

International Aero Engines SERVICE BULLETIN

Date: Aug. 3/98

Subject: Transmittal of Revision 1 to Service Bulletin Number
V2500-ENG-72-0306

Service Bulletin Revision History:

| <u>Event</u> | <u>Date</u> |
|--------------|-------------|
| Basic Issue | Apr. 24/98 |
| Revision 1 | Aug. 3/98 |

Reason for Issuance of Revision:

To replace *1 and *2 in Figure 1.

Effect on Past Compliance:

None

List of Effective Pages:

| <u>Bulletin</u> <u>Page No.</u> | <u>Rev.</u> <u>No.</u> | <u>Effective</u> <u>Date</u> |
|------------------------------------|---------------------------|---------------------------------|
| R 1 | 1 | Aug. 3/98 |
| 2 to 5 | Basic | Apr. 24/98 |
| R 6 | 1 | Aug. 3/98 |
| 7 to 16 | Basic | Apr. 24/98 |

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Transmittal
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ENGINE - LP COMPRESSOR - TO INCORPORATE BUSHES ON
THE LPC BLEED SYNCHRONIZING RING

MODEL APPLICATION

V2500-A1

BULLETIN INDEX LOCATOR

72-32-00

Compliance Category Code

6

Internal Reference No.

EC97VJ024

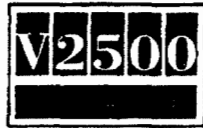
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Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



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ENGINE - LP COMPRESSOR - TO INCORPORATE BUSHES ON
THE LPC BLEED SYNCHRONIZING RING

1. Planning Information

A. Effectivity

(1) Aircraft:

(a) Airbus A320

(2) Engine:

(a) V2500-A1 Engines prior to Serial Number V0266

B. Reason

(1) Condition

Wear on the pin holes of the synchronizing ring
have been found.

(2) Background

The customer requested to have capability of bushing repair
on this part.

(3) Objective

The purpose of this Service Bulletin is to maintain
engine reliability.

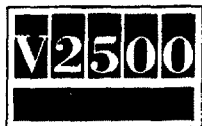
(4) Substantiation

Substantiation tests are not necessary.

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(5) Effects of Bulletin on workshop procedure:

| | |
|----------------------|---------------------------|
| Removal/Installation | Not affected |
| Disassembly/Assembly | Affected (Refer to 6 (a)) |
| Cleaning | Not affected |
| Inspection/Check | Affected (Refer to 6 (b)) |
| Repair | Affected (Refer to 6 (c)) |
| Testing | Not affected |

(6) Supplemental Information

- (a) Disassembly/Assembly of the post-service bulletin configuration requires instruction for oversize bushes.
- (b) The Inspection/Check of the post-service bulletin configuration requires instruction for acceptable hole diameter.
- (c) The Repair Scheme will be introduced to show the repair procedure of the oversize bushes.

C. Description

(1) The changes introduced by this Service Bulletin are as follows;

- (a) Additional 50 bushes are installed into the link arm holes on the synchronizing ring. (Refer to Figure 1)
- (b) At the same time, new oversize bushes are also introduced as a definition of repair of synchronizing ring.

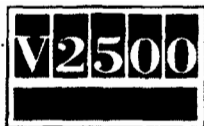
72-32-70/01-147 5A1816 0.0394 in (1 mm) over size Bush
72-32-70/01-149 5A1817 0.0787 in (2 mm) over size Bush
72-32-73/01-102 5A1818 0.0394 in (1 mm) over size Bush
72-32-73/01-104 5A1819 0.0787 in (2 mm) over size Bush

NOTE: The existing bushes can be replaced with oversize bushes, if the wear is out of limit on the power arm holes and link arm holes of the synchronizing ring.

- (2) Old Part Number 5A3724, synchronizing ring can be reworked to the new configurations. (Refer to Figure 2, Sheet 1 to 5)

D. Approval

The 'Compliance' statement and procedures are given in Sections 2 of this Service Bulletin. They obey the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.



