



**Number:** V2500-NAC-71-0283

## Summary

**Date:** May 21, 2001

Internal Reference No.

**ATA System:** 71-14

JG 01VN803

**SUBJECT:** PYLON APRON - NO. 1 HINGE BEAM - MODIFICATION OF AND REPLACEMENT OF  
ATTACHING HARDWARE - FAN CASE ATTACH BRACKETS - MODIFICATION OF

### BACKGROUND

#### GENERAL:

Pylon apron forward hinge beams have been found with damaged hinge beam-to-fan case attach fasteners.

This service bulletin provides instructions to remove the existing attach fasteners, modify the hinge beam and engine attach bracket, and install larger diameter attach fasteners.

#### ACTION:

Remove the existing attach fasteners, modify the hinge beam and engine attach bracket, and install larger diameter attach fasteners.

#### COMPLIANCE:

Category 5

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

### EFFECTIVITY:

All V2500-D5 EBU and QEC kits prior to serial number 0514001. All number one hinge beams with part numbers 290-1004-505, -506, -507, and -508.

#### MANPOWER:

Manpower necessary to incorporate Service Bulletin is 0.5 manhour for each hinge beam.

#### MATERIAL INFORMATION:

There is no service bulletin kit. The parts to accomplish this service bulletin are to be purchased individually or procured from operator stock.



"MODIFICATION SERVICE BULLETIN" - "NACELLE - PYLON APRON - NO. 1 HINGE BEAM -  
MODIFICATION OF AND REPLACEMENT OF ATTACHING HARDWARE - FAN CASE  
ATTACH BRACKETS - MODIFICATION OF"

1. PLANNING INFORMATION

A. Effectivity

(1) Airplane: MD-90

(2) Nacelle:

(a) All V2500-D5 EBU and QEC kits prior to serial number 0514001.

(b) All #1 hinge beams with part numbers 290-1004-505, -506,  
-507, and -508.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

(a) Pylon apron number 1 hinge beam-to-fan case attach fasteners  
can become damaged in service.

(2) Cause

(a) Strength of existing attach fasteners is insufficient.

(3) Background

(a) Operators have found pylon apron number 1 hinge beams with  
damaged hinge beam-to-fan case bracket attach fasteners.

(4) Objective

(a) The changes in configuration recommended in this Service  
Bulletin are intended to maintain reliability of the number  
1 hinge beam by replacing the hinge beam-to-fan case bracket  
attach fasteners.

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(5) Substantiation

(a) Not applicable.

D. Description

This service bulletin provides instructions to remove the existing number one hinge beam-to-fan case attach fasteners, modify the number 1 hinge beam and engine attach brackets, and install larger diameter attach fasteners.

E. Compliance

Category 5

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

F. Approval

Incorporation of this Service Bulletin must be accomplished only in conjunction with Douglas Aircraft Company Service Bulletin MD-90-71-014 which has received exclusive FAA approval for MD-90 Series aircraft.



G. Manpower

Estimated manhours to incorporate the full intent of this Service Bulletin.

VENUE	EST'D MAN HOURS
(1) In Service	
(a) To gain access	30 minutes
(b) To modify	1.0 hours
(c) To close up	30 minutes
Total	0.5 hours per hinge beam 0.5 hours per EBU (2.0 hours per aircraft)
(2) In Shop	
(a) To modify	1.0 hours
Total	0.5 hours per hinge beam. 0.5 hours per EBU

NOTE: Man hour estimate is provided for planning purposes only. No labor reimbursement is provided under the terms of this service bulletin offering.



H. Material Cost and Availability

There is no kit for this service bulletin. The parts to accomplish this service bulletin are to be purchased individually or procured from operator stock.

I. Tooling

IAE1N20045 Fan Cowl No.1 Hinge Beam Bracket Locator

J. Weight and Balance

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

K. References

Publication	Chapter/Section
IAE Standard Practices/Processes Manual (SPP-V2500-1IA)	70-09-00

L. Other Publications Affected

Publication	Chapter/Section
Pylon Apron Component Maintenance Manual (CMM-PA-V2500-3IA)	71-14-03
Aircraft Illustrated Parts Catalog	

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# SERVICE BULLETIN

### 2. Material Information

#### A. Material Requirements

(1) The following is applicable to a EBU or QEC and a hinge beam.

