V2500 International Aero Engines

V2500 Propulsion System — Nacelle

SERVICE BULLETIN

NACELLE - EXHAUST - LOCKOUT FEATURE, THRUST REVERSER - MODIFICATION OF

MODEL APPLICATION

V2500-D5

BULLETIN INDEX LOCATOR

78-32-00

Compliance Category Code

5

Internal Reference No.

JG/LL 95VN806

August 23, 1996

V2500-NAC-78-0113

1. Planning Information

A. Effectivity

(1) Airplane: MD-90

(2) Nacelle: V2500-D5 thrust reverser serial numbers 0004001 through 0007001, 0009001, 0010001, 0021001 through 0056005, and 0057001 through 0096001.

B. Reason

(1) Condition

Possible interference between the translating sleeve stow lockout pin and the stow lockout retainer may not allow the thrust reverser to be locked out.

(2) Background

Operators have experienced inability to lock out the thrust reverser due to interference between the stow lockout pin and stow lockout retainer.

(3) Objective

Allow the thrust reverser to be locked out.

(4) Substantiation

Testing of a modified stow lockout plug and stow lockout retainer installed on a production unit was successful.

(5) Impact of Bulletin on Workshop Procedures:

Removal/Installation	Not Affected
Disassembly/Assembly	Not Affected
Cleaning	Not Affected
Inspection/Repair	Not Affected
Repair	Not Affected
Testing	Not Affected

(6) Supplemental Information

None.

C. Description

The outboard main slider, stow lockout plug, and lockout plug retainer will be machined and the outboard seal block trimmed to prevent any future interference.

D. Approval

Incorporation of this Service Bulletin must be accomplished only in conjuction with Douglas Aircraft Company Service Bulletin 78-015 which has received exclusive FAA approval for MD-90 Series aircraft.

E. Compliance

Category 5

Accomplish when the nacelle or system is disassembled sufficiently to afford access to the affected subassembly (i.e. accessories, components) and to all affected spare subassemblies.

F. Manpower

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

VENUE		ESTIMATED MANHOURS
(1) In Service		
(a) To gain access		0.5 M/Hrs.
(b) To rework		4.0 M/Hrs.
(c) To return to service		0.5 M/Hrs.
	Total	5.0 M/Hrs.
(2) In Shop		
(a) To Rework		4.0 M/Hrs.
	Total	4.0 M/Hrs

NOTE: After incorporation of this modification, a maximum of 4.0 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
U.S.A.
Attn: Airline Support Manager, Bldg. 107A
Warranty Department
(Ref: Service Bulletin V2500-NAC-78-0114)

G. Material - Cost and Availability

None.

H. Tooling - Cost and Availability

Not applicable.

I. Weight and Balance

(1) Weight change .....None

(2) Moment arm .....None

(3) Datum .....Front Engine Mount Centerline

.....(Power Plant Station (PPS) 100.0

J. Electrical Load Data

Not Applicable.

K. References

MD-90 Aircraft Maintenance Manual	78-32-00
IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA)	70-09-00
Overhaul Processes/Consumable Index (PCI-V2500-1IA)	

L. Other Publications Affected

MD-90 Engine Illustrated Parts Catalog (S-V2500-3IA)	78-32-10
MD90/V2500D5 Thrust Reverser Component Maintenance Manual (CMM-TR-V2500-3IA)	78-32-10

2. Accomplishment Instructions

A. Pre-requisite Instructions

(1) Manually move the translating sleeves to the fully deployed position. Refer to the MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 201.