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E. Compliance

Category Code 6

Accomplish when the subassembly (That Modules, Accessories, components, Build Groups) is disassembled sufficiently to access to all affected parts.

F. Manpower

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

| <u>Venue</u> | <u>Estimated Man-hours</u> |
|------------------------|----------------------------|
| (1) In service | Not applicable |
| (2) At overhaul | |

NOTE: It is possible to get access to the parts affected by this Service Bulletin at overhaul.

(a) Rework the Synchronizing
Ring .. 2 hours 40 minutes

TOTAL 2 hours 40 minutes

G. Material - Price and Availability

Not applicable

H. Tooling - Price and Availability

The special tool that follows is necessary to set the synchronizing ring to the machining fixture without removal of the guide assembly.

| <u>Tool No.</u> | <u>Qty</u> | <u>Description</u> | <u>Function</u> | <u>Avail</u> |
|-----------------|------------|--------------------|---------------------------|--------------|
| IAE3J12790 | 1 | Machining Fixture | Rework Synchronizing Ring | 1) |

1) A revised Tool Design Aperture Card will be available from IAE, refer to S,E Bulletin No. IAE3J12790-B1.



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I. Weight and Balance

- | | | | |
|-------------------|----|-----|--|
| (1) Weight change | .. | .. | None |
| (2) Moment arm | .. | ... | Not affected |
| (3) Datum | .. | .. | Engine front mount centerline (Power Plant Station (PPS) 100) |

J. Electrical Load Data

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

K. References

- (1) VV2500-A1 Engine Manual (EM), Chapter/Section 72-32-70, Assembly-01, CONFIG-01.
- (2) V2500 Standard Practices/Processes Manual (SPPM), Chapter/Section 70-09-00 Marking of Parts, and Chapter/Section 70-38-00 Surface Treating.
- (3) Facilities Equipment Manual (FEM), Section 5 and 6.

L. Other Publications Affected

- (1) V2500 Engine Illustrated Parts Catalog (EIPC) (S-V2500-1IA), Chapter/Section 72-32-70, and 72-32-73.
- (2) V2500 Engine Manual (EM) (E-V2500-1IA), Chapter/Section 72-32-70, Assembly-01 and Chapter/Section 72-32-73, Inspection/Check-01.



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NOTE : IF THE HOLE IS OUT OF LIMIT ON THE
SYNCHRONIZING RING. USE THE FOLLOWING
OVERSIZE BUSH THAT FOLLOWS.

(★1) : 5A1816 (A / R off)
or
5A1817 (A / R off)

(★2) : 5A1818 (A / R off)
or
5A1819 (A / R off)

