



ENGINE - DIFFUSER AND COMBUSTOR GROUP - PROVIDE A NEW NO.4 BEARING SUPPORT ASSEMBLY
WITH INCREASED DURABILITY - CATEGORY CODE 5 - MOD.ENG-72-0112

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: Part 1

V2500-A1 Engines Serial Nos. V0090, V0092, V0097, V0098, V0099, and V0102 through V0188 except Serial Number V0118, V0181, V0183, V0185 and V0187.

Part 2

V2500-A1 Engines Serial Nos. V0001 through V0100 and V0118 except V0090, V0092, V0097, V0098 and V0099.

B. Reason

(1) Condition

Part 1

(a) Some of the No.4 Bearing support released to service may not have been subjected to a complete heat treatment.

Part 2

(b) The No.4 Bearing support has eight slots based on nine equally spaced slots and one rectangular oil drain slot at the six o'clock position. A higher than anticipated stress concentration has been found in the corners of the rectangular slot.

(2) Background

Part 1

(a) During a review of the manufacturing process, it was found that some of the No.4 Bearing Supports may not have been subjected to a complete heat treatment.

Part 2

(b) A analytical review has determined that the rectangular oil drain slot corners have an increase in stress concentration. This could reduce the durability of the No.4 Bearing support.

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(3) Objective

Part 1

- (a) To determine that all of the existing No.4 Bearing support Assemblies have been subjected to a complete heat treatment.

Part 2

- (b) Shotpeen applicable No. 4 Bearing Supports with the rectangular oil drain slot to maximize cyclic life and to provide a new No.4 Bearing Support that features nine equally spaced race track slots that will substantially increase the durability of the part.

(4) Substantiation

Satisfactory engine endurance testing.

(5) Effects of Bulletin on Workshop Procedures:

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.

C. Description

This Service Bulletin is divided into 2 parts:

Part 1 Covers the inspection/reidentification or replacement of the 2A2038 No.4 Bearing Support Assembly.

Part 2 Covers the rework or replacement of the 2A0846 No.4 Bearing Support Assembly.

- (1) The changes introduced by Part 1 of the Accomplishment Instructions (Section 2) of this Service Bulletin are as follows:

- (a) Examine the applicable 2A2038 No.4 Bearing Support Assemblies for the correct hardness and, if acceptable, identify as 2A2461.
- (b) If the inspection shows that the hardness is not in the limit, replace the 2A2038 No.4 Bearing Support Assembly with a new 2A2064 No. 4 Bearing Support Assembly.

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(2) The changes introduced by Part 2 of the Accomplishment Instructions (Section 2) of this Service Bulletin are as follows:

- (a) Do the applicable modification to the 2A0846 No.4 Bearing Support Assembly for any Engine with 2800 cycles or less and identify the assembly as 2A2461.
- (b) Replace the 2A0846 No.4 Bearing Support Assembly with a new 2A2064 No.4 Bearing Support Assembly, on all Engines that have more than 2800 cycles.

D. Approval

The Part Number Changes and/or part modifications described in Section 2 and 3 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 5

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

F. Manpower

Estimated manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At overhaul (Note: The parts affected by this Service Bulletin are accessible at overhaul)	

Part 1 of Section 2

To accomplish the inspection and the reidentification of the 2A2038 No.4 Bearing Support Assembly	20 Minutes
	TOTAL: 20 minutes

Part 2 of Section 2

To accomplish the modification and the reidentification of the 2A0846 No.4 Bearing Support Assembly.	43 Minutes
	TOTAL: 43 Minutes

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**G. Material – Price and Availability**

- (1) Modification Kit not required.
- (2) See "Material Information" section for prices and availability of future spares.

H. Tooling – Price and Availability

None.

I. Weight and Balance

- (1) Weight change None
- (2) Moment arm No effect
- (3) Datum Engine front mount centerline
(Powerplant station P.P.S.100)

J. Electrical Load Data

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

K. Reference

- (1) Internal Reference No.