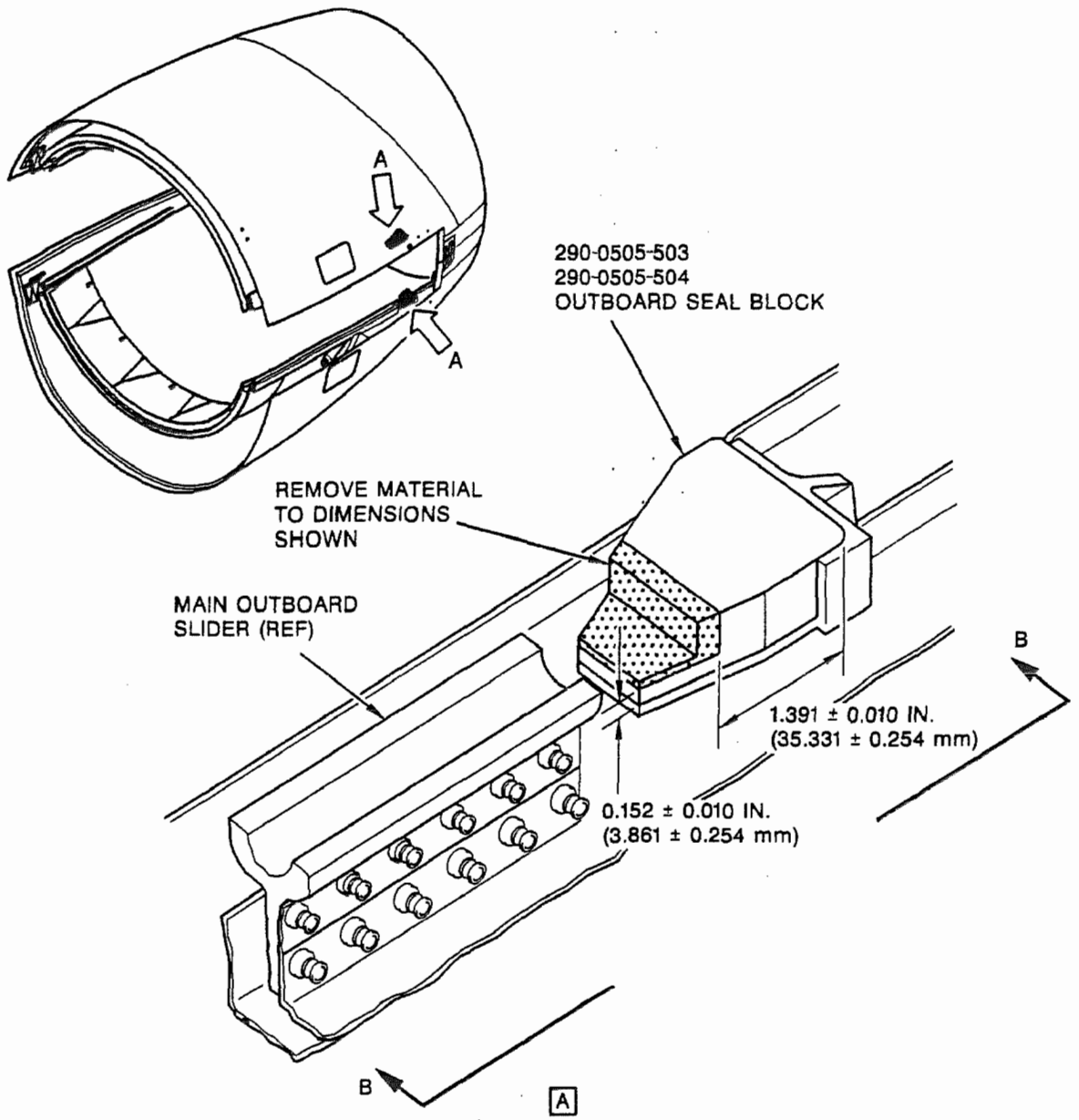
B. Rework or Modification Instructions

(1) Modify the 290-0505-503 and 290-0505-504 outboard seal blocks. Refer to Figure 1.

