

International Aero Engines SERVICE BULLETIN

Date: Dec.09/99

Subject: Transmittal of Revision 2 to Service Bulletin
No.V2500-ENG-72-0037

Service Bulletin Revision History:

Event	Date
Basic Issue	July 26/93
Revision 1	May 26/94
Revision 2	Dec.09/99

Reason for Issuance of Revision:

To clarify effectivity of engines.

Effect on Past Compliance:

None

List of Effective Pages:

Bulletin Page No.	Rev. No.	Effective Date
R 1 and 2	2	Dec.09/99
R 3 to 13	1	May 26/94

V2500-ENG-72-0037

Transmittal
Page 1 of 1



International Aero Engines
SERVICE BULLETIN

**ENGINE - LP TURBINE - REPLACE THE LP TURBINE SHAFT REAR END
SEALING RING**

MODEL APPLICATION

V2500-A1

BULLETIN INDEX LOCATOR

72-50-00

Compliance Category Code

4

Internal Reference No.

**EC92VJ136A
EC94VJ704**

**July 26/93
R Revision 2 Dec.09/99**

V2500-ENG-72-0037

Page 1 of 13



International Aero Engines SERVICE BULLETIN

ENGINE - LP TURBINE - REPLACE THE LP TURBINE SHAFT REAR END SEALING RING

1. Planning Information

A. Effectivity

(1) Aircraft:

(a) Airbus A320

(2) Engine:

R (a) V2500-A1 Engines prior to Serial Number V0347 except V0345

B. Reason

(1) Condition

Oil leak problems may occur due to the distortion of the Sealing Ring installed on the Blind Cap at the end of LP Turbine Shaft.

(2) Background

The distortion of the Sealing Ring caused by shortage of that durability at high temperature.

(3) Objective

The incorporation of this Service Bulletin is to improve the durability of the Sealing Ring.

(4) Substantiation

The configuration change shown in this Service Bulletin has been subjected to an endurance testing on development engine. The results obtained were satisfactory.

(5) Effects of Bulletin on workshop procedure:

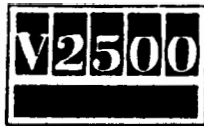
Removal/Installation	Affected (See Supplemental Information)
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

July 26/93

Revision 2 Dec.09/99

V2500-ENG-72-0037

Page 2



International Aero Engines SERVICE BULLETIN

(6) Supplemental Information

The Removal/Installation of the post-Service Bulletin configuration is affected due to the change of the Sealing Ring.

C. Description

- (1) The changes introduced by this Service Bulletin are as follows
(See Figure 1):

- (a) The configuration of the Sealing Ring was changed.
- (b) Existing Part Number of the Sealing Ring has been changed to a new Part Number.

- R (2) This Service Bulletin has two procedures to install the Sealing Ring
R into the Blind Cap satisfactory as follows
R (See Figure 2 to Figure 5):

R Part 1: Installation procedure of Sealing Ring with tools.

R Part 2: Installation procedure of Sealing Ring without tools.

R NOTE: Part 1 is recommended for more correctly installation
R of Sealing Ring.

D. Approval

The Part Number changes and part modifications described in Section 2 and 3 of this Service Bulletin have shown to comply with the applicable Federal Aviation Regulations and FAA-APPROVED for the Engine Model Listed.

E. Compliance

Category Code 4.

Accomplish at the first visit of an engine or module to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action or the reason for engine removal.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

	<u>Venue</u>	<u>Estimated Manhours</u>
(1)	In service (Part 1 and Part 2)	
R	(a) To gain access -----	16 minutes
R	(b) To embody -----	36 minutes

July 26/93
R Revision 1 Apr. 7/94

V2500-ENG-72-0037
Page 3



International Aero Engines SERVICE BULLETIN

	<u>Venue</u>	<u>Estimated Manhours</u>
R	(c) To return engine to	
R	flyable status -----	17 minutes
R		<u>Total 1 hour/s 9 minutes</u>
R	(2) At overhaul (Part 1 and Part 2):	No additional time required to maintain the new configuration.

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

G. Material - Price and Availability

- (1) Modification kit is not required. Part is supplied as single line items.
- (2) See "Material Information" section for prices and availability of future spares.