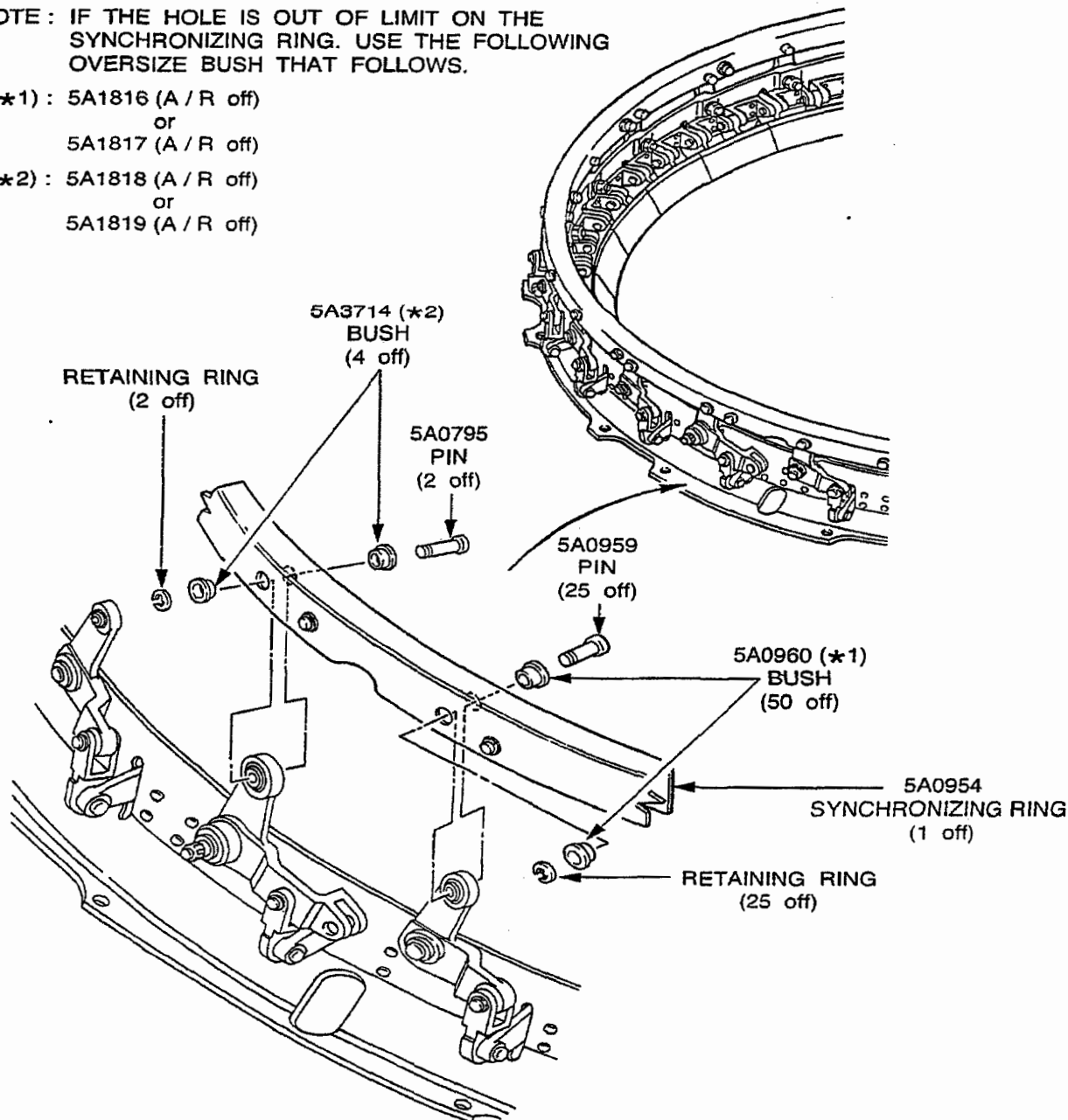


Figure 1

Install the Bushes to the LPC Synchronizing Ring

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2. Accomplishment Instructions

A. Rework Instructions

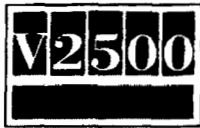
- (1) Do a modification on 5A3724, Synchronizing Ring and reidentify to the new part number 5A0954 as follows:

| <u>Procedures</u> | <u>Supplemental Information</u> |
|---|--|
| (a) Remove the 5A3699 guide assembly and MS15795, washer from the synchronizing ring. Discard the guide, but keep the washer. | Refer to the A1 Engine Manual Chapter/Section 72-32-73 Repair 002, VRS1336 Refer to Figure 2 (Sheet 5) |
| (b) Set a turn table onto the horizontal boring mill. | Refer to the Facilities Equipment Manual Section 5 and 6 |
| (c) Put the support equipment IAE3J12790, machining fixture onto the turn table. | Refer to the Facilities Equipment Manual Refer to Figure 2 (Sheet 1) |
| (d) Set the support equipment by the PLANE A and the Diameter B (DIA B). | Refer to Figure 2 (Sheet 1) |
| (e) Set and clamp the 5A3724, synchronizing ring with the open side down onto the IAE3J12790, machining fixture. Make sure that there is no clearance between the synchronizing ring and Plane A of machining fixture at each clamp position. | Refer to Figure 2 (Sheet 1) |
| (f) Find a 'Top' marking and two scallops on the synchronizing ring, and adjust the zero degree of the turn table to the center of hole 'C'. | Refer to Figure 2 (Sheet 2 and 3) |
| (g) Enlarge 25 holes on the synchronizing ring with a drill. Make sure that the drill center aligns with each existing hole. | Refer to Figure 2 (Sheet 4) |