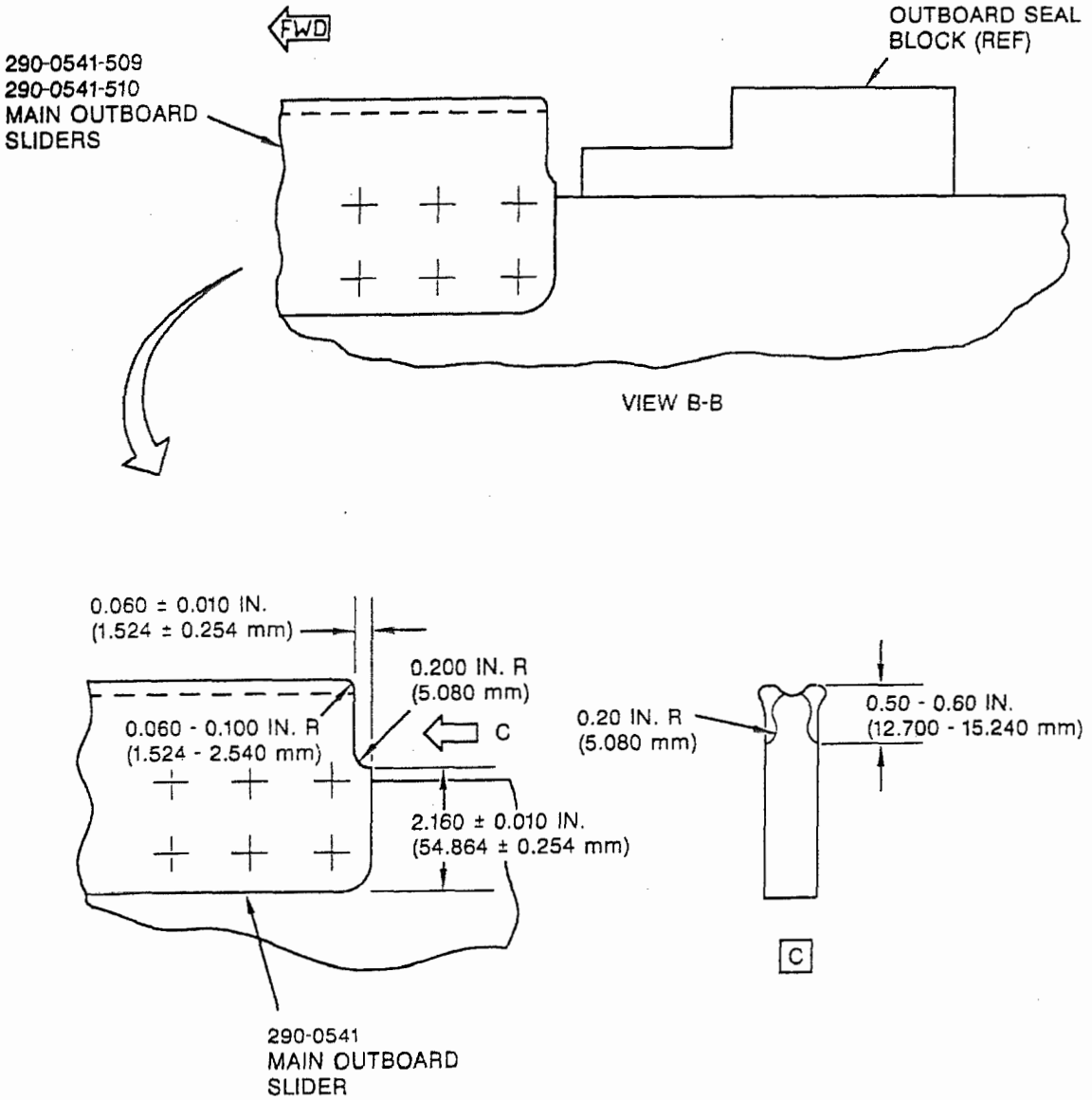
(a) Remove the indicated material from the 290-0505-503 and 290-0505-504 seal blocks on the upper and lower translating sleeves with a knife.

(2) Modify the 290-0541-509 and 290-0541-510 main outboard sliders on the upper and lower translating sleeves. Refer to Figure 1.