H. Tooling - Price and Availability

The following tools are required to accomplish this Service Bulletin:

	<u>Tool No.</u>	<u>Qty</u>	<u>Description</u>	<u>Function</u>	<u>Avail</u>
R	IAE1J12243	1	Sleeve, Sizing	Make the Sealing Ring diameter smaller	(1)
	IAE1J12259	1	Slider, Installation	Slide the Sealing Ring on the Blind Cap	(1)

- (1) Indicates that Tool Design Aperture Card is currently available from IAE.

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.

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 4



International Aero Engines SERVICE BULLETIN

K. References

- (1) V2500 Maintenance Manual.
- (2) V2500 Engine Manual.
- (3) V2500 Engine Illustrated Parts Catalog, Chapter/Section 72-50-41.

L. Other Publications Affected

- (1) V2500 Engine Manual, 72-00-50, Removal, TASK 72-00-50-020-002, TASK 72-00-50-020-003, and TASK 72-00-50-020-005, and 72-0050, Installation, TASK 72-00-50-420-001, TASK 72-00-50-420-003-A00, and TASK 72-00-50-420-004.
- (2) V2500 Maintenance Manual, 72-50-00.
- (3) V2500 Engine Illustrated Parts Catalog, Chapter/Section 72-50-41.
- (4) V2500 Power Plant Illustrated Parts Catalog, Chapter/Section 72-50-41.

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037

Page 5



International Aero Engines SERVICE BULLETIN

2. Accomplishment Instructions

A. Rework Instruction

- (1) There are no rework instructions necessary for this Service Bulletin.

B. Pre-Requisite Instructions

- (1) On the aircraft panel 115VU, put a warning notice to tell person not to start the engine.
- (2) Make sure that the engine has been shutdown for at least five minutes.
- (3) On the aircraft panel 50VU, make sure that the ON legend on the ENG FADEC GND PWR push button switch is OFF and install a warning notice.
- (4) Open the Fan Cowls by the approved procedures in Reference (1), 71-13-00, Maintenance Practices Page 201.

WARNING: YOU MUST DEACTIVE THE THRUST REVERSER HYDRAULIC CONTROL UNIT (HCU) BEFORE YOU WORK ON OR AROUND THE THRUST REVERSER. IF YOU DO NOT DO THIS THE THRUST REVERSER CAN OPERATE ACCIDENTALLY AND CAUSE INJURY AND DAMAGE.

- (5) Deactive the thrust reverser hydraulic control unit (HCU) by the approved procedures in Reference (1), 78-30-00, Maintenance Practices Page 401.
- (6) Remove the exhaust cone by the approved procedures in Reference (1), 78-11-12, Maintenance Practices Page 401.

C. Removal Instructions

- (1) Remove the No.5 Bearing Compartment Cover from the engine by the approved procedures in Reference (2), TASK 72-00-50-020-002.
- (2) Remove the Blind Cap from the engine by the approved procedures in Reference (2), TASK 72-00-50-020-002.
- (3) Remove the Sealing Ring from the Blind Cap by the approved procedures in Reference (2), TASK 72-00-50-020-002. Discard the Sealing Ring.

D. Installation Instructions

- R (1) Part 1: Installation procedure of Sealing Ring with tools.
- R (a) Install the new 5A1515, Sealing Ring into the groove on the Blind Cap
R (Refer to Figure 2).
- R 1) Put the Blind Cap on to the work bench with rear end down.
- R 2) Install the IAE1J12259, Slider onto the Blind Cap.

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 6



International Aero Engines

SERVICE BULLETIN

- 3) Lubricate the Sealing Ring with CoMat 10-077 approved engine oil.
- 4) Lubricate outer diameter surface of the slider with CoMat 10-077 approved engine oil.
- 5) Put the Sealing Ring on to the outer diameter of the slider.
The open side of the Sealing Ring must be in down direction.

CAUTION: MOVE THE SEALING RING SMOOTHLY AND EQUALLY OVER THE ALL CIRCUMFERENCE. IF NOT SO, THE SEALING RING IS EXTENDED LOCALLY. LOCAL EXTENSION CAN CAUSE DAMAGE TO THE SEALING RING.

