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This document transmits the Initial Issue of Service Bulletin EV2500-72-0469 and the Initial Issue of the Supplement

Bulletin Initial Issue

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	Pages 1 to 22 of the Service Bulletin	First Issue

Supplement Initial Issue

Remove	Incorporate	Reason for change
	Page 1	First Issue

V2500-ENG-72-0469

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International Aero Engines

SERVICE BULLETIN

ENGINE - LP COMPRESSOR TO ANNOUNCE THE AVAILABILITY OF LPC FRONT CASE WITH HIGHER EROSION RESISTANT ABRADABLE SEAL

Printed in Great Britain

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5 and V2527M-A5 Engines prior to Serial Number V11825*

(2) Airbus A320

(a) V2527-A5 and V2527E-A5 Engines prior to Serial Number V11825*

(3) Airbus A321

(a) V2530-A5 and V2533-A5 Engines prior to Serial Number V11825*

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

(4) Boeing - Longbeach Division MD-90

(a) V2525-D5 and V2528-D5 Engines prior to Serial Number V20286

B. Concurrent Requirements

None.

C. Reason

(1) Problem

Erosion of the abradable seal on the LPC Booster Assembly (Stage 1.5) has been observed during interface inspection of the Intermediate Modules. This Leads to the LPC Booster Assembly being removed and disassembled for repair of the abradable seal. As a result the removal and disassembly of the LPC Booster Assembly has increased maintenance cost.

(2) Background

The repair of abradable seal on the LPC Booster Assembly was required to prevent degradation of engine performance.

(3) Objective

This modification improves the durability of the abradable seal on the LPC Booster Assembly and decreases the possibility of removal and disassembly of the LPC Booster Assembly for repair. This will reduce the maintenance cost.

(4) Substantiation

The change recommended in this Service Bulletin has been subjected to rigtest and engine cyclic test. The tests have been successfully completed.

(5) Effect of Bulletin on Workshop procedures:

(a) Removal/Installation

Not affected

(b) Disassembly/Assembly

Not affected

(c) Cleaning

Not affected

(d) Inspection/Check

Not Affected.

(e) Repair

Affected (See Supplemental Information)

(f) Testing

Not affected.

(6) Supplemental Information

(a) The Repair of the Post-Service Bulletin configuration requires instruction for replacement of the new abradable seal of the LPC Front Case.

D. Description

(1) The changes introduced are as follows;

(a) The material of abradable seal of the LPC Front Case is changed.

(b) Resistant erosion property of new abradable seal is higher than that of existing abradable seal. Refer to Figure 1

(2) For relationship with other Service bulletins, see 1.K References and Figure 2 Family Tree.

E. Compliance

Category Code 6

Accomplish when the subassembly (i.e., modules, accessories, and 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 modification described in Section 2 and 3 of this Modification Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA- APPROVED for the Engine Models listed.

G. Manpower

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

(1) In Service

Not applicable

(1) At Overhaul

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

To remove abradable seal 1 hours

To prepare surface area (Cleaning and applying primer) 1 hours, 3 minutes

To apply silicone rubber compound 1 hours, 20 minutes

To do a visual, dimensional and hardness checks 1 hours,

To do a Bond test 30 minutes

To re- identify new part number 5 minutes

Total: 4hours, 58 minutes

H. Weight and Balance

(1) Weight Change

Plus 0.15 1b (0,07 kg)

(2) Moment Arm

None.

(3) Datum

Engine front mount centreline (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 Engineering Change No. 01VJ014

(2) V2500 Engine Illustrated Parts Catalog (A5/D5), Chapter/Section 72-32-83

(3) V2500 Engine Manual (EM) (E-V2500-1IA and E-V2500-3IA), Chapter/Section 72-32-83, Repair 039 (VRS1760)

(4) V2500 Standard Practices/Processes Manual (SPM) (SPP-V2500-1IA), Chapter/Section 70-09-00 Marking of parts

(5) V2500 Standard Practices/Processes Manual (SPM) (SPP-V2500-1IA), Chapter/Section 70-15-01 Marking of parts Water blast cleaning

(6) V2500 Standard Practices/Processes Manual (SPM) (SPP-V2500-1IA), Chapter/Section 70-23-05 Penetrant inspection

(7) V2500 Standard Practices/Processes Manual (SPM) (SPP-V2500-1IA), Chapter/Section 70-38-02 Surface treating

(8) V2500 Engine Manual (EM) (E-V2500-1IA), Chapter/Section 72-32-80, Assembly, Config-02.

(9) V2500 Engine Manual (EM) (E-V2500-3IA), Chapter/Section 72-32-80, Assembly.

(10) ATA Locator

72-32-00

L. Other Publications Affected

(1) V2500 Engine Illustrated Parts Catalog (A5/D5), Chapter/Section 72-32-83 will be revised.