89VA137

93VC504

- (2) Other references

V2500 Engine Illustrated Parts Catalog.

V2500 engine Manual.

V2500 Standard Practices Manual.

L. Other Publications Affected

- (1) The V2500 Engine Illustrated Parts Catalog. Chapter/Section 72-42-31, Figure 1, to add the new parts.
- (2) The V2500 Engine Manual, Chapter/Section 72-42-31, Cleaning, to add the new parts.
- (3) The V2500 Engine Manual, Chapter/Section 72-42-31, Inspection, to add the new parts.

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- (4) The V2500 Engine Manual, Chapter/Section 72-42-31, Repair, to add the new parts.

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2. Accomplishment Instructions

A. Prerequisite Instructions

- (1) Remove the No.4 Bearing Front Compartment by the procedure in Reference (2), Chapter/Section 72-42-00, Disassembly.
- (2) Remove the No.4 Bearing Support Assembly, Reference (1) Fig/Item No.01-010) by the procedure in Reference (2), Chapter/Section 72-42-30, Disassembly.

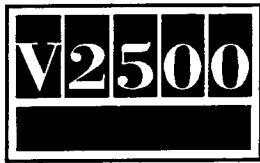
Part 1

- B. Rework Instructions (For V2500-A1 Engine Serial Numbers V0090, V0092, V0097, V0098, V0099 and V0101 through V0188 except Serial Number V0118, V0181, V0183, V0185 and V0187).

- (1) Do an inspection of the 2A2038 No.4 Bearing Support Assemblies (Reference (1) Fig/Item No. 01-010).

Procedure	Supplementary Information				
<p>(a) Check the Bearing Support for a 40 HRC or equivalent hardness.</p> <p>NOTE: Each location Z has two test points you can use. There are six locations and a total of twelve possible points where you can do the necessary hardness checks. The hardness check must be done at five points.</p>	<p>Refer to Figure 1 and Figure 3 requirements. Do the hardness check on stationary machine that will correctly support the part. Do the hardness test on the radius at any 5 of 12 positions given in Figure 3. Do the test 0.100in. (2,54 mm) from the hole edges.</p>				
<p>(b) If the hardness is 40 HRC or more, mark the New Part Number adjacent to the old part number. Use the vibration peen method.</p>	<table><tr><th>OLD PART NO.</th><th>NEW PART NO.</th></tr><tr><td>2A2038</td><td>2A2461</td></tr></table> <p>Refer to Figures 1, and 3 for requirements and Reference (3), Control No./Task No. 70-09-00-400-501. Remove any high metal caused by the test. Keep the surface finish requirements given in the Figure.</p>	OLD PART NO.	NEW PART NO.	2A2038	2A2461
OLD PART NO.	NEW PART NO.				
2A2038	2A2461				

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- (c) If the hardness is less than 40 HRC, replace the 2A2038 No.4 Bearing Support Assembly with a 2A2064 No.4 Bearing Support Assembly. Refer to Figure 1. See paragraph D. Post-requisite Instructions.

Part2

C. Rework Instructions (For V2500-A1 Engine Serial Numbers V0001 through V0100 and Serial Number V0118 except Serial Numbers V0090, V0092, V0097, V0098, and V0099).

- (1) Do a modification on 2A0846 No.4 Bearing Support Assembly (Reference (1) Fig/Item No. 01-010) only if the part has 2800 engine cycles or less as follows:

Procedure	Supplementary Information	
(a) Round the edges of all slots in the No. 4 Bearing Support Assembly.	Refer to Figures 2 and 4 requirements.	
(b) Shotpeen the No. 4 Bearing Support Assembly to an intensity of 6A using SAE 170 maximum cast steel shot (Hardness 45-55 HRC or equivalent by TASK 70-38-13-380-501 (AMS 2430)).	Refer to Figures 2 and 5 requirements. Refer to the approved procedure in Reference (3), Chapter/Section 70-38-13 Surface Treating.	
NOTE: Overspray is permitted on all other surfaces if not differently specified.		
(c) Mark the New part Number adjacent to the Old Part Number. Use the vibration peen method.	OLD PART NO.	NEW PART NO.
	2A0846	2A2461
	Refer to Figure 2 and Figure 3, Sheet 2 requirements Refer to Reference (3) Control No./Task No. 70-09-00-400-501.	
Replace the 2A0846 No.4 Bearing Support Assemblies (Reference (1) Fig/Item No. 01-010) with more than 2800 engine cycles. Use a 2A2064 No.4 Bearing Support Assembly. Refer to Figure 2.		

