P U B L I C A T I O N T R A N S M I T T A L

RR-DERBY

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DATER Dec. 4/01

V2500-A1 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits Revision 3 to Service Bulletin EV2500-72-0233

Document History

Service Bulletin Revision Status		Supplement Revision Status
Initial Issue	Feb.28/96	
Revision 1	Jan.13/97	
Revision 2	Jan.25/98	

Bulletin Revision 3

Remove	Incorporate	Reason for change
All pages of the Service Bulletin	Pages 1 to 30 of the Service Bulletin	To change instructions disposition from (2D) to (1D) and add instructions disposition (A) to reflect change in availability of parts 6A6435 and 6A6437

V2500-ENG-72-0233

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 3 are as follows:

Page		Revision Number	Revision Date
	Bulletin		
R	1	3	Dec.4/01
R	2	3	Dec.4/01
R	3	3	Dec.4/01
R	4	3	Dec.4/01
R	5	3	Dec.4/01
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R	25	3	Dec.4/01
R	26	3	Dec.4/01
R	27	3	Dec.4/01
R	28	3	Dec.4/01
R	29	3	Dec.4/01
R	30	3	Dec.4/01

MODIFICATION SERVICE BULLETIN - ENGINE - LP COMPRESSOR - ROD ADJUSTMENT FEATURE RELOCATION OF LPC BLEED RIGGING

1. Planning Information

A. Effectivity

(1) Airbus A320

(a) V2500-A1 Engines prior to Serial No.V0362.

(2) ATA Location

72-32-00

75-31-00

B. Reason

(1) Problem

Readjustment of LPC Bleed Mechanism requires disassembling the parts of the Intermediate Case Module.

(2) Background

Operators requested minimum disassembling of the parts when they performed the readjustment of LPC Bleed Mechanism to decrease a part of the elevated exhaust gas temperature (E.G.T.) caused by the deterioration of LPC Bleed Mechanism.

(3) Objective

To make easy the readjustment of LPC Bleed Mechanism by the modification of adjusting feature from front end of the Actuating Rod to rear end.

(4) Substantiation

Satisfactory analytical review

(5) Effects of Bulletin on Workshop Procedures:

(a) Removal/Installation

Not affected.

(b) Disassembly/Assembly

Affected (See Supplemental Information).

(c) Cleaning

Not affected.

(d) Inspection/Check

Affected (See Supplemental Information).

(e) Repair

Affected (See Supplemental Information).

(f) Testing

Not affected.

C. Supplemental Information

(1) Assembly of the Post-Service Bulletin configuration requires instructions for installing new LPC Bleed Actuating Rods.

(2) The existing inspection, 72-32-75, Inspection/Check-02 does not apply to the new configuration.

(3) The following existing Repair Schemes are not applicable to the new LPC Bleed Actuating Rod introduced by this Service Bulletin.

(a) VRS1341

Spherical Bearing Replacement Repair Scheme of Rod Assembly.

(b) VRS1343

Key Replacement Repair Scheme of Rod Assembly.

(c) VRS1720

Blend Repair Scheme of BSBVA Master Guide.

(d) VRS1722

Blend Repair Scheme of BSBVA Slave Guide.

D. Description

(1) The change introduced by this Service Bulletin are as follows:

(a) To change the adjustment position of LPC Bleed Mechanism from forward end to rear end of Rod Assembly.

(b) To eliminate the slots from the Booster Stage Bleed Valve Actuator Master and Slave Guides for the engines not incorporating Bulletin V2500-ENG-70-0272.

(2) The existing Booster Stage Bleed Valve Actuating Master and Slave Guides can be reworked and reidentified with the new part numbers.

E. Compliance

Category Code 6

Accomplish when the sub assembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected parts.

F. 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.

G. Manpower

Estimated manhours to incorporate the full intent of this Bulletin:

(1) In Service

Not applicable.

(2) At Overhaul

(a) To rework and reidentify the 5A0334 or 5A9013, Master Guide

1 hour

(b) To rework and reidentify the 5A0335 or 5A9017, Slave Guide

1 hour

(c) Increase in time for assembly of Actuating Rods

2 minutes

(d) Total: 2 hours 2 minutes

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

H. Material - Price and Availability

(1) Modification kit is not required.

(2) See 'Material Information' section for prices and availability of future spares.

I. Tooling - Price and Availability

Special tool is not required.

J. Weight and Balance

(1) Weight Change

Plus 0.17 lb. (0,08 kg.)

(2) Moment Arm

No effect

(3) Datum

Engine Front Mount Centreline (Power Plant Station (PPS) 100)

K. Electrical Load Data

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

L. References

(1) IAE V2500 Service Bulletins:

(a) V2500-ENG-70-0272

Information - To announce the availability of revised material LP compressor bleed actuator mounting brackets

(b) V2500-ENG-70-0049

Information - Provide a replacement BSBVA master and slave guide assembly

(c) V2500-ENG-72-0031

Provide a seal for booster stage bleed valve A/O and a replacement LPC inlet guide vane assembly

(2) V2500 Engine Illustrated Parts Catalog (S-V2500-1IA), Chapter/Section 72-32-75, 75-31-42 and 75-31-43.

(3) V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-32-00.

(4) V2500 Standard Practices/Processes Manual.

(5) Facilities Equipment Manual.

(6) Internal Reference No.

IAE Engineering Change Number 93VJ162

M. Other Publications Affected

(1) V2500 Engine Illustrated Parts Catalog (S-V2500-1IA), Chapter/Section 72-32-75, 75-31-42 and 75-31-43

(2) V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-32-00, Disassembly-08 and Assembly-08 Config-1

