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## V2500-A1/A5 SERIES NACELLE SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin NV2500-78-0199

### Document History

Service Bulletin Revision Status  
Initial Issue Nov.5/03

Supplement Revision Status

### Bulletin Revision 1

|                                      |                                               |                                                                                          |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------|
| Remove                               | Incorporate<br>Page 1 and 2 of the<br>Summary | Reason for change<br>Material Information and<br>Accomplishment Instructions<br>revised. |
| All pages of the<br>Service Bulletin | Pages 1 to 33 of the<br>Service Bulletin      | Material Information and<br>Accomplishment Instructions<br>revised.                      |

# V2500-NAC-78-0199

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED  
If any have not been received please advise Customer Data 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> |
|-------------|------------------------|----------------------|
| Summary     |                        |                      |
| R 1         | 1                      | Apr.26/06            |
| R 2         | 1                      | Apr.26/06            |
| Bulletin    |                        |                      |
| R 1         | 1                      | Apr.26/06            |
| R 2         | 1                      | Apr.26/06            |
| R 3         | 1                      | Apr.26/06            |
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| R 20        | 1                      | Apr.26/06            |
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| R 25        | 1                      | Apr.26/06            |
| R 26        | 1                      | Apr.26/06            |
| R 27        | 1                      | Apr.26/06            |
| R 28        | 1                      | Apr.26/06            |
| R 29        | 1                      | Apr.26/06            |
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| R 31        | 1                      | Apr.26/06            |
| R 32        | 1                      | Apr.26/06            |
| R 33        | 1                      | Apr.26/06            |

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NACELLE – THRUST REVERSER – AFT SUPPORT RING REPLACEMENT – BLANK CASCADE REPLACEMENT  
– ACTUATOR COVER REPLACEMENT

## SUMMARY

R 1. PLANNING

R A. EFFECTIVITY:

R V2500-A1/A5 ALL Thrust Reversers with Serial Numbers prior to 8367001

R B. CONCURRENT REQUIREMENTS:

R If Service Bulletin V2500-NAC-78-0088 has not been accomplished, steps within  
R the Accomplishment Instruction section must be taken. Also, an inspection from  
R Service Bulletin V2500-NAC-78-0209 must be completed when incorporating this  
R bulletin.

R C. REASON/CONDITION:

R (1) Condition

R The thrust reverser aft support rings, blank cascades, and actuator covers can  
R become cracked in service. High stress concentration effects and interference  
R between the aft support ring lockout lug and the translating sleeve lockout  
R clevis.

R (2) Background

R Thrust reversers have been found with cracked aft support rings, blank  
R cascades, and actuator covers.

R (3) Objectives

R To introduce improved aft support rings, blank cascades, and actuator covers in  
R order to eliminate the root cause of the problem.

R (4) Substantiation

R By analysis.

R D. DESCRIPTION

R This Service Bulletin provides instructions to install a new aft support ring  
R (Refer to Figure 1, Sheet 1), new blank cascades made of composite material  
R (Refer to Figure 3) and new actuator covers (Refer to Figure 4).

R E. COMPLIANCE

R Category Code 8 (Replace the Aft Support Ring, Blank Cascades, and Actuator  
R Covers). Accomplish based upon experience with the prior configuration.



- R F. MANPOWER
- R (1) In Service – 16 hours
- R (2) At Overhaul – 6 hours

NACELLE – THRUST REVERSER – AFT SUPPORT RING REPLACEMENT – BLANK CASCADE REPLACEMENT  
– ACTUATOR COVER REPLACEMENT

1. Planning Information

A. Effectivity

(1) Airplane:

Airbus A319

Airbus A320

Airbus A321

(2) Engine:

V2500-A1

V2500-A5

(3) Thrust Reverser:

All thrust reversers with serial numbers prior to 8367001.

B. Concurrent Requirements

NOTE: If you have not done V2500-NAC-78-0088, and/or have not purchased the kit or parts to do so, you will only need to do Paragraphs 3.A.9 (a) through (f).

NOTE: The accomplishment instruction of this Service Bulletin requires the completion of an inspection in Part B of V2500-NAC-78-0209. This may require the replacement of 740-0039-507 Clevis Fitting.

C. Reason/Condition

(1) Condition

The thrust reverser aft support rings, blank cascades, and actuator covers can become cracked in service. High stress concentration effects and interference between the aft support ring lockout lug and the translating sleeve lockout clevis.

(2) Background

Thrust reversers have been found with cracked aft support rings, blank cascades, and actuator covers.

(3) Objectives

To introduce improved aft support rings, blank cascades, and actuator covers in order to eliminate the root cause of the problem.

(4) Substantiation

By analysis.

D. Description

This Service Bulletin provides instructions to:

R Install a new aft support ring (Refer to Figure 1, Sheet 1), new blank cascades  
R made of composite material (Refer to Figure 3) and new actuator covers (Refer  
R to Figure 4), and to inspect the translating sleeve clevis fitting (P/N  
R 740-0039-507).

E. Approval

R The technical content of this Service Bulletin has been approved under the  
R authority of the EASA Design Organization Approval No. EASA.21J.031. The  
R authorizing IAE document is EC 01VN613. In addition, the part number changes  
R and/or part modifications described in Paragraphs 2 and 3 of this Service  
R Bulletin have been shown to comply with the applicable Federal Aviation  
R Regulations and are FAA approved for the equipment model(s) listed.

F. Compliance

R Category Code 8 (Replace the Aft Support Ring, Blank Cascades and Actuator  
R Covers)

R Accomplish based upon experience with the prior configuration.

G. Manpower

R Estimated Man-hours to incorporate the full intent of this bulletin for one  
R nacelle half:

(1) In Service

R 16 hours

(2) At Overhaul

R 6 hours

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

#### H. Material Cost and Availability

- R The parts required to accomplish this service bulletin are available from the  
R manufacturer as kit numbers V2578199-551, V2578199-552, V2578199-553 and  
R V2578199-554.
- R Operators with units listed in Paragraph 1.A. should submit a purchase order  
R for the applicable quantity of kits. The purchase order must specify this  
R service bulletin number and the kit numbers listed herein. Operators will have  
R one year from the issue date of this bulletin to place an order. Upon receipt  
R of purchase order, Goodrich shall provide a delivery schedule for kits ordered.  
R After one year, kits will no longer be available and operators will have to  
R order parts individually at catalog prices if they desire to incorporate this  
R change.

Direct Purchase Order to:

Rohr, Inc.

850 Lagoon Drive

Chula Vista, CA 91910-2098

U.S.A.

Attn: Regional Business Manager - MZ 107A (Ref Service Bulletin No.  
V2500-NAC-78-0199)

**NOTE:** Please do not submit orders for service bulletin parts via the Spec 2000 ordering system

Please verify the parts pricing by referring to the current Goodrich Spare Parts Catalog or log on to [www.parts.asg.goodrich.com](http://www.parts.asg.goodrich.com)

#### I. Tooling

No special tools are required.

### J. Weight and Balance

R Incorporation of this service bulletin results in a thrust reverser weight  
R reduction of 3.74 lbs per nacelle, broken down as follows:

R Blank Cascades: 2.47 LB savings

R Aft Cascade Ring: 0.13 LB increase

R Actuator Covers: 1.40 LB savings

### R K. Electrical Load Data

R Not applicable.

### L. References

#### Publication

#### Chapter/Section

V2500 Aircraft Maintenance Manual

78-32-19 78-32-43

78-32-46 78-32-48

78-32-76

Overhaul Processes and Consumable Index  
(PCI-V2500-1IA)

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

IAE Service Bulletin V2500-NAC-78-0088

IAE Service Bulletin V2500-NAC-78-0209

Airbus Modification No. 33301

Airbus Modification No. 33302

Airbus Modification No. 33303

Airbus Service Bulletin A320-78-1024

Engineering Change No. EC01VN613

ATA Locator - 78-30-00

M. Other Publications Affected

| Publication                                                                                          | Chapter/Section |
|------------------------------------------------------------------------------------------------------|-----------------|
| A320-V2500-A1/A319/A320/A321/V2500A5 Thrust Reverser Component Maintenance Manual (CMM-TR-V2500-1IA) | 78-30-00        |

R N. Interchangeability of Parts

R See 2.C. Parts Affected by the Service Bulletin.

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## 2. Material Information

### A. Material Requirements

R (1) The following is applicable to one thrust reverser half.

### B. Parts Required to Accomplish this Service Bulletin:

R Each kit listed in the parts list below is specific to one half of the engine.  
R The kits correspond to position as follows:

R V2578199-551 - Engine Position No.1 (L/H), Outboard

R V2578199-552 - Engine Position No.1 (R/H), Inboard

R V2578199-553 - Engine Position No.2 (L/H), Inboard

R V2578199-554 - Engine Position No.2 (R/H), Outboard

R NOTE: The inspection required by 3.A.(15) may require the replacement of the  
R Clevis Fitting (P/N 740-0039-507).