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Procedure

Supplemental Information

- (h) Remove the synchronizing ring from the machining fixture.
- (i) Make chamfer on the outside edge of each hole. Break the sharp edge on the inside edge of each hole. Refer to Figure 2 (Sheet 4)
- (j) Do an anodize touch up coating to all surfaces of 25 holes. Refer to the Standard Practices/Processes Manual Chapter/Section 70-38-00, TASK 70-38-02-380-501.
- (k) Install the 5A0956, guide assembly and the MS15795-809, washer onto the synchronizing ring. Refer to Figure 2 (Sheet 5)
Refer to the A1 Engine Manual, Chapter/Section 72-32-73, Repair 002, VRS1336.
Use the IAE3J12850 peening tool
- | | <u>Existing</u> | <u>Re-number</u> |
|--|---|------------------|
| (l) Mark the re-number adjacent to the existing part number of synchronizing ring. Use the vibration peening method. | 5A3724 | 5A0954 |
| | Refer to the Standard Practices/Processes Manual, Chapter/Section 70-09-00, TASK 70-09-00-400-001 | |
- (m) Visually and dimensionally examine the formed guide assembly. Refer to Figure 2 (Sheet 5)

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B. Assembly Instructions

- (1) Install the 50 5A0960, bushes in to the link arm holes of the 5A0954, synchronizing ring at all locations (Two at each location). For the correct procedures, refer to the A1 Engine Manual Chapter/Section 72-32-70, ASSEMBLY-01, CONFIG-1. (Refer to Figure 1)

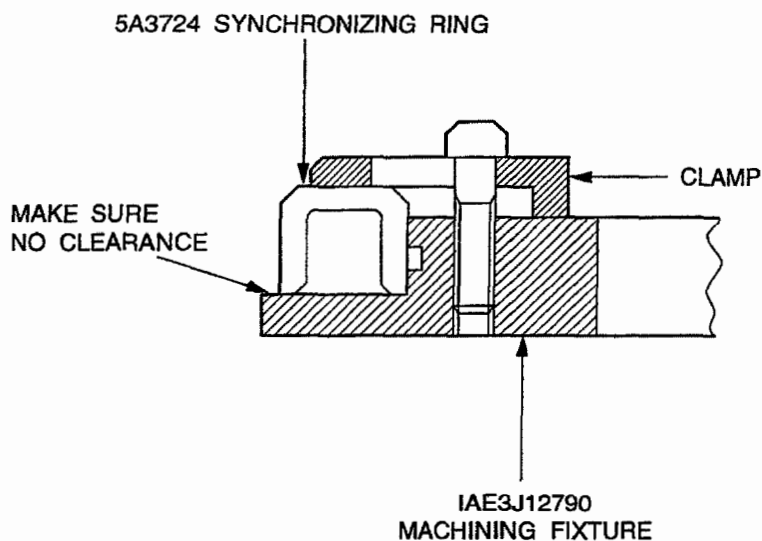
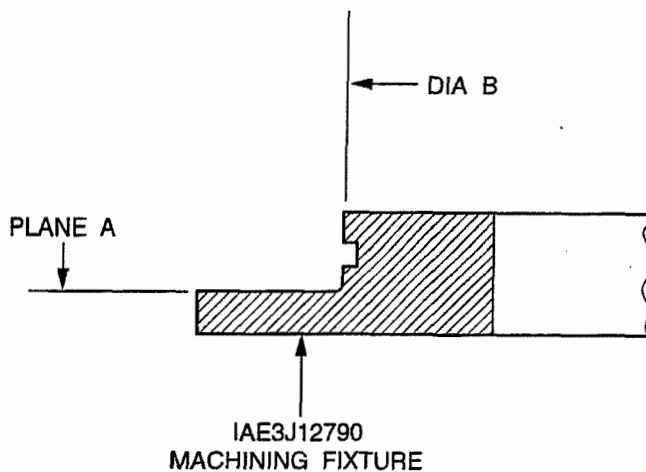
C. Recording Instructions

- (1) A record of accomplishment is necessary.