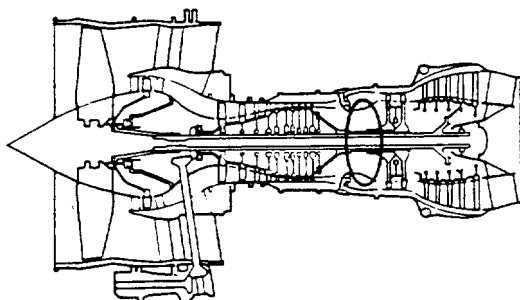
D. Post-requisite Instructions



- (1) Install the No.4 Bearing Front Compartment Parts by the approved procedure in Reference (2), Chapter/Section 72-42-30, Assembly. Use the 2A2064 No.4 Bearing Support Assembly or 2A2461 No.4 Bearing Support Assembly.
- (2) Install the No.4 Bearing Front Compartment by the approved procedure in Reference (2), Chapter/Section 72-42-00, Assembly.

F. Recording Instructions

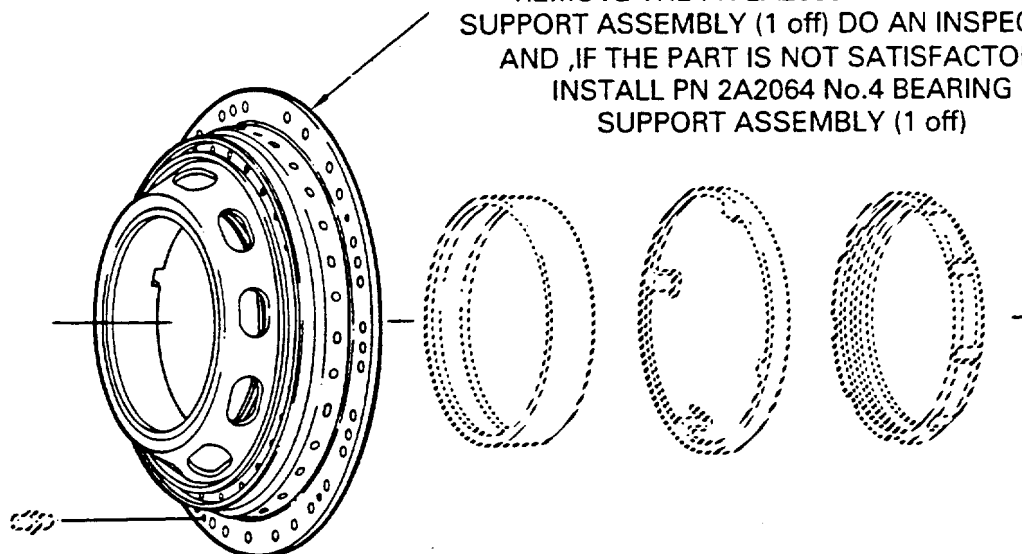
- (1) A record of accomplishment is necessary.