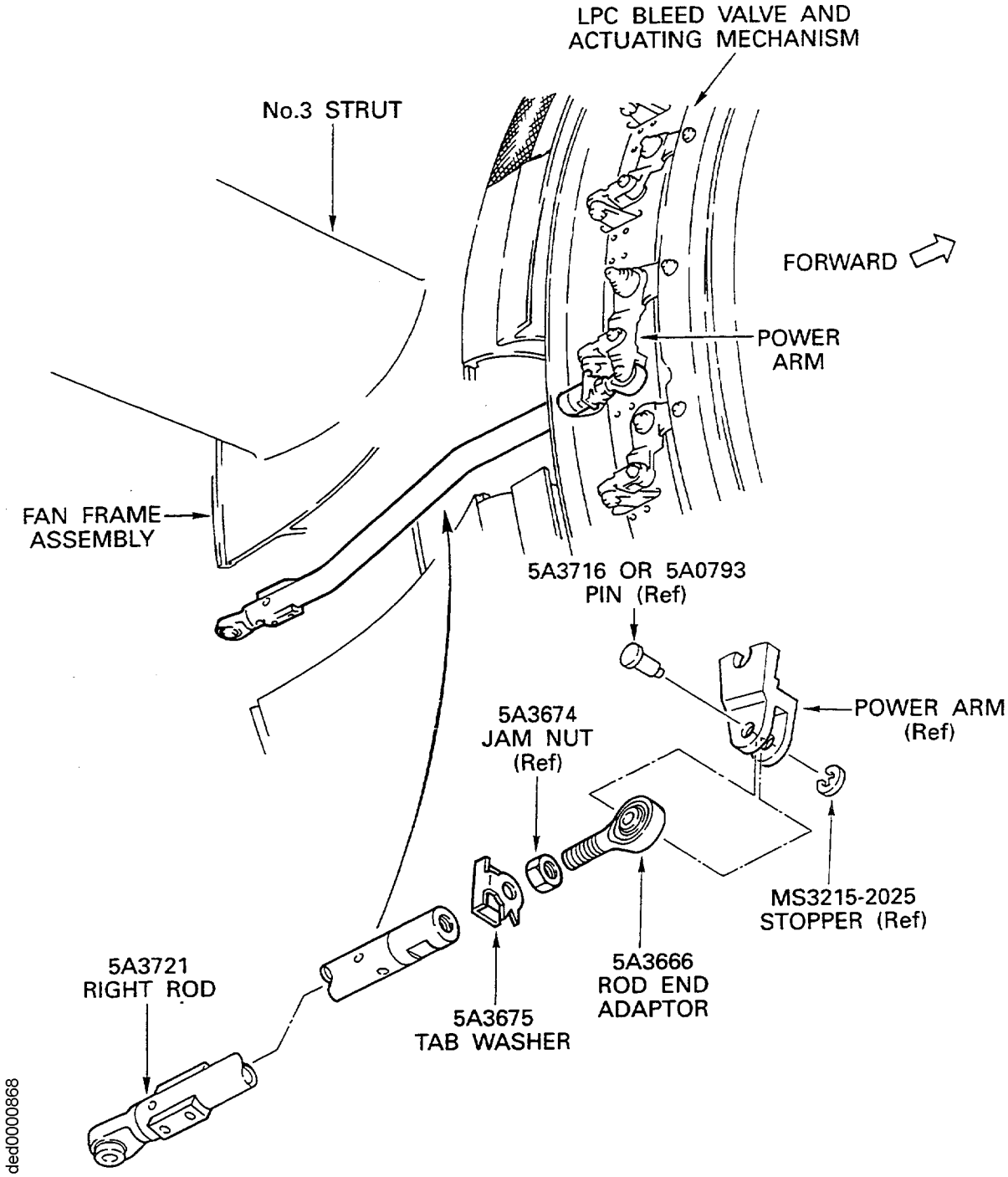

Fig.1 Before Alteration of the Right Rod Assembly of LPC Bleed Valve

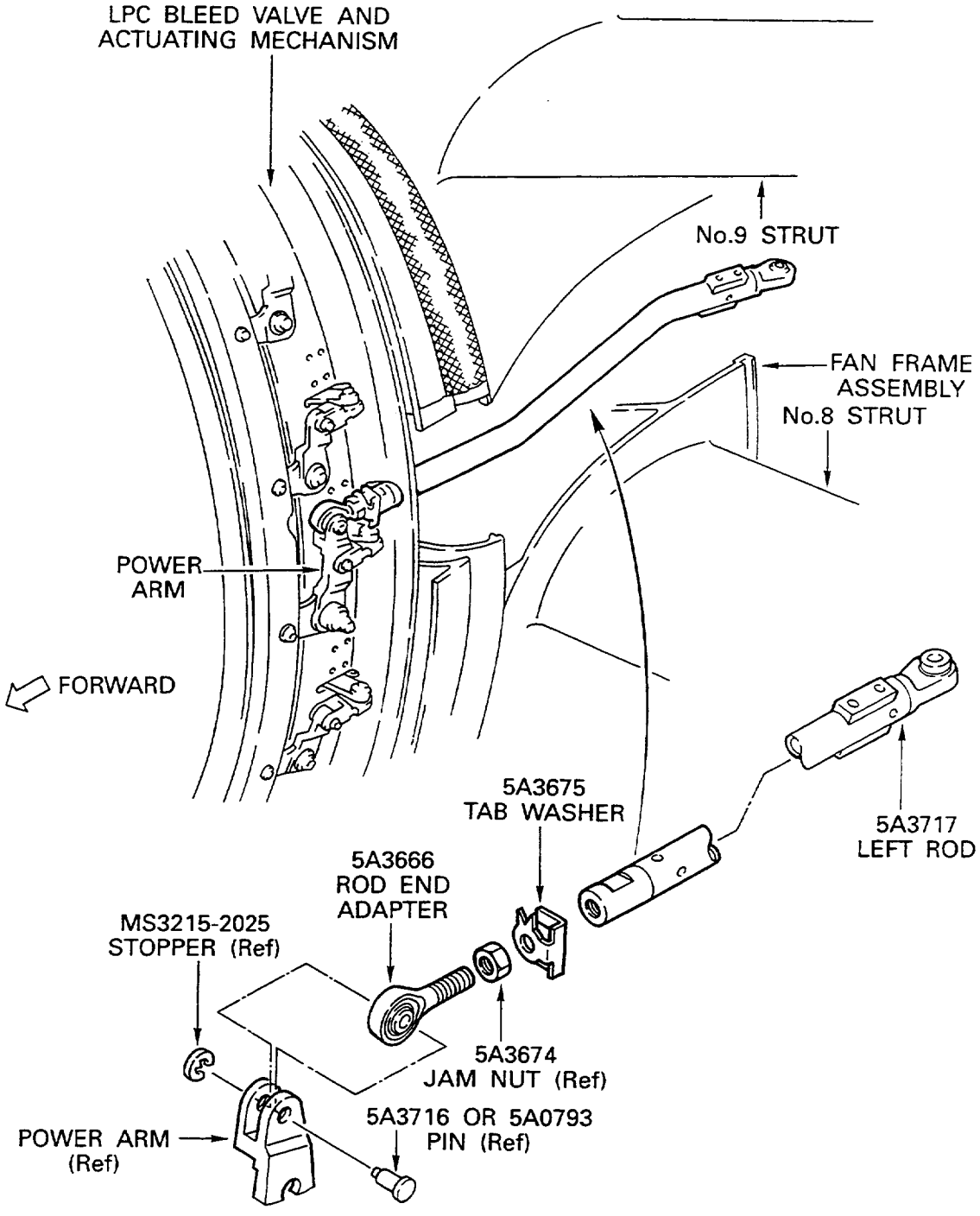

Fig.2 Before Alteration of the Left Rod Assembly of LPC Bleed Valve

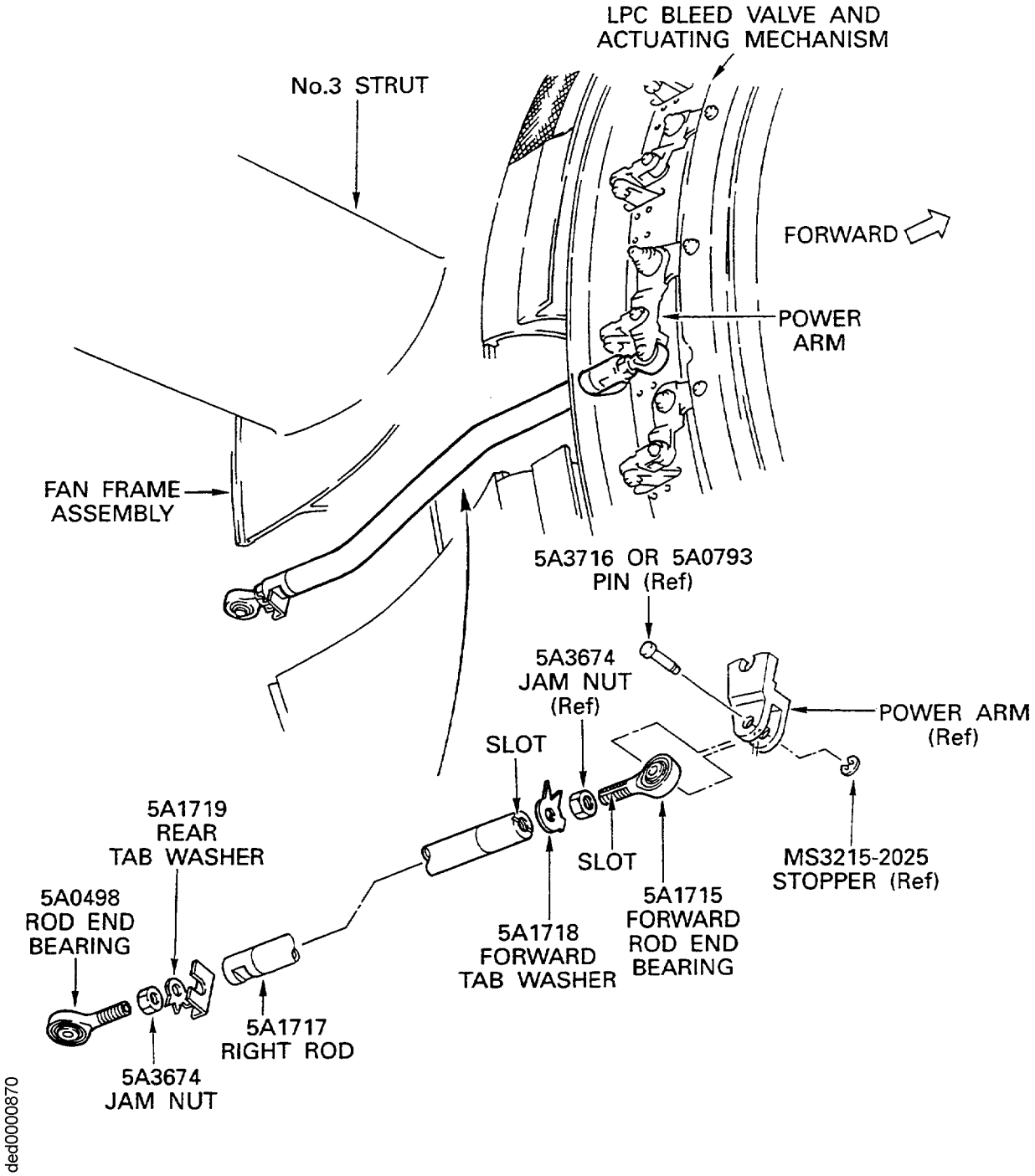

Fig.3 After Alteration of the Right Rod Assembly of LPC Bleed Valve

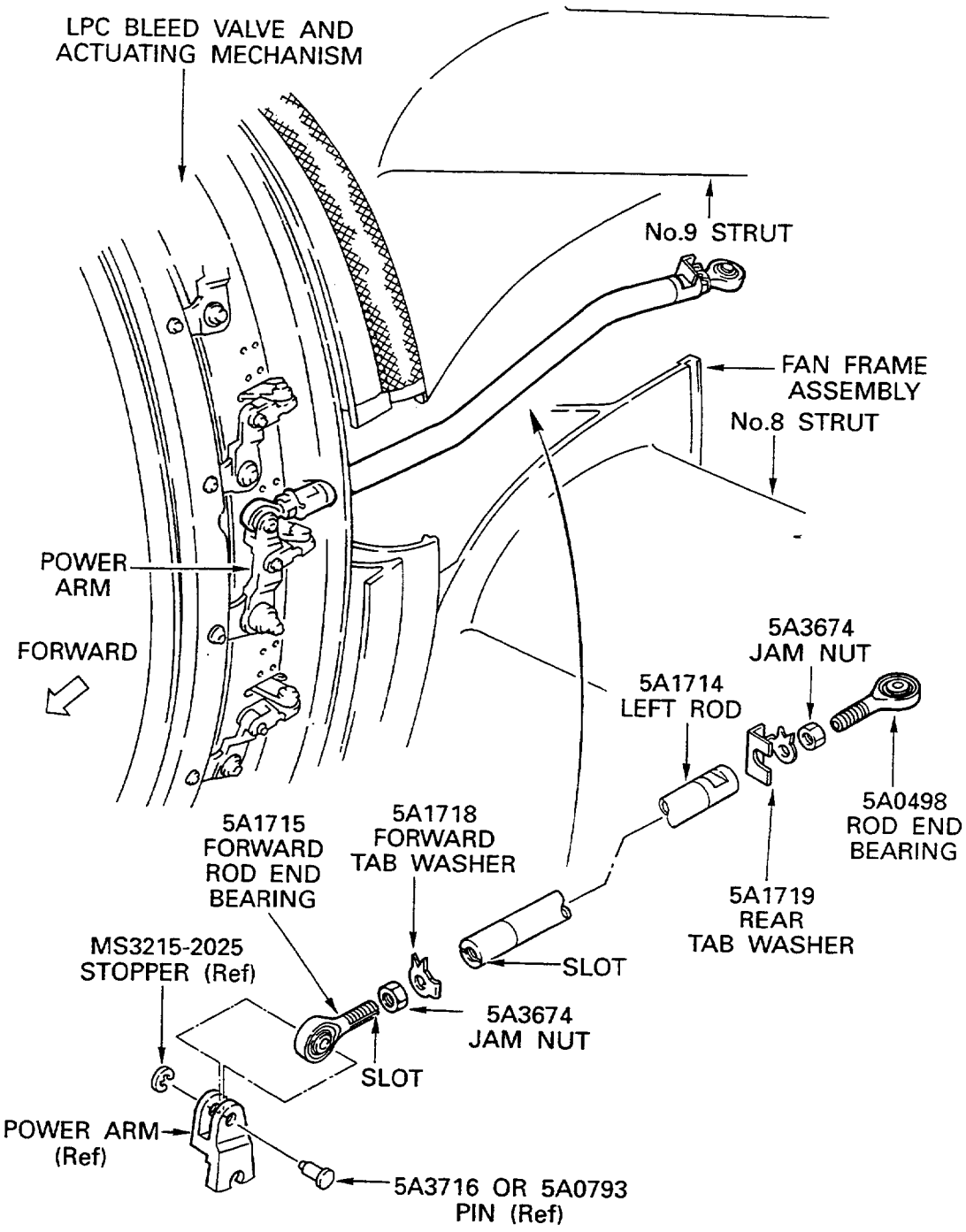

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Fig.4 After Alteration of the Left Rod Assembly of LPC Bleed Valve

2. Material Information

A. The kit required consists of the following parts:

None

B. New production parts:

PART NO.	QTY	UNIT PRICE US DOLLARS
5A1715	1	109.00
5A1718	1	38.90
5A1717	1	1113.00
5A1719	1	38.90
5A3674	1	20.10
5A0498	1	196.00
5A1714	1	11130.00

NOTE: The unit prices, if shown, are an estimate and they are given for the purpose of planning only. For actual prices, refer to the IAE Price Catalogue or contact IAE's spare parts sales department.

C. Parts affected by this bulletin:

72-32-75

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
01120	5A1715	1	Bearing, rod end forward	-	5A3666	(A)(B) (S1)
01160	5A1718	1	Washer, tab forward	-	5A3675	(A) (B) (S1)
01200	5A1717	1	Rod A/O right	-	5A3721	(A) (E) (S1)
01170	5A1719	1	Washer, tab rear	-	-	(A) (S1)
01180	5A3674	1	Nut, jam	-	-	(A) (S1)
01190	5A0498	1	Bearing, rod end	-	-	(A) (S1)
01250	-	1	Bearing	-	MS14101-4	(B) (S1)
01260	-	1	Rivet	-	AN123496	(B) (S1)