### C. Parts Affected by this Service Bulletin

R NOTE: 'REF' Used for Item Removed and Replaced Per SB V2500-NAC-78-0199  
R Accomplishment Instructions.

| R | NEW PART NO   | QTY | PART TITLE           | OLD PART NO  | INSTR/      |
|---|---------------|-----|----------------------|--------------|-------------|
| R | (ATA NO)      |     |                      | (IPC NO)     | DISPOS      |
| R | V2578199-551  | 1   | Replacement Kit      |              | (A)(S1)     |
| R | (78-30-00)    |     |                      |              |             |
| R |               |     | 1. Actuator Cover    |              |             |
| R |               |     | Replacement (For LHS |              |             |
| R |               |     | T/R Half of LHS      |              |             |
| R |               |     | Engine)              |              |             |
| R | 740-0552-509  | 2   | Cover Assy, Actuator | 740-0552-507 | (A)(S1)     |
| R |               | REF | Clamp Half           | 740-0554-1   | See Fig.4,5 |
| R | NAS6403U21    | 2   | Bolt                 |              | See Fig.4,5 |
| R | NAS6404U21    | 2   | Bolt                 | NAS6404U9    | See Fig.4,5 |
| R | NAS1022C4     | 2   | Nut                  |              | See Fig.4,5 |
| R | NAS1022C3     | 2   | Nut                  |              | See Fig.4,5 |
| R | MS51496-55    | 4   | Washer               |              | See Fig.4,5 |
| R | NAS620B10L    | 4   | Washer               |              | See Fig.4,5 |
| R | NAS6303-8     | 4   | Bolt                 |              | See Fig.4,5 |
| R | NAS1149C0332B | 8   | Washer               |              | See Fig.4,5 |
| R | NAS1291-C3M   | 4   | Nut                  |              | See Fig.4,5 |
| R |               |     |                      |              |             |

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| R | NEW PART NO<br>(ATA NO) | QTY | PART TITLE           | OLD PART NO<br>(IPC NO) | INSTR/<br>DISPOS |
|---|-------------------------|-----|----------------------|-------------------------|------------------|
| R |                         |     | 2. Aft Support Ring  |                         |                  |
| R |                         |     | Replacement          |                         |                  |
| R | 740-0409-507            | 1   | Ring Assy            | 740-0409-505            | (A)(S1)          |
| R | NAS6306U22              | REF | Bolt                 |                         | See Fig.1,2      |
| R | MS21042-6               | REF | Nut                  |                         | See Fig.1,2      |
| R | NAS1149C0663R           | REF | Washer               |                         | See Fig.1,2      |
| R | S700B0115P6D29          | REF | Bushing              |                         | See Fig.1,2      |
| R | NAS6305U15              | REF | Bolt                 |                         | See Fig.1,2      |
| R | MS21042-5               | REF | Nut                  |                         | See Fig.1,2      |
| R | NAS1149C0563R           | REF | Washer               |                         | See Fig.1,2      |
| R | S700B0115P5D17          | REF | Bushing              |                         | See Fig.1,2      |
| R | NAS6404U11              | 3   | Bolt                 |                         | See Fig.1,2      |
| R |                         |     | 3. Blank Cascade     |                         |                  |
| R |                         |     | Replacement          |                         |                  |
| R | 745-0109-507            | 1   | Blank Cascade        | 740-0411-501            | (A)(S1)          |
| R |                         |     | (Preferred Part to   |                         |                  |
| R |                         |     | 745-0109-501 per GIB |                         |                  |
| R |                         |     | V2500-NAC-70-0877)   |                         |                  |
| R | NAS6406U21              | 8   | Bolt                 |                         | See Fig. 3       |
| R | NAS1587-4L              | 8   | Washer               |                         | See Fig. 3       |
| R |                         |     |                      |                         |                  |
| R | NEW PART NO<br>(ATA NO) | QTY | PART TITLE           | OLD PART NO<br>(IPC NO) | INSTR/<br>DISPOS |
| R | V2578199-552            | 1   | Replacement Kit      |                         | (A)(S1)          |
| R | (78-30-00)              |     |                      |                         |                  |
| R |                         |     | 1. Actuator Cover    |                         |                  |
| R |                         |     | Replacement (For RHS |                         |                  |
| R |                         |     | T/R Half of LHS      |                         |                  |
| R |                         |     | Engine)              |                         |                  |
| R |                         | 2   | Cover Assy, Actuator | 740-0552-507            | (A)(S1)          |
| R |                         | REF | Clamp Half           | 740-0554-1              | See Fig.4,5      |
| R | NAS6403U21              | 2   | Bolt                 |                         | See Fig.4,5      |
| R | NAS6404U21              | 2   | Bolt                 |                         | See Fig.4,5      |
| R | NAS1022C4               | 2   | Nut                  |                         | See Fig.4,5      |
| R | NAS1022C3               | 2   | Nut                  |                         | See Fig.4,5      |
| R | MS51496-55              | 4   | Washer               |                         | See Fig.4,5      |
| R | NAS620B10L              | 4   | Washer               |                         | See Fig.4,5      |
| R | NAS6303-8               | 4   | Bolt                 |                         | See Fig.4,5      |
| R | NAS1149C0332B           | 6   | Washer               |                         | See Fig.4,5      |
| R | NAS1291-C3M             | 4   | Nut                  |                         | See Fig.4,5      |
| R |                         |     | 2. Aft Support Ring  |                         |                  |
| R |                         |     | Replacement          |                         |                  |
| R | 740-0409-508            | 1   | Ring Assy            | 740-0409-506            | (A)(S1)          |
| R | NAS6306U22              | REF | Bolt                 |                         | See Fig.1,2      |



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| R | NEW PART NO<br>(ATA NO) | QTY | PART TITLE                                                                        | OLD PART NO<br>(IPC NO) | INSTR/<br>DISPOS |
|---|-------------------------|-----|-----------------------------------------------------------------------------------|-------------------------|------------------|
| R | MS21042-6               | REF | Nut                                                                               |                         | See Fig.1,2      |
| R | NAS1149C0663R           | REF | Washer                                                                            |                         | See Fig.1,2      |
| R | S700B0115P6D29          | REF | Bushing                                                                           |                         | See Fig.1,2      |
| R | NAS6305U15              | REF | Bolt                                                                              |                         | See Fig.1,2      |
| R | MS21042-5               | REF | Nut                                                                               |                         | See Fig.1,2      |
| R | NAS1149C0563R           | REF | Washer                                                                            |                         | See Fig.1,2      |
| R | S700B0115P5D17          | REF | Bushing                                                                           |                         | See Fig.1,2      |
| R |                         |     | 3. Blank Cascade<br>Replacement                                                   |                         |                  |
| R | 745-0109-507            | 1   | Blank Cascade<br>(Preferred Part to<br>745-0109-501 per GIB<br>V2500-NAC-70-0877) | 740-0411-501            | (A)(S1)          |
| R | 745-0109-506            | 1   | Blank Cascade<br>(Preferred Part to<br>745-0109-504 per GIB<br>V2500-NAC-70-0877) | 740-0411-506            | (A)(S1)          |
| R | NAS6404U21              | 15  | Bolt                                                                              |                         | See Fig. 3       |
| R | NAS1587-4L              | 16  | Washer                                                                            |                         | See Fig. 3       |
| R | NAS6404U19              | 1   | Bolt                                                                              |                         | See Fig. 3       |

R

| R | NEW PART NO<br>(ATA NO)    | QTY | PART TITLE                                                              | OLD PART NO<br>(IPC NO) | INSTR/<br>DISPOS |
|---|----------------------------|-----|-------------------------------------------------------------------------|-------------------------|------------------|
| R | V2578199-554<br>(78-30-00) | 1   | Replacement Kit                                                         |                         | (A)(S1)          |
| R |                            |     | 1. Actuator Cover<br>Replacement (For RHS<br>T/R Half of RHS<br>Engine) |                         |                  |
| R | 740-0552-509               | 2   | Cover Assy, Actuator                                                    | 740-0552-507            | (A)(S1)          |
| R |                            | REF | Clamp Half                                                              | 740-0554-1              | See Fig.4,5      |
| R | NAS6403U21                 | 2   | Bolt                                                                    |                         | See Fig.4,5      |
| R | NAS6404U21                 | 2   | Bolt                                                                    |                         | See Fig.4,5      |
| R | NAS1022C4                  | 2   | Nut                                                                     |                         | See Fig.4,5      |
| R | NAS1022C3                  | 2   | Nut                                                                     |                         | See Fig.4,5      |
| R | MS51496-55                 | 4   | Washer                                                                  |                         | See Fig.4,5      |
| R | NAS620B10L                 | 4   | Washer                                                                  |                         | See Fig.4,5      |
| R | NAS6303-8                  | 4   | Bolt                                                                    |                         | See Fig.4,5      |
| R | NAS1149C0332B              | 8   | Washer                                                                  |                         | See Fig.4,5      |
| R | NAS1291-C3M                | 4   | Nut                                                                     |                         | See Fig.4,5      |
| R |                            |     | 2. Aft Support Ring<br>Replacement                                      |                         |                  |
| R | 740-0409-508               | 1   | Ring Assy                                                               | 740-0409-506            | (A)(S1)          |
| R | NAS6306U22                 | REF | Bolt                                                                    |                         | See Fig.1,2      |

| R | NEW PART NO                                                                    | QTY | PART TITLE           | OLD PART NO  | INSTR/      |
|---|--------------------------------------------------------------------------------|-----|----------------------|--------------|-------------|
| R | (ATA NO)                                                                       |     |                      | (IPC NO)     | DISPOS      |
| R | MS21042-6                                                                      | REF | Nut                  |              | See Fig.1,2 |
| R | NAS1149C0663R                                                                  | REF | Washer               |              | See Fig.1,2 |
| R | S700B0115P6D29                                                                 | REF | Bushing              |              | See Fig.1,2 |
| R | NAS6305U15                                                                     | REF | Bolt                 |              | See Fig.1,2 |
| R | MS21042-5                                                                      | REF | Nut                  |              | See Fig.1,2 |
| R | NAS1149C0563R                                                                  | REF | Washer               |              | See Fig.1,2 |
| R | S700B0115P5D17                                                                 | REF | Bushing              |              | See Fig.1,2 |
| R | NAS6404U11                                                                     | 3   | Bolt                 |              | See Fig.1,2 |
| R |                                                                                |     | 3. Blank Cascade     |              |             |
| R |                                                                                |     | Replacement          |              |             |
| R | 745-0109-507                                                                   | 1   | Blank Cascade        | 740-0411-501 | (A)(S1)     |
| R |                                                                                |     | (Preferred Part to   |              |             |
| R |                                                                                |     | 745-0109-501 per GIB |              |             |
| R |                                                                                |     | V2500-NAC-70-0877)   |              |             |
| R | NAS6406U21                                                                     | 8   | Bolt                 |              | See Fig. 3  |
| R | NAS1587-4L                                                                     | 8   | Washer               |              | See Fig. 3  |
| R | <u>NOTE:</u> 'REF' Used for Item Removed and Replaced Per SB V2500-NAC-78-0199 |     |                      |              |             |
| R | Accomplishment Instructions.                                                   |     |                      |              |             |

#### D. Instructions/Dispositions Code Statements

(A) Old part will no longer be available.