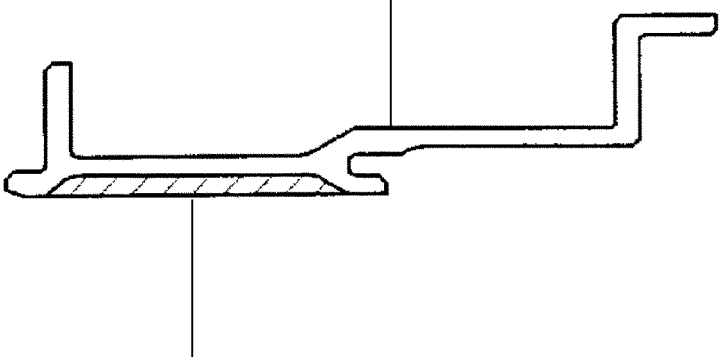
(2) V2500 Engine Manual (EM) (E-V2500-1IA and 3IA), Chapter/Section 72-32-83, Cleaning-01 Config-01 will be revised.

(3) V2500 Engine Manual (EM) (E-V2500-1IA and 3IA), Chapter/Section 72-32-83, Inspection-01 Config-02 will be revised.

(4) V2500 Engine Manual (EM) (E-V2500-1IA and 3IA), Chapter/Section 72-32-83, Repair 007 (VRS1382), Repair 037 (VRS1759), Repair 038 (VRS1761), Repair 039 (VRS1760) and Repair 051 (VRS1713) will be revised.

M. Interchangeability of Parts

Not Affected.



jax0800087

Before and after alteration to Case A/O Front LPC
Figure 1

2. Material Information

A. Industry Support Information

None.

B. Kits necessary for this Service Bulletin

None.

C. Parts affected by this Service Bulletin

V2500-A5/D5 Engines

72-32-83

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
02350	5A1864	1	Case A/O Front LPC	-	5A0458	(A)(B) (S1)(1D)

D. Instruction Disposition Codes

(A) New part is currently available.

(B) Old part is no longer available.

(S1) Old and new part is freely and fully interchangeable, both physically and functionally.

(1D) New part can be obtained by rework and reidentification of old part.

E. Tooling - Price and Availability

Special tools are not required to accomplish this Service Bulletin.

MODIFICATION	PART NUMBER CHANGE
BASE LINE	5A0458
V2500-ENG-72-0469 ENGINE - LP COMPRESSOR - TO ANNOUNCE THE AVAILABILITY OF NEW LPC FAN CASE ENGINE WITH HIGHER EROSION RESISTANT ABRADABLE SEAL CATEGORY 6	5A1864

jax0800108

Family Tree - Case A/O Front LPC (72-32-83, 02-350)
Figure 2

3. Accomplishment Instructions

A. Rework Instructions

Do a modification of 5A0458 Case A/O Front LPC and identify as follows:

(1) Tools

(a) Standard Equipment

Bamboo scraper
Dry blast system cabinet
Oven
Cutter, knife
Hardness tester (durometer)
Injector (air pressure type)
Water blast jet

(b) Special tools

IAE 3J12804	Moulding fixture	1 off
IAE 3J12775	Bond test fixture	1 off
IAE 3J12785	Inspection stand	1 off
IAE 3J12792	Inspection stand	1 off

(c) Consumable Materials

CoMat 01-031	Acetone (CH3) 2C0
CoMat 01-124	Isopropyl Alcohol
CoMat 01-275	Chromate conversion coating
CoMat 02-005	Adhesive tape (masking)
CoMat 02-099	Lint-free cloth
CoMat 05-038	Silicon carbide grit
CoMat 05-050	Silicon carbide grit
CoMat 06-064	Fluorescent penetrant
CoMat 08-032	Primer
CoMat 08-150	Silicone rubber compound

PROCEDURE	RELATED DATA
(2) Remove the abradable seal	Refer to figure 3 sheet 1 and sheet 2 and figure 4 sheet 1.

NOTE: This step (3) is an alternative to step (4).

(a) Remove the abradable seal	Use a bamboo scraper or similar

NOTE: Take care not to damage the LP compressor front case.

(3)	Remove the abradable seal	Refer to figure 3 sheet 1 and sheet 2 and figure 4 sheet 1.
	NOTE: This step (4) is an alternative to step (3).	
	(a) Remove the abradable seal	Use a water blast jet Refer to SPPM TASK 70-15-01-160-501 Make test piece of AMS4132
	(b) Do a dimensional inspection	Refer to figure 6 Use IAE3J12792 inspection stand 1 off if necessary
(4)	Examine the surface from which the abradable seal is removed.	Refer to figure 4 sheet 1
	(a) Fluorescent penetrant examine the surface where abradable seal is removed	Refer to SPPM TASK 70-23-05-230-501 Use CoMat 06-064 fluorescent penetrant
(5)	Apply surface protection to the LPC Front Case Assembly	Refer to figure 4 sheet 1
	NOTE: This step (6) must be done if the abradable seal is removed by step (4). It is not necessary to do this step (6) if step (3) was done	
	(a) Apply the chromate conversion coating for aluminium with a brush to the surface where abradable seal is removed	Refer to SPPM TASK 70-38-02-300-503 Use CoMat 01-275 chromate conversion coating
	(b) Use clean cold water and then dry air blast to dry the repaired area	
(6)	Clean the surfaces which are to be applied with silicone rubber compound	Refer to figure 4 sheet 1
	(a) Mask the areas which are not to be applied with silicone rubber compound	Use CoMat 02-005 masking tape
	(b) Dry abrasive blast on the molding area	Use CoMat 05-038 silicon carbide grit or CoMat 05-050 silicon carbide grit Use a dry blast system cabinet with air pressure of 76.9 to 87.0 psig (530 to 600 kPa) at a minimum distance of 6in. (152 mm) from the air nozzle to the component surface