01265	-	1	Key	-	5A3725	(B) (S1)

	FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
	01420	5A1715	1	Bearing, rod end forward	-	5A3666	(A) (B) (S1)
	01460	5A1718	1	Washer, tab forward	-	5A3675	(A) (B) (S1)
	01500	5A1714	1	Rod, A/O left	-	5A3717	(A) (E) (S1)
	01470	5A1719	1	Washer, tab rear	-	-	(A) (S1)
	01480	5A3674	1	Nut, jam	-	-	(A) (S1)
	01490	5A0498	1	Bearing, rod end	-	-	(A) (S1)
	01550	-	1	Bearing	-	MS14101-4	(B) (S1)
	01560	-	1	Rivet	-	AN123496	(B) (S1)
	01565	-	1	Key	-	5A3725	(B) (S1)
	75-31-42						
	01250	6A6436	1	Guide, plate BSBVA Master	-	5A0334	(A)(C) (1D) (S1) (S2)
R R	01250	6A6435	Ref	Guide, plate BSBVA Master	-	5A9013	(A)(C) (1D) (S1) (S2)
R	75-31-43						
	01250	6A6438	1	Guide, plate BSBVA Slave	-	5A0335	(A) (C) (1D) (S1) (S2)
R R	01250	6A6437	Ref	Guide, plate BSBVA Slave	-	5A9017	(A) (C) (1D) (S1) (S2)

D. Instructions disposition codes:

(A) New part will be available.

(B) Old part will continue to be supplied for old application.

(C) Old part will continue to be supplied until the existing stock has been exhausted.

(E) Old part will no longer be available for sale.

(1D) New part can be obtained by rework and re-identification of old part

(S1) New parts coded (S1) must replace old parts coded (S1) as a complete set per engine, except as noted in (S2).

(S2) New part coded (S2) can be used instead of old part coded (S2) for engines not incorporating Service Bulletin V2500-ENG 70-0272.