- 6) Slowly push down the Sealing Ring by hand until it is installed into the groove of the Blind Cap.
- 7) Remove the slider from the Blind Cap.

CAUTION: DO NOT INSTALL THE BLIND CAP AND THE SEALING RING INTO THE LPT SHAFT WITHOUT FOLLOWING STEPS, THE SEALING RING DIAMETER WILL BE EXTENDED AND THE LPT SHAFT BORE CAN CAUSE DAMAGE TO THE OUTER DIAMETER ON THE SEALING RING.

- (b) Make the shrinkage satisfactory of the Sealing Ring on the Blind Cap (Refer to Figure 3).

- 1) Put the IAE1J12243, Sizing Sleeve on to the work bench with the front end down.

NOTE: Make sure of the open side direction of Sealing Ring. It is different from the above steps in D, (1), (a) procedures.

- 2) Lubricate the inner diameter face of the Sizing Sleeve and the outer diameter of Sealing Ring with CoMat 10-077 approved engine oil.
- 3) Put the Blind Cap in to the Sizing Sleeve. Diaphragm of the Blind Cap must be in down direction (At position A shown in Figure 3).
- 4) Slowly push the Blind Cap down until it touches the work bench (At position B shown in Figure 3).
- 5) Keep the Blind Cap in the Sizing Sleeve for 10 or more minutes.
- 6) Remove the Sizing Sleeve from the Blind Cap.

- (c) Visually examine the Sealing Ring.

- 1) Make sure that there is no damage on the surface.

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 6A



International Aero Engines SERVICE BULLETIN

CAUTION: DO NOT USE SEALING RING, IF IT IS TWISTED. THIS TWISTED SEALING RING MUST BE DISCARDED.

- 2) Make sure that the Sealing Ring is not twisted (Refer to Figure 5).
- (2) Part 2: Installation procedure of Sealing Ring without tools.
 - (a) Install the new 5A1515, Sealing Ring in to the bottom half of groove on the Blind Cap (Refer to Figure 4).
 - 1) Lubricate the Sealing Ring and the Blind Cap with CoMat 10-077 approved engine oil.

CAUTION: DO NOT PUSH THE SEALING RING IN DIRECTION CC SHOWN IN FIGURE 4, BECAUSE EDGE OF THE BLIND CAP CAN CAUSE DAMAGE OR TWIST TO THE SEALING RING. THE DEFECTIVE SEALING RING CAUSES OIL LEAK.

CAUTION: DO NOT EXTEND THE SEALING RING TOO MUCH. MUCH EXTENSION CAN CAUSE PERMANENT EXTENSION OF THE PLASTIC COVER OF SEALING RING AND CAUSE OIL LEAK.

- 2) Install the Sealing Ring in to the bottom half of the groove of the Blind Cap and open side of the Sealing Ring must be rearward.
- (b) Install the Sealing Ring around all the groove of the Blind Cap (Refer to Figure 4).
 - 1) Push the Sealing Ring inner face in direction DD with finger sides to let the Sealing Ring go in to the groove of the Blind Cap.
 - 2) Move the fingers in direction EE.
 - 3) Repeat steps 1) and 2) until the Sealing Ring is installed around all of the groove.
- (c) Visually examine the Sealing Ring.
 - 1) Make sure that there is no damage on the surface.

CAUTION: DO NOT USE SEALING RING, IF IT IS TWISTED. THIS TWISTED SEALING RING MUST BE DISCARDED.

- 2) Make sure that the Sealing Ring is not twisted (Refer to Figure 5).
- (3) Install the 5A0386, Blind Cap into the engine in Reference (2), TASK 72-00-50-420-003-A00.
- (4) Install the No.5 Bearing Compartment Cover onto the engine in Reference (2), TASK 72-00-50-420-003-A00.



International Aero Engines SERVICE BULLETIN

E. Post-Requisite Instructions

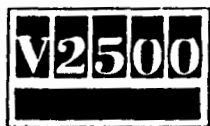
- (1) Install the exhaust cone by the approved procedures in Reference (1), 78-11-12, Maintenance Practices Page 401.
- (2) Active the thrust reverser hydraulic control unit (HCU) by the approved procedures in Reference (1), 78-30-00, Maintenance Practices Page 401.
- (3) Close the Fan Cowl by the approved procedures in Reference (1), 71-13-00, Maintenance Practices Page 201.
- (4) Remove the warning notices.
- (5) Do an Oil Leak Test by the approved procedures in Reference (1), Maintenance Practices Page 501.