REMOVE THE PN 2A2038 No.4 BEARING
SUPPORT ASSEMBLY (1 off) DO AN
INSPECTION AND IF ACCEPTABLE,IDENTIFY
AND INSTALL AS PN 2A2461 No.4 BEARING
SUPPORT ASSEMBLY (1 off)

OR

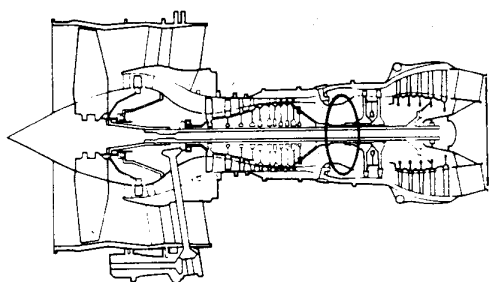
REMOVE THE PN 2A2038 NO.4 BEARING
SUPPORT ASSEMBLY (1 off) DO AN INSPECTION
AND ,IF THE PART IS NOT SATISFACTORY,
INSTALL PN 2A2064 No.4 BEARING
SUPPORT ASSEMBLY (1 off)



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Location of No.4 bearing support assembly
Fig.1

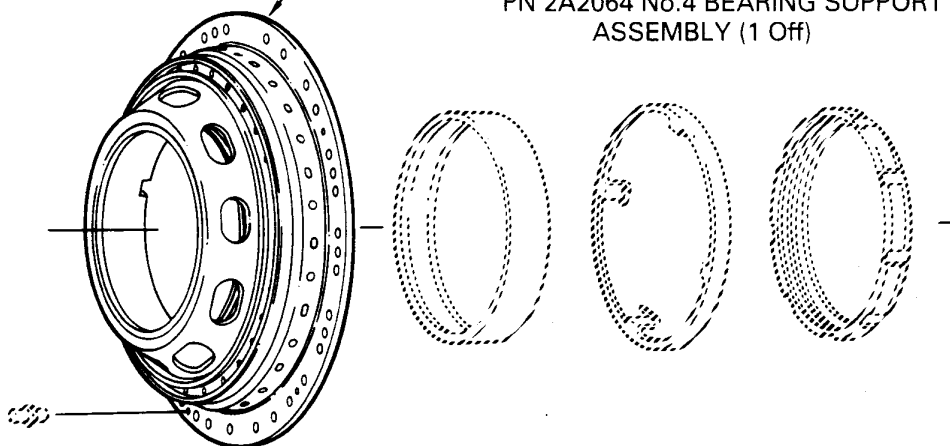
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REMOVE THE PN 2A0846 No.4 BEARING
SUPPORT ASSEMBLY (1 Off) DO A
MODIFICATION, IDENTIFY, AND INSTALL
AS PN 2A2461 No. 4 BEARING SUPPORT
ASSEMBLY (1 Off)

OR

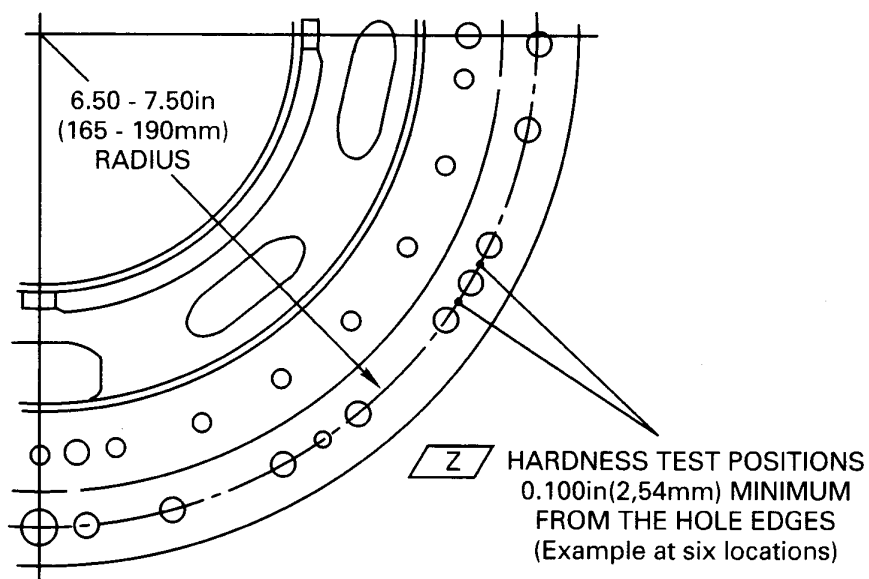
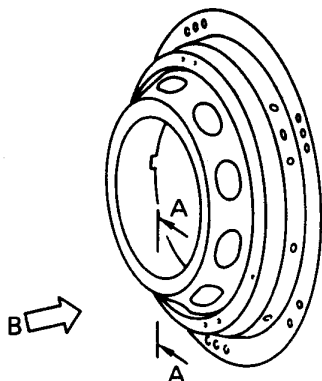
REMOVE THE PN 2A0846 No.4 BEARING
SUPPORT ASSEMBLY (1 Off) AND INSTALL
PN 2A2064 No.4 BEARING SUPPORT
ASSEMBLY (1 Off)