(S1) Old and new parts are fully interchangeable.

#### E. Materials Required to do this Service Bulletin:

|   |              |                        |
|---|--------------|------------------------|
| R | CoMat 01-438 | Solvent (MIK/MIBK mix) |
|   | CoMat 02-099 | Lint Free Cloth        |

### 3. Accomplishment Instructions

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- R A. Replace the aft support ring, blank cascades and actuator covers on each  
R reverser half. Refer to Figures 1, 2, 3, 4 and 5.
- R (1) If the thrust reverser serial number is prior to 0493001, make sure that  
R service bulletin V2500-NAC-78-0088 has been done before you replace the  
R actuator covers.
- R NOTE: If you have not done V2500-NAC-78-0088, and/or have not purchased  
R the kit or parts to do so, you will only need to do Paragraphs  
R 3.A.(9)(a) through (f). If you do not have kit V2578088-553, do not  
R order the 740-0552-503 actuator cover. Order only the 740-0554-501  
R clamp, NAS1149C0332B washers, NAS1291C3M nuts, and NAS6303-8 bolts.
- R (2) Remove the transitioning sleeve. Refer to the Aircraft Maintenance Manual,  
R TASK 78-32-46-000-010 or 78-32-76-000-010.
- R (3) Remove the deflector boxes and retain hardware. Refer to the Aircraft  
R Maintenance Manual, TASK 78-32-19-000-010.
- R (4) Remove the old blank cascades. Refer to the Aircraft Maintenance Manual,  
R TASK 78-32-19-000-010.
- R (5) Remove the thrust reverser actuators. Refer to the Aircraft Maintenance  
R Manual, TASK 78-32-43-000-010 and 78-32-48-000-010.
- R (6) Remove the old actuator covers.
- R (7) Remove the NAS6306U22 bolt, AN960C616L or NAS1149C0663R washers,  
R S700B0115P6D29 bushings, and MS21042-6 nut at the upper end of the ring.  
R Retain the attach hardware.
- R (8) Remove the NAS6305U15 bolt, AN960C516L or NAS1149C0563R washers,  
R S700B0115P5D17 bushings, and MS21042-5 nut at the lower end of the ring.  
R Retain the attach hardware.
- R (9) For thrust reversers on which service bulletin kit number V2578088-551 has  
R not been installed:
- R (a) Remove the C-duct locking and non-locking actuators on the left thrust  
R reverser door in accordance with A320/A321 Aircraft Maintenance  
R Manual, Chapter 78-32-43, Removal/Installation.
- R (b) Discard 740-0218-505 or 507 cover assembly.
- R (c) For each of the actuator installations, change actuator support  
R bracket assembly and remove/install the parts as follows:
- R (i) Remove two MS16555-640 pins from actuator support bracket  
R assembly. Discard these parts. (Refer to Figure 5, Sheet 1).

(ii) Ream the two holes in the actuator support bracket assembly to 0.190 - 0.196 inches (4,83 - 4,98 mm).

(iii) Back spotface forward side of the holes to 0.563 inch diameter (14,300 mm) and to a depth of 0.000 - 0.020 inch (0,000 - 0,508 mm).

(d) Burr holes as necessary.

(e) Clean up the unwanted material with a vacuum or other applicable equipment.

**WARNING:** METHYL ETHYL KETONE (MEK) IS FLAMMABLE AND VAPOR IS HARMFUL. USE IN A WELL-VENTILATED AREA. AVOID PROLONGED BREATHING OF VAPORS OR PROLONGED OR REPEATED CONTACT WITH SKIN. MAY CAUSE IRRITATION OF EYES, NOSE, THROAT, AND SKIN. HIGH CONCENTRATIONS MAY CAUSE IMPAIRED JUDGEMENT. PROTECTIVE GLOVES SHOULD BE WORN DURING USE. MAY CAUSE DERMATITIS BY REMOVING SKIN OILS, PRIOR TO USE OF THIS PRODUCT, READ THE 'MATERIAL SAFETY DATA SHEET' AND FOLLOW ALL LISTED SAFETY AND HEALTH PRECAUTIONS.

(f) Use a clean (CoMat 02-099) lint free cloth and (CoMat 01-438) methyl ethyl ketone, MEK, and methyl isobutyl ketone, MIBK, solution to clean area of the actuator support bracket assembly. Wipe surface dry before solution evaporates.

(10) Install the new ring with the retained hardware. Torque the MS21042-6 nut to 160 - 190 in-lb (18,0 - 21,5 Nm). Torque the MS21042-5 nut to 100 - 140 in-lb (11,3 - 15,8 Nm).

(11) Replace the actuator covers. Refer to Figure 4 and 5. Install the new actuator covers using the appropriate hardware.

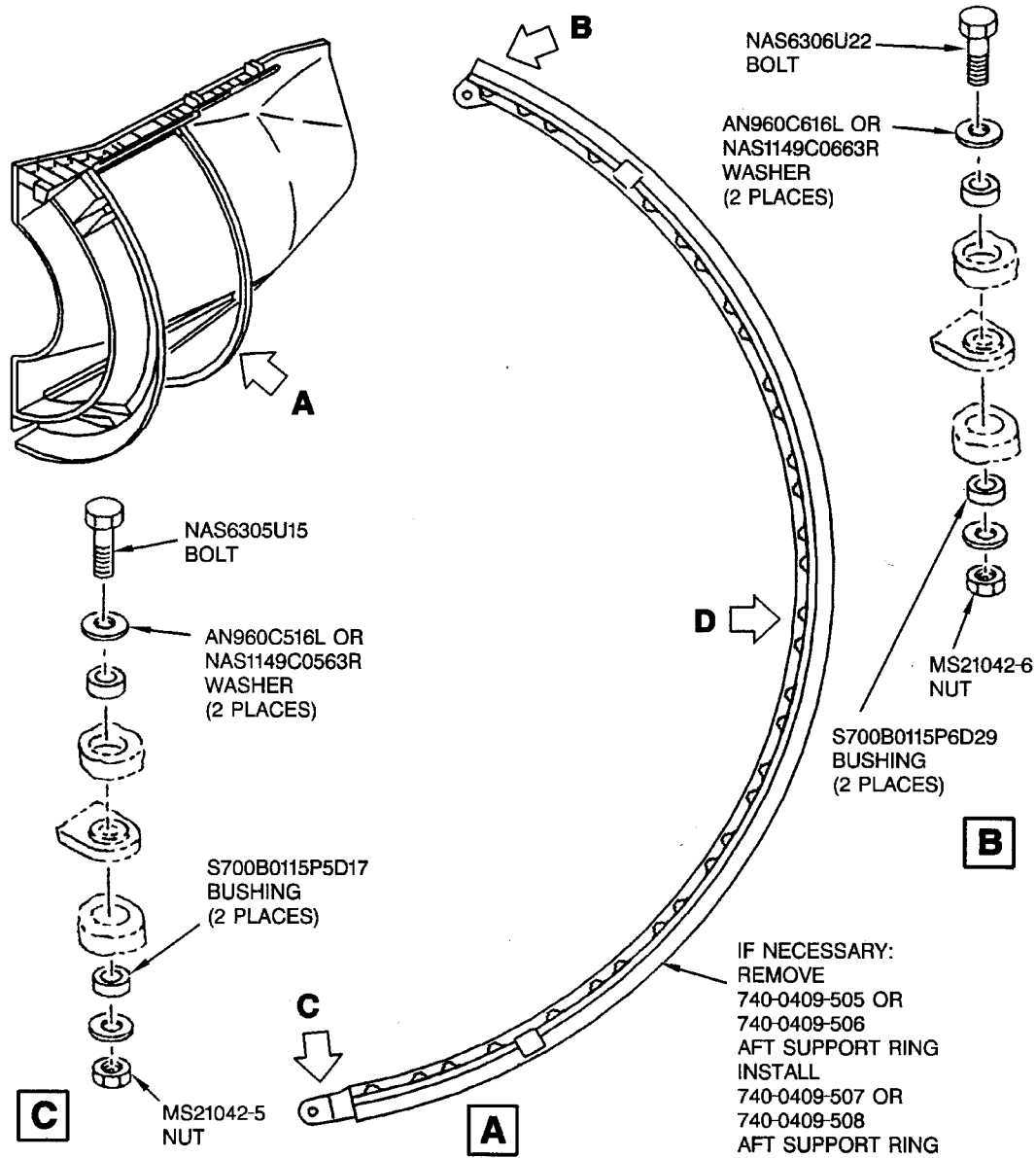
**NOTE:** The attach hardware for installation of the actuator cover on the new aft support ring is different from that required for installation on the old aft support ring. Refer to Figure 4 for the proper attach hardware.

(12) Install the thrust reverser actuators. Refer to the Aircraft Maintenance Manual TASK 78-32-43-400-010 and 78-32-48-400-010.

(13) Install the deflector boxes. Refer to the Aircraft Maintenance Manual TASK 78-32-19-400-010.

**NOTE:** One deflector box per nacelle requires three new, longer bolts to support the new configuration. See Figure 2 for detail information.