3. Accomplishment Instructions

A. Assembly Instructions

(1) The procedures that follow must be done to accomplish this bulletin

(a) Install the rod assemblies by use of approved procedures given in Reference(3), TASK 72-32-00-430-008-B00, SUBTASK 72-32-00-430-303, ASSEMBLY-08, CONFIG-2.

(b) Install the setting fixture and dummy ring by use of approved procedures given in Reference (3), TASK 72-32-00-430-008-B00, SUBTASK 72-32-00-430-304, ASSEMBLY-08, CONFIG-2.

(c) Install the rear rod bearings in to the rods by use of approved procedures given in Reference (3), TASK 72-32-00-430-008-B00, SUBTASK 72-32-00-430-305, ASSEMBLY-08, CONFIG-2.

(d) Adjust the length of the rear rod end bearing for the engines not incorporating IAE Service Bulletin No. V2500-ENG-72-0031, by use of approved procedures given in Reference(3), TASK 72-32-00-430-00A00, SUBTASK 72-32-00-430-306-A00, ASSEMBLY-08, CONFIG-2.

(e) Adjust the length of the rear rod end bearing for the engines incorporating IAE Service Bulletin No. V2500-ENG-72-0031, by use of approved procedures given in Reference(3), TASK 72-32-00-430-008-B00, SUBTASK 72-32-00-430-306-B00, ASSEMBLY-08, CONFIG-2.

(f) Remove the setting fixture and dummy ring by use of approved procedures given in Reference(3), TASK 72-32-00-430-008-B00, SUBTASK 72-32-00-430-307, ASSEMBLY-08, CONFIG-2.

(2) For the engines which IAE Service Bulletin V2500-ENG-70-0272 in 1.K Reference (1) has not been incorporated, do the following installation by the approved procedures in Reference (3), Chapter/Section 72-00-40, Installation-09, Config-1.

(a) Install the new 6A6436 or 6A6435, Booster Stage Bleed Valve Actuating Master Guide to the existing 5A0347, Master Bleed Actuator Mount Bracket.

(b) Install the 6A6438 or 6A6437, Booster Stage Bleed Valve Actuating Slave Guide to the existing 5A0348, Slave Bleed Actuator Mount Bracket.

B. Rework Instructions

For the engines incorporating IAE Service Bulletin V2500-ENG-70-0272, any rework is not required.

For the engines not incorporating IAE Service Bulletin V2500-ENG-70-0272, the Booster Stage Bleed Valve Actuating Master and Slave Guides must be reworked as below:

(1) Rework the parts that follow:

5A0334, Guide, A/O BSBVA Master (Refer to 75-31-42, Fig/Item 01-250)

Consumable Materials:

CoMat 06-022, Fluorescent penetrant

Standard Equipment:

Chemical cleaning equipment

Standard workshop equipment

Penetrant crack test equipment

Vibro engraving equipment

CAUTION: TITANIUM COMPONENT - USE SILICON CARBIDE TYPE ABRASIVE WHEELS, STONES AND PAPERS TO DRESS, BLEND AND POLISH THIS COMPONENT

CAUTION: TITANIUM COMPONENT - DO NOT USE FORCE WITH MECHANICAL CUTTERS OR THE MATERIAL WILL BECOME TOO HOT

CAUTION: TITANIUM COMPONENT - IF THE MATERIAL SHOWS A CHANGE IN COLOR TO DARKER THAN A LIGHT STRAW COLOR, THE COMPONENT IS TO BE REJECTED

PROCEDURE	RELATED DATA
(a) Chemically clean the Guide, A/O BSBVA Master.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(b) Mark off the area of the Guide, A/O BSBVA Master, that is to be removed.	See Fig 5, 6, 7, 8 and 9. Use standard workshop equipment.
(c) Rework the Guide, A/O BSBVA Master, in the area shown.	See Fig 8 and 9. Use standard workshop equipment.
(d) Remove sharp edges.	See Fig 8 and 9. Use standard workshop equipment.
(e) Chemical clean the Guide, A/O BSBVA Master.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.

(f)	Do a swab etch on the reworked area.	Refer to SPM TASK 70-11-08-300-503 SUBTASK 70-11-08-300-002. Use chemical cleaning equipment.
(g)	Do a local penetrant crack test on the reworked area.	Refer to SPM TASK 70-23-05-230-501. Use CoMat 06-022 Fluorescent penetrant, with penetrant crack test equipment.
	(i) If cracked	Reject.
(h)	Visually examine and measure the dimensions of the reworked area.	See Fig 8 and 9.
(i)	Cancel the existing part number and identify with the new part number.	Refer to SPM TASK 70-09-00-400-501, SUBTASK 70-09-00-400-001. Use vibro engraving equipment.

Existing	Re-number
5A0334	6A6436

(2) Rework the parts that follow:

5A9013, Guide, A/0 BSBVA Master (Refer to 75-31-42, Fig/Item 01-250)

Consumable Materials:

CoMat 06-022, Fluorescent penetrant

Standard Equipment:

Chemical cleaning equipment

Standard workshop equipment

Penetrant crack test equipment

Vibro engraving equipment

CAUTION: TITANIUM COMPONENT - USE SILICON CARBIDE TYPE ABRASIVE WHEELS, STONES AND PAPERS TO DRESS, BLEND AND POLISH THIS COMPONENT

CAUTION: TITANIUM COMPONENT - DO NOT USE FORCE WITH MECHANICAL CUTTERS OR THE MATERIAL WILL BECOME TOO HOT

CAUTION: TITANIUM COMPONENT - IF THE MATERIAL SHOWS A CHANGE IN COLOR TO DARKER THAN A LIGHT STRAW COLOR, THE COMPONENT IS TO BE REJECTED

PROCEDURE	RELATED DATA
(a) Chemically clean the Guide, A/O BSBVA Master.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(b) Mark off the area of the Guide, A/O BSBVA Master, that is to be removed.	See Fig 5, 6, 7, 10 and 11. Use standard workshop equipment.
(c) Rework the Guide, A/O BSBVA Master, in the area shown.	See Fig 10 and 11. Use standard workshop equipment.
(d) Remove sharp edges.	See Fig 10 and 11. Use standard workshop equipment.
(e) Chemical clean the Guide, A/O BSBVA Master.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(f) Do a swab etch on the reworked area.	Refer to SPM TASK 70-11-08-300-503, SUBTASK 70-11-08-300-002. Use chemical cleaning equipment.
(g) Do a local penetrant crack test on the reworked area.	Refer to SPM TASK 70-23-05-230-501. Use CoMat 06-022 Fluorescent penetrant, with penetrant crack test equipment.
(i) If cracked	Reject.
(h) Visually examine and measure the dimensions of the reworked area.	See Fig 10 and 11.
(i) Cancel the existing part number and identify with the new part number.	Refer to SPM TASK 70-09-00-400-501, SUBTASK 70-09-00-400-001. Use vibro engraving equipment.

Existing	Re-number
5A9013	6A6435

(3) Rework the parts that follow:

5A0335, Guide, A/O BSBVA Slave (Refer to 75-31-43, Fig/Item 01-250)

Consumable Materials:

CoMat 06-022, Fluorescent penetrant

Standard Equipment:

Chemical cleaning equipment

Standard workshop equipment

Penetrant crack test equipment

Vibro engraving equipment

CAUTION: TITANIUM COMPONENT - USE SILICON CARBIDE TYPE ABRASIVE WHEELS, STONES AND PAPERS TO DRESS, BLEND AND POLISH THIS COMPONENT

CAUTION: TITANIUM COMPONENT - DO NOT USE FORCE WITH MECHANICAL CUTTERS OR THE MATERIAL WILL BECOME TOO HOT

CAUTION: TITANIUM COMPONENT - IF THE MATERIAL SHOWS A CHANGE IN COLOR TO DARKER THAN A LIGHT STRAW COLOR, THE COMPONENT IS TO BE REJECTED

PROCEDURE	RELATED DATA
(a) Chemically clean the Guide, A/O BSBVA Slave.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(b) Mark off the area of the Guide, A/O BSBVA Slave, that is to be removed.	See Fig 5, 6, 7, 12 and 13. Use standard workshop equipment.
(c) Rework the Guide, A/O BSBVA Slave, in the area shown.	See Fig 12 and 13. Use standard workshop equipment.
(d) Remove sharp edges.	See Fig 12 and 13. Use standard workshop equipment.
(e) Chemical clean the Guide, A/O BSBVA Slave.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(f) Do a swab etch on the reworked area.	Refer to SPM TASK 70-11-08-300-503, SUBTASK 70-11-08-300-002. Use chemical cleaning equipment.