#### B. Parts Necessary for this Service Bulletin:

NEW PNUMBER (ATA NUMBER)	QTY	ESTD UNIT PRICE	KEYWORD	OLD PNNUM- BER (IPC NUMBER)	INSTR/ DISPOS
HL40-5-8	2		Pin		
MS21043-08	2		Nut		
NAS1149EN832R	4		Washer		

#### C. Parts Affected by this Service Bulletin:

NEW PNUMBER (ATA NUMBER)	QTY	ESTD UNIT PRICE	KEYWORD	OLD PNNUM- BER (IPC NUMBER)	INSTR/ DISPOS
290-1004-509 (71-14-03)	1		Beam Assy- Hinge No.1 LH	290-1004-505 (01-10)	(A)(1D) (S1) (S2) (S3)
290-1004-510 (71-14-03)	1		Beam Assy- Hinge No.1 RH	290-1004-506 (01-12)	(A)(1D) (S1) (S2) (S4)
MS21043-08 (71-14-03)	2		Nut	MS21043-06 (01-14)	(A)(S1) (S2)
NAS1149EN832R  (71-14-03)	4		Washer	NAS1149EN632R  (01-16)	(A)(S1) (S2)

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NEW PNUMBER (ATA NUMBER)	QTY	ESTD UNIT PRICE	KEYWORD	OLD PNNUM- BER (IPC NUMBER)	INSTR/ DISPOS
HL40-5-8 (71-14-03)	2		Pin	HL40-4-8 (01-18)	(A)(S1) (S2)
290-0028-25 (71-14-04)	1		Bracket	290-0028-5 (01-10)	(A)(1D) (S1) (S2)
290-0028-26 (71-14-04)	1		Bracket	290-0028-6 (01-30)	(A)(1D) (S1) (S2)

D. Instructions/Disposition Codes:

(A) New part is available.

(1D) Old part can be reworked to new part number.

(S1) New part can replace old part but not vice versa.

(S2) Old and new parts coded (S1) must be used together in sets.

(S3) 290-1004-511 is optional to 290-1004-509.

(S4) 290-1004-512 is optional to 290-1004-510.

E. Materials Required to do this Service Bulletin:

CoMat 07-139	Catalyst
CoMat 07-140	Epoxy Primer
CoMat 07-144	Thinner

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3. Accomplishment Instructions

- A. Remove the No.1 hinge beam from the fan case attach brackets. Refer to Figure 1 (sheet 2).

(1) Remove the MS21043-06 nuts, NAS1149EN632R washers, and HL40-4-8 pins that attach the No.1 hinge beam to the fan case attach brackets. Discard the pins, nuts, and washers.

- B. Remove the brackets from the fan case (if necessary for access). Refer to Figure 1 (sheet 3).

NOTE: The alignment of the brackets on the fan case is critical to proper installation of the hinge beam. If you remove the brackets from the fan case, you will have to use the IAE1N20045 tool to install them.

(1) Remove the nuts, washers, and bolts that attach the brackets and shims to the fan case.

- C. Make the holes in the brackets and the hinge beam larger. Refer to Figure 1 (sheets 2 and 3).

(1) Make the holes in the brackets and No.1 hinge beam 0.164 to 0.167 inch (4,166 to 4,242 mm) diameter.

- D. Re-identify the brackets and No. 1 hinge beam. Use a rubber stamp and metal marking ink. Refer to the IAE Standard Practices/Processes Manual, Chapter 70-09-00.

(1) Re-identify the 290-0028-5 bracket as 290-0028-25.

(2) Re-identify the 290-0028-6 bracket as 290-0028-26.

(3) Re-identify the 290-1004-505 No.1 hinge beam as 290-1004-509.

(4) Re-identify the 290-1004-506 No.1 hinge beam as 290-1004-510.

(5) Re-identify the 290-1004-507 No.1 hinge beam as 290-1004-511.

(6) Re-identify the 290-1004-508 No.1 hinge beam as 290-1004-512.





E. Install the brackets (if removed). Refer to Figure 1 (sheet 3).

- (1) Remove the hardware from the Rolls-Royce bracket at flange A, Holes 29 and 30. Move the bracket and tube aside to make room for the IAE1N20045 tool.
- (2) Attach detail 1 of the IAE1N20045 tool to the aft side of flange A with four index pins.
- (3) Hold detail 2 of the IAE1N20045 tool to the aft side of flange A with two clamps.