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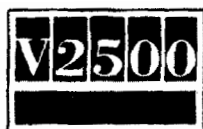
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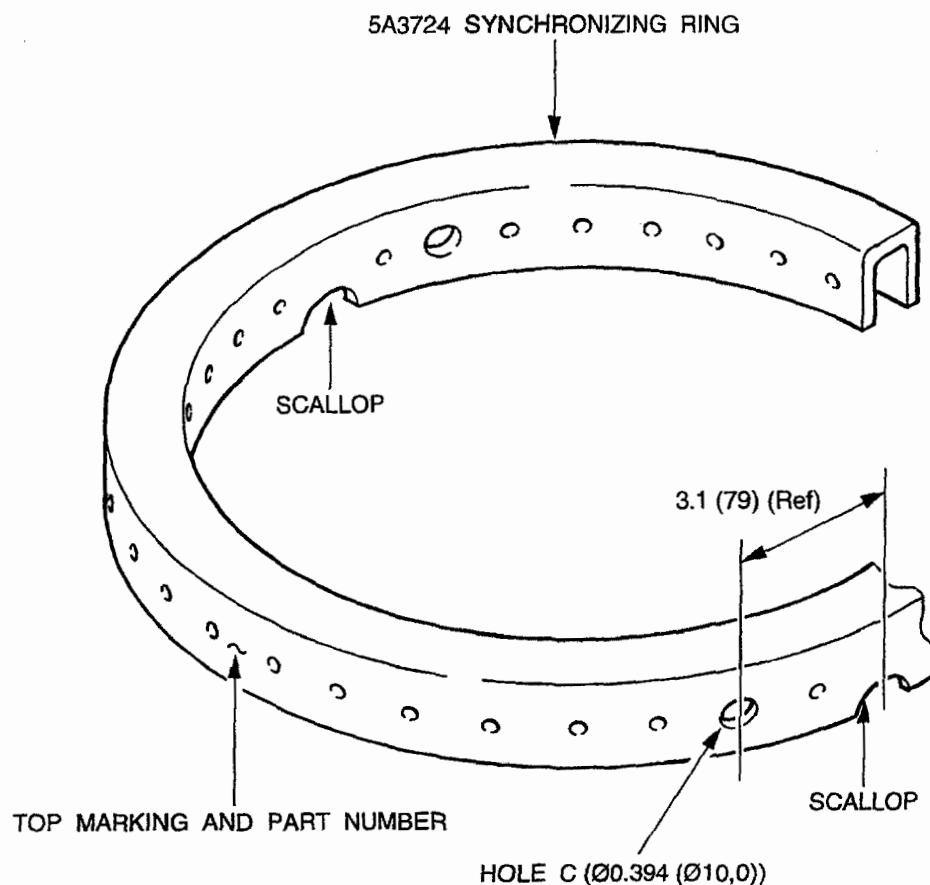
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Set the Synchronizing Ring onto the Machine Fixture

Figure 2 (Sheet 1 of 5)