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Location of No.4 bearing support assembly
Fig.2

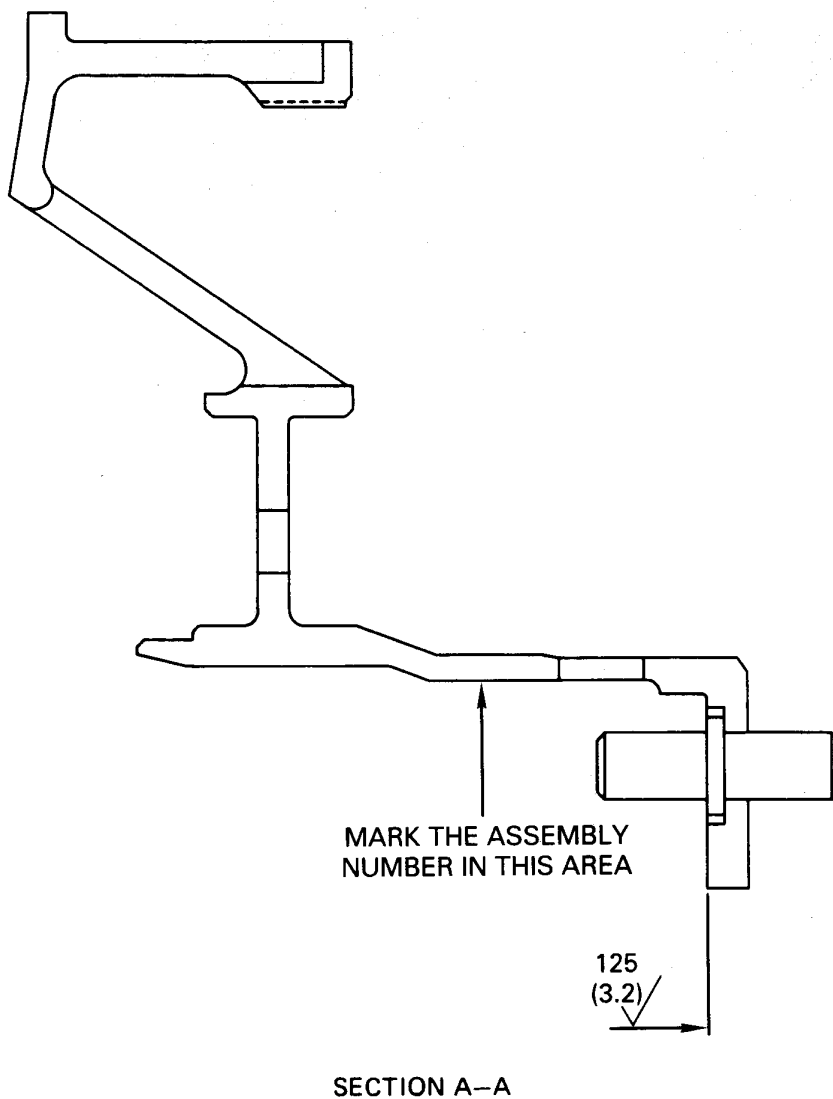
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No.4 bearing support inspection and identification areas
Fig.3 Sheet 1 of 2