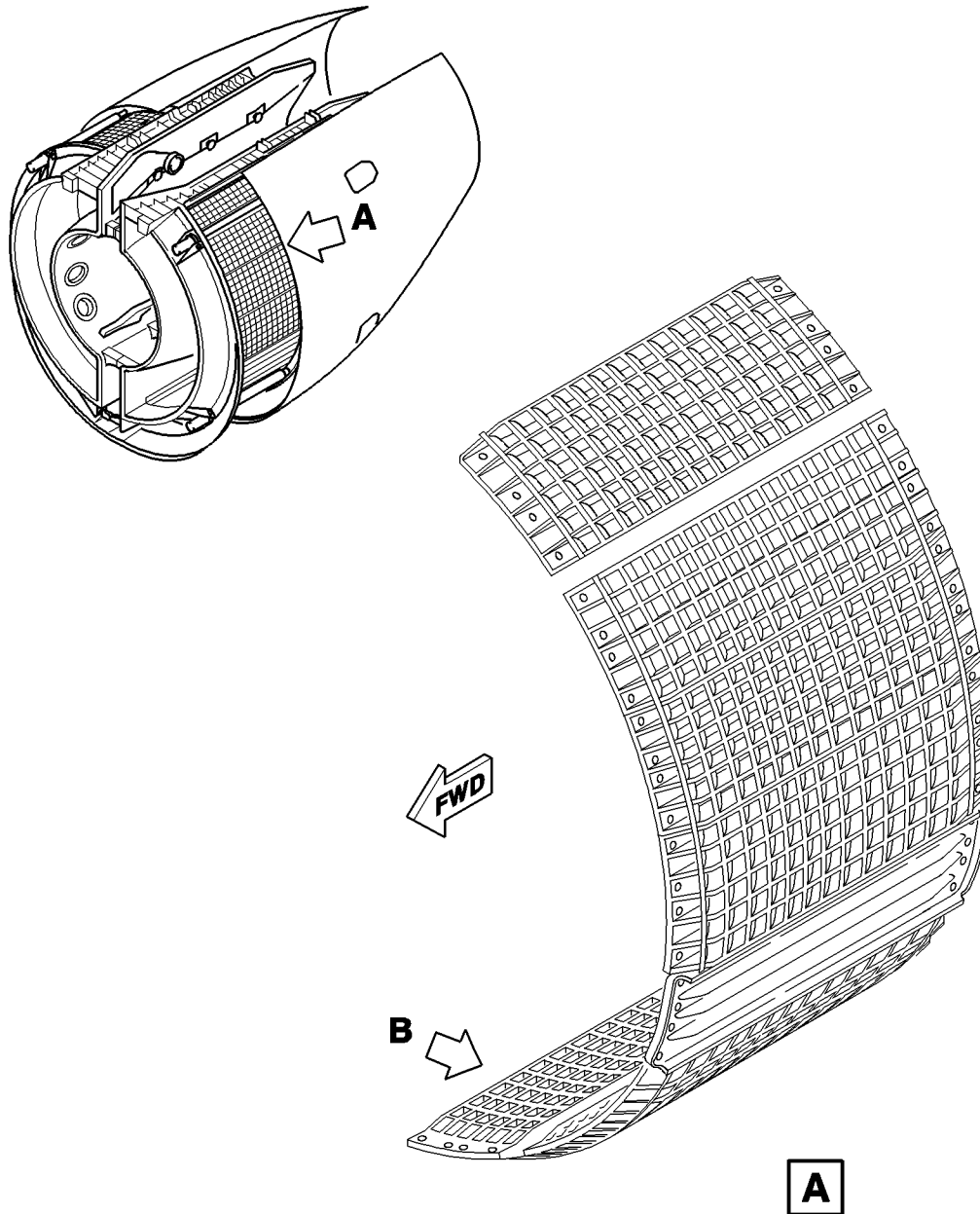
- R (14) Replace the blank cascades. Refer to Figure 3. Install the new blank  
R cascades. Refer to the Aircraft Maintenance Manual, TASK 78-32-19-400-010.
- R NOTE: The attach hardware for installation of a blank cascade on the new  
R aft support ring is different from that required for installation  
R on the old aft support ring. Refer to Figure 3 for the proper  
R attach hardware.
- R (15) Inspect/replace the translating sleeve lockout fitting as instructed in  
R Part B of service bulletin V2500-NAC-78-0209.
- R NOTE: This inspection may require the replacement of the Clevis Fitting  
R (P/N 740-0039-507).
- R (16) Install the translating sleeve. Refer to the Aircraft Maintenance Manual  
R TASK 78-32-46-400-010 or 78-32-76-400-010.
- R (17) Mark on the thrust reverser data plate and in the applicable records that  
R Service Bulletin V2500-NAC-78-0199 has been done. Use vibro-etch or  
R electro-etch method. Refer to the Standard Practices/Processes Manual  
R (SPP-V2500-1IA).



Aft Cascade Ring Replacement  
Figure 1

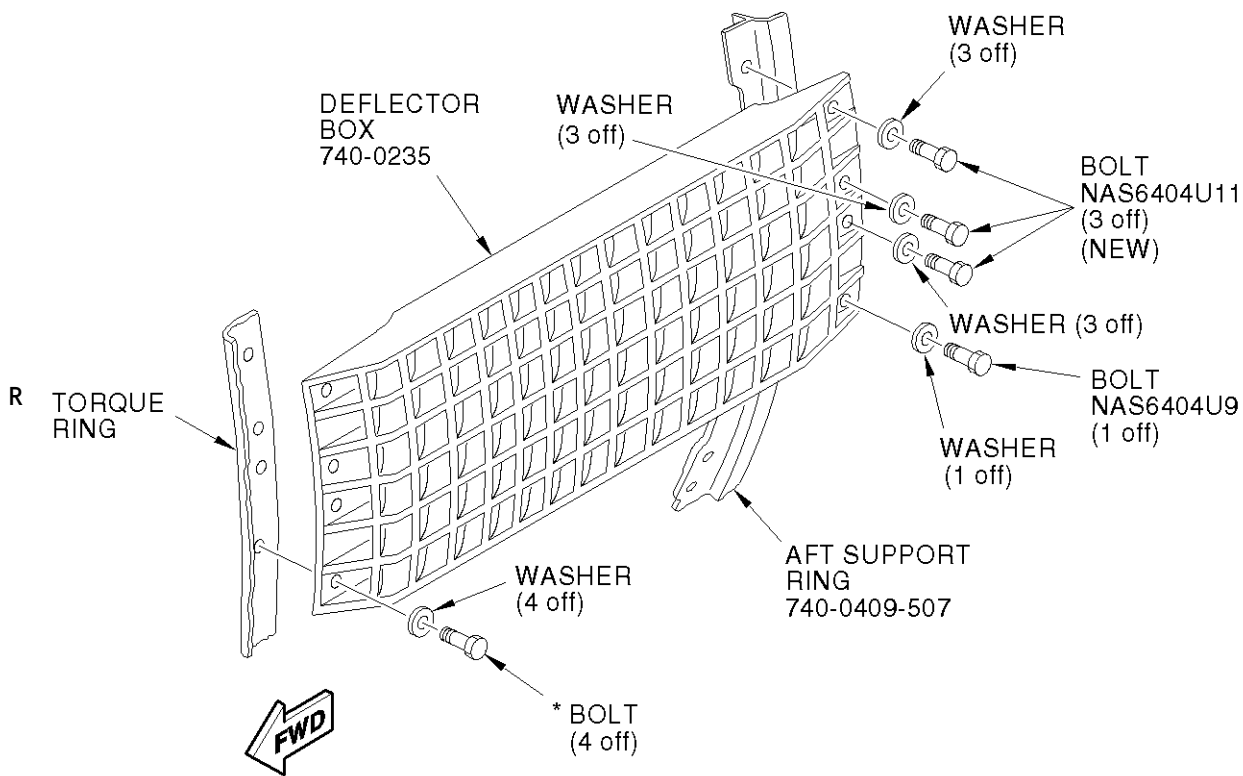
VSB914

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Aft Cascade Ring Replacement – Install the Deflector Box, Eng No.1, LH Side  
Figure 2 (Sheet 1)



**B**

EXISTING DEFLECTOR BOX  
NEW AFT SUPPORT RING

NOTE:

\* If bolt is too long, you can install an extra washer under the head of the bolt.

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R Aft Cascade Ring Replacement – Install the Deflector Box, Eng No.1, LH Side  
R Figure 2 (Sheet 2)