(g)	Do a local penetrant crack test on the reworked area.	Refer to SPM TASK 70-23-05-230-501. Use CoMat 06-022 Fluorescent penetrant, with penetrant crack test equipment.
	(i) If cracked	Reject.
(h)	Visually examine and measure the dimensions of the reworked area.	See Fig 12 and 13.
(i)	Cancel the existing part number and identify with the new part number.	Refer to SPM TASK 70-09-00-400-501, SUBTASK 70-09-00-400-001. Use vibro engraving equipment.

Existing	Re-number
5A0335	6A6438

(4) Rework the parts that follow:

5A9017, Guide, A/O BSBVA Slave (Refer to 75-31-43, Fig/Item 01-250)

Consumable Materials:

CoMat 06-022, Fluorescent penetrant

Standard Equipment:

Chemical cleaning equipment

Standard workshop equipment

Penetrant crack test equipment

Vibro engraving equipment

CAUTION: TITANIUM COMPONENT - USE SILICON CARBIDE TYPE ABRASIVE WHEELS, STONES AND PAPERS TO DRESS, BLEND AND POLISH THIS COMPONENT

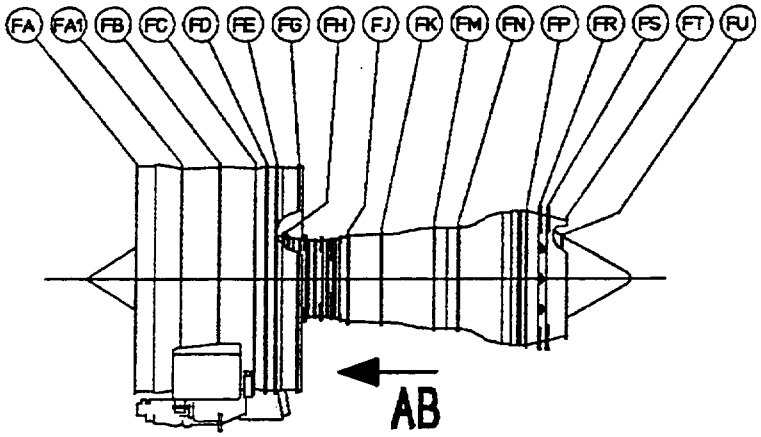
CAUTION: TITANIUM COMPONENT - DO NOT USE FORCE WITH MECHANICAL CUTTERS OR THE MATERIAL WILL BECOME TOO HOT

CAUTION: TITANIUM COMPONENT - IF THE MATERIAL SHOWS A CHANGE IN COLOR TO DARKER THAN A LIGHT STRAW COLOR, THE COMPONENT IS TO BE REJECTED

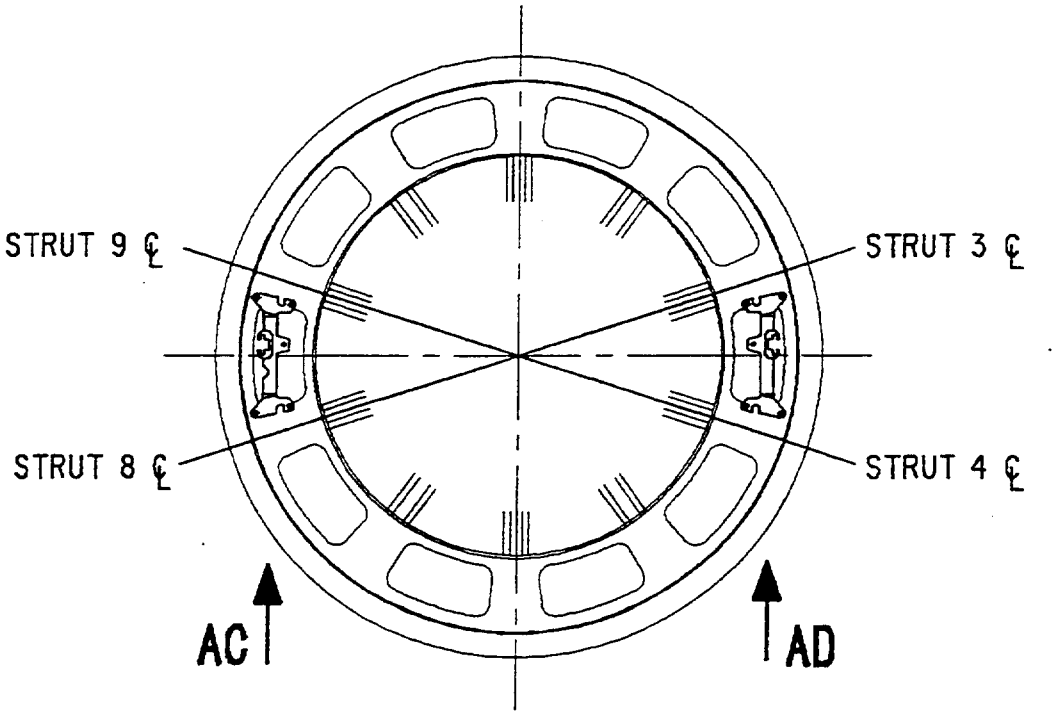
	PROCEDURE	RELATED DATA
(a)	Chemically clean the Guide, A/O BSBVA Slave.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.

(b) Mark off the area of the Guide, A/O BSBVA Slave, that is to be removed.	See Fig 5, 6, 7, 14 and 15. Use standard workshop equipment.
(c) Rework the Guide, A/O BSBVA Slave, in the area shown.	See Fig 14 and 15. Use standard workshop equipment.
(d) Remove sharp edges.	See Fig 14 and 15. Use standard workshop equipment.
(e) Chemical clean the Guide, A/O BSBVA Slave.	Refer to SPM TASK 70-11-03-300-503. Use chemical cleaning equipment.
(f) Do a swab etch on the reworked area.	Refer to SPM TASK 70-11-08-300-503, SUBTASK 70-11-08-300-002. Use chemical cleaning equipment.
(g) Do a local penetrant crack test on the reworked area.	Refer to SPM TASK 70-23-05-230-501. Use CoMat 06-022 Fluorescent penetrant, with penetrant crack test equipment.
(i) If cracked	Reject.
(h) Visually examine and measure the dimensions of the reworked area.	See Fig 14 and 15.
(i) Cancel the existing part number and identify with the new part number.	Refer to SPM TASK 70-09-00-400-501, SUBTASK 70-09-00-400-001. Use vibro engraving equipment.

Existing	Re-number
5A9017	6A6437



VIEW ON ENGINE EXTERIOR



ENLARGED VIEW ON ARROW **AB**

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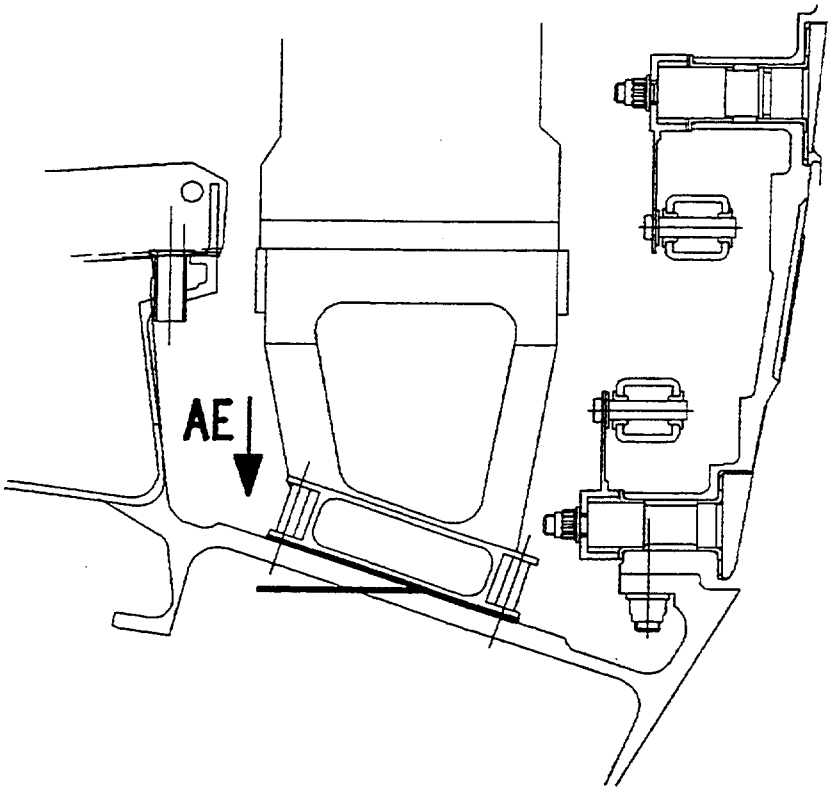
Rework of existing guide plates
Fig 5