(a) Remove the indicated material from the 290-0541-509 and the 290-0541-510 main outboard sliders and radius the corners with a grinder as shown in Figure 1.



Outboard Seal Block and Main Slider Modification
Figure 1 (Sheet 1)



VSB443

Outboard Seal Block and Main Slider Modification
Figure 1 (Sheet 2)

WARNING: TRICHLOROETHANE (COMAT 01-001) 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 PRECAUTIONS.

(b) With a clean lint-free cloth (CoMat 02-099) and trichloroethane (CoMat 01-001), clean machined areas on the 290-0541-509 and 290-0541-510 main outboard sliders on the upper and lower translating sleeves. Wipe solvent before it becomes dry.

WARNING: CONVERSION COATING (COMAT 07-028) 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 PRECAUTIONS.

(c) Mix the conversion coating in a ratio of 3.0 oz. conversion coating (CoMat 07-028) to 1.0 gal of demineralized water.

(d) Apply the conversion coating to the machined areas on the 290-0541-509 and 290-0541-510 main outboard sliders for two to five minutes. Keep surfaces wet with fresh solution. Do not allow solution to dry.

NOTE: Retain remaining conversion coating for later use.

(e) Rinse conversion coating from all surfaces with clean water and dry with a lint free cloth (CoMat 02-099).

WARNING: PRIMER (COMAT 07-080) 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 PRECAUTIONS.

(f) Mix the primer (CoMat 07-080). Refer to the manufacturer's instructions.

(g) Apply the primer with a brush to the machined areas on the main outboard sliders on the upper and lower translating sleeves.

NOTE: Retain remaining primer for later use.

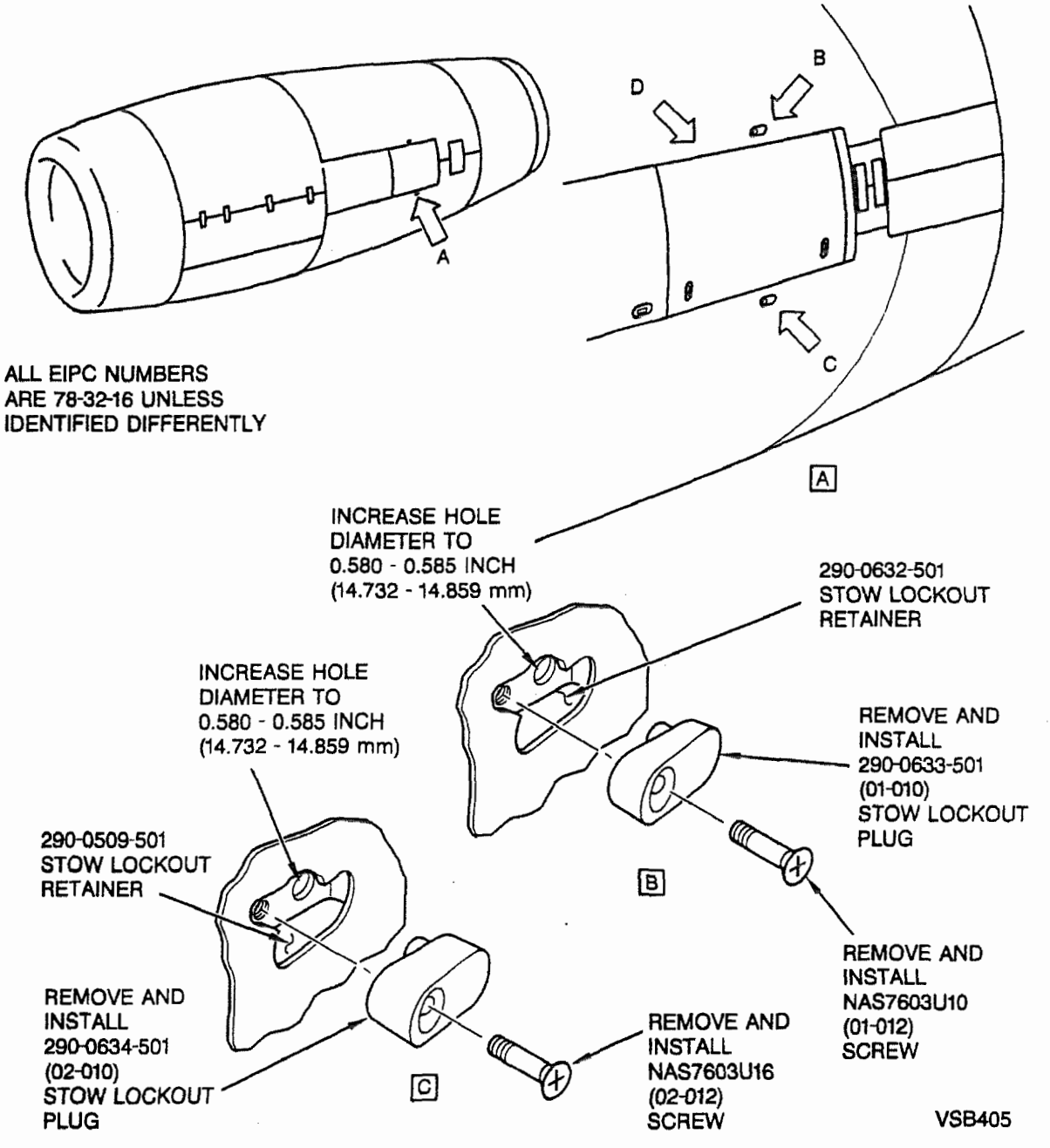
(h) Cure the primer for seven hours at room temperature or for 40 minutes at 140°-180°F (60°-82°C) with an explosion-proof heat lamp.