F. Recording Instructions

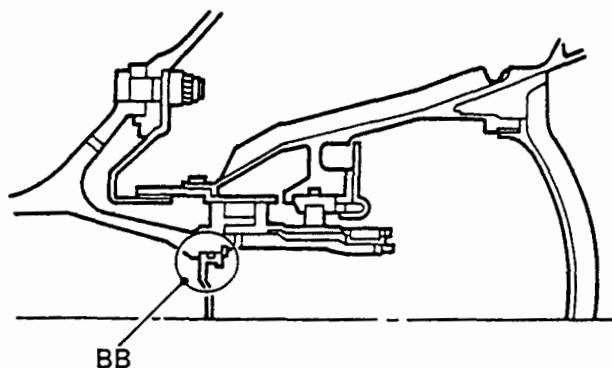
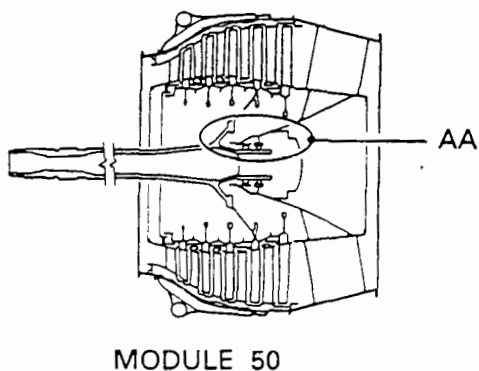
- (1) A record of accomplishment is necessary.

July 26/93
R Revision 1 May 26/94

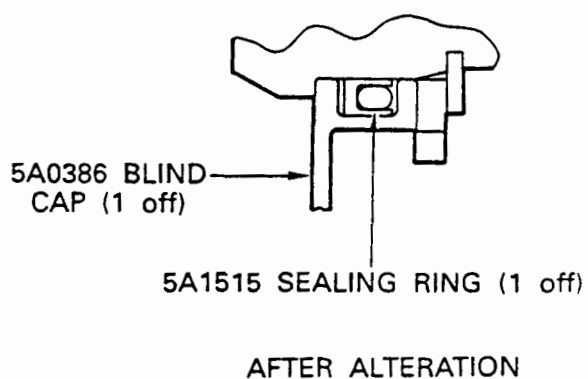
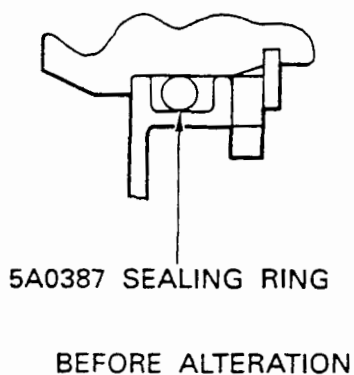
V2500-ENG-72-0037
Page 7