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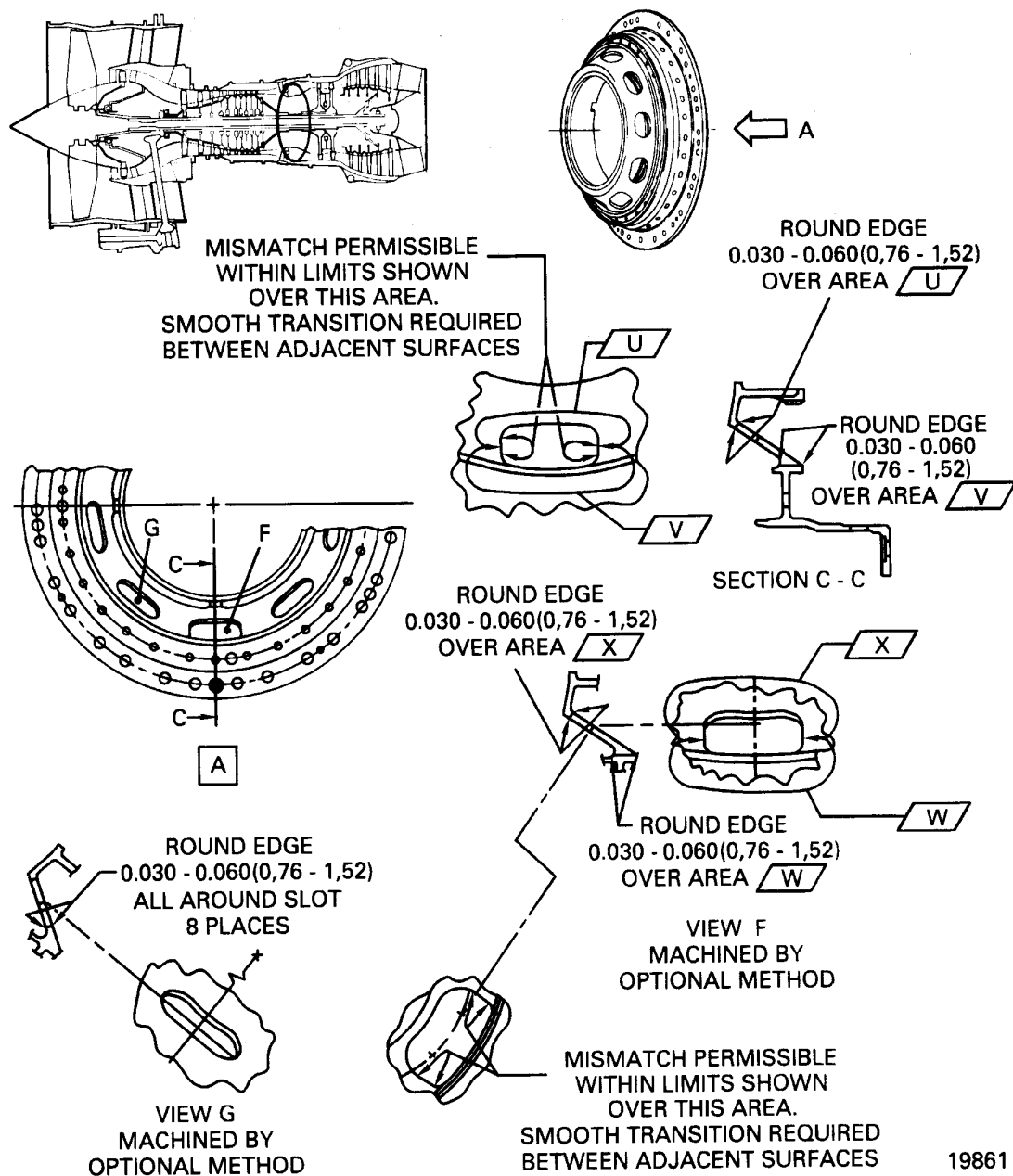


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No.4 bearing support inspection and identification areas
Fig.3 Sheet 2 of 2

