

**International  
Aero Engines**

V2500 Propulsion System — Nacelle

# **SERVICE BULLETIN**

Date: January 29, 1998

Subject: Transmittal of Revision 2 to Service Bulletin Number V2500-NAC-78-0137

Service Bulletin Revision History:

<u>Event</u>	<u>Date</u>
Basic Issue	Apr. 03/97
Revision 1	Oct. 22/97
Revision 2	Jan. 29/98

Reasons for Issuance of Revision

(1) To correct part number on page 10.

Effect on Past Compliance

(1) None.

List of Effective Pages:

<u>Page No.</u>	<u>Rev. No.</u>	<u>Date</u>
1	2	Jan. 29/98
2 thru 9	1	Oct. 22/97
10	2	Jan. 29/98
11 thru 15	1	Oct. 22/97

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Transmittal

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NACELLE - EXHAUST - BLOCKER DOOR BUSHING/BUSHING RETAINER PIN  
INSTALLATION - MODIFICATION OF

## MODEL APPLICATION

V2500-D5

## BULLETIN INDEX LOCATOR

78-32-00

## Compliance Category Code

4

## Internal Reference No.

JG/LL 97VN800

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## **1. Planning Information**

### **A. Effectivity**

(1) Aircraft:

(a) MD90

(2) Nacelle: V2500 D5 thrust reverser serial numbers 0021001  
thru 0276001.

### **B. Reason**

(1) Condition

The blocker door bushing can become loose. The blocker door bushing anti-rotation pin can vibrate and cause wear damage to the blocker door.

(2) Background

Operators have experienced loose blocker door bushings and loose anti-rotation pins.

(3) Objective

Modify the existing thrust reverser blocker door bushing and anti-rotation pin installation to prevent the bushings from coming loose and the pins from vibrating.

(4) Substantiation

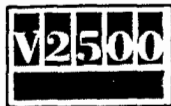
Not applicable.

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(5) Impact 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

The thrust reverser blocker door is removed. The spring is removed from the blocker door. The bushing is removed and installed with Loctite. The spring is installed. Sealant is applied to the ends of the anti-rotation pin to prevent vibration. The thrust reverser blocker door is installed.

D. Approval

Incorporation of this Service Bulletin must be accomplished only in conjunction with Douglas Aircraft Company Service Bulletin MD90-78-018 which has received exclusive FAA approval for MD-90 Series Aircraft.

E. Compliance maintenance action for the nacelle or nacelle component.

Category 4

Accomplish at the first visit of the nacelle or nacelle component to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action for the nacelle or nacelle component.

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## F. Manpower

Estimated manhours per nacelle to incorporate the full intent of this Bulletin:

<u>VENUE</u>	<u>ESTIMATED MANHOURS</u>
(1) In Service	Not Applicable
(2) In Shop	
(a) To Rework	<u>10.0 M/Hrs.</u>
Total	10.0 M/Hrs

NOTE: After this modification, a maximum of 20.0 manhours for labor will be reimbursed by Rohr, as a labor credit allowance per affected aircraft to obtain a labor credit allowance after procurement of noted material. Labor claims should reference this service bulletin number and aircraft fuselage number and be submitted to:

Rohr, Inc.  
850 Lagoon Drive  
Chula Vista, CA 91910-2098  
Attn: Airline Account Manager -MZ 107A  
Warranty Department  
(Ref. Service Bulletin V2500-NAC-78-0137)

## G. Material - Cost and Availability

The parts to do this Service Bulletin are available from Rohr, Inc. as kit V2578137-551 at no cost to the operator.

Operators with units shown in Paragraph 1.A. should submit a no charge purchase order for the applicable quantity of kits. The purchase order must give this Service Bulletin number with applicable Operator serial numbers and list only the parts shown in the reference kit. Operators will have one year to place an order for parts in applicable quantities from service bulletin issue date. After one year operators will be required to pur-

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R chase parts at the current catalog price, if they desire to  
R incorporate this change.

R Direct purchase order to:

R Rohr, Inc.  
R 850 Lagoon Drive  
R Chula Vista, CA 91910-2098 USA  
R Attn: Airline Account Manager, MZ 107A  
R (Service Bulletin No. V2500-NAC-78-0137)

R NOTE: Please do not send purchase orders for kits via Spec 2000  
R ordering system.

## H. Tooling - Cost and Availability

None required.