(c) Remove the abrasive grit that remains by vacuuming

(d) Wipe the blasted surfaces — Use a CoMat 02-099 lint free cloth made moist with CoMat 01-031 acetone or CoMat 01-124 isopropyl alcohol

(e) Air dry for 15 minutes minimum

NOTE: After cleaning, the component must not be touched by hand and must be covered with craft paper to prevent contamination

(7) Apply primer to the surfaces after cleaning

(a) Within 8 hours after cleaning, prime the surface of the molding with a clean cloth and then immediately wipe off any excess primer with another clean cloth. Clean thoroughly. — Thickness of primer layer: 0.0001in (0,0025 mm) Use CoMat 08-032 primer

NOTE: 1. The primed surface must have a pale pink color. If there is no color, the primer layer is not continuous. If the color is bright, streaky bright or chalky, the primer is too thick.

2. Keep the primer in a small container for single use only. Do not use the primer that remains.

(b) Cure the primed surface for 2 hours minimum and 24 hours maximum, at 65 to 82 deg F (18 to 28 deg C) and minimum 20 percent relative humidity

(8) Mould the silicone rubber compound

NOTE: The silicone rubber compound should be used within 12 months from date of manufacture when stored in its original, unopened container at temperatures below 90 deg F.(32 deg C)

(a) Clean the moulding fixture — Use IAE 3J12804 moulding fixture 1 off

(b) Attach the component to the moulding fixture

(c) Put the gas free silicone rubber compound into an injector — Use an injector, air pressure type. Use a CoMat 08-150 Silicone rubber compound

	(d) Inject the silicone rubber compound into the LP Compressor Front Case Assembly (with the moulding fixture attached) until the compound comes out of the vent port of the fixture	Injection pressure: 50.8 psig (350 kPa)
	(e) Remove the injector	
(9)	Cure the silicone rubber compound	
	(a) Put the LP compressor front case assembly into an oven	
	(b) Cure the compound	Cure for 2 hours at 291 to 309 deg F (144 to 154 deg C)
	(c) Remove the LP compressor front case assembly from the moulding fixture	
(10)	Examine the repaired area	
	(a) Visually examine the repaired area	Voids: Refer to figure 4 sheet 4 Recesses: Refer to figure 4 sheet 4 Discoloration: Refer to figure 4 sheet 4 Cracks are not permitted Foreign inclusion is not permitted Peelings are not permitted Bubbles are not permitted
	(b) Do a dimensional inspection of the molding diameter of abradable seal. If necessary, grind the diameter of the abradable seal	Refer to figure 4 sheet 1
	(c) Do a dimensional check of excess abradable seal (Dim. H.). If necessary, remove the excess resin by using grinding equipment, cutter/knife and/or equivalent	Refer to figure 4 sheet 1 and sheet 2 If Dim. H. the height between the front liner surface of LPC front case and inner surface of abradable seal, is more than 0.019in. (0,50 mm), blend abradable seal Refer to figure 4 sheet 3

PROCEDURE	RELATED DATA
(d) Do a hardness check of the repaired area at four equal spaced positions on the circumference	Use a hardness tester (durometer). Hardness: ASTM D2240 (durometer A) 70-80
(11) Do a bond test of the repaired area (a)Do a bond test of the repaired area	Refer to figure 5 Use IAE 3J12775 bond test fixture 1 off, IAE 3J12785 inspection stand 1 off and IAE 3J12792 inspection stand 1 off No signs of bulging or air leakage are permitted
NOTE: The bond test must be done after curing of the rubber compound. The bond test must meet the following conditions Inspection gas: Air or nitrogen gas Gas pressure: 200 psig (1380 kPa) Inspection position: Change the pattern as necessary to examine the incomplete repaired areas Probe angle: Approximately 45 degrees.	
(12) Cancel existing part number and re-identify with new part number which is followed by the letters assy adjacent to existing part number	Use the Vibro-Peen method, Refer to figure 7 and SPM 70-09-00, Marking of parts, Task 70-09-00-400-501