International Aero Engines
SERVICE BULLETIN



VIEW ON AA



VIEW ON BB

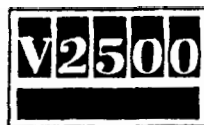
J720037-1

Modification of the Sealing Ring
Figure 1

July 26/93

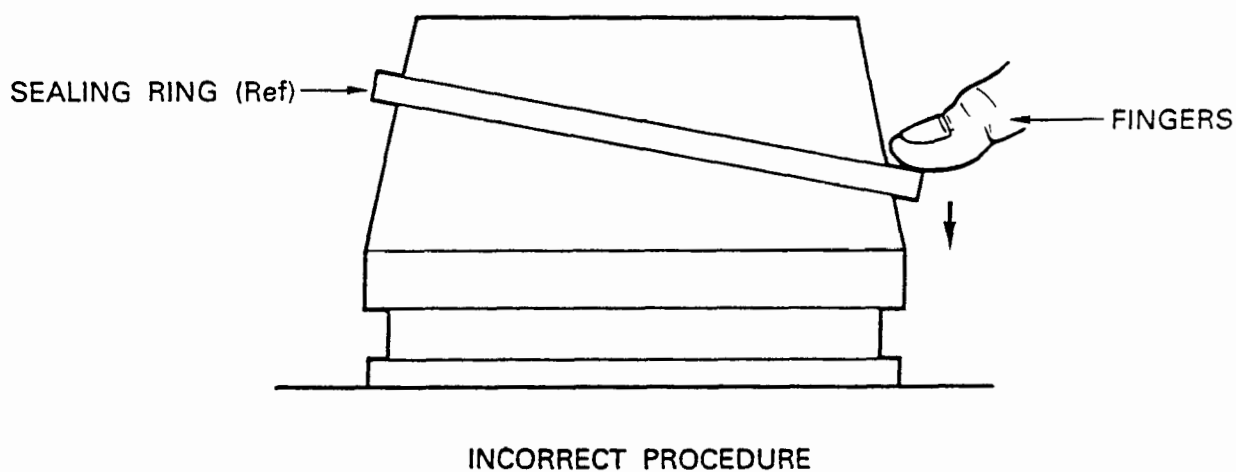
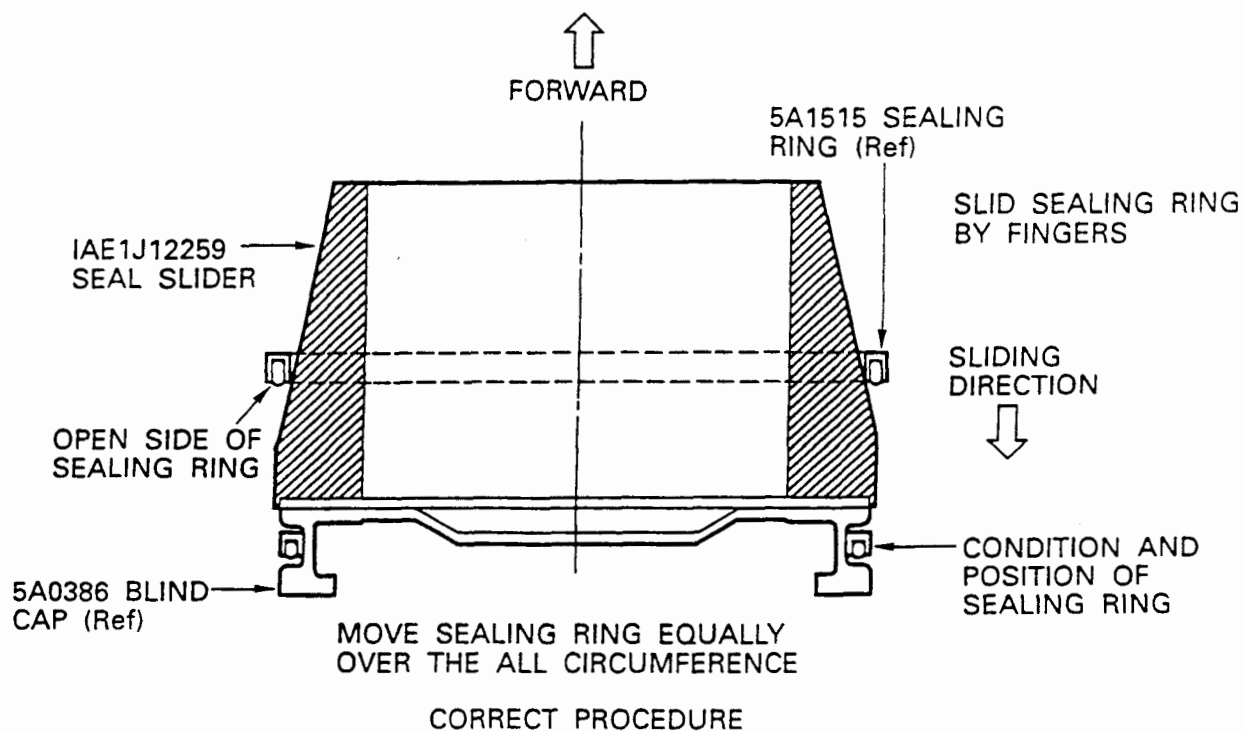
V2500-ENG-72-0037

