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V2500-D5 SERIES NACELLE SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin NV2500-78-0196

Document History

Service Bulletin Revision Status
Initial Issue Nov.18/02

Supplement Revision Status

Bulletin Revision 1

Remove
All pages of the
Service Bulletin

Incorporate
Pages 1 to 15 of the
Service Bulletin

Reason for change
Material Information
revised to add PN
290-1201-521 and
Disposition Code (1D).

V2500-NAC-78-0196

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

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LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 are as follows:

<u>Page</u>	<u>Revision Number</u>	<u>Revision Date</u>
Bulletin		
R 1	1	Mar.17/04
R 2	1	Mar.17/04
R 3	1	Mar.17/04
R 4	1	Mar.17/04
R 5	1	Mar.17/04
R 6	1	Mar.17/04
R 7	1	Mar.17/04
R 8	1	Mar.17/04
R 9	1	Mar.17/04
R 10	1	Mar.17/04
R 11	1	Mar.17/04
R 12	1	Mar.17/04
R 13	1	Mar.17/04
R 14	1	Mar.17/04
R 15	1	Mar.17/04

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COMMON NOZZLE ASSEMBLY (CNA) – OUTER BARREL – MODIFICATION TO PREVENT ELONGATION OF
UPPER AND LOWER STRUT ATTACH HOLES

1. Planning Information

A. Effectivity

- (1) Airplane: MD-90
- (2) Nacelle: All V2500-D5 CNA's.

NOTE: If repair VRS2647 has been done to a C.N.A., and there has been no subsequent elongation of the bolt holes in the inner (perforated) skin of the outer barrel, it is not necessary to do this service bulletin.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

- (a) The upper and lower strut attach bolt holes in the inner skin of the outer barrel can become elongated.
- (b) The strut attach bolts can interfere with the strut skins.

(2) Cause

- (a) Not applicable.

(3) Background

- (a) C.N.A.'s have been found with elongated strut attach bolt holes in the inner skin of the outer barrel.
- (b) C.N.A.'s have been found with strut attach bolts that interfere with the strut skins.

(4) Objective

- (a) The changes in configuration recommended in this Service Bulletin are intended to maintain reliability of the C.N.A. by installation of doublers in the area of the upper and lower strut attach holes in the outer barrel and modification of the strut skins.



(5) Substantiation

(a) Not applicable.

D. Description

This service bulletin provides instructions to install doublers to strengthen the skin in the area of the upper and lower strut attach holes in the outer barrel and to modify the strut skins and outer fittings.

E. Compliance

Category 6

Accomplish when the nacelle subassembly is disassembled sufficiently to afford access to the affected part and all affected spare parts.

F. Approval

Incorporation of this Service Bulletin must be accomplished only in conjunction with Boeing Service Bulletin MD90-78-054 which has received exclusive FAA approval for MD-90 Series aircraft.

G. Manpower

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

(1) In Service

Not applicable

(2) At Overhaul

40 man-hours

H. Material Cost and Availability

The parts and materials required to accomplish this service bulletin are to be procured and manufactured by the operator.

I. Tooling

None.

J. Weight and Balance

1)	Weight change	None
2)	Moment Arm	No effect
3)	Datum	Engine front mount centreline (Powerplant Station PS 100)

V2500-NAC-78-0196

Page 2

K. References

Publication	Chapter/Section
IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA)	70-09-00
Overhaul Processes and Consumable Index (PCI-V2500-1IA)	
Common Nozzle Assembly Component Maintenance Manual (CMM-CN-V2500-3IA)	78-11-11 Repair 006 Repair 008 Repair 009
Engineering Change Number	01VN804
ATA Locator	78-11-11

L. Other Publications Affected

None.

**2. Material Information****A. Material Requirements**

(1) The following is applicable to one C.N.A.

B. Parts necessary for this Service Bulletin:

(1) Refer to the repairs referenced in Paragraph 1.K. for the parts required.

C. Parts affected by this Service Bulletin:

78-11-11

	FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	OLD PART NO.	INSTR DISP
		290-1201-21	2	Doubler	-	
R	05-05	290-1201-521	1	Common Nozzle Assembly	290-1201-517	(1D)

D. Instructions/Disposition Codes:

R (1D) Old part can be modified and re-identified as new part number.

E. Tooling - Price and Availability:

None.