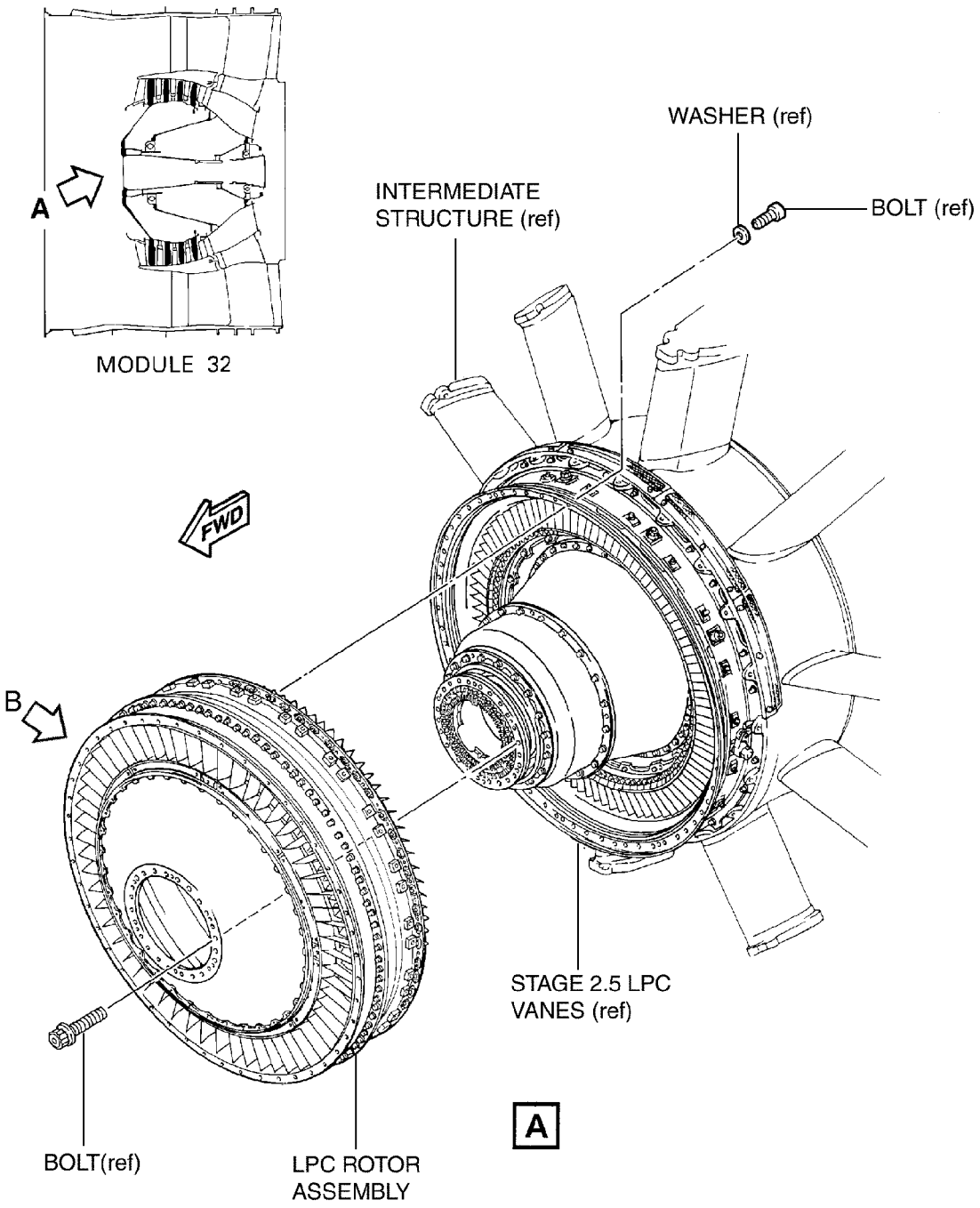
Existing	Re-number
5A0458	5A1864

B. Assembly Instructions

Not applicable.

C. Recording Instructions

A record of accomplishment is necessary.



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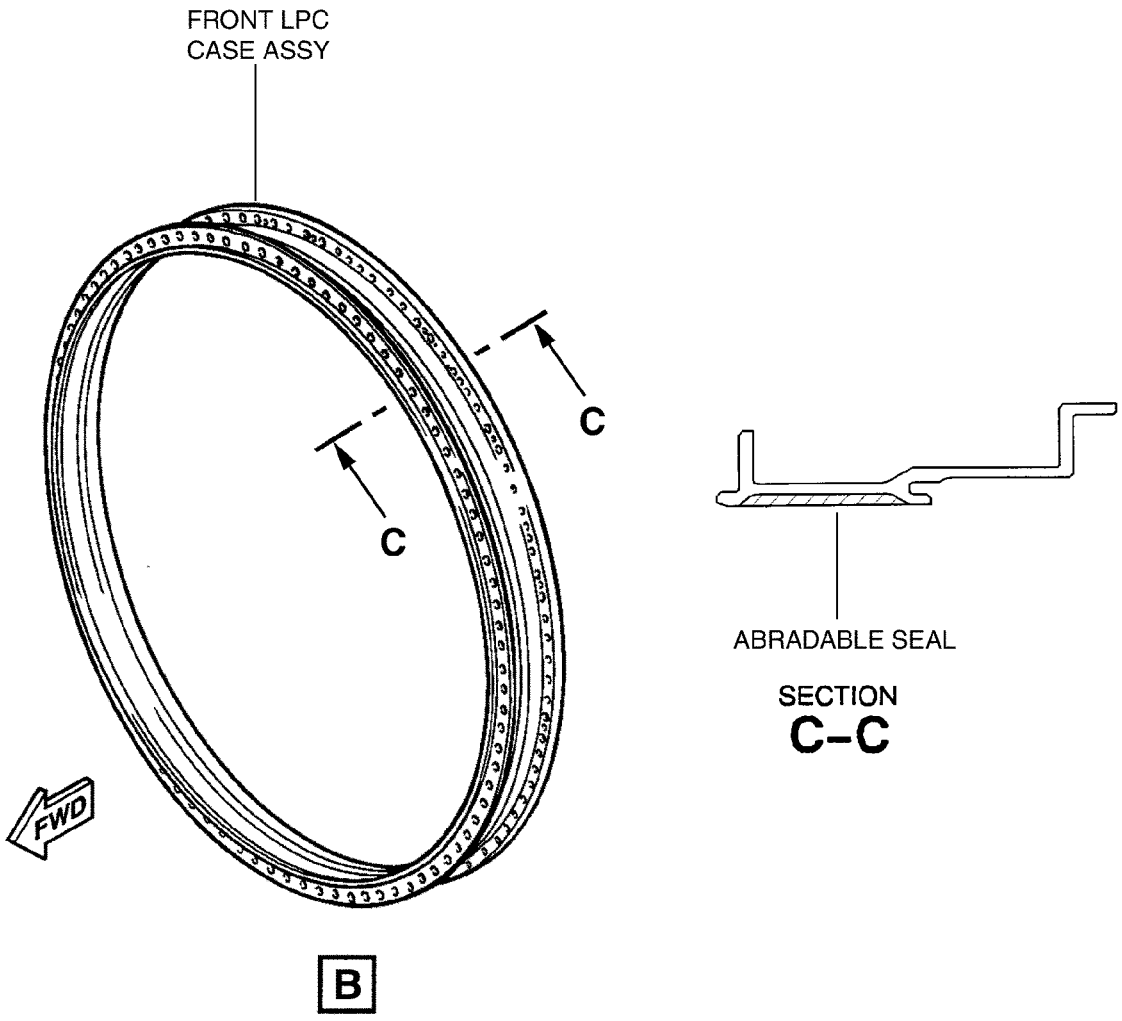
Location of Case A/O Front LPC
Figure 3 sheet 1



