2) Disassemble the No. 4 Rear Seal Assembly by the approved procedures in reference (5) or (6), chapter/section task 72-43-20-040-001.
 - (a) Replace the Carbon Seal Assembly PN, 2A2918 with PN, 2A3517.
 - (b) Assemble the No. 4 Rear Seal Assembly by the approved procedures in reference (5) or (6), Chapter/Section task 72-43-20-440-001.
 - (c) After modification identify the No. 4 Rear Seal Assembly PN, 2A2931 as PN, 2A3526 by the approved procedure in reference (7) Chapter/Section 70-09-00.
- (3) Recording Instructions
 - (a) A record of accomplishment is required.



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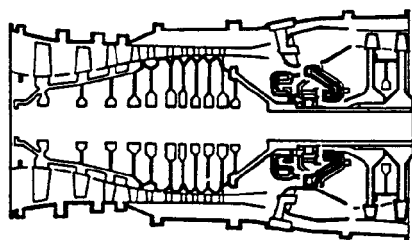


REPLACE NO. 4 BEARING
FRONT CARBON SEAL
2A2918 WITH 2A3517

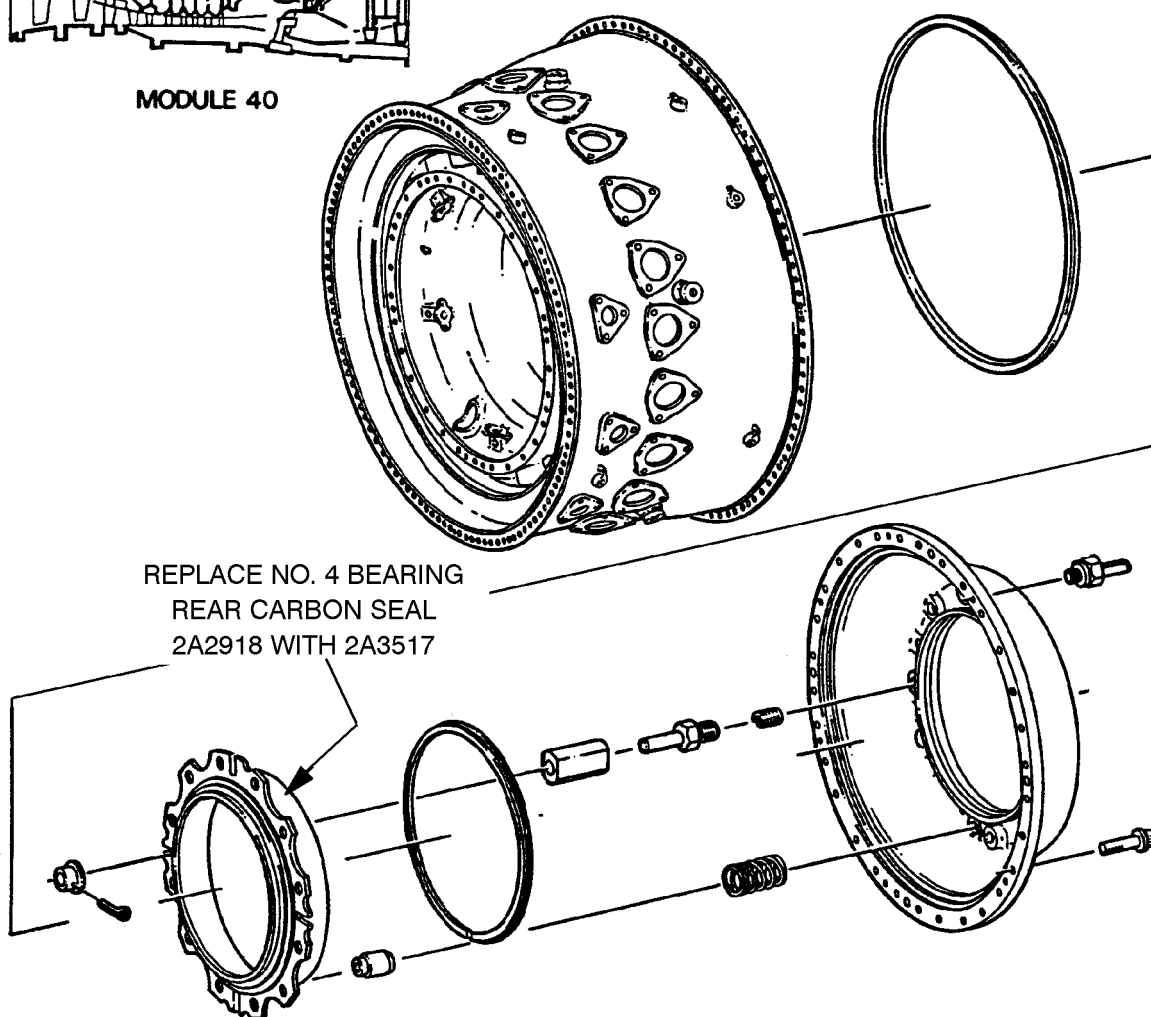


E8396

No. 4 bearing front seal assembly
Fig 1



MODULE 40



E8397

No. 4 bearing rear seal assembly
Fig 2



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SERVICE BULLETIN

APPENDIX 1

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

Added data

Number values shown in parenthesis adjacent to U.S. values are Systeme
Internationale equivalents.

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MODIFICATIONS

PART NUMBER CHANGE

BASELINE

2A2055

V2500-ENG-
72-0163

2A2834

V2500-ENG-
70-0115

2A2930

*V2500-ENG-
72-0282

2A3525

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*V2500-ENG-72-0282 SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801

B511311

Family tree - Seal assembly, No. 4 bearing front Ref, Catalog Sequence No. 72-42-33,
Fig 01 Item 001
Fig 3

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MODIFICATIONS

PART NUMBER CHANGE

BASELINE

2A2056

V2500-ENG-70-0115

2A2931

*V2500-ENG-72-0282

2A3526

R

*V2500-ENG-72-0282 SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801

B511312

R Family tree - Seal assembly, No. 4 bearing rear Ref, Catalog Sequence No. 72-43-20,
R Fig 01 Item 001
Fig 4

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MODIFICATIONS

PART NUMBER CHANGE

BASELINE

2A2053

V2500-ENG-
70-0115

2A2918

*V2500-ENG-
72-0282

2A3517

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R

*V2500-ENG-72-0282 SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801

B511313

R Family tree-Seal, carbon assembly of No. 4 bearing front and rear Ref. Catalog
R Sequence No.72-42-33 Fig 01 Item 220 and Catalog Seq. No. 72-43-20 Fig 01 Item 180
R Fig 5

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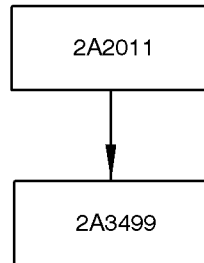
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MODIFICATIONS

PART NUMBER CHANGE

BASELINE

*V2500-ENG-72-0282



R

*V2500-ENG-72-0282 SUPERSEDES INFORMATION BULLETIN V2500-ENG-70-0801

B511314

R
R

Family tree-Seal, face No. 4 bearing front and rear Ref. Catalog Sequence
No.72-42-33 Fig 01 Item 248 and Catalog Seq. No. 72-43-20 Fig 01 Item 208
Fig 6

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