## I. Weight and Balance

- (1) Weight change .....None
- (2) Moment arm .....None
- (3) Datum .....Front Engine Mount Centerline  
.....(Power Plant Station (PPS) 100.00)

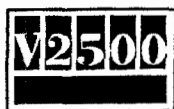
## J. Electrical Load Data

Not Applicable.

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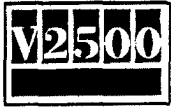
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K. References	Chapter/Section
Overhaul Processes and Consumable Index (PCI-V2500-1IA)	
IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA)	70-09-00
MD90/V2500D5 Thrust Reverser Component Maintenance Manual (CMM-TR-V2500-3IA)	78-32-16
L. Other Publications Affected	
MD90 Engine Illustrated Parts Catalog (S-V2500-3IA)	78-32-16
MD90/V2500D5 Thrust Reverser Component Maintenance Manual (CMM-TR-V2500-3IA)	78-32-16

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## 2. Accomplishment Instructions

### A. Pre-requisite Instructions

- (1) Remove the thrust reverser blocker door. Refer to the MD-90 Aircraft Maintenance Manual, Chapter 78-32-20.

### B. Rework or Modification Instructions. Refer to Figure 1.

- (1) Remove the anti-rotation pin from the blocker door.
- (2) Drill out the rivets that attach the spring to the blocker door and remove the spring. Do not make the rivet holes larger.

**CAUTION:** USE CARE WHEN YOU REMOVE THE BUSHINGS. DO NOT APPLY STRONG SHOCK FORCES TO THE BUSHINGS OR THE DOOR. STRONG SHOCK FORCES CAN DAMAGE THE DOOR.

- (3) Carefully remove the bushings from the blocker door. If the bushings are not loose, heat the bushings to 300 deg F with a heat gun and then remove the bushings.

**WARNING:** SOLVENT (COMAT 01-438) IS CLASSIFIED AS A HAZARDOUS MATERIAL WHICH MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THIS PRODUCT SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

- (4) Clean the mating surfaces of the bushings, the springs, and the doors. Use a lint free cloth (CoMat 02-099) and solvent (01-438). Wipe the surfaces dry before the solvent becomes dry.
- (5) Inspect the blocker door for damage/wear to the bushing and anti-rotation pin holes.

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- (a) If the blocker door bushing and anti-rotation pin holes are worn/damaged more than the limits in Figure 1 (Sheet 2), Detail D, you must replace the blocker door.

**WARNING:** PRIMER (COMAT 07-145) IS CLASSIFIED AS A HAZARDOUS MATERIAL WHICH MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THIS PRODUCT SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

- (6) Apply primer (CoMat 07-145) to the mating surfaces of the bushing.

**WARNING:** ADHESIVE (COMAT 08-121) IS CLASSIFIED AS A HAZARDOUS MATERIAL WHICH MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THIS PRODUCT SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

- (7) Apply adhesive (CoMat 08-121) to the mating surfaces of the bushings.
- (8) Install the bushings in the blocker door.

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**WARNING:** PRIMER CONVERTER (COMAT 07-115), THINNER (COMAT 07-116), AND PRIMER BASE (COMAT 08-093) ARE CLASSIFIED AS HAZARDOUS MATERIALS AND MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THESE PRODUCTS SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THESE PRODUCTS, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

- (9) Mix the primer base (CoMat 08-093), primer converter (CoMat 07-115), and thinner (CoMat 07-116). Refer to the manufacturer's instructions.
- (10) Install the spring on the blocker door with the rivets. Wet install the rivets with the primer mix. Wipe off any unwanted primer with a lint free cloth (CoMat 02-099) and cleaning solvent (Comat 01-438).
- (11) Install the anti-rotation pin in the blocker door.

**WARNING:** SEALANT (COMAT 08-030) IS CLASSIFIED AS A HAZARDOUS MATERIAL AND MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THIS PRODUCT SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

- (12) Apply sealant (CoMat 08-030) to each end of the anti-rotation pin to keep the pin from vibrating.

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(13) Reidentify the blocker doors as follows:

290-0657-505 as 290-0657-507  
290-0657-506 as 290-0657-508  
290-0658-505 as 290-0658-507  
290-0659-505 as 290-0659-507  
290-0659-506 as 290-0659-508

Use a rubber stamp and black ink (CoMat 06-073). Refer to the IAE V2500 Practices/Processes Manual, Chapter 70-09-00.

## **C. Recording Instructions**

- (1) A record of accomplishment is necessary. Write in the applicable records and metal stamp, vibroetch, or electroetch on the thrust reverser data plate that Service Bulletin V2500-NAC-78-0137 has been done. Refer to the IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

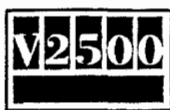
## **D. Post-requisite Instructions**

- (1) Install the blocker doors. Refer to the Aircraft Maintenance Manual, Chapter 78-32-20.