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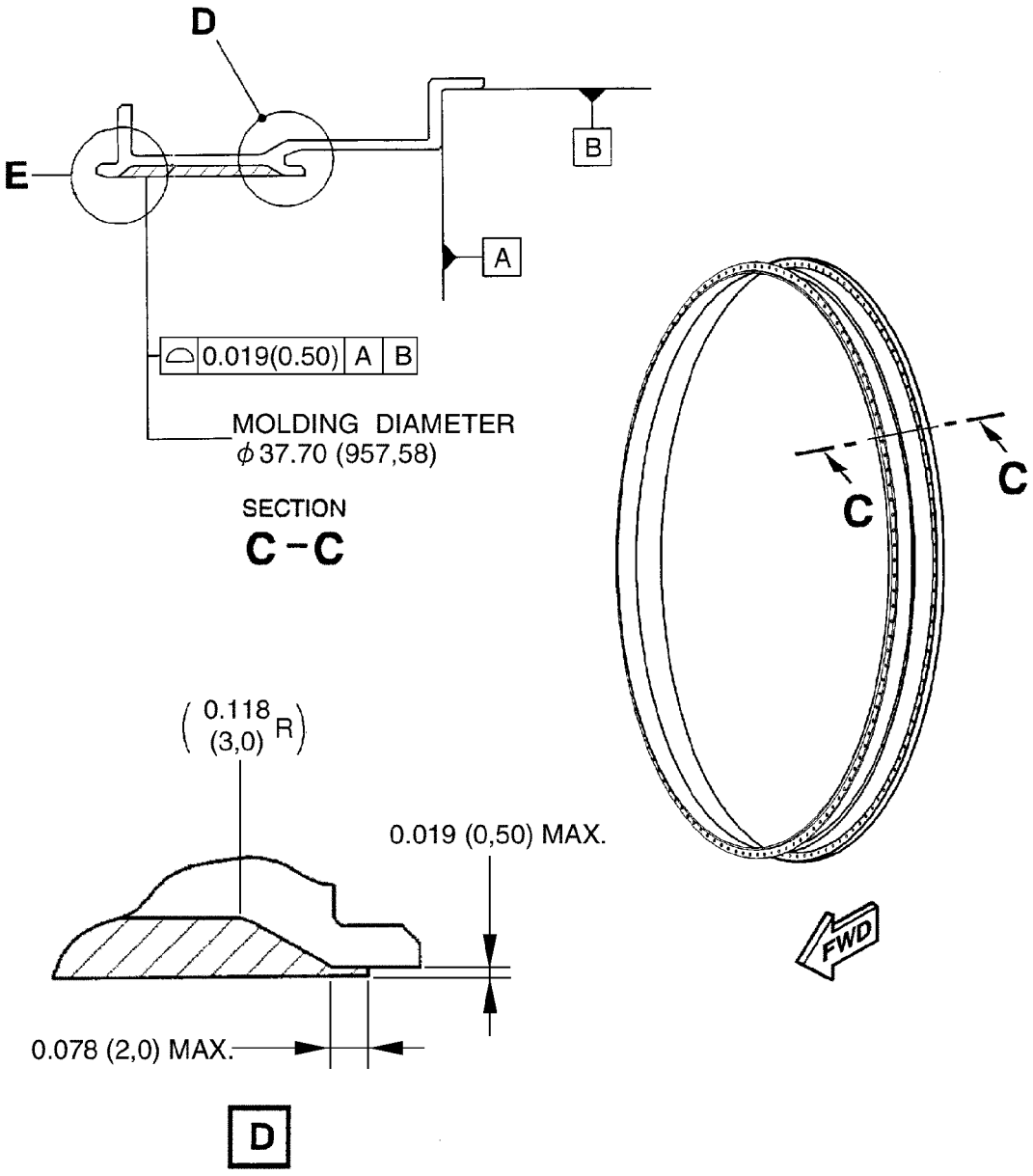
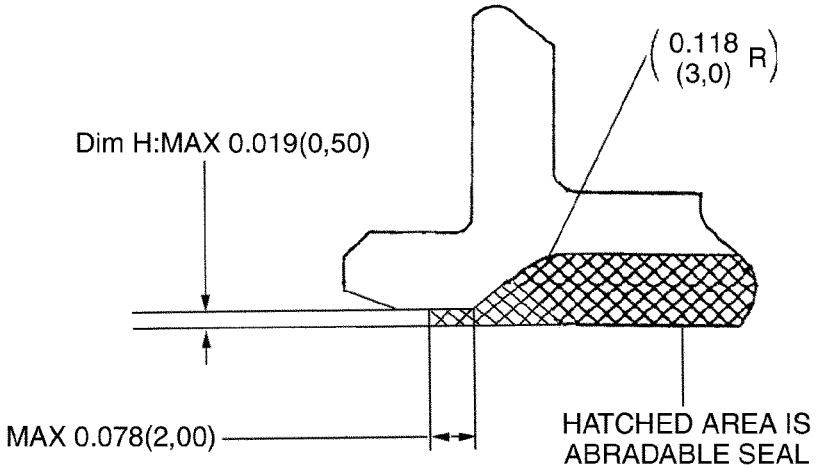
Location of Case A/O Front LPC
Figure 3 sheet 2