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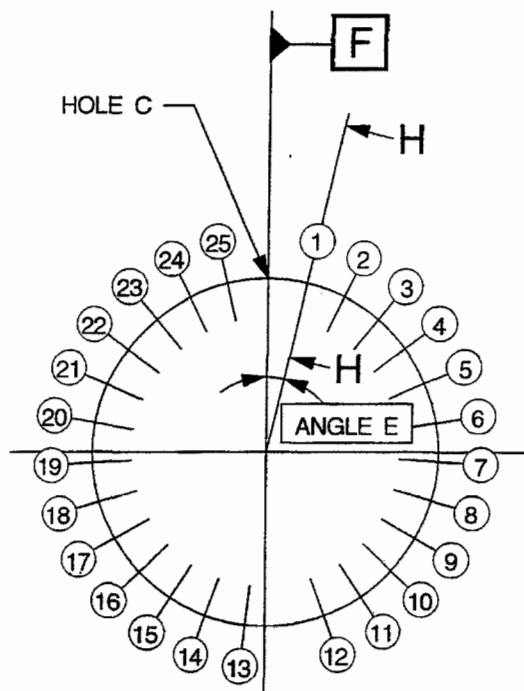
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Top Marking and Scallops on the Synchronizing Ring

Figure 2 (Sheet 2 of 5)



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5A3724 SYNCHRONIZING RING

| No. | ANGLE E | No. | ANGLE E |
|-----|----------|-----|----------|
| 1 | 13° 20' | 13 | 186° 40' |
| 2 | 26° 40' | 14 | 200° 00' |
| 3 | 40° 00' | 15 | 213° 20' |
| 4 | 53° 20' | 16 | 226° 40' |
| 5 | 66° 40' | 17 | 240° 00' |
| 6 | 80° 00' | 18 | 253° 20' |
| 7 | 93° 20' | 19 | 266° 40' |
| 8 | 106° 40' | 20 | 280° 00' |
| 9 | 120° 00' | 21 | 293° 20' |
| 10 | 133° 20' | 22 | 306° 40' |
| 11 | 146° 40' | 23 | 320° 00' |
| 12 | 160° 00' | 24 | 333° 20' |
| | | 25 | 346° 40' |

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Hole Positions on the Synchronizing Ring

Figure 2 (Sheet 3 of 5)