F. Materials Required to do this Service Bulletin:

CoMat 01-438	Solvent
CoMat 02-099	Lint Free Cloth
CoMat 07-028	Conversion Coating for Aluminum
CoMat 07-139	Catalyst
CoMat 07-140	Primer
CoMat 07-144	Thinner
MIL-S-22499	Laminated Shim, CRES (refer to Figure 2 for
Composition 3 Type	dimensions)
1, Class 1	
MIL-S-5059 Type 301	Sheet, CRES 301, 1/2 Hard (refer to Figure 2 for
	dimensions)

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

V2500-NAC-78-0196

Page 4

Nov 18/02
R Mar.17/04

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



3. Accomplishment Instructions

NOTE: If the C.N.A. Component Maintenance Manual Repair 006, TASK 78-11-11-300-008 (VRS2647) has been done to the C.N.A., and there has been no subsequent elongation of the bolt holes in the inner (perforated) skin, it is not necessary to do this service bulletin. However, if you do not need to do this bulletin, it is recommended that you do service bulletin V2500-NAC-78-0128 to make sure the proper length strut attach bolts are installed.

NOTE: This service bulletin is written with the assumption the C.N.A. has been removed from the aircraft.

- A. Remove the upper C.N.A. strut from the C.N.A. Refer to the C.N.A. Component Maintenance Manual, Repair 008, TASK 78-11-11-300-008.
- B. Remove the lower C.N.A. strut from the C.N.A. Refer to the C.N.A. Component Maintenance Manual, Repair 009, TASK 78-11-11-300-009.
- C. Modify the strut skins.

WARNING:

SOLVENT (COMAT 01-438) 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 PRECAUTIONS.

- (1) Clean the strut skins with a lint free cloth (CoMat 02-099) made moist with solvent (CoMat 01-438). Wipe the surfaces dry before the surfaces become dry.
- (2) Remove material from the strut skins. Refer to Figure 1.
- (3) Clean the modified areas with a lint free cloth (CoMat 02-099) made moist with solvent (CoMat 01-438). Wipe the surfaces clean and dry before the solvent becomes dry.

WARNING:

CONVERSION COATING (COMAT 07-028) 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 PRECAUTIONS.



- (4) Apply conversion coating (CoMat 07-028) to the modified areas. Refer to the manufacturer's instructions.

WARNING:

PRIMER (COMAT 07-140), CATALYST (COMAT 07-139), AND THINNER (COMAT 07-144) 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 PRECAUTIONS.

- (5) Mix the primer (CoMat 07-140), catalyst (CoMat 07-139), and thinner (CoMat 07-144). Refer to the manufacturer's instructions.
- (6) Apply the primer to the modified areas of the strut skins. Refer to the manufacturer's instructions.

D. Modify the outer fittings of the upper and lower struts.

- (1) Clean the outer fittings with a lint free cloth (CoMat 02-099) and solvent (CoMat 01-438).
- (2) Remove material from the surface of the fittings that mates with the inner surface of the outer barrel. Refer to Figure 2.
- (3) Remove the sharp edges from the fittings.
- (4) Clean the outer fittings with a lint free cloth (CoMat 02-099) solvent (CoMat 01-438). Wipe the surfaces clean and dry before the solvent becomes dry.

E. Install the upper C.N.A. strut on the C.N.A. Do not install the strut attach bolts. Refer to the C.N.A. Component Maintenance Manual, Repair 008, TASK 78-11-11-300-008.

F. Install the lower C.N.A. strut on the C.N.A. Do not install the strut attach bolts. Refer to the C.N.A. Component Maintenance Manual, Repair 009, TASK 78-11-11-300-009.

G. Make two doublers.

- (1) Make the doublers from MIL-S-5059, Type 301, 1/2 Hard Cres sheet. Refer to Figure 2.

NOTE: You will use these doublers in place of the doublers that are manufactured in the C.N.A. Component Maintenance Manual, Repair 006, TASK 78-11-11-300-008 (VRS2647).



H. Make the laminated shims for the lower and upper strut locations.

- (1) Make the laminated shims from MIL-S-22499, Composition 1, Type 1, Class 1 Laminated CRES. Refer to Figure 2.

NOTE: You will use these shims in place of the 290-1201-13 and 290-1201-15 shims that are specified in the C.N.A. Component Maintenance Manual, Repair 006, TASK 78-11-11-300-008 (VRS2647).