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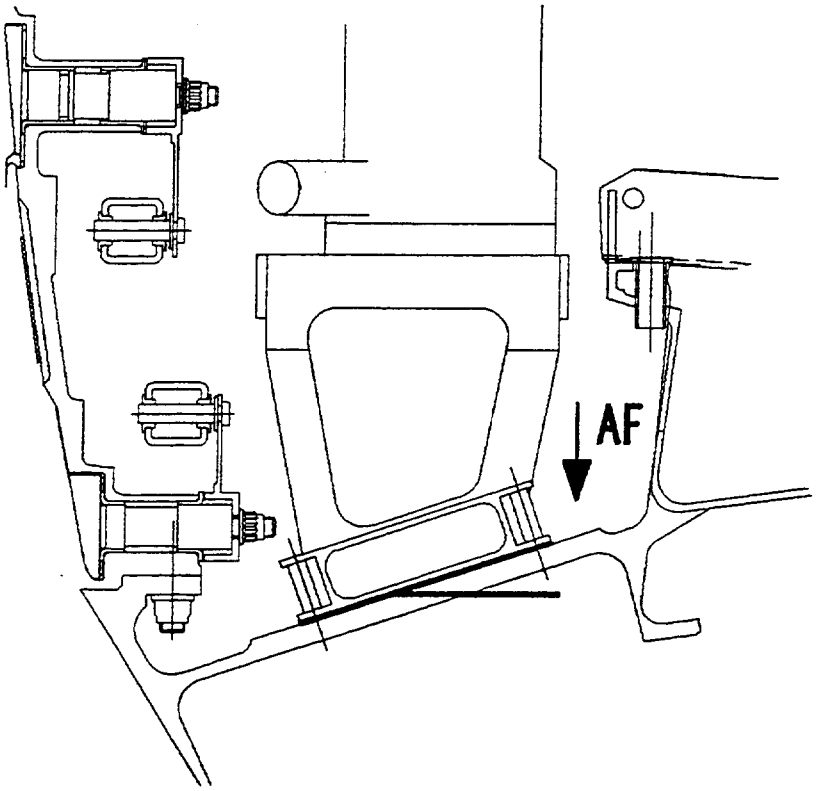
ENLARGED VIEW ON ARROW **AC**

Rework of existing guide plates
Fig 6



ENLARGED VIEW ON ARROW AD

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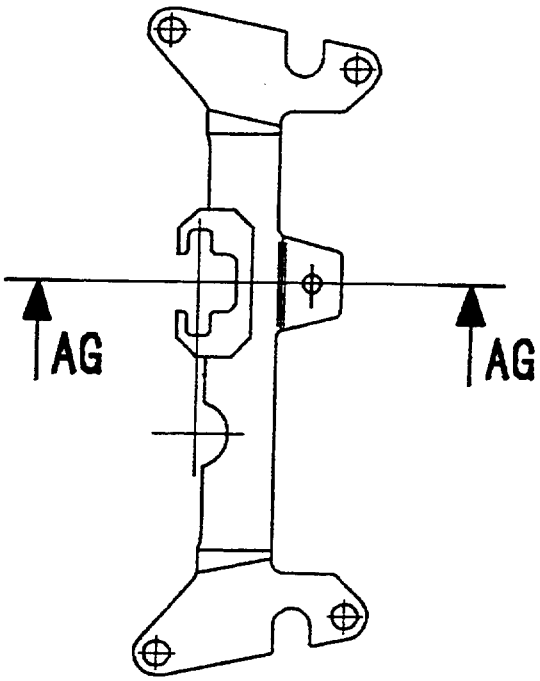
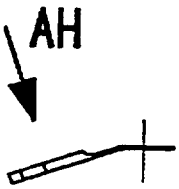
Rework of existing guide plates
Fig 7



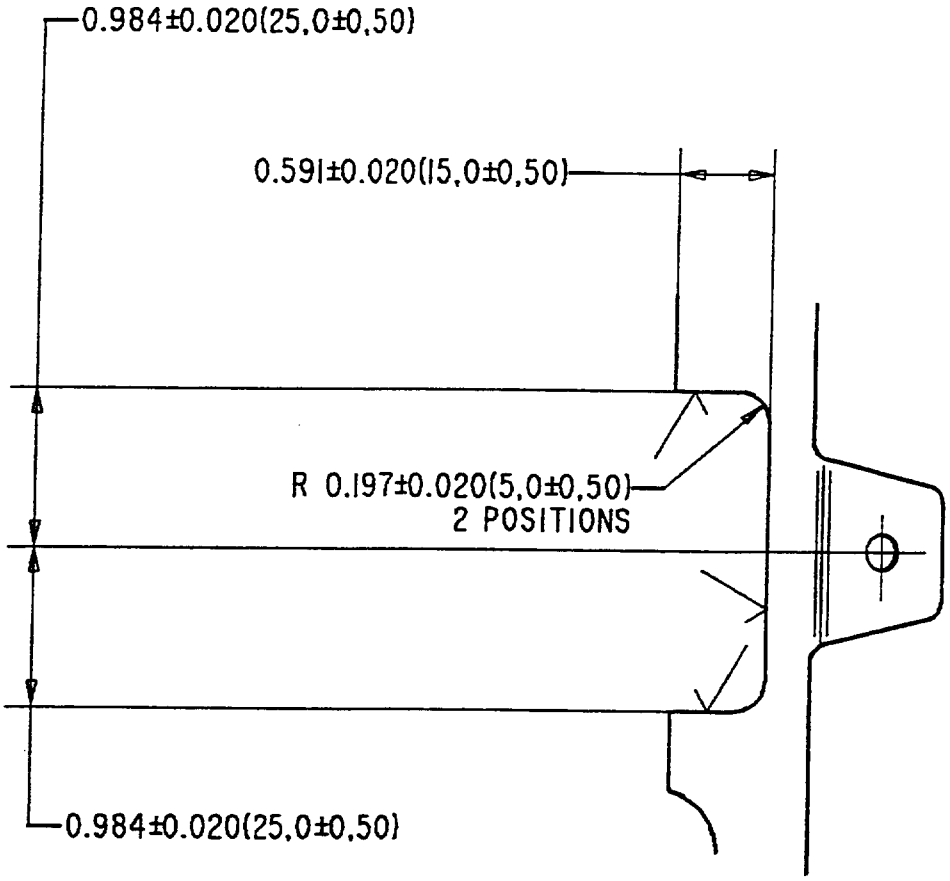
VIEW ON ARROW AE
BSBVA MASTER GUIDE PLATE 5A0334



SECTION AG

ded0000875

Rework of existing guide plates
Fig 8



THE FOLLOWING NOTES APPLY TO FIGS 11,13,15 AND 17
ALL DIMENSIONS IN INCHES (MILLIMETRES)