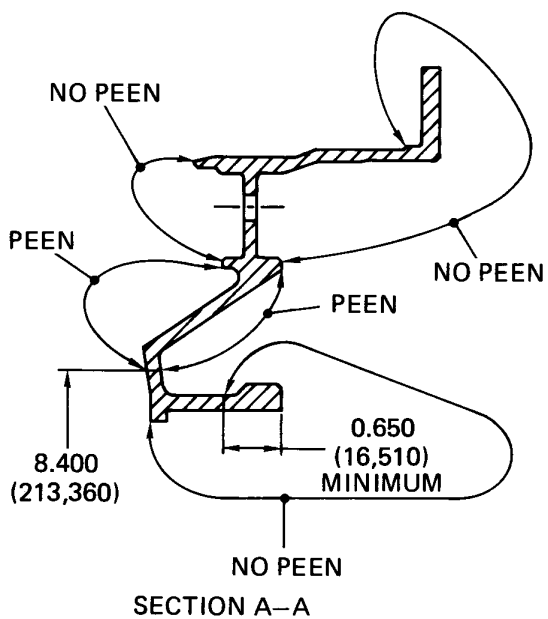
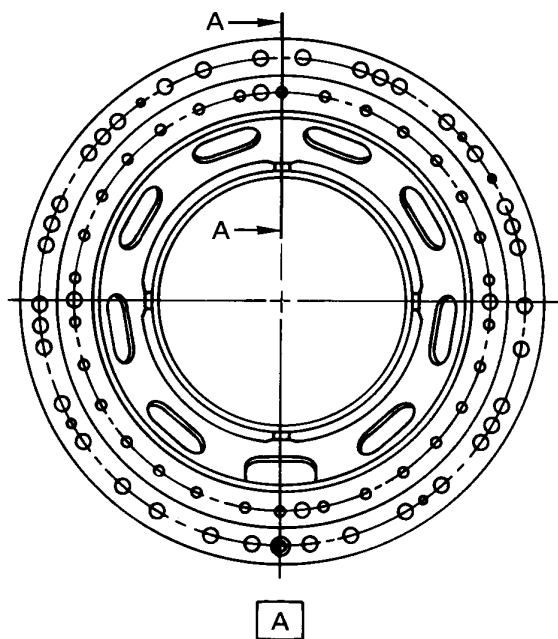
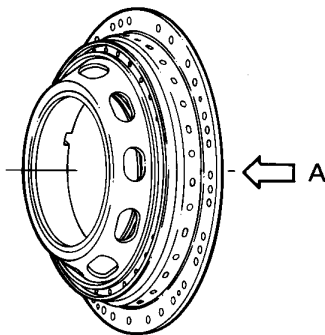
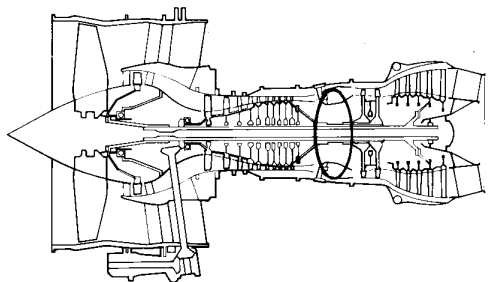
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Modification of No.4 bearing support assembly
Fig.4

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Modification of No.4 bearing support assembly
Fig.5

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3. Material Information

Applicability: For each V2500 Engine to incorporate this 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
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Applicable Part Number transactions for Part 1 of the Accomplishment Instructions (Section 2) of this Service Bulletin:

2A2064 (72-42-31)	1	-	Support Assembly, No.4 Bearing or	2A2038 (01-010)	(A) (B) (E)
2A2461 (72-42-31)	1	-	Support Assembly, No.4 Bearing	2A2038 (01-010)	(1D) (C) (E)

Applicable Part Number transactions for Part 2 of the Accomplishment Instructions (Section 2) of this Service Bulletin:

2A2064 (72-42-31)	1	-	Support Assembly, No.4 Bearing or	2A0846 (01-010)	(A) (B) (E)
2A2461 (72-42-31)	1	-	Support Assembly, No.4 Bearing	2A0846 (01-010)	(2D) (C) (E)