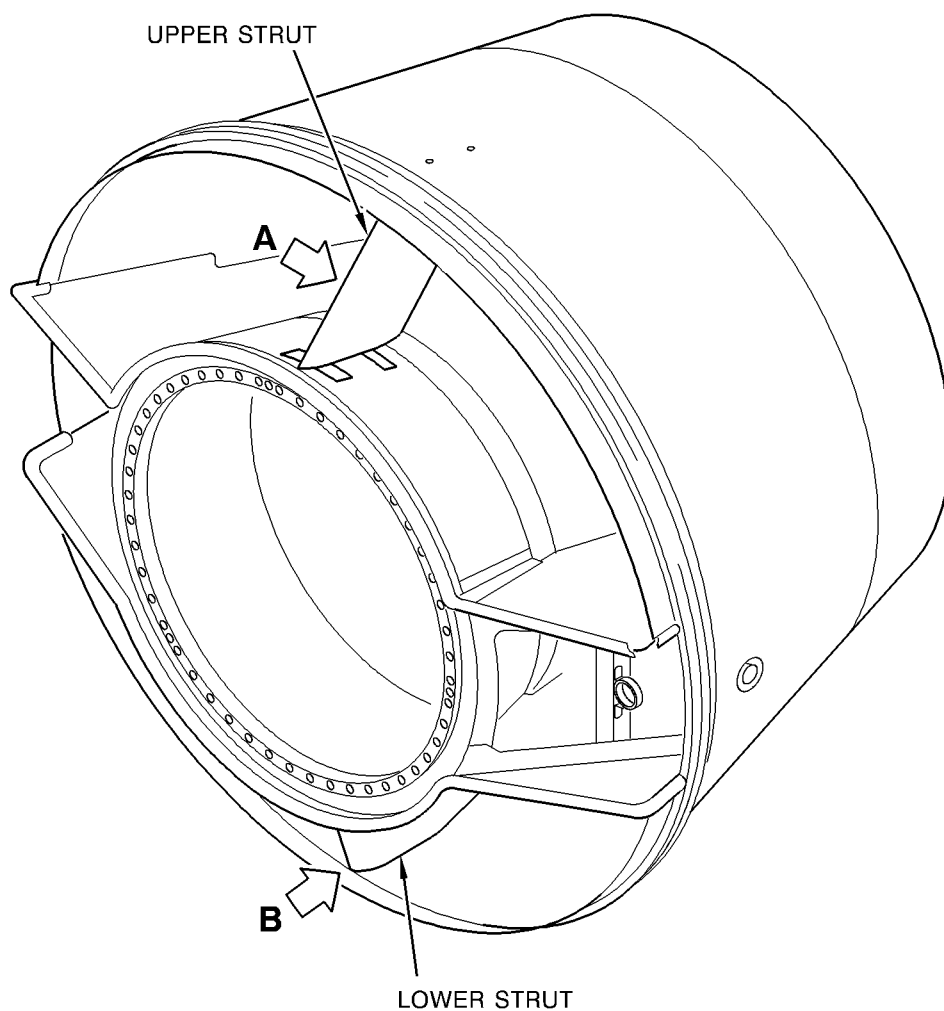
I. Install the doublers, and shims (if necessary) on the inner surface of the outer barrel. Refer to the C.N.A. Component Maintenance Manual, Repair 006, TASK 78-11-11-300-008 (VRS2647).

NOTE: You will use the shims and doublers you made in this service bulletin instead of the doublers and the 290-1201-13 (-15) shims instructed in Repair 006.

NOTE: Repair 006 instructs forty eight (48) CR3523-4-1 and twenty two (22) CR3523-4-2 rivets to install each doubler. You will use eighteen (18) CR3523-4-1 and sixteen (16) CR3523-4-2 rivets when you install each doubler as shown in Figure 2 of this bulletin.

J. Recording Instructions

- (1) A record of accomplishment is required. Write in the applicable records and metal stamp, electroetch, or vibroetch on the C.N.A. data plate that Service Bulletin V2500-NAC-78-0196 has been done. Refer to the Standard Practices/Processes Manual (SPP-V2500-1IA), Chapter 70-09-00.