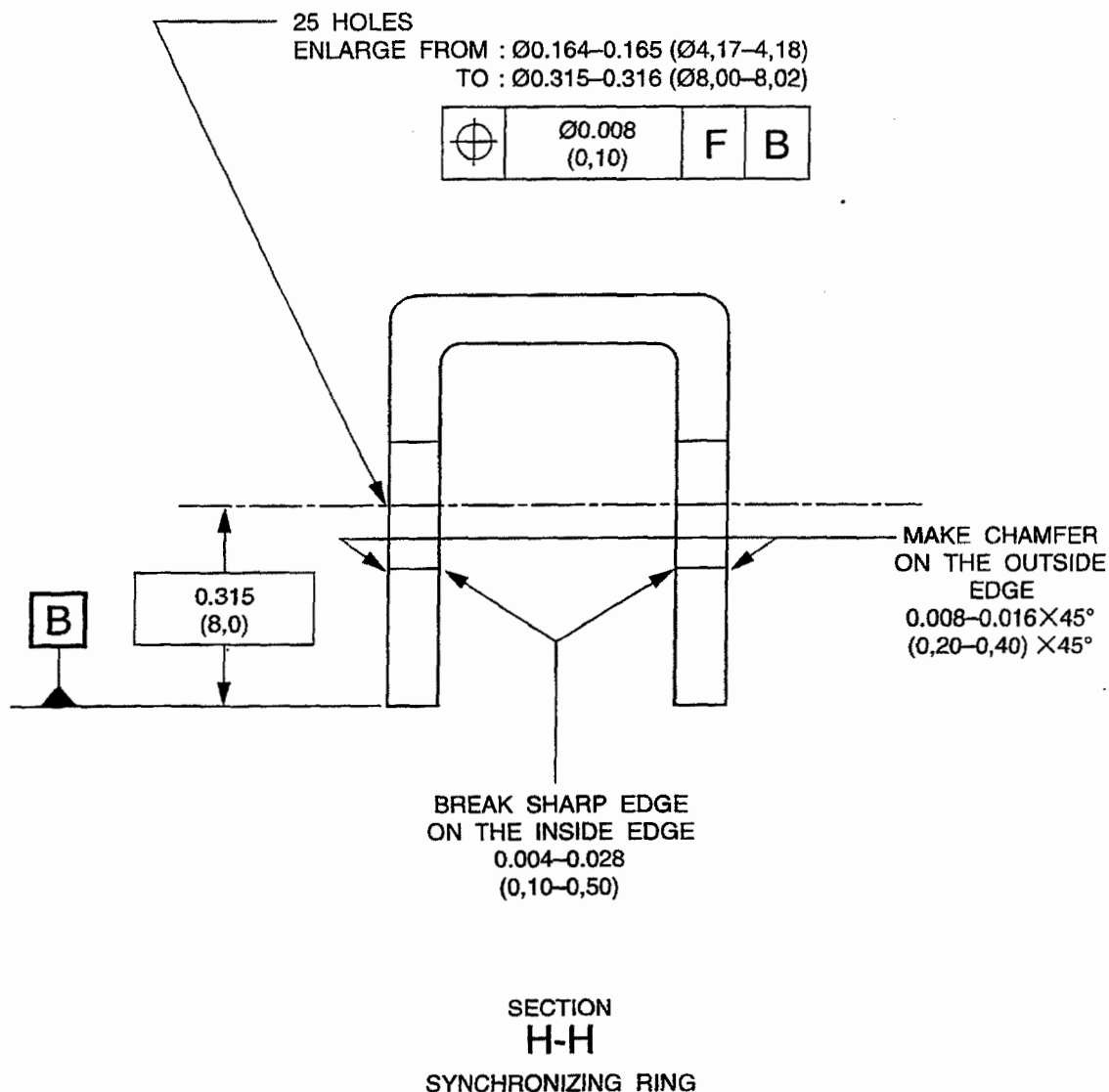
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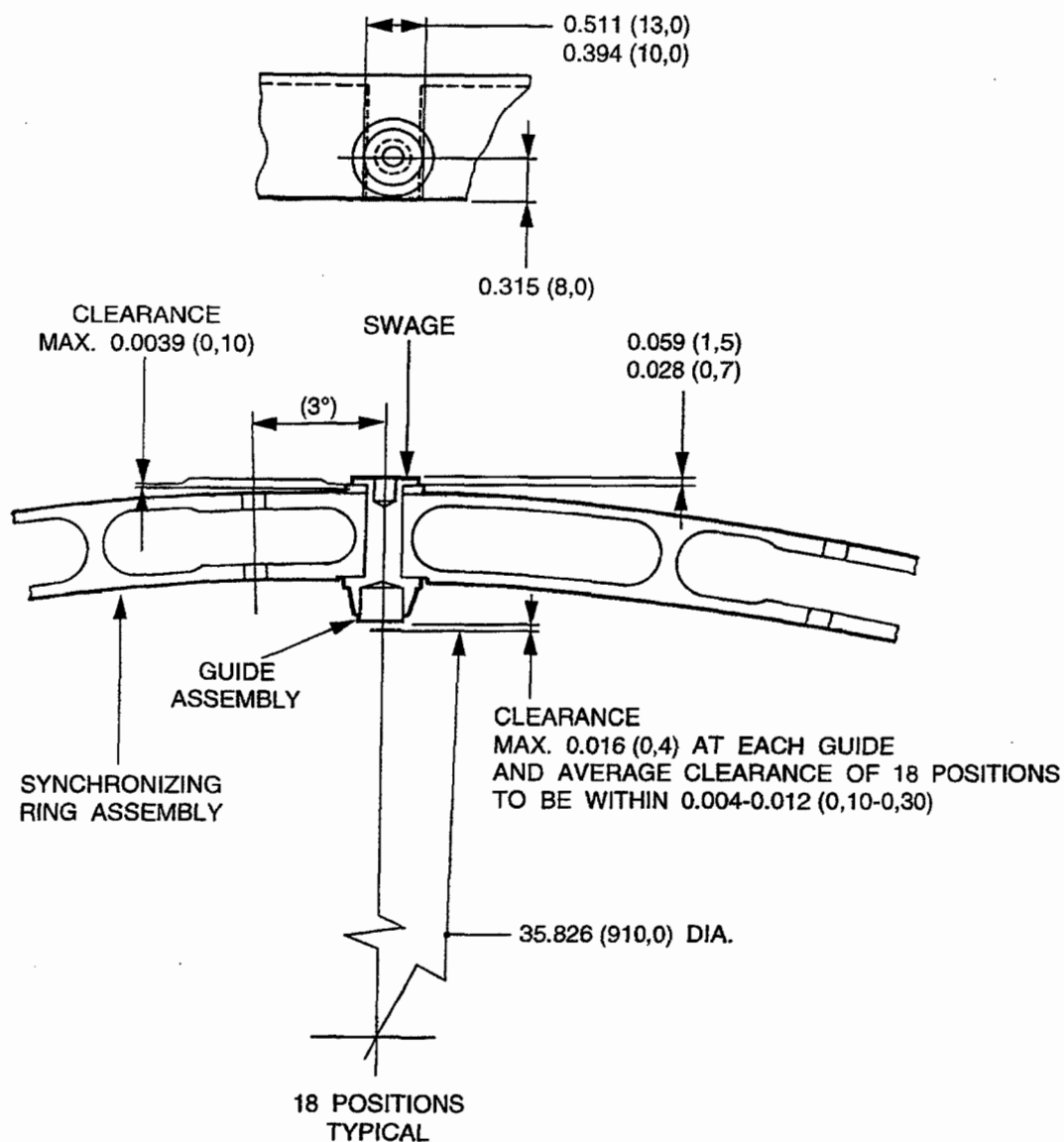
Enlarge 25 Holes on the Synchronizing Ring