C. Instruction/Disposition Code Statements:

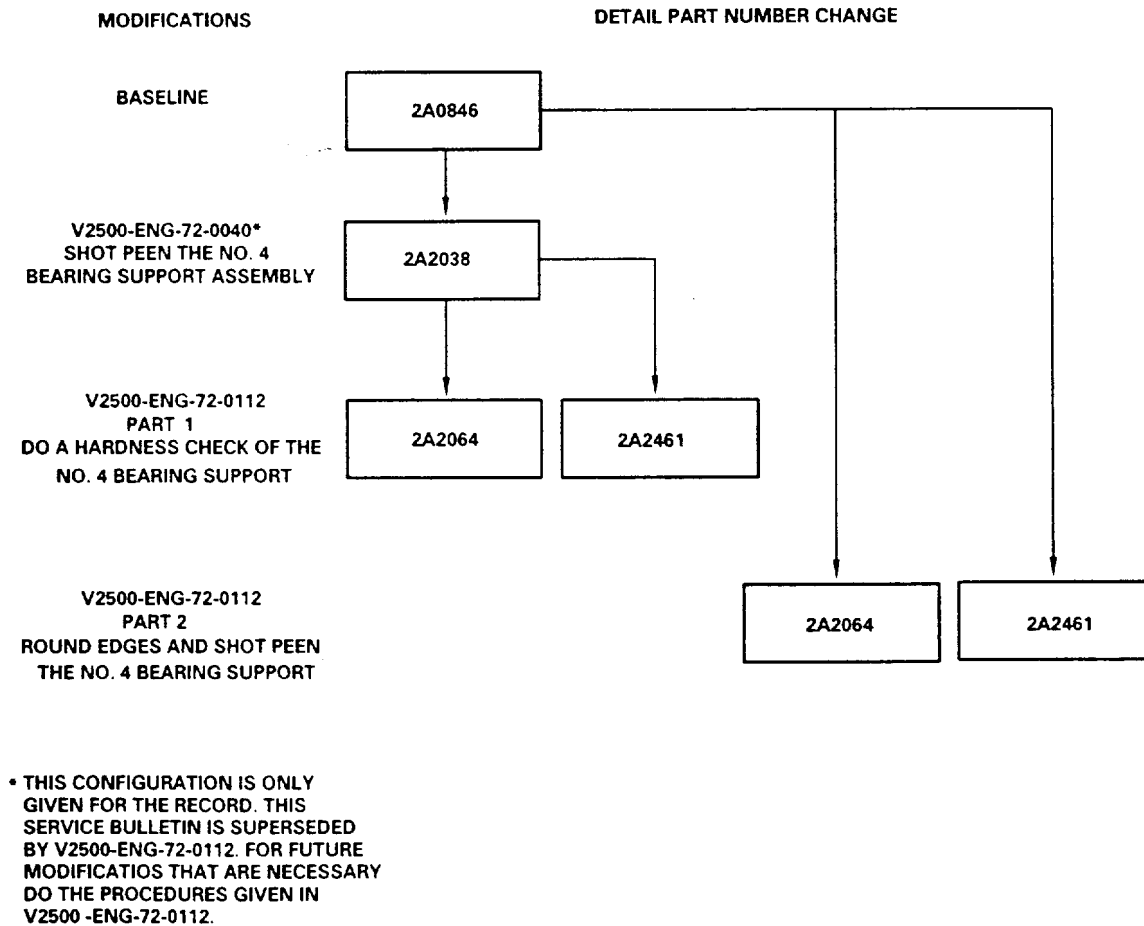
- (1D) Inspect all of the parts specified for the Old part number and identify it as the new part number if it is in the limits.
- (2D) Rework the Old part number and identify it as the New partr number.
- (A) New part is currently available.
- (B) Old part will no longer continue to be available.
- (c) New part number can only be obtained by rework.
- (E) Old and New parts are freely and fully interchangeable both physically and functionally.

NOTE: The estimated 1994 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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Family tree - No.4 bearing support assembly
Fig.4

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