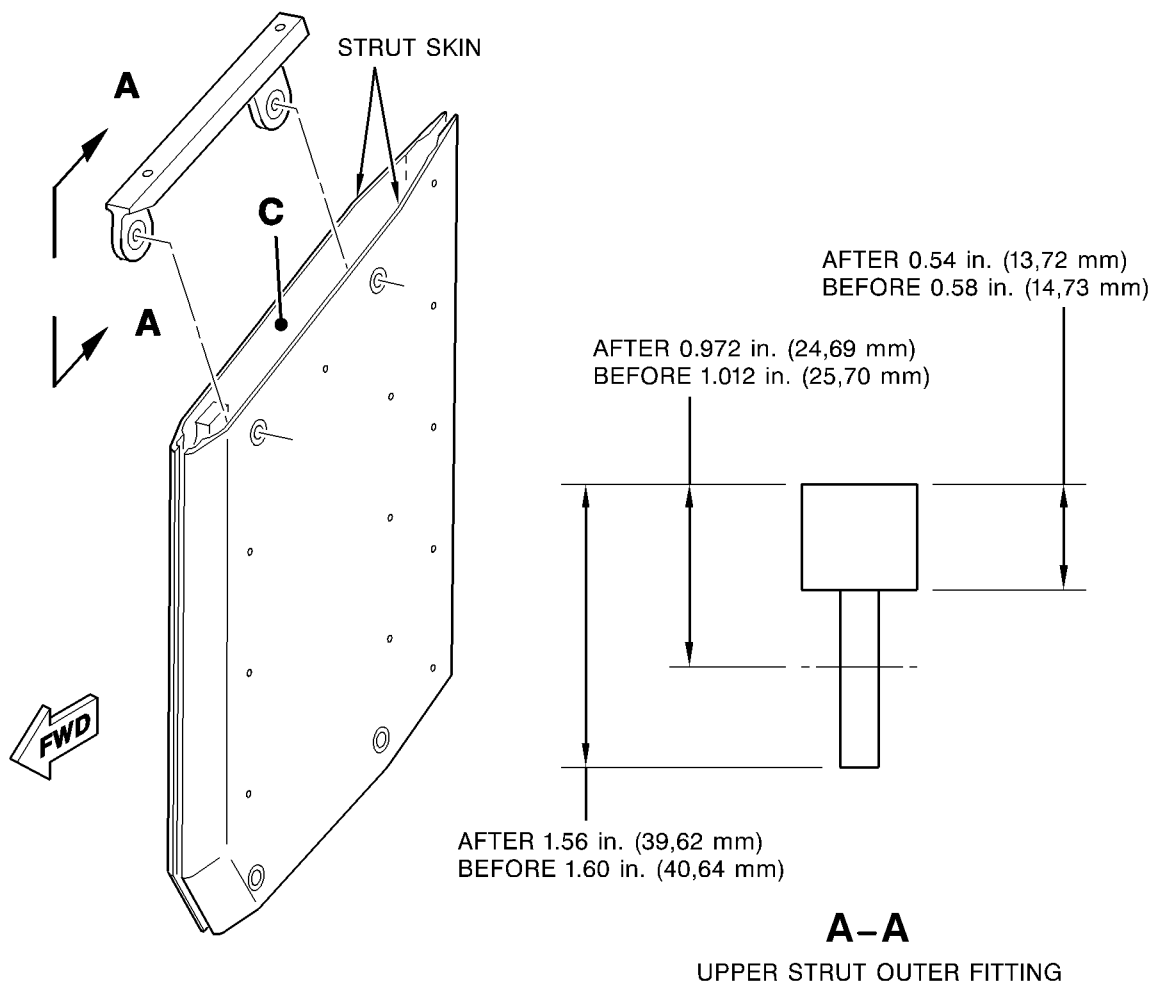


VSB849

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 1)