(3) Modify the 290-0632-501 and 290-0509-501 stow lockout retainers. Refer to Figure 2.

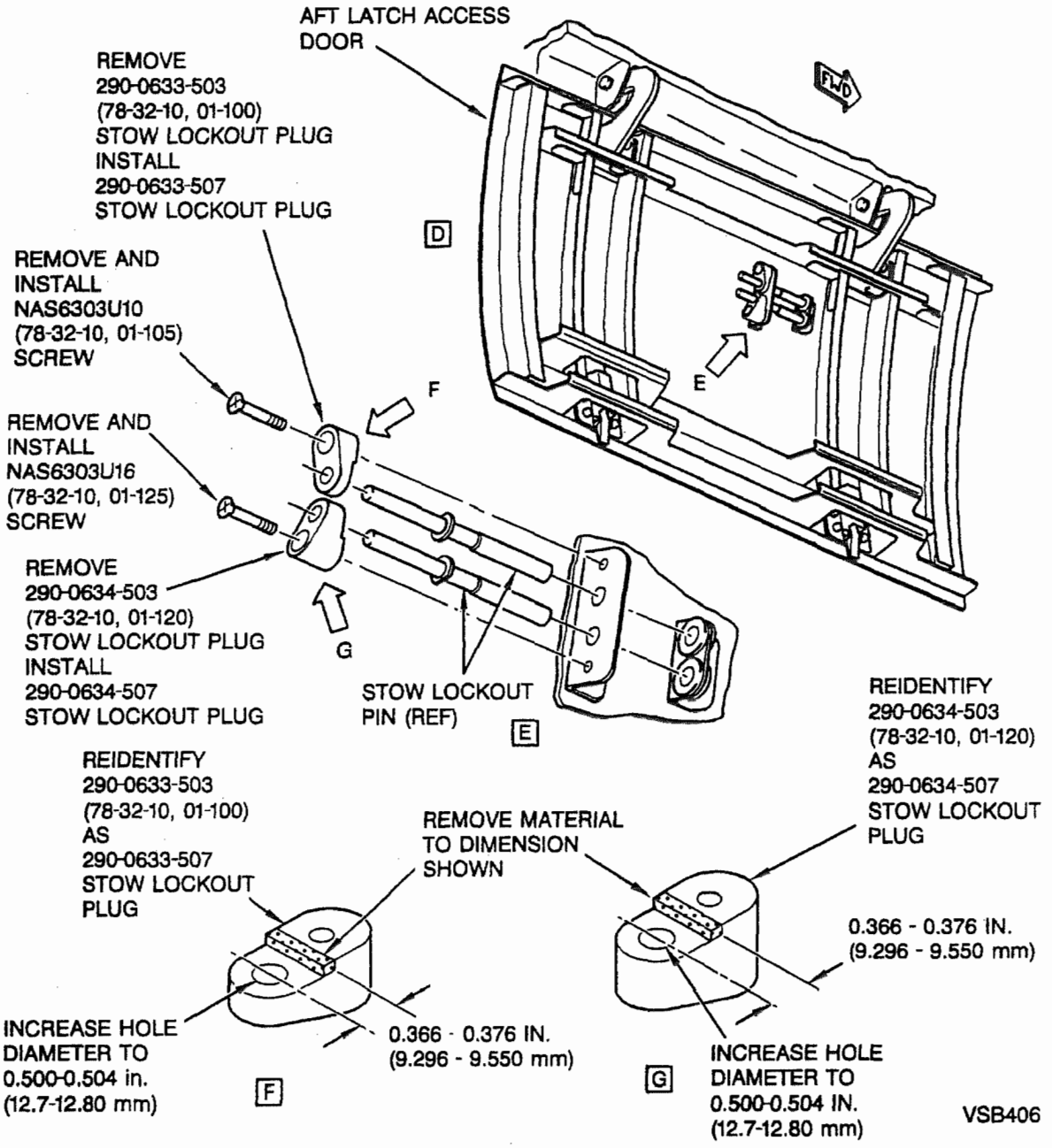
(a) Remove the NAS7603U10 screw and the 290-0633-501 stow lockout plug from the 290-0632-501 stow lockout retainer on the upper translating sleeve. Retain screw and plug for installation.

(b) Remove the NAS7603U16 screw and the 290-0634-501 stow lockout plug from the 290-0509-501 stow lockout retainer on the lower translating sleeve. Retain screw and plug for installation.

(c) Increase hole diameters in the 290-0632-501 and 290-0509-501 stow lockout retainers as shown in Figure 2.



Stow Lockout Plug and Stow Lockout Plug Retainer Modification
Figure 2 (Sheet 1)



Stow Lockout Plug and Stow Lockout Plug Retainer Modification
Figure 2 (Sheet 2)

(d) With a clean lint free cloth (CoMat 02-099) and trichloroethane (CoMat 01-001), clean enlarged holes in the 290-0632-501 and 290-0509-501 stow lockout retainers. Wipe solvent before it becomes dry.

(e) Apply the conversion coating to the enlarged holes in the 290-0632-501 and 290-0509-501 stow lockout retainers for two to five minutes. Keep surfaces wet with fresh solution. Do not allow solution to dry.

NOTE: Retain remaining conversion coating for later use.

(f) Rinse the converson coating from all surfaces with clean water and dry with a lint free cloth (CoMat 02-099).

(g) Apply primer with a brush to the enlarged holes in the 290-0632-501 and the 290-0509-501 stow lockout retainers.

NOTE: Retain remaining primer for later use.

(h) Cure the primer for seven hours at room temperature or for 40 minutes at 140°-180°F (60°-82°C) with an explosion-proof heat lamp.

(i) Install the 290-0633-501 stow lockout plug and NAS7603-U10 screw in the stow lockout retainer.

NOTE: It is permissible to use the 290-0633-501 stow lockout plug for the purposes of this service bulletin. For spares ordering, the 290-0633-501 stow lockout plug has been replaced by the 290-0633-505.