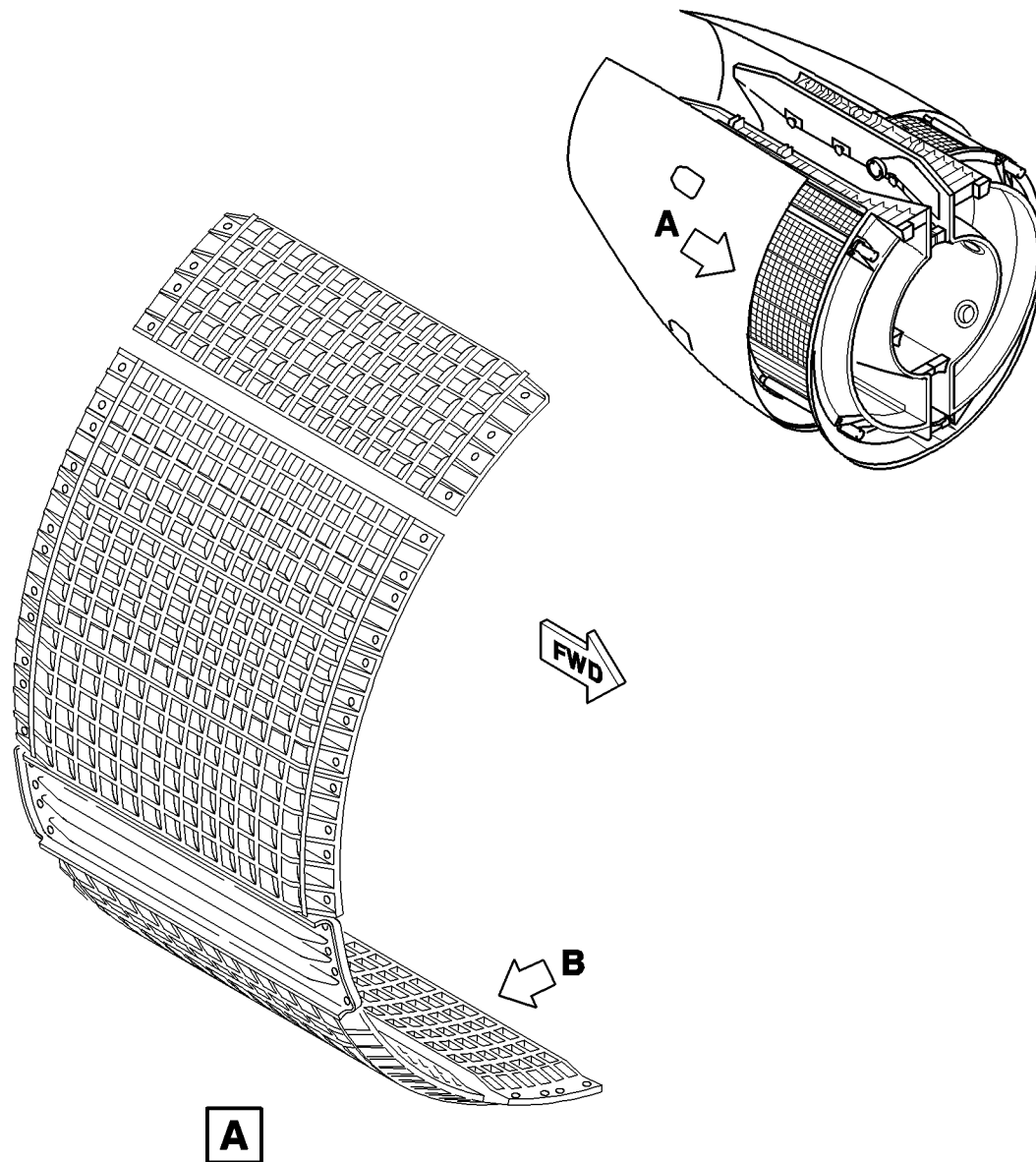
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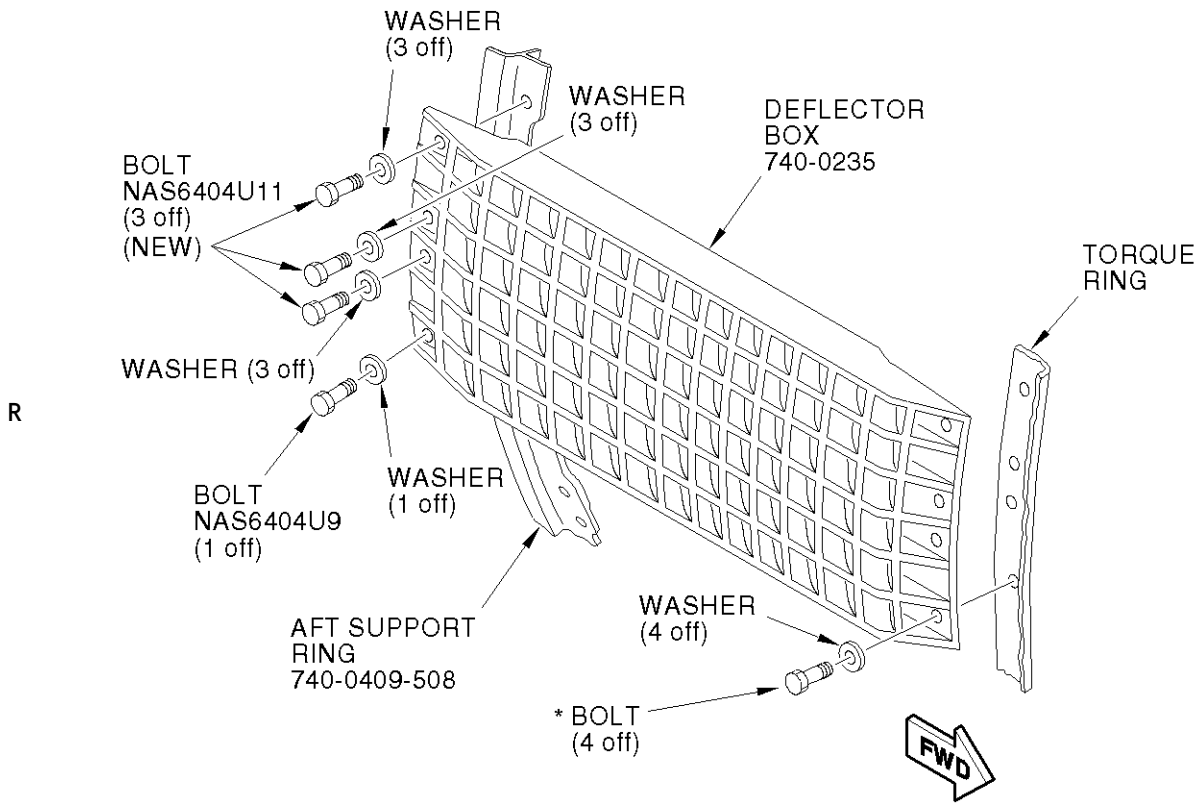
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Aft Cascade Ring Replacement – Install the Deflector Box, Eng No.2, RH Side  
Figure 2 (Sheet 3)



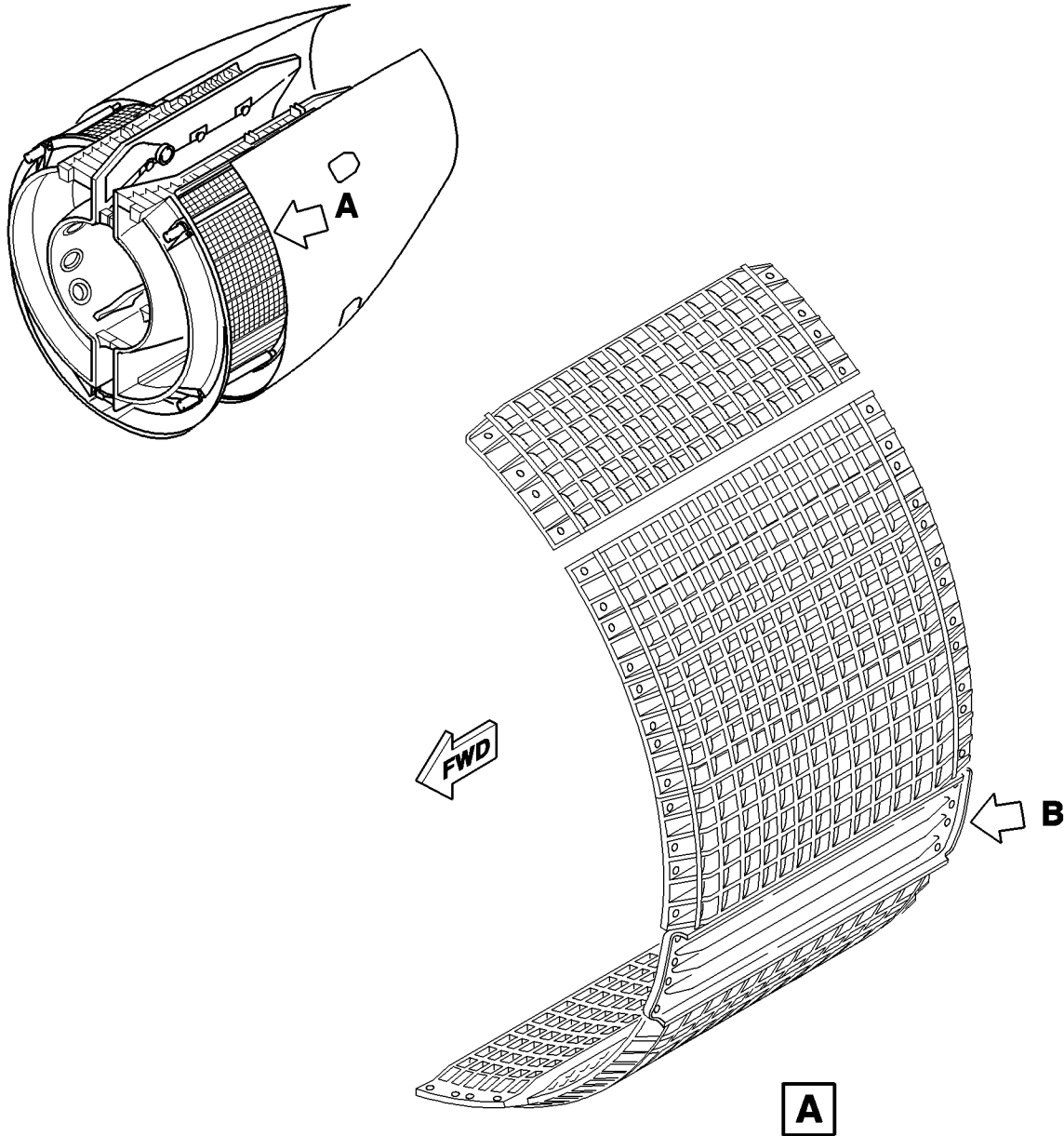
EXISTING DEFLECTOR BOX  
NEW AFT SUPPORT RING

NOTE:

\* If bolt is too long, you can install an extra washer under the head of the bolt.