V2500-NAC-78-0196

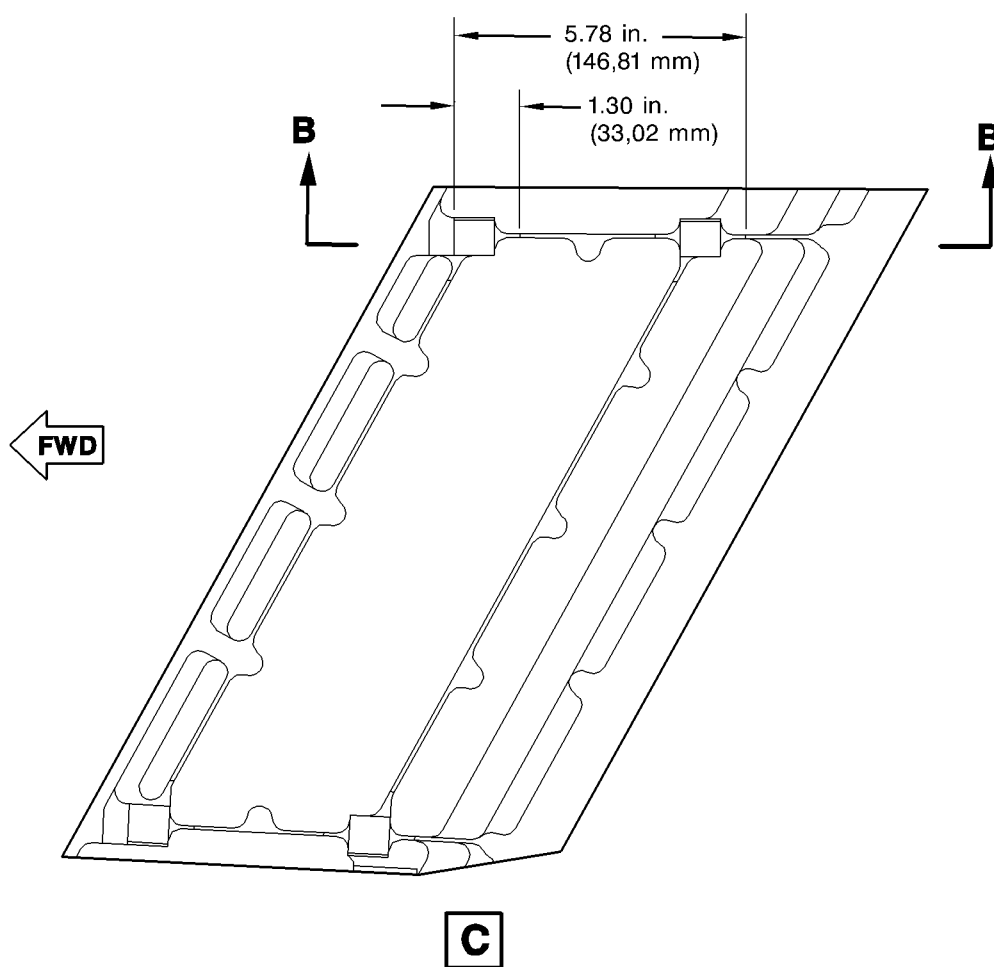
Page 8



UPPER STRUT

VSB850

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 2)



BEFORE MODIFICATION
(Typical both skins)

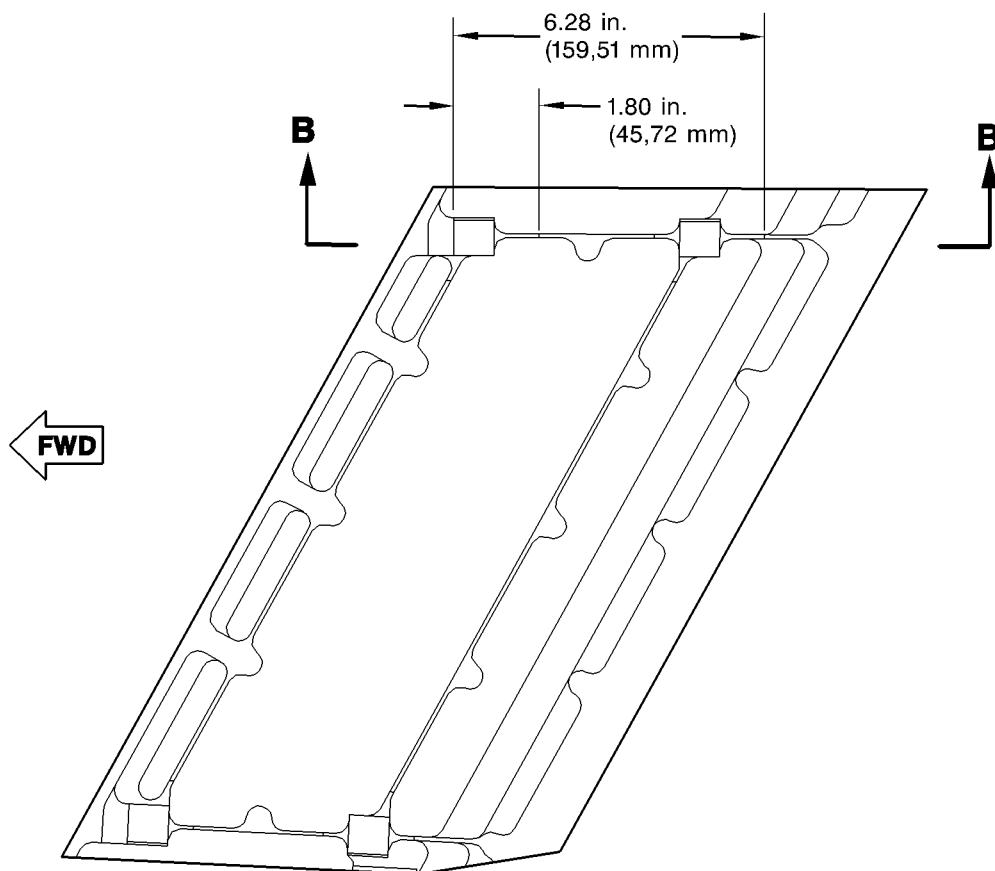


B-B
BEFORE MODIFICATION

VSB851

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 3)