(j) Install the 290-0634-501 stow lockout plug and NAS7603-U16 screw in the stow lockout retainer.

NOTE: It is permissible to use the 290-0634-501 stow lockout plug for the purposes of this service

bulletin. For spares ordering, the 290-0634-501 stow lockout plug has been replaced by the 290-0634-505.

(4) Modify the 290-0633-503 and the 290-0634-503 stow lockout plugs. Refer to Figure 2.

(a) Remove the NAS7603U10 screw and 290-0633-503 stow lockout plug and NAS7603U16 screw and 290-634-503 stow lockout plug from the latch access door on the upper thrust reverser half. Keep the screws for later installation.

(b) Machine the indicated material from the 290-0633-503 and the 290-0634-503 stow lockout plugs.

(c) Increase the hole diameters in the 290-0633-503 and 290-0634-503 stow lockout plugs as shown in Figure 2.

(d) With a clean lint free cloth (CoMat 02-099) and trichloroethane (CoMat 01-001), clean machined areas on the 290-0633-503 and 290-0634-503 stow lockout plugs. Wipe solvent before it becomes dry.

(e) Apply the conversion coating to the machined areas on the 290-0633-503 and 290-0634-503 stow lockout plugs for two to five minutes. Keep surfaces wet with fresh solution. Do not allow solution to dry.

NOTE: Retain remaining conversion coating for later use.

(f) Rinse conversion coating from all surfaces with clean water and dry with a clean cloth.

(g) Apply the primer with a brush to the machined areas on the 290-0633-503 and the 290-0634-503 stow lockout plugs.

NOTE: Retain remaining primer for later use.

(h) Cure the primer for seven hours at room temperature or for 40 minutes at 140°-180°F (60°-82°C) with an explosion-proof heat lamp.

(i) Identify the 290-0633-503 stow lockout plug as the 290-0633-507 stow lockout plug with rubber stamp and black ink (CoMat 06-073). Refer to IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

(j) Identify the 290-0634-503 stow lockout plug as the 290-0634-507 stow lockout plug with rubber stamp and black ink (CoMat 06-073). Refer to IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

(k) Install the 290-0633-507 stow lockout plug and NAS7603U10 screw and the 290-0634-507 stow lockout plug and NAS7603U16 screw on the latch access door.

C. Post-requisite Instructions

(1) Manually move the translating sleeves to the fully stowed position. Refer to the MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 201.

D. Recording Instructions

A record of accomplishment is necessary. Metal stamp, vibroetch, or electroetch on thrust reverser data plate that Service Bulletin V2500-NAC-78-0113 has been done. Refer to IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

3. Material Information

Applicability: For each nacelle 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)	INSTR/ DISPOS
290-0633-505 (78-32-16)	1		..Plug	290-0633-501 (01-010)	(A)(S1)
290-0633-507 (78-32-10)	1		..Plug	290-0633-503 (01-100)	(A)(S1) (1D)
290-0634-505 (78-32-16)	1		..Plug	290-0634-501 (02-010)	(A)(S1)
290-0634-507 (78-32-10)	1		..Plug	290-0634-503 (01-120)	(A)(S1) (1D)

C. Instructions/Disposition Code Statements:

(A) New part will be available December 1996.

(S1) Old part number may be used as a replacement only where old part was installed. New part number is acceptable replacement for the old or new part number.

(1D) Rework old part to new configuration.

NOTE: The estimated 1996 unit prices shown are provided for planning purposes only and do not constitute a firm quotation.

Consult the Rohr Price Catalog or contact Rohr's Customer Support Department for information concerning firm prices.

D. Materials required to incorporate this Service Bulletin

CoMat 01-001	Trichloroethane
CoMat 02-099	Lint Free Cloth
CoMat 06-073	Metal Marking Ink
CoMat 07-028	Chromate Conversion Coating for Aluminum
CoMat 07-080	Two-Pack Epoxy Primer and Catalyst

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