ALL DIMENSIONS ARE IN IN.(MM)

jax0800117

Replace the abradable seal of the LPC front case
Figure 4 sheet 1



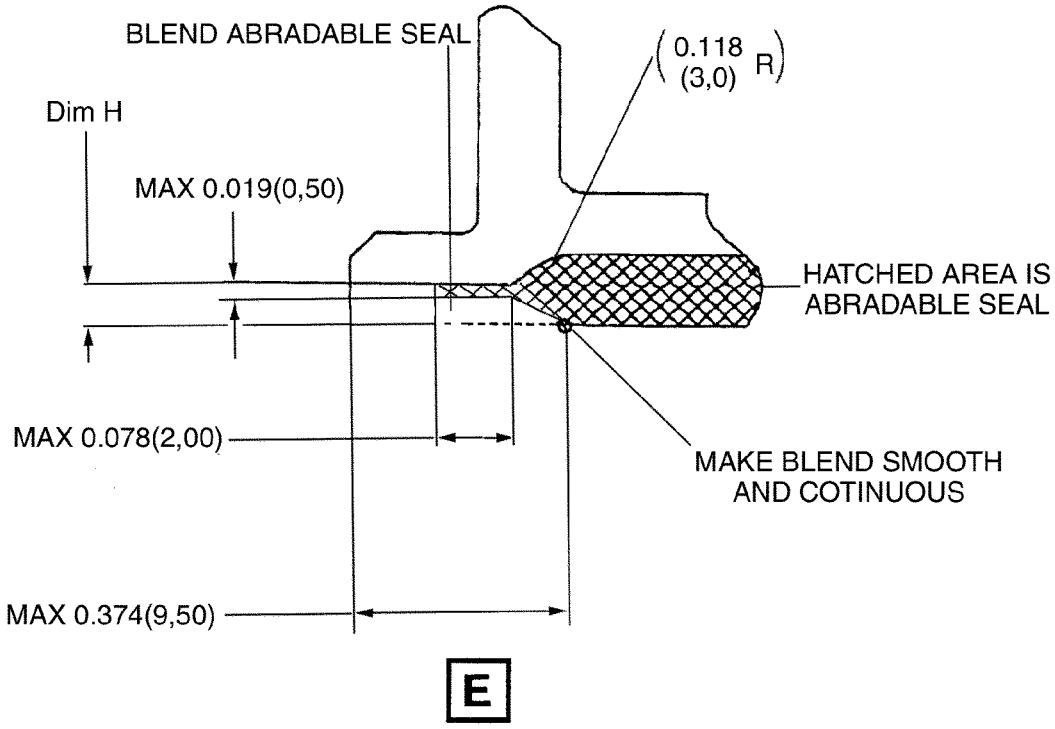
E

'Dim H' is thickness of excess abradable seal on the front inner surface.

ALL DIMENSIONS ARE IN IN.(MM)

jax0800121

Replace the abradable seal of the LPC front case
Figure 4 sheet 2



'Dim H' IS MORE THAN 0.019 (0,50).

'Dim H' IS THICKNESS OF EXCESS ABRADABLE SEAL ON THE FRONT INNER SURFACE.