V2500-NAC-78-0196



AFTER MODIFICATION
(Typical both skins)

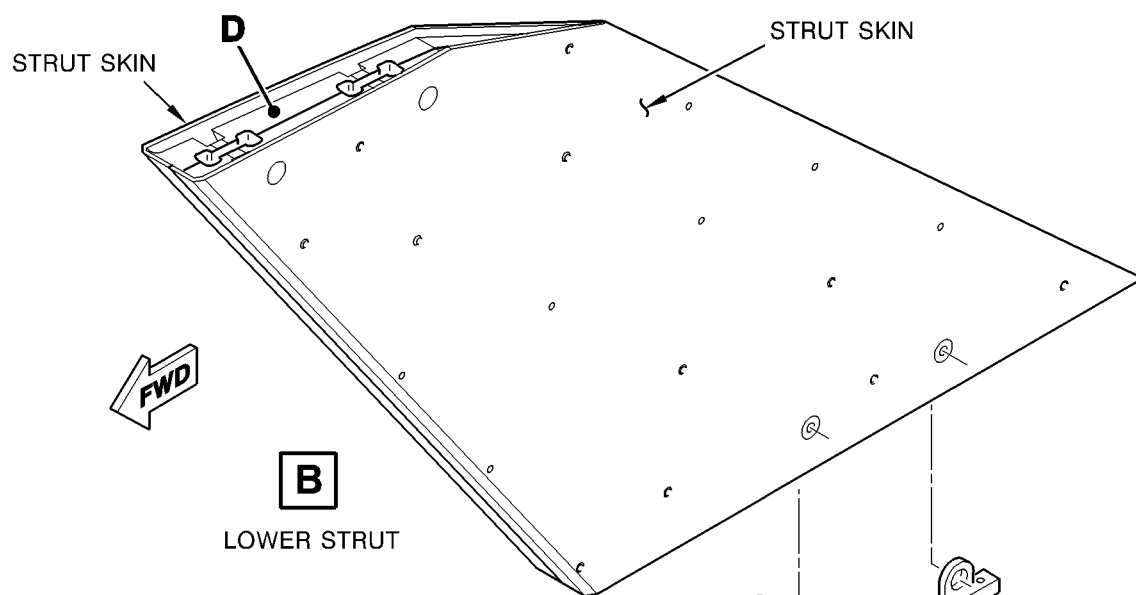


B-B

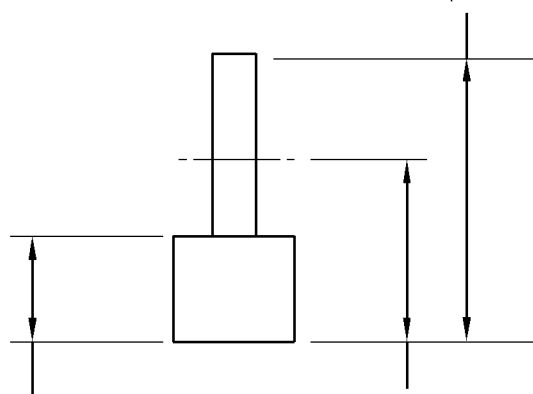
AFTER MODIFICATION

VSB852A

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 4)



AFTER 1.56 in. (39,62 mm)
BEFORE 1.60 in. (40,64 mm)



AFTER 0.54 in. (13,72 mm)
BEFORE 0.58 in. (14,73 mm)

AFTER 0.972 in. (24,69 mm)
BEFORE 1.012 in. (25,70 mm)