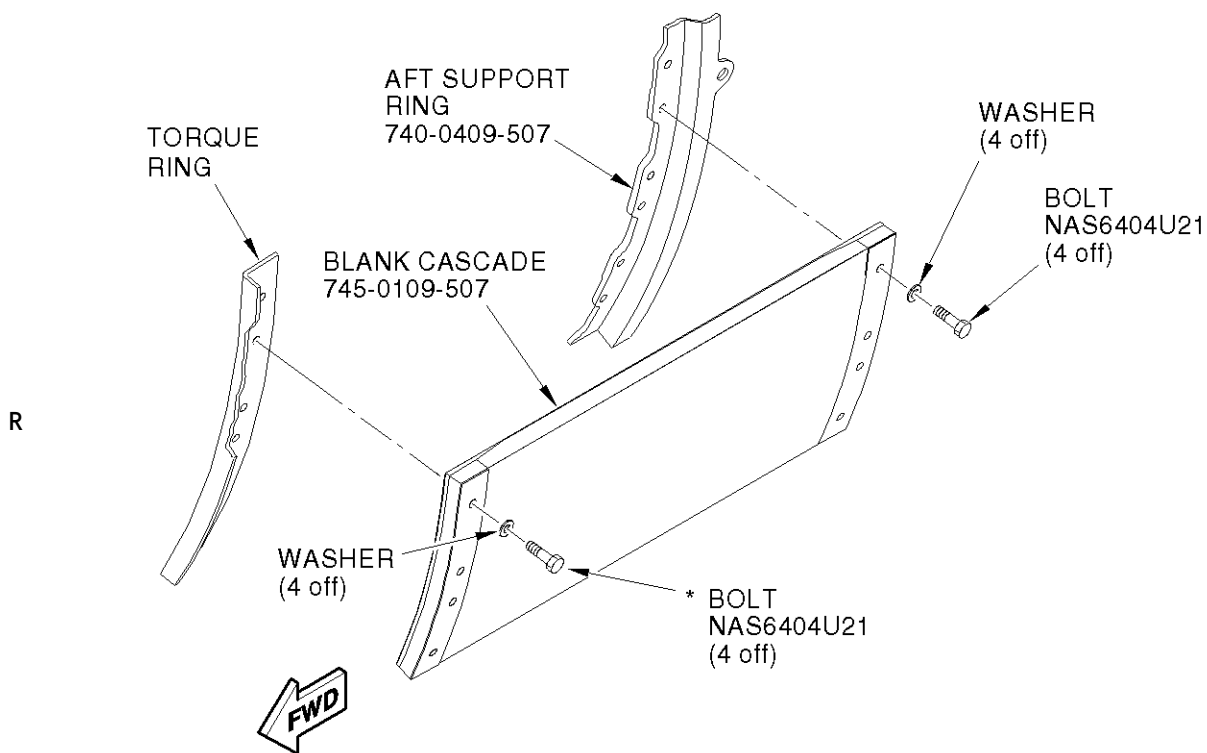
gc00vvsb919

Rft Cascade Ring Replacement – Install the Deflector Box, Eng No.2, RH Side  
Figure 2 (Sheet 4)



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Replace the Blank Cascades – Eng No.1, LH Side  
Figure 3 (Sheet 1)



**B**

NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

\* If bolt is too long, you can install an extra washer under the head of the bolt.

Replace the Blank Cascades – Eng No.1, LH Side  
Figure 3 (Sheet 2)

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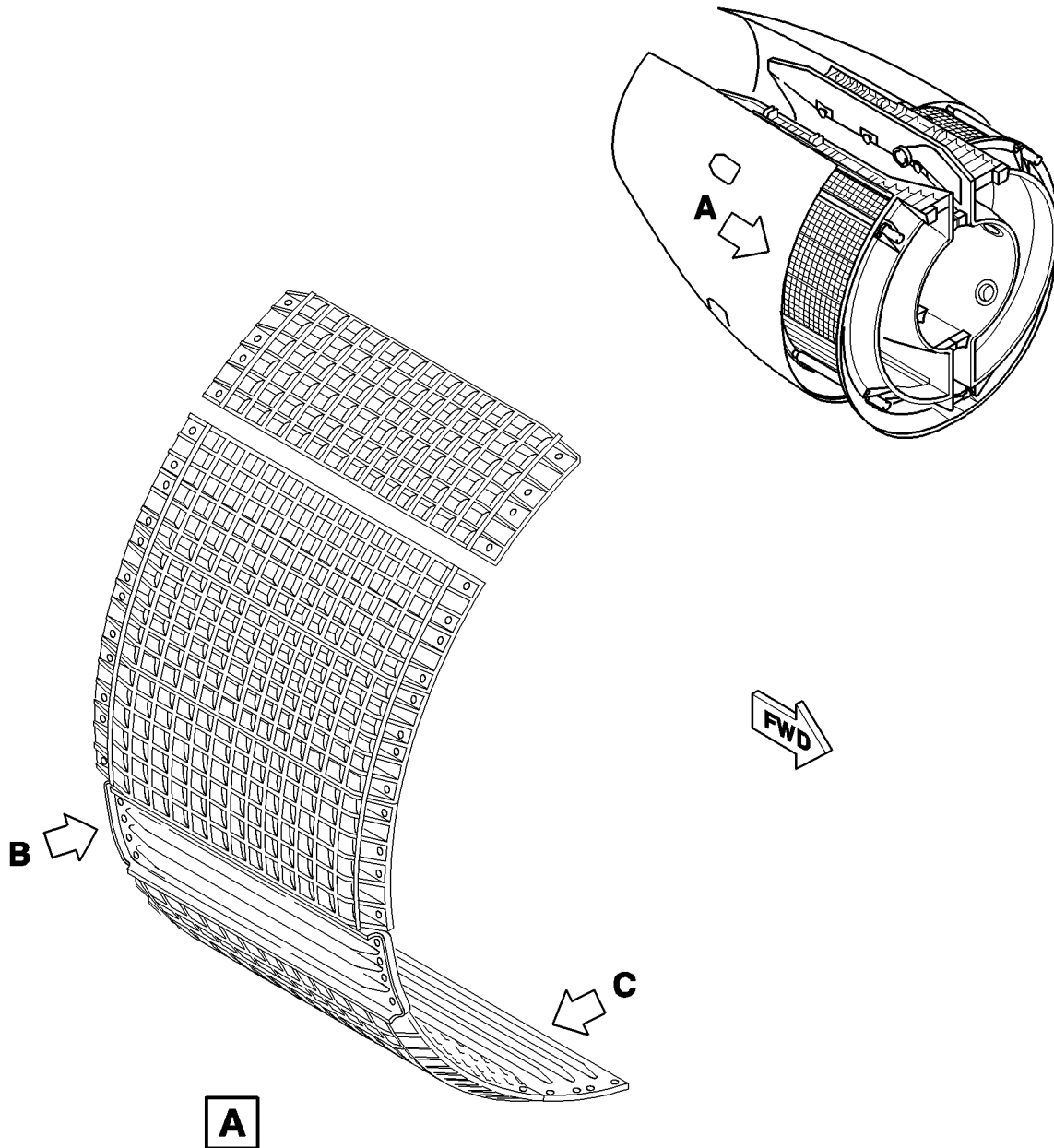
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R  
R



Replace the Blank Cascades – Eng No.1, RH Side  
Figure 3 (Sheet 3)

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R

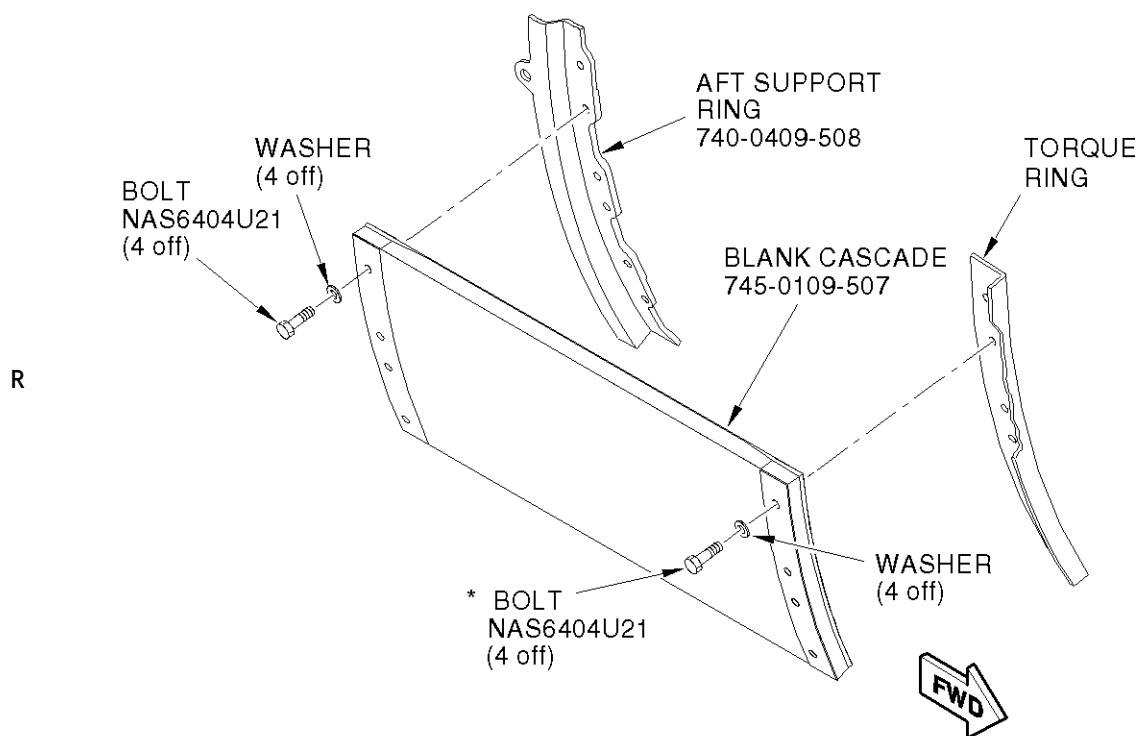
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**B**

NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

- \* If bolt is too long, you can install an extra washer under the head of the bolt.