ALL DIMENSIONS ARE IN IN.(MM).

jax0800122

Replace the abradable seal of the LPC front case
Figure 4 sheet 3

IMPERFECTIONS	ACCEPTANCE LIMITS
VOIDS	MAXIMUM SIZE OR AREA : 0.499 sqin. (322 sqmm) MAXIMUM DEPTH : 0.039 in. (1 mm) NUMBER ALLOWED : 14 per 1550 sqin. (1000000 sqmm) MINIMUM SEPARATION : 1.181 in. (30 mm) MAXIMUM DIMENSION : 0.014 in. (0,38 mm) DIA.
RECESSES	MAXIMUM SIZE OR AREA 1. THE AREA WITHIN 0.255 in. (6,5 mm) FROM THE EDGES OF THE RUBBER. TOTAL ACCUMULATED LENGTH OF IMPERFECTION TO WITHIN HALF OF THE CIRCUMFERENTIAL LENGTH. 2. THE REST AREA EXCEPT CLAUSE 1. TOTAL ACCUMULATED AREA TO BE WITHIN 1.007 sqin. (650 sqmm) MAXIMUM DEPTH : 0.039 in. (1 mm)
DISCOLORATION	MAXIMUM SIZE OR AREA: 1. AREA WITHIN 0.118 in. (3 mm) FROM THE EDGES OF THE RUBBER. MAY EXTEND FOR THE ENTIRE CIRCUMFERENCE OF THE RUBBER. 2. AREA WITHIN 0.255 in. (6,5 mm) EXCEED OF CLAUSE 1. UP TO 1.968 in. (50 mm) LONG (Circumferentially) TOTAL LENGTH TO BE NO MORE THAN 30 PERCENT OF THE CIRCUMFERENCE OF THE RUBBER.

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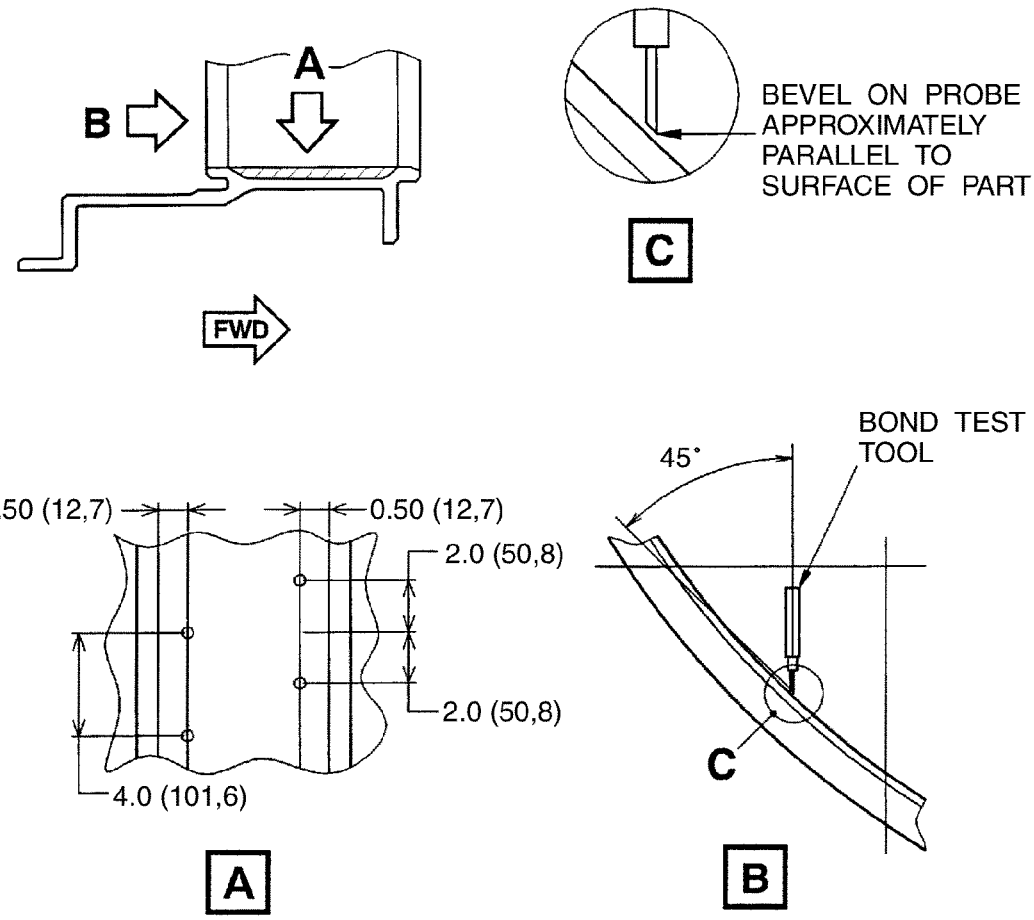
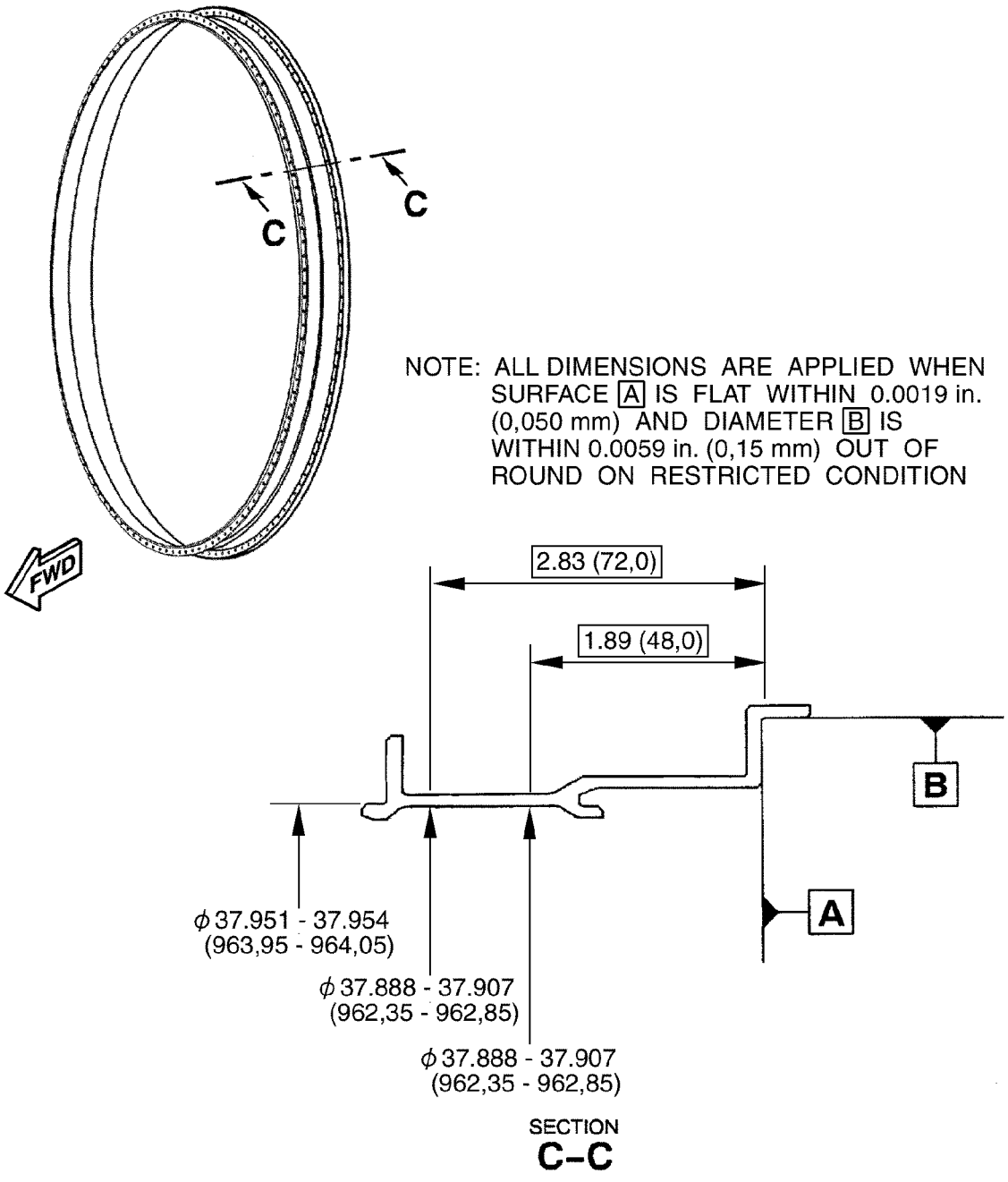
Replace the abradable seal of the LPC front case
Figure 4 sheet 4