MACHINE WHERE MARKED THUS ▽

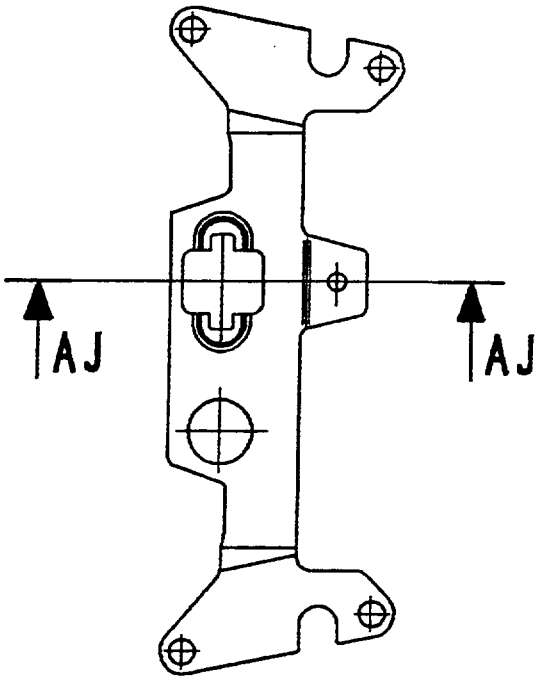
SURFACE TEXTURE TO BE 125 (3,2)

BREAK SHARP EDGES 0.004(0,10) TO 0.020(0,50)

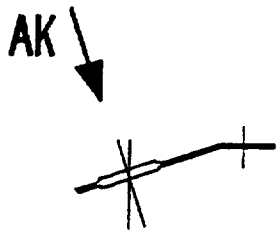
ENLARGED VIEW ON ARROW **AH**
SHOWING REQUIRED MACHINING

ded0000876

Rework of existing guide plates
Fig 9



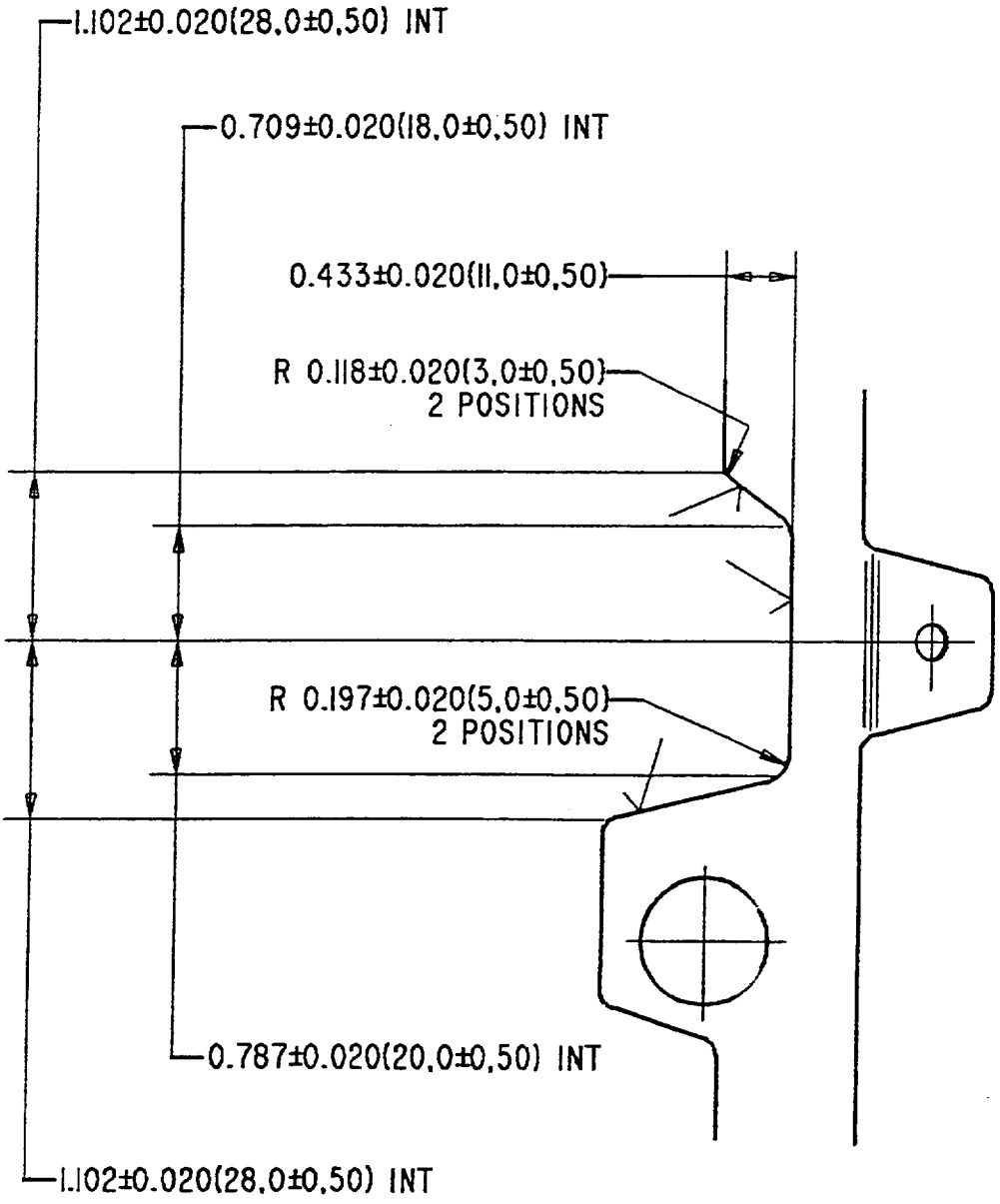
VIEW ON ARROW AE
BSBVA MASTER GUIDE PLATE 5A9013