Page 8



International Aero Engines

SERVICE BULLETIN



J720037-2

Installation of the Sealing Ring onto the Blind Cap
Figure 2

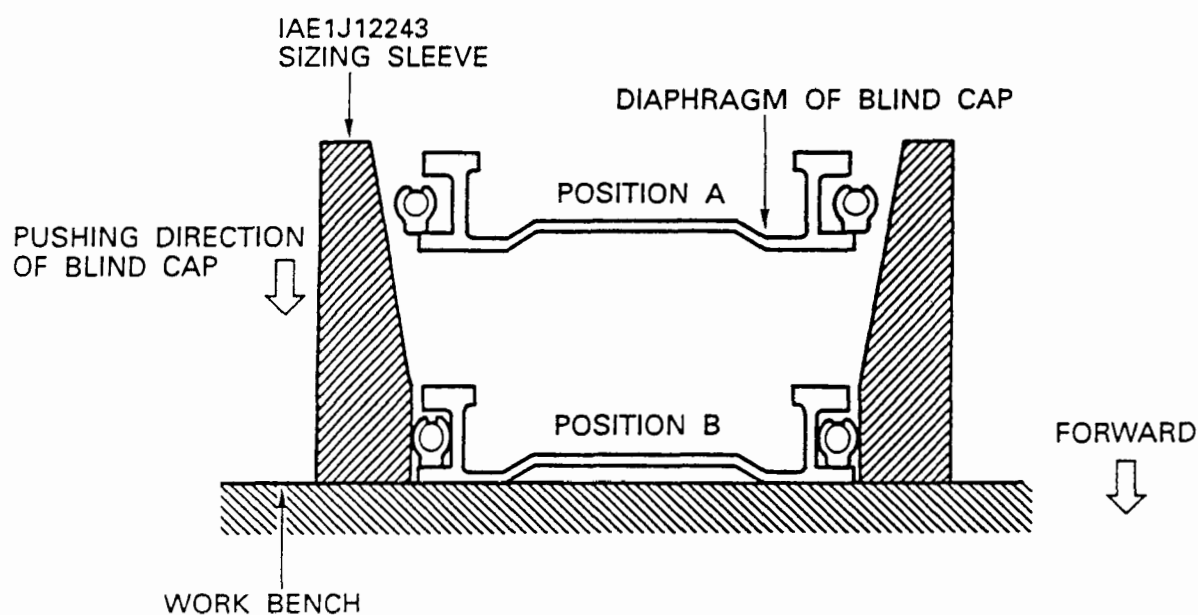
July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037