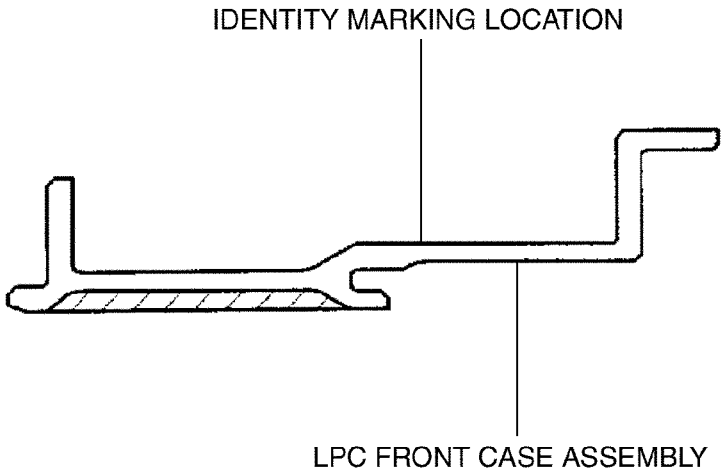
ALL DIMENSIONS ARE IN IN.(MM)

jax0800119

Do a bond test of the required area of the LPC front case assembly
Figure 5



Dimansion required after water blast cleaning
Figure 6



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Reidentification of Case A/0 Front LPC
Figure 7

International Aero Engines

SERVICE BULLETIN

ENGINE - LP COMPRESSOR TO ANNOUNCE THE AVAILABILITY OF LPC FRONT CASE WITH HIGHER EROSION RESISTANT ABRADABLE SEAL

SUPPLEMENT -PRICES AND AVAILABILITY

The prices if 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 catalogue for current prices.

1. Modification Kit

Modification kit not required, existing parts must be reworked.

1. New Production Parts or Rework Parts

Part No.	Desc.	Unit Price - US Dollars
5A1864	Case A/O Front LPC	10610.00