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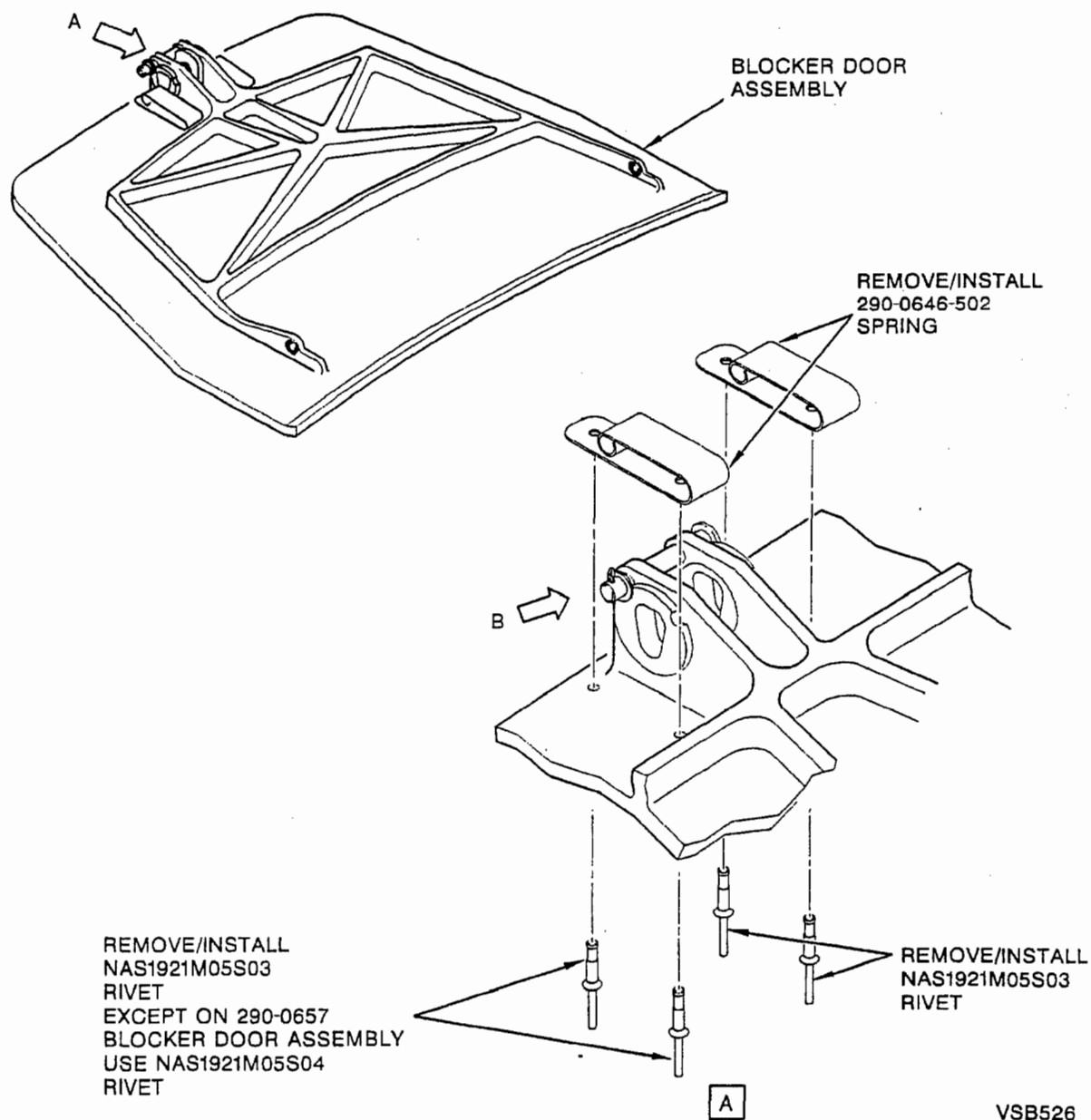
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Blocker Door Bushing and Anti-Rotation Pin Installation Modification  
Figure 1 (Sheet 1)