Replace the Blank Cascades – Eng No.1, RH Side  
Figure 3 (Sheet 4)

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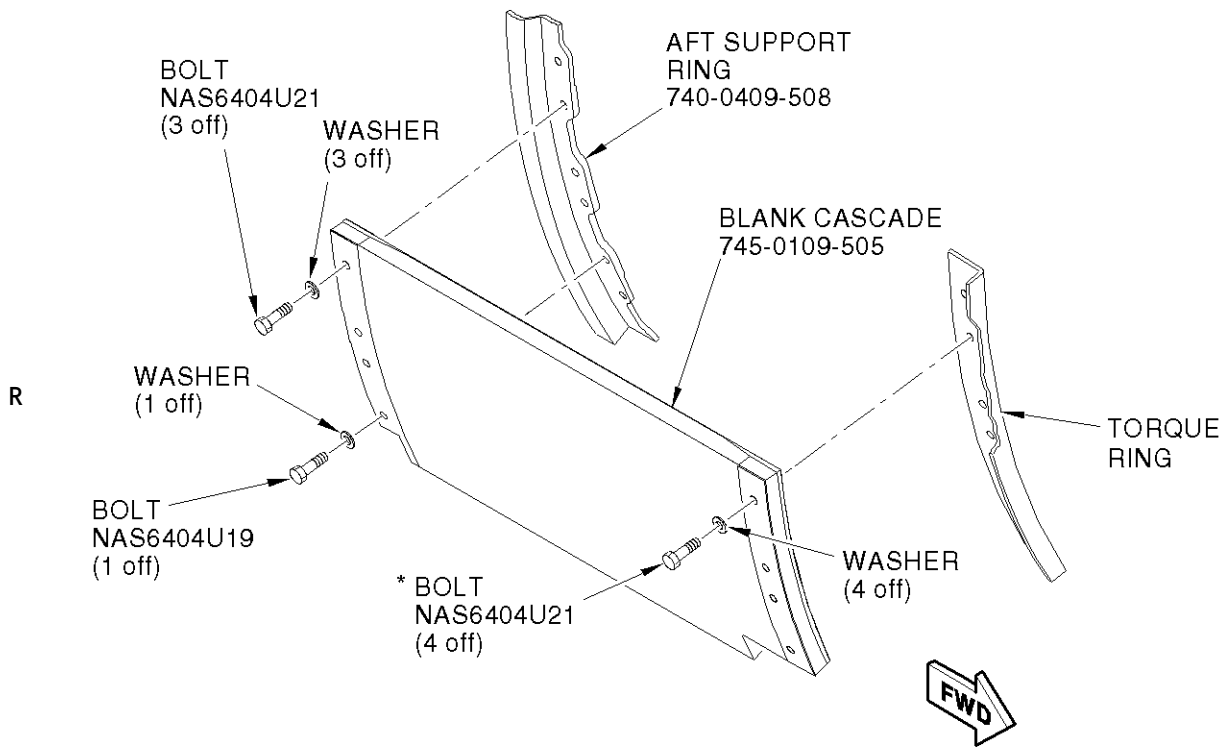
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gc00vbsb865

R  
R



NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

- \* If bolt is too long, you can install an extra washer under the head of the bolt.

Replace the Blank Cascades – Eng No.1, RH Side  
Figure 3 (Sheet 5)

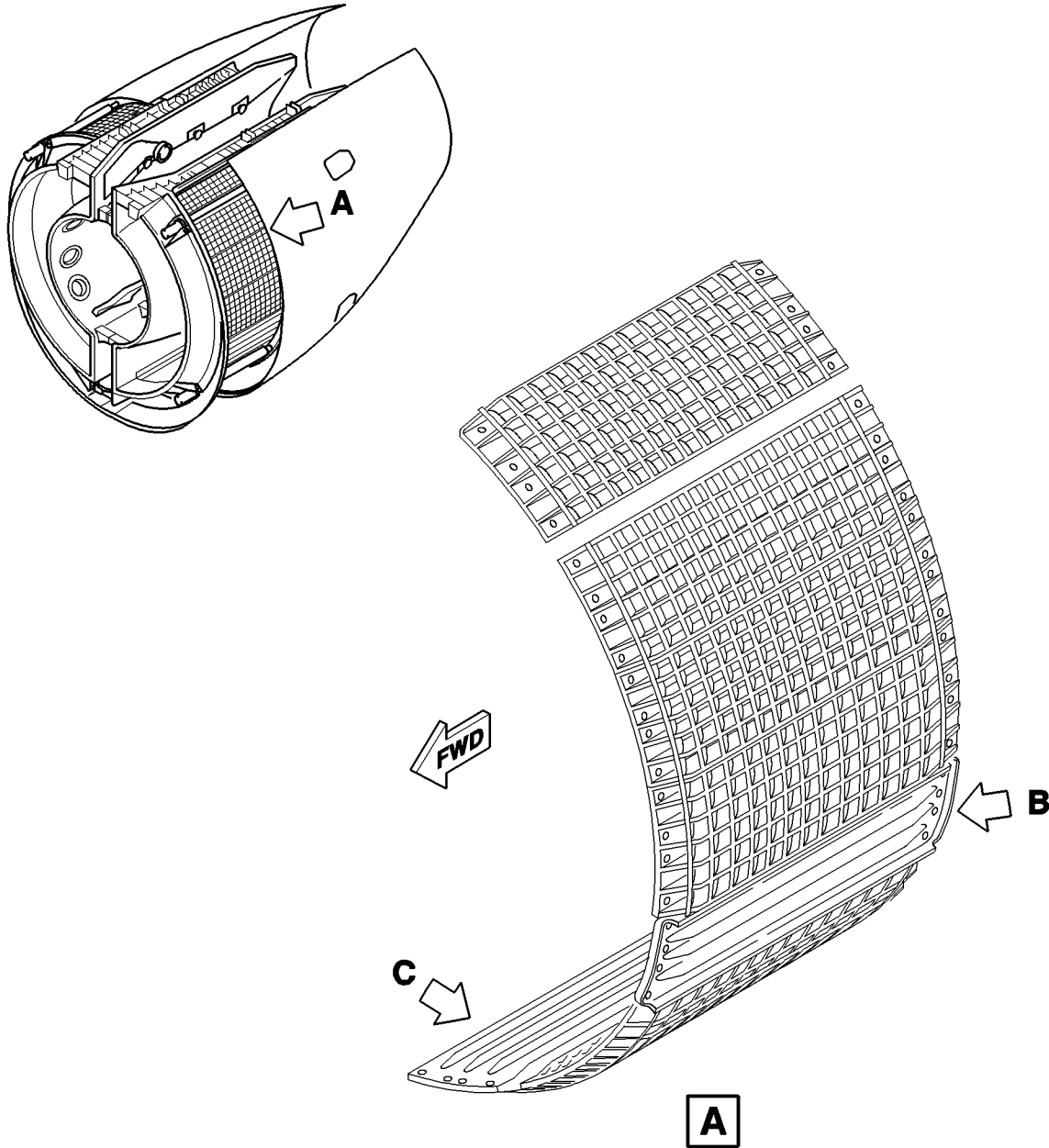
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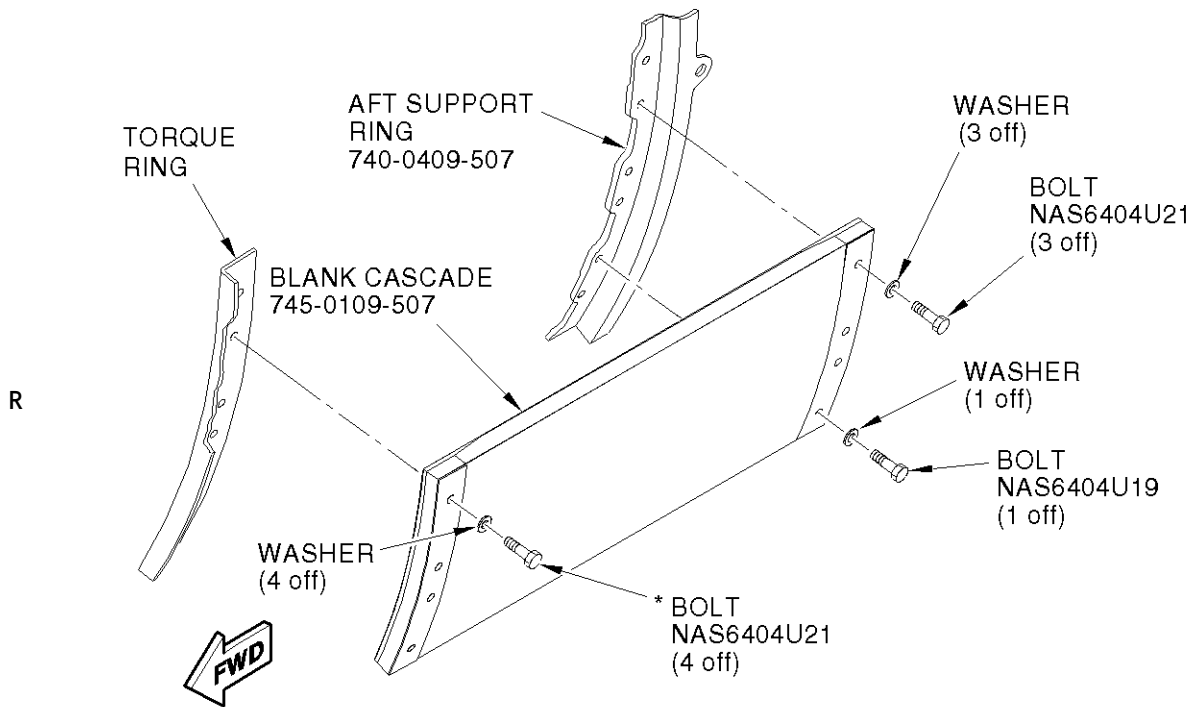
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Replace the Blank Cascades – Eng No.2, LH Side  
Figure 3 (Sheet 6)

R

ded0005661



**B**

NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

\* If bolt is too long, you can install an extra washer under the head of the bolt.