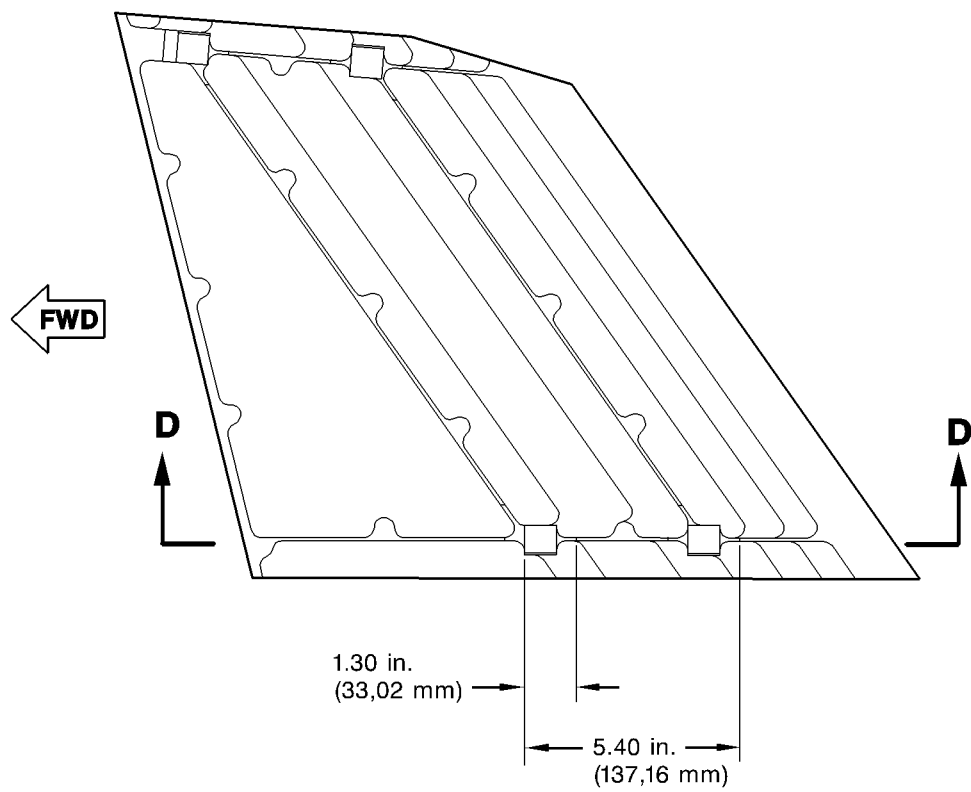
C-C

LOWER STRUT OUTER FITTING

VSB853

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 5)

V2500-NAC-78-0196



D

BEFORE MODIFICATION
(Typical both sides)

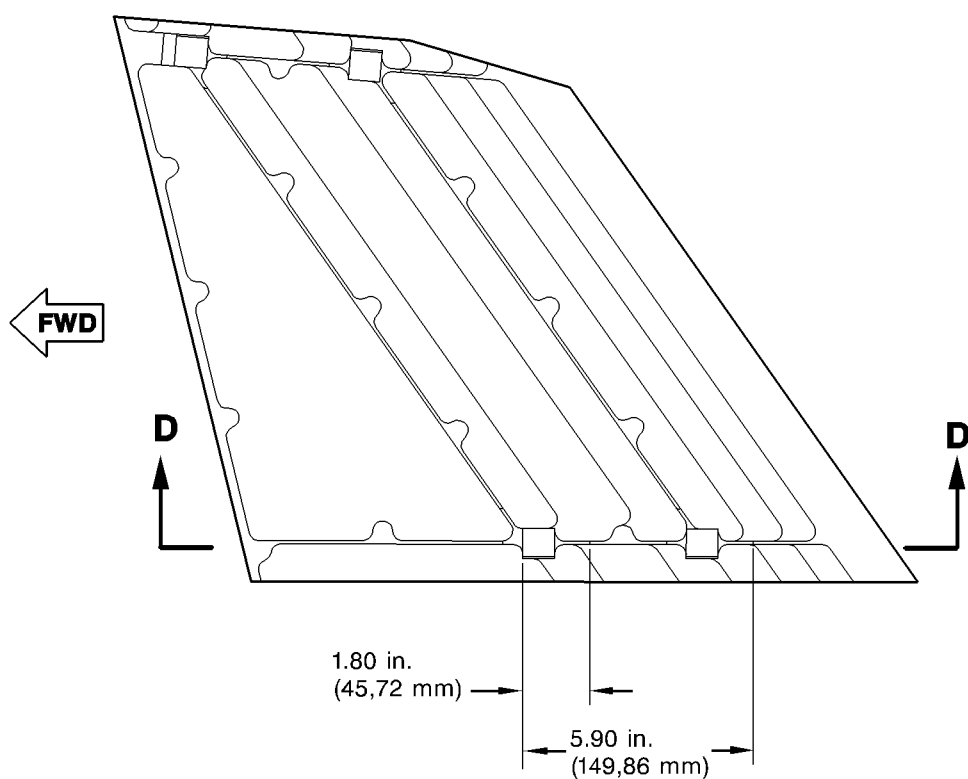


D-D

BEFORE MODIFICATION

VSB854

CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 6)



AFTER MODIFICATION
(Typical both sides)