Figure 2 (Sheet 4 of 5)



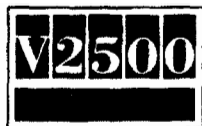
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Installation of the Guide onto the Synchronizing Ring

Figure 2 (Sheet 5 of 5)



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3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits necessary for this Service Bulletin:

None.

B. Parts affected by this Service Bulletin:

| New Part No. (ATA No.) | Qty | Est'd Unit Price (\$) | Keyword | Old Part No. (IPC No.) | Instructions /Disposition |
|------------------------------|-----|-----------------------------|----------------------------|------------------------------|------------------------------|
| 5A0959 (72-32-70) | 25 | | .Pin | 5A3710 (01-140) | (A) (S1) |
| 5A0960 (72-32-70) | 50 | | .Bush | - (01-145) | (A) (S1) (2D) |
| 5A1816 (72-32-70) | A/R | | .Bush | - (01-147) | (B) (2D) |
| 5A1817 (72-32-70) | A/R | | .Bush | - (01-149) | (B) (2D) |
| 5A0795 (72-32-70) | 2 | | .Pin | 5A3709 (01-180) | (A) (S1) |
| 5A3714 (72-32-73) | 4 | | .Bush | - (01-100) | (A) (S1) (2D) |
| 5A1818 (72-32-73) | A/R | | .Bush | - (01-102) | (B) (2D) |
| 5A1819 (72-32-73) | A/R | | .Bush | - (01-104) | (B) (2D) |
| 5A0954 (72-32-73) | 1 | | .Ring, A/O Synchronized | 5A3724 (01-150) | (A) (C) (S1) (1D) |
| 5A0956 (72-32-73) | 18 | | ..Guide, A/O | 5A3699 (01-180) | (A) |

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NOTE: The unit prices, if shown, are an estimate and they are given for the purposes of planning only. For information about actual prices, refer to the IAE Price Catalog or contact IAE's Spare Parts Sales Department.

C. Instruction/Disposition Code Statements:

- (A) New part is available.
- (B) New part will be available in December 1998.
- (C) Old part will continue to be supplied.
- (S1) New parts coded (S1) must replace old parts coded(S1) as a COMPLETE SET per engine.
- (1D) Old part can be reworked and reidentified to the new part number.
- (2D) Additional Part.