**WARNING:** CATALYST (COMAT 07-139), PRIMER (COMAT 07-140), 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 SHEETS" AND FOLLOW ALL LISTED SAFETY AND HEALTH PRECAUTIONS.

- (4) Mix the catalyst (CoMat 07-139), the primer (CoMat 07-140), and the thinner (CoMat 07-144). Refer to the manufacturer's instructions.
- (5) Apply primer mix to the bracket attach hardware to provide dissimilar metal protection.
- (6) Install the shims and brackets on flange A with the screws, bolts, washers, and nuts.
- (7) Make sure the brackets are in the proper position. Use the check pin.
- (8) Torque the nuts of the screws to 85 to 105 inlbs (10,0 to 12,0 NM).
- (9) Torque the nuts of the bolts to 50 to 70 inlbs (6,0 to 8,0 NM).

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F. Install the No.1 hinge beam on the brackets. Refer to Figure 1 (sheet 2).

(1) Apply primer mix to the hinge beam attach hardware to provide dissimilar metal protection.

(2) Install the hinge beam on the brackets with the new HL40-5-8 pins, NAS1149EN832R washers, and MS21043-08 nuts.

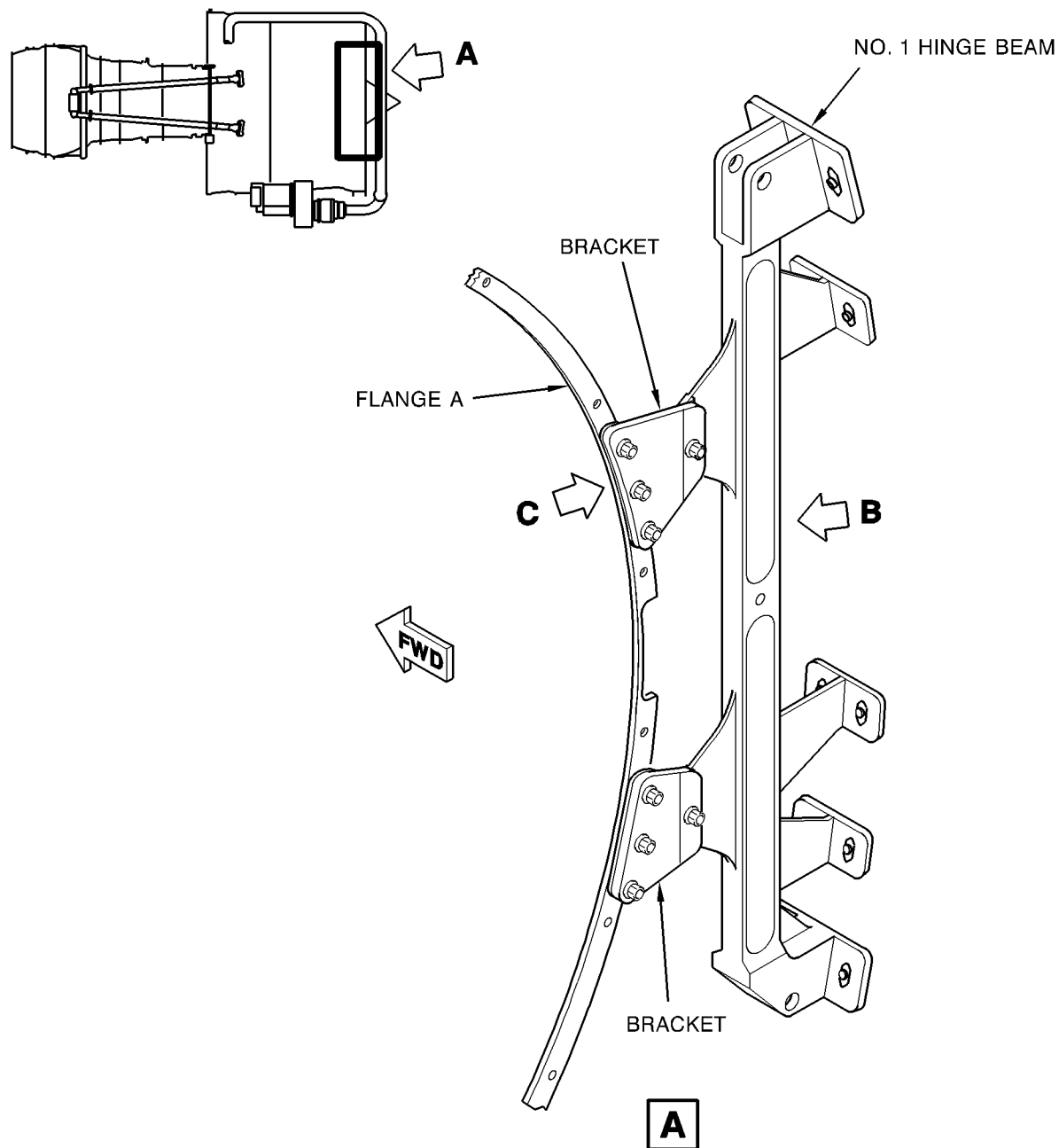
G. Recording Instructions

(1) A record of accomplishment is required. Write in the applicable records that Service Bulletin V2500-NAC-71-0283 has been done.

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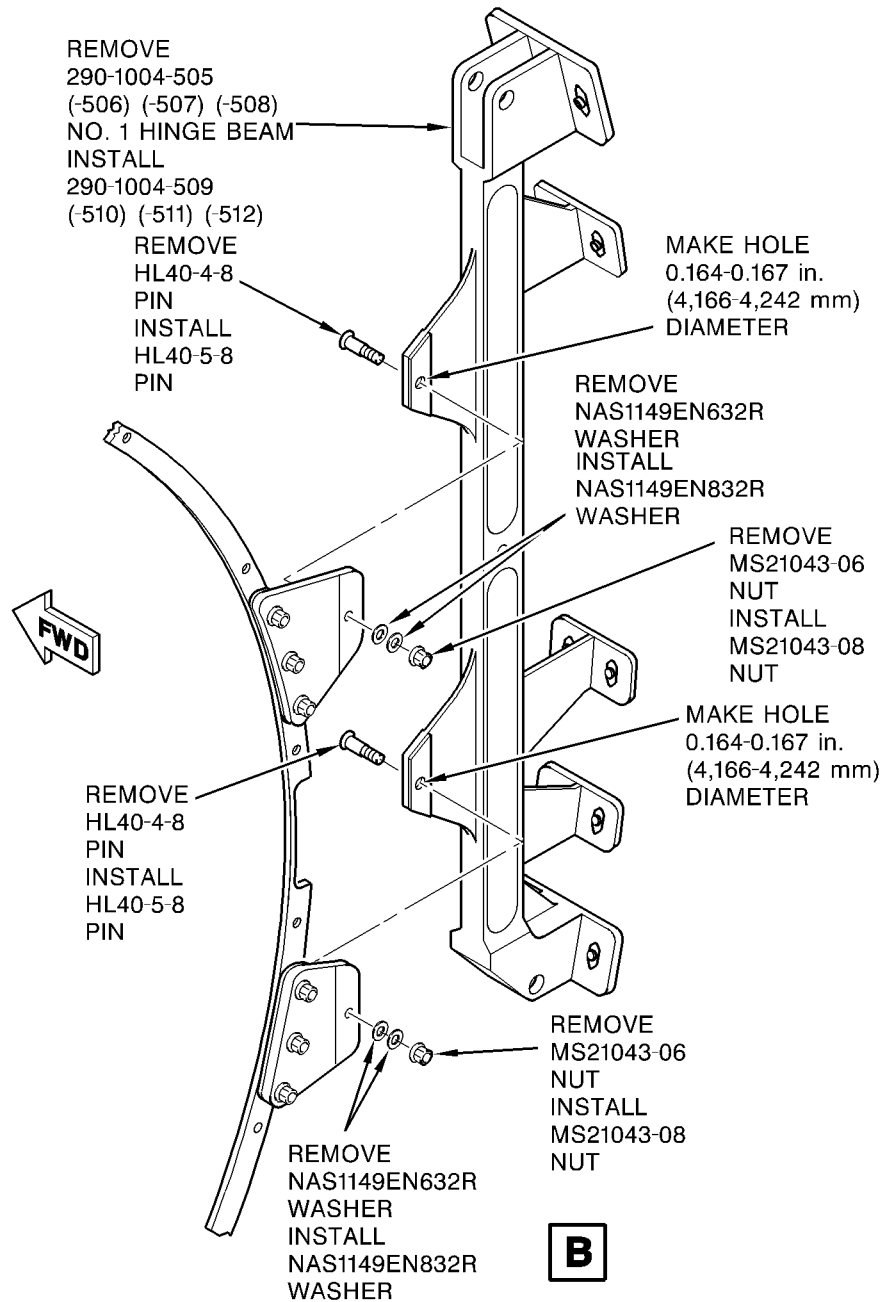