D-D

AFTER MODIFICATION

VSB855A

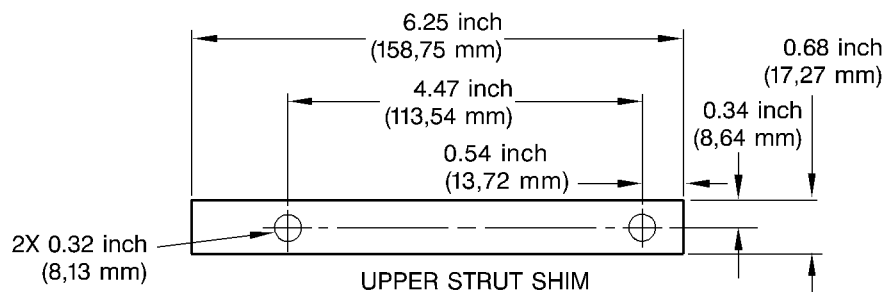
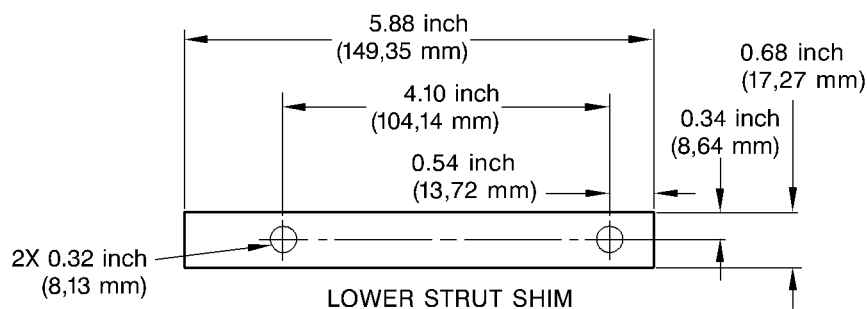
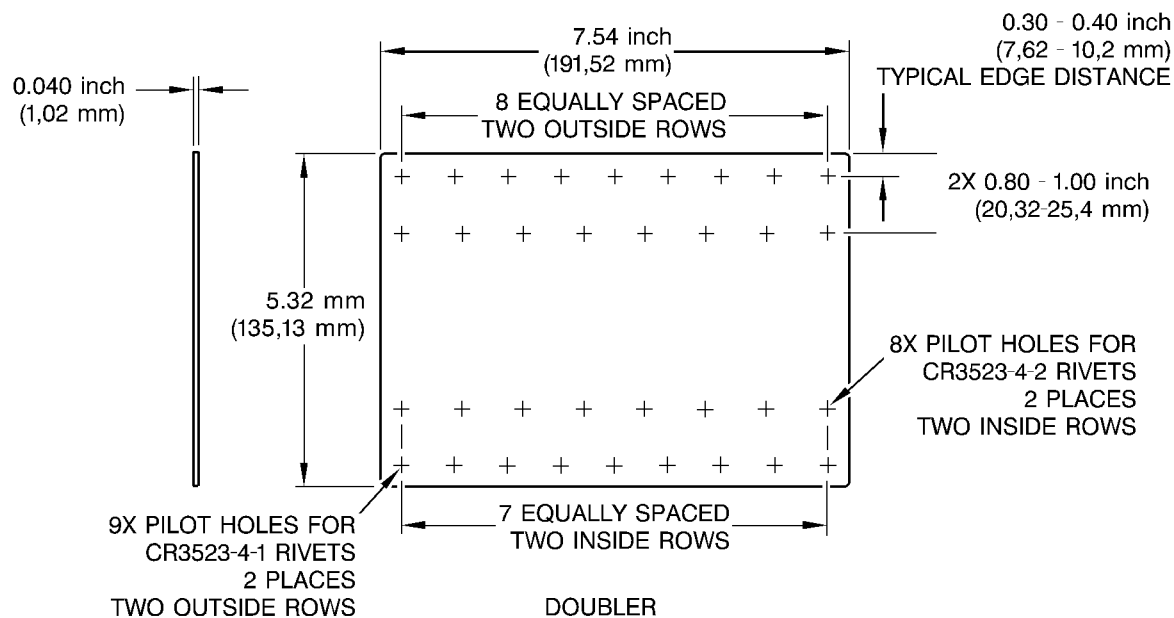
CNA - Strut Skin and Outer Fitting Modification
Figure 1 (sheet 7)

V2500-NAC-78-0196

Nov 18/02
R Mar. 17/04

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Page 14



VSB930

Make the Doublers and Laminated Shims
Figure 2