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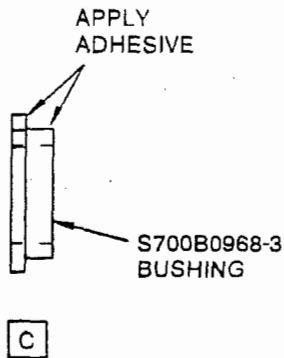
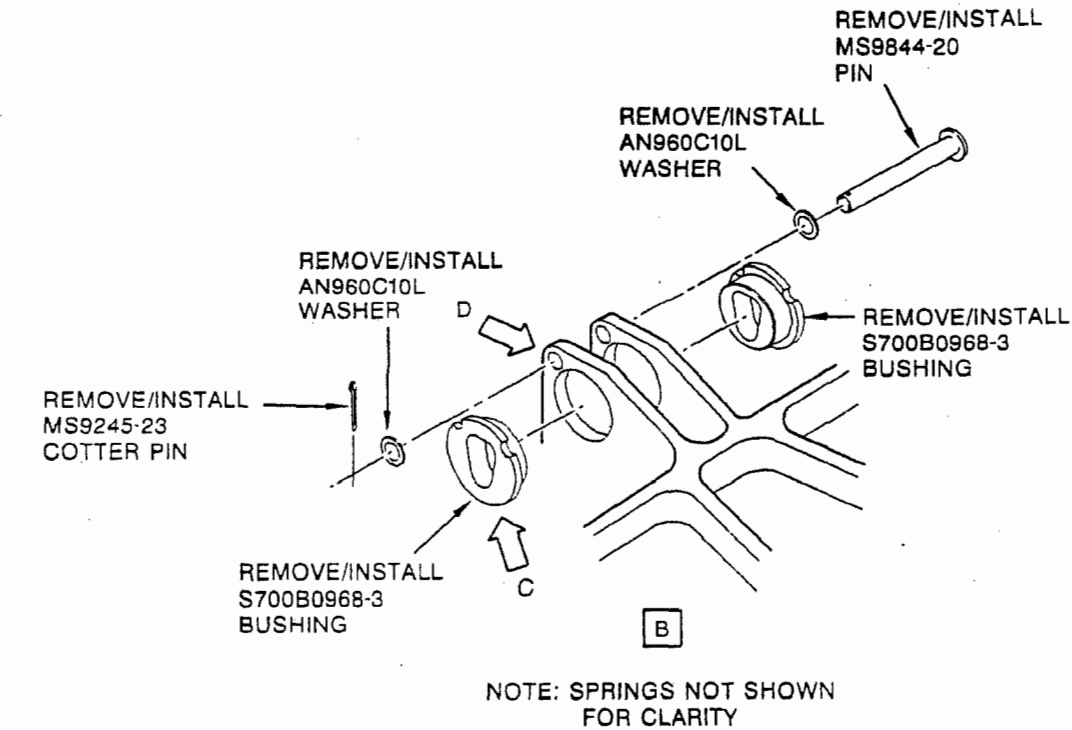
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VSB527A

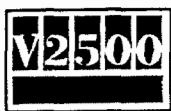
Blocker Door Bushing and Anti-Rotation Pin Installation Modification  
Figure 1 (Sheet 2)