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Fan Cowl #1 Hinge Beam Installation Modification  
Figure 1 (sheet 1)

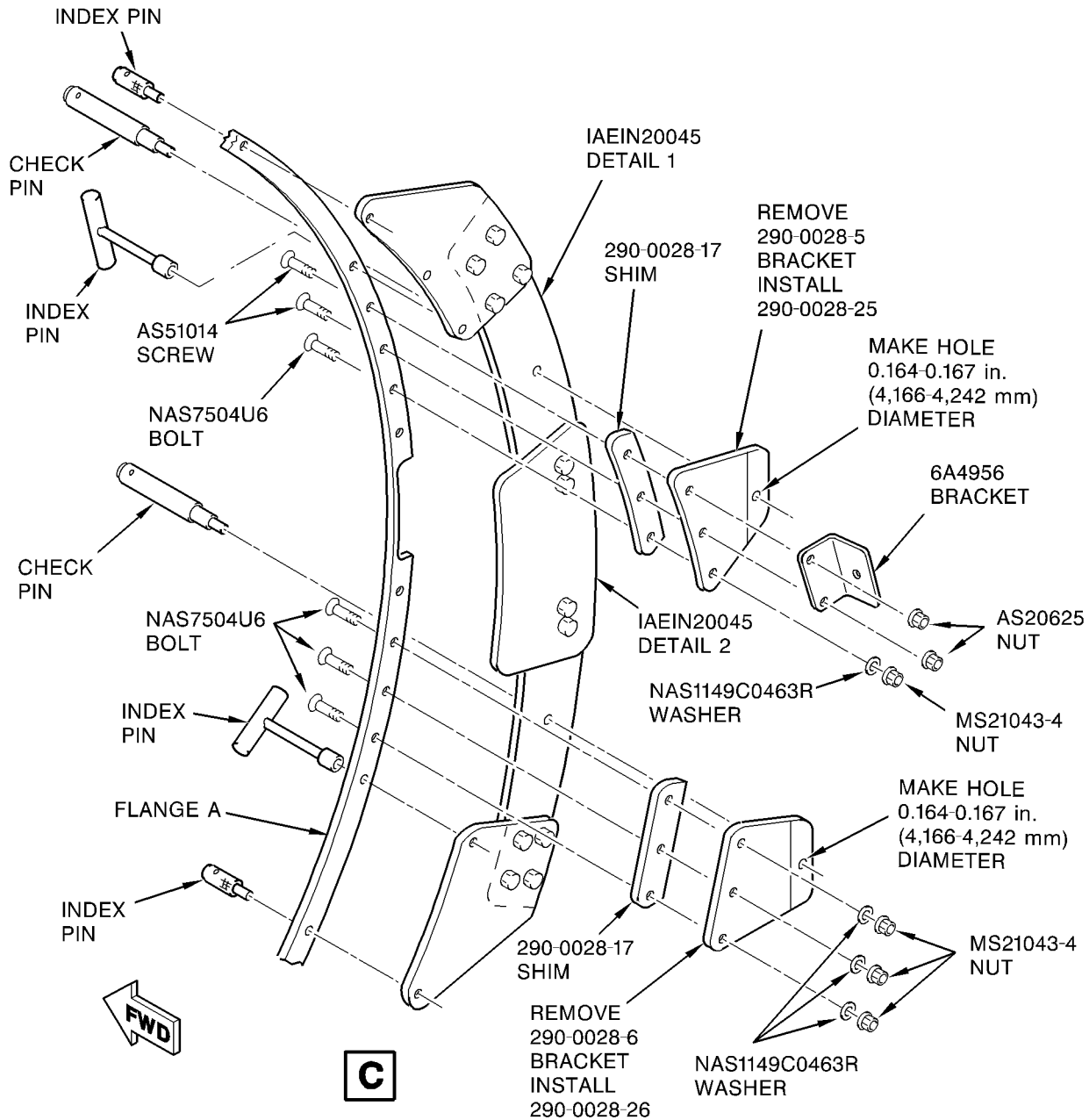
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Fan Cowl #1 Hinge Beam Installation Modification  
Figure 1 (sheet 2)



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Fan Cowl #1 Hinge Beam Installation Modification  
Figure 1 (sheet 2)