Page 9



International Aero Engines
SERVICE BULLETIN



J720037-3

Installation of the Blind Cap in to the Sizing Sleeve
Figure 3

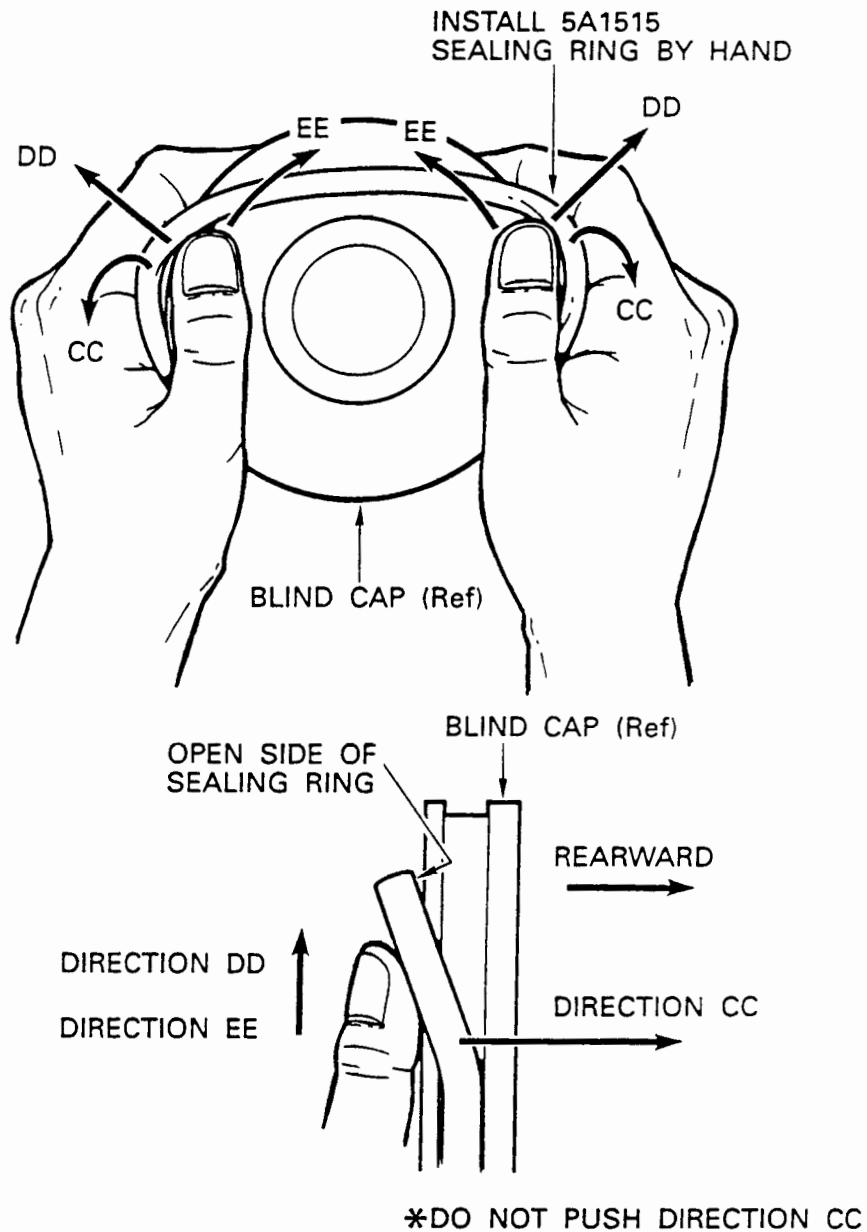
July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 10



International Aero Engines

SERVICE BULLETIN



J720037-4

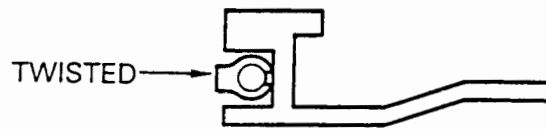
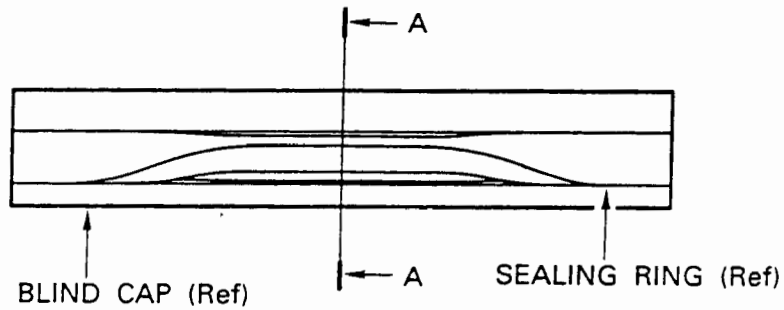
Installation of the Sealing Ring on to the Blind Cap
Figure 4

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 11

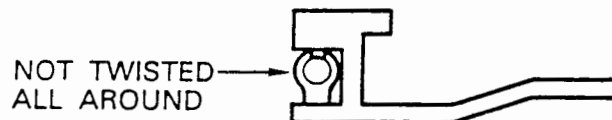


International Aero Engines SERVICE BULLETIN



SECTION A-A

REJECTED



ACCEPTABLE

J720037-5

Installed condition of the Sealing Ring
Figure 5

July 26/93
R Revision 1 May 26/94

V2500-ENG-72-0037
Page 12



International Aero Engines SERVICE BULLETIN

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.)	Instruction Disposition
5A1515 (72-50-41)	1	184.00	. Ring, Sealing	5A0387 (01-160)	(A) (B) (S1)

C. Instruction/Disposition Code Statements:

(A) New Parts are currently available for sale.

(B) Old Part will no longer be available for sale.

(S1) Old and New Parts are freely and fully interchangeable, both physically and functionally.

NOTE: The estimated 1993 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.