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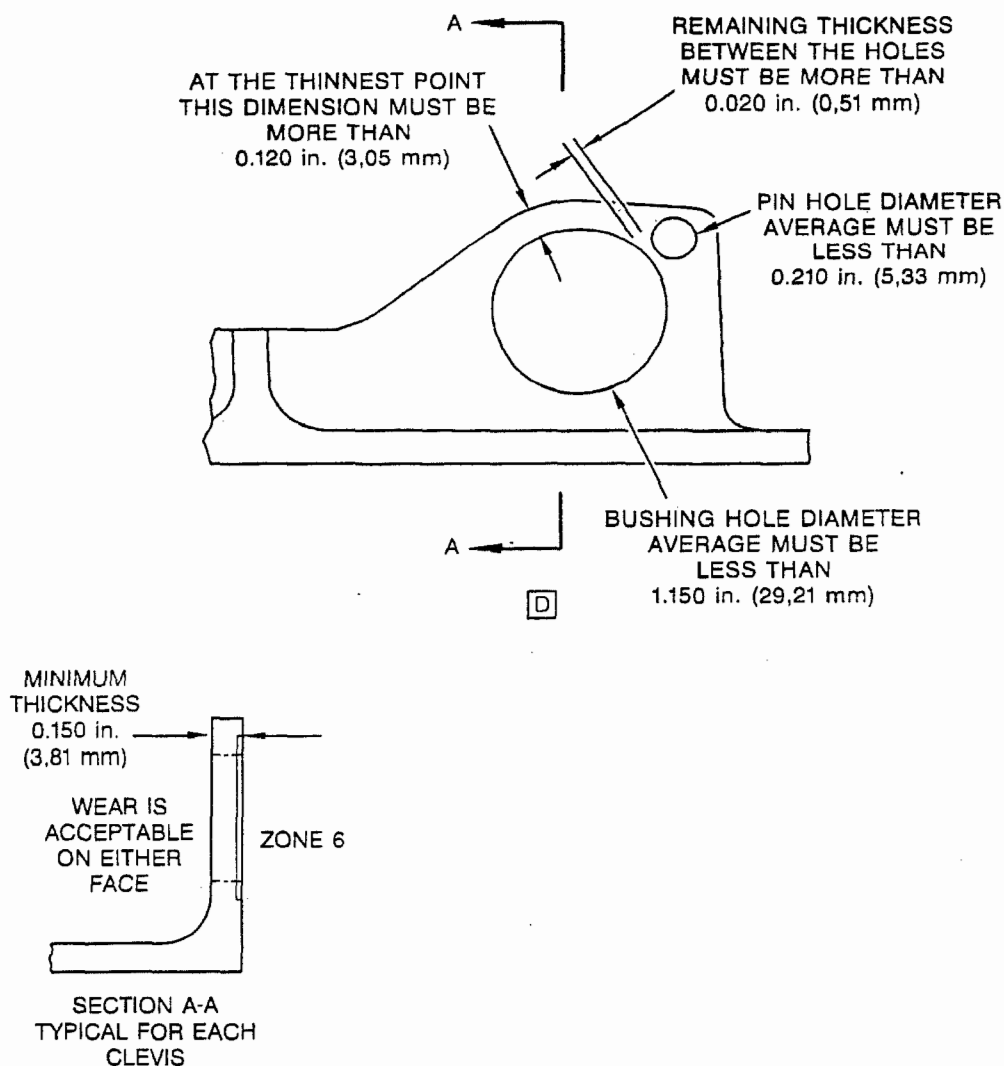
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VSB544

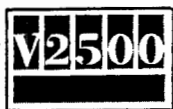
Blocker Door Bushing and Anti-Rotation Pin Installation Modification  
Figure 1 (Sheet 3)

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## 3. Material Information

Applicability: For each V2500-D5 Nacelle to incorporate this Bulletin.

### A. Kits associated with this Bulletin:

<u>NEW PART NO</u> <u>(ATA NO)</u>	<u>QTY</u>	<u>EST'D</u> <u>UNIT</u> <u>PRICE</u>	<u>KEYWORD</u>	<u>OLD PART NO</u> <u>(IPC NO)</u>	<u>INSTR/</u> <u>DISPOS</u>
V2578137-551 Consisting of	1		Kit		(A)
MS9245-23	10		Cotter Pin		
NAS1921M05S03	32		Rivet		
NAS1921M05S04	10		Rivet		

### B. Parts affected by this Bulletin:

<u>NEW PART NO</u> <u>(ATA NO)</u>	<u>QTY</u>	<u>EST'D</u> <u>UNIT</u> <u>PRICE</u>	<u>KEYWORD</u>	<u>OLD PART NO</u> <u>(IPC NO)</u>	<u>INSTR/</u> <u>DISPOS</u>
290-0657-507 (78-32-20)	1		Door, Blocker	290-0657-505 (01-050)	(A)
290-0657-508 (78-32-20)	1		Door, Blocker	290-0657-506 (02-050)	
290-0658-507 (78-32-20) (78-32-20)	3		Door, Blocker	290-0658-505 (01-030) (02-030)	
290-0659-507 (78-32-02)	1		Door, Blocker	290-0659-505 (01-010)	
290-0659-508 (78-32-02)	1		Door, Blocker	290-0659-506 (02-010)	

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C. Instructions/Disposition Code Statements:

- (A) Kit will be available April 1997.
- (B) New part is available.
- (C) Old part will no longer be available.
- (1D) Old part may be reworked and reidentified to the new part number.

D. Materials Required to Incorporate This Bulletin:

CoMat 01-438	Cleaning Solvent
CoMat 02-099	Lint Free Cloth
CoMat 06-073	Metal Marking Ink
CoMat 07-115	Primer Converter
CoMat 07-116	Thinner
CoMat 07-145	Primer
CoMat 08-030	Sealant
CoMat 08-093	Primer Base
CoMat 08-121	Adhesive

NOTE: To identify the consumable materials, refer to the Overhaul Processes and Consumable Index PCI-V2500-1IA.

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