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R  
R

Replace the Blank Cascades – Eng No.2, LH Side  
Figure 3 (Sheet 7)

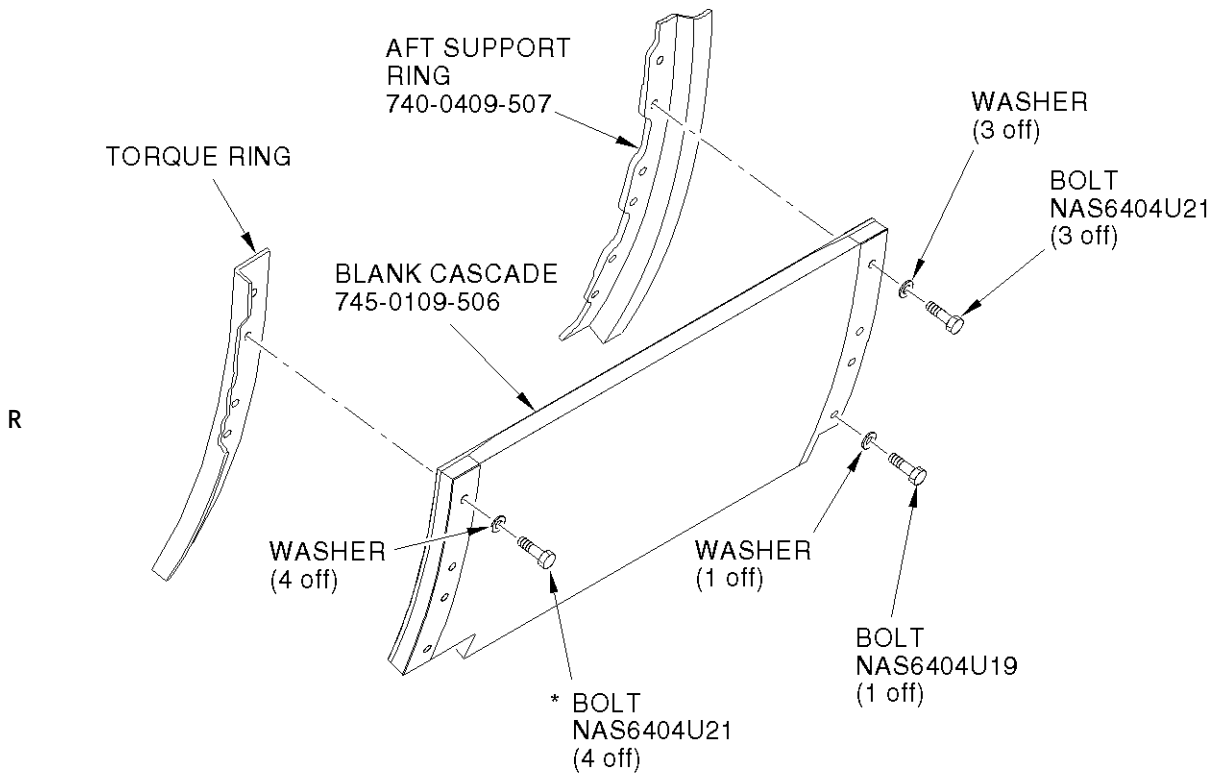
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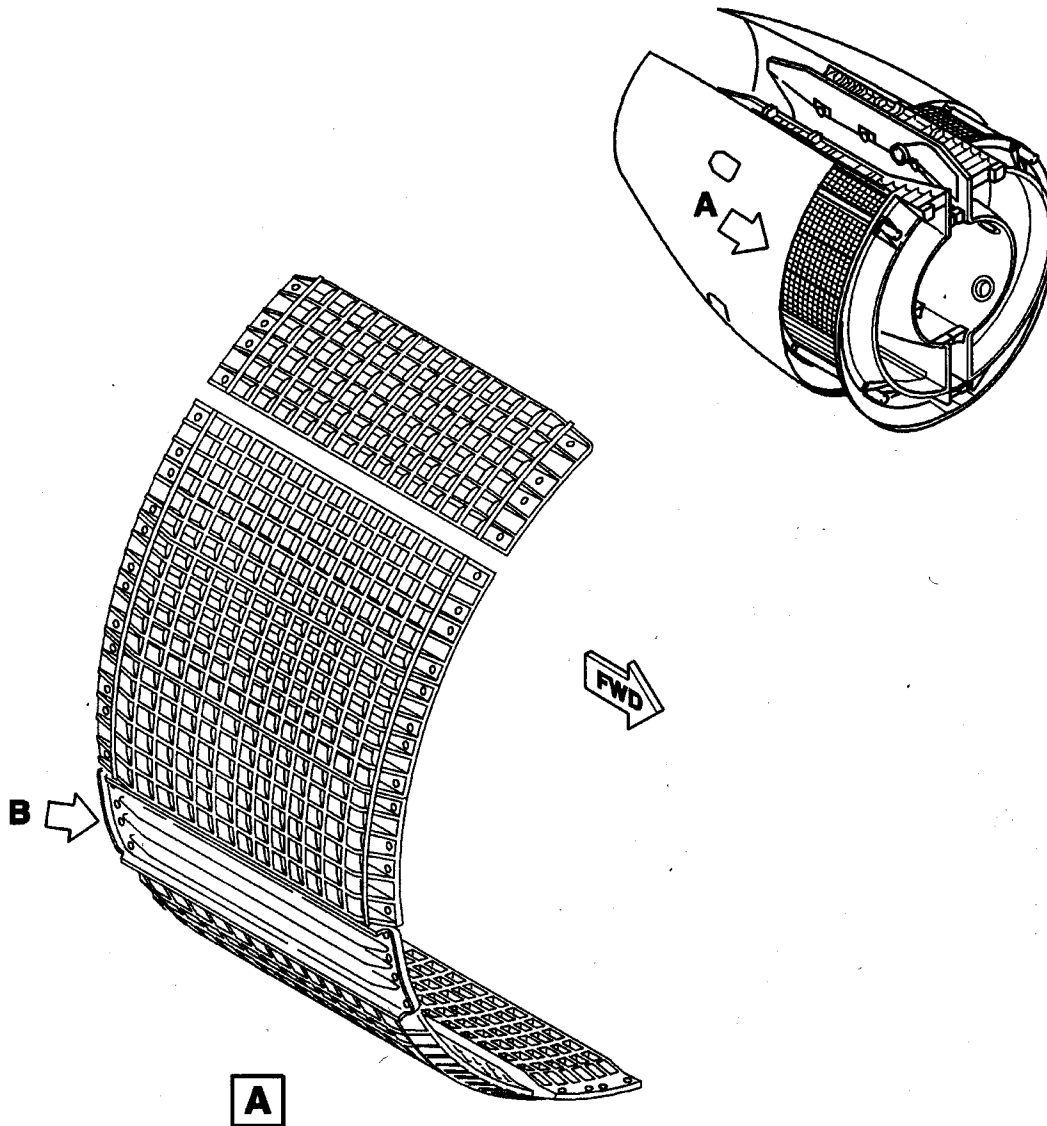


NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

- \* If bolt is too long, you can install an extra washer under the head of the bolt.

Replace the Blank Cascades – Eng No.2, LH Side  
Figure 3 (Sheet 8)



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VSB911

Replace the Blank Cascades - Eng No.2, RH Side  
Figure 3 (Sheet 9)

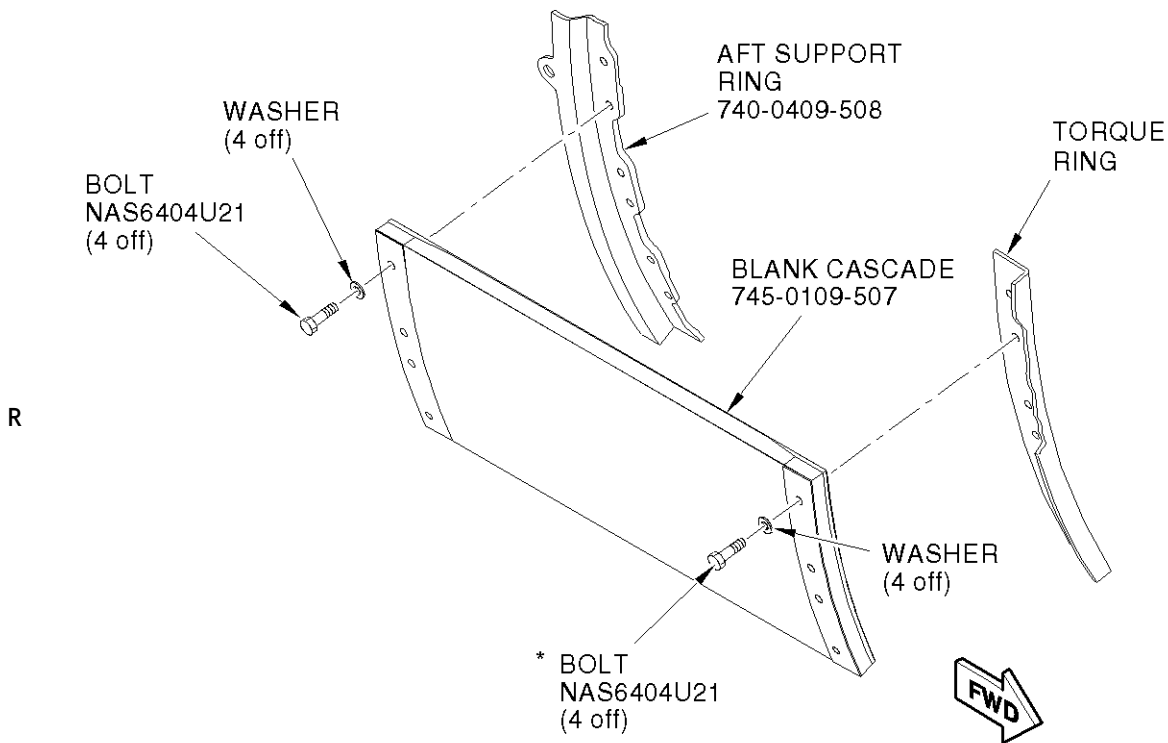
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**B**

NEW BLANK CASCADE  
NEW AFT SUPPORT RING

NOTE:

- \* If bolt is too long, you can install an extra washer under the head of the bolt.

Replace the Blank Cascades – Eng No.2, RH Side  
Figure 3 (Sheet 10)

gc00vsb881

R  
R