SECTION AJ

ded0000877

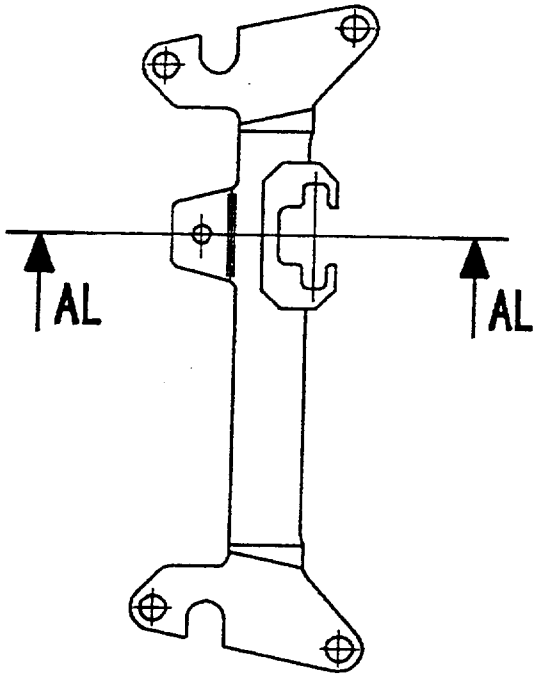
Rework of existing guide plates
Fig 10



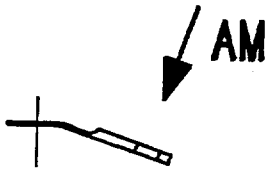
ENLARGED VIEW ON ARROW **AK**
SHOWING REQUIRED MACHINING

ded0000878

Rework of existing guide plates
Fig 11



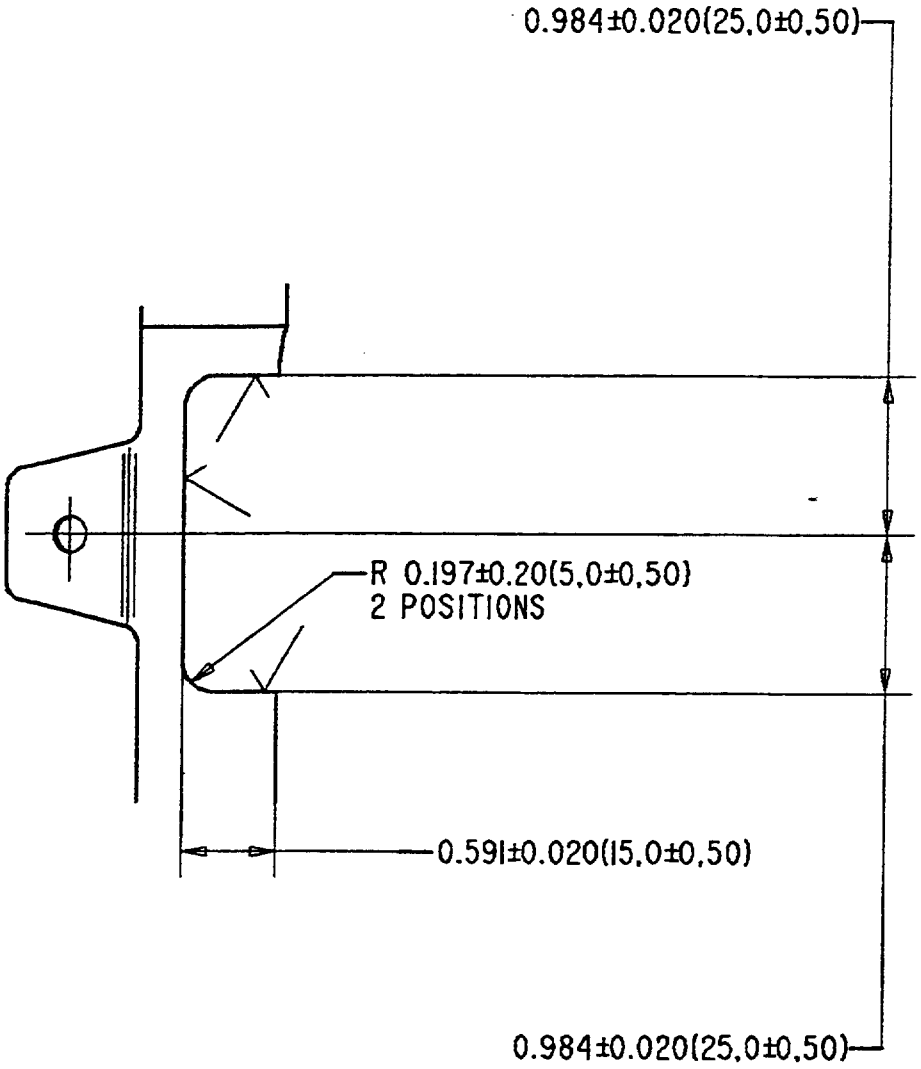
VIEW ON ARROW **AF**
BSBVA SLAVE GUIDE PLATE 5A0335



SECTION **AL**

ded0000879

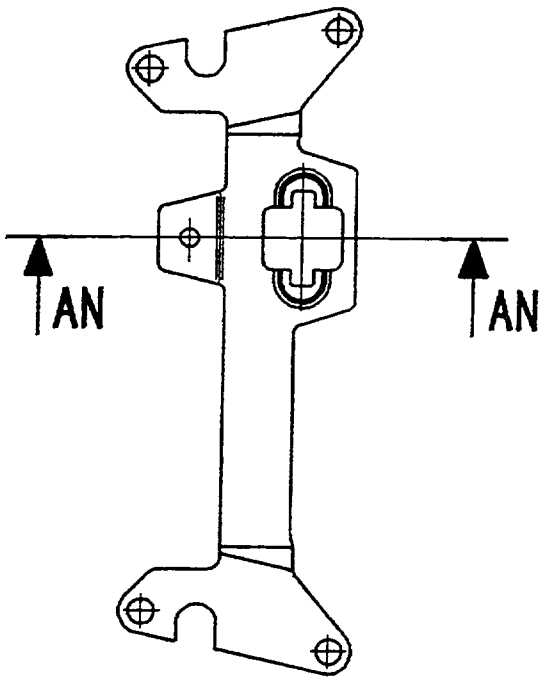
Rework of existing guide plates
Fig 12



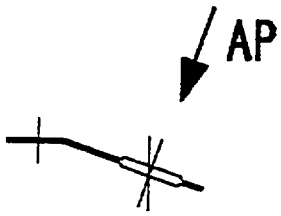
ENLARGED VIEW ON ARROW **AM**
SHOWING REQUIRED MACHINING

ded0000880

Rework of existing guide plates
Fig 13



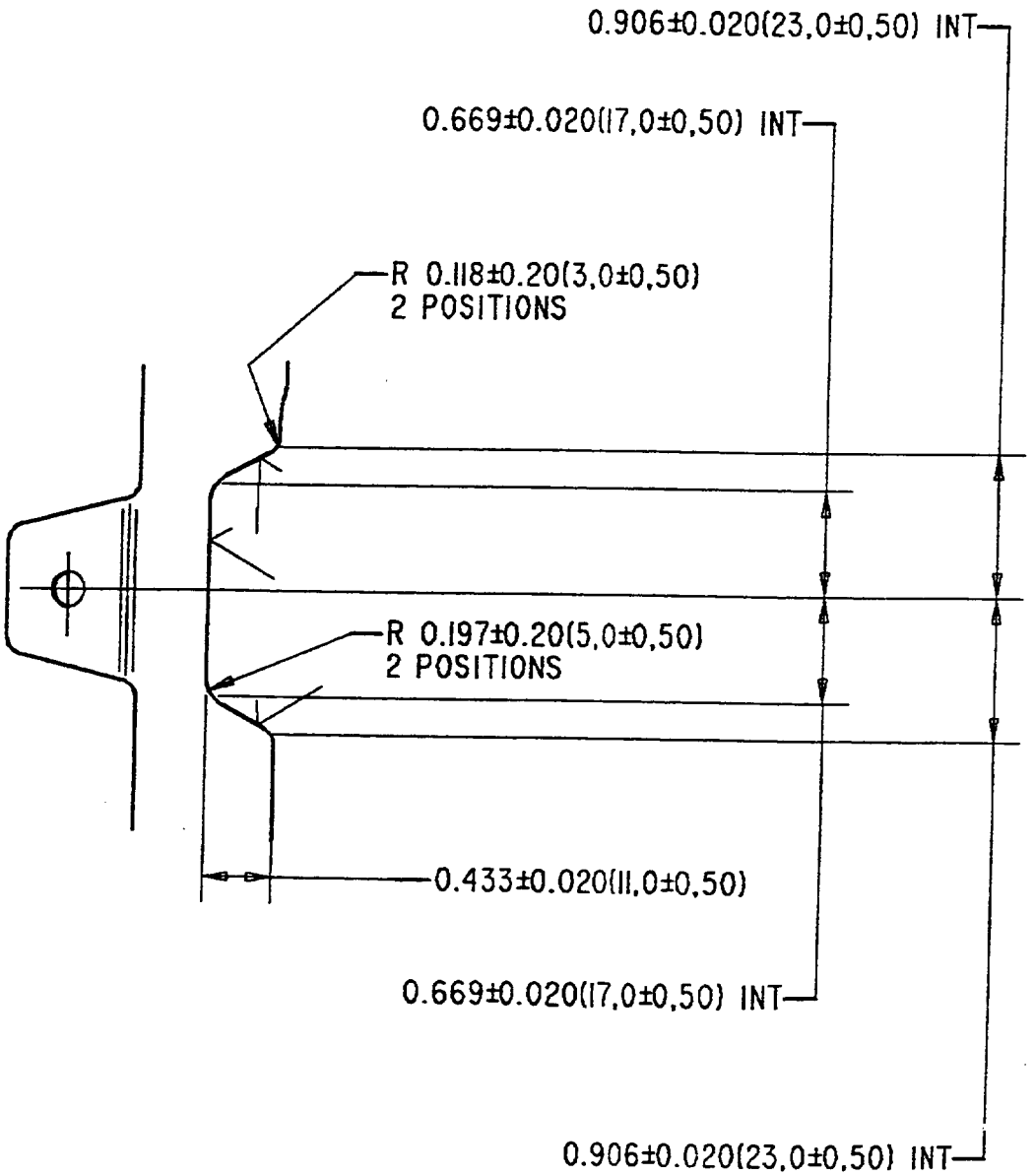
VIEW ON ARROW **AF**
BSBVA SLAVE GUIDE PLATE 5A9017



SECTION **AN**

ded0000881

Rework of existing guide plates
Fig 14



ENLARGED VIEW ON ARROW AP
SHOWING REQUIRED MACHINING

ded0000882

Rework of existing guide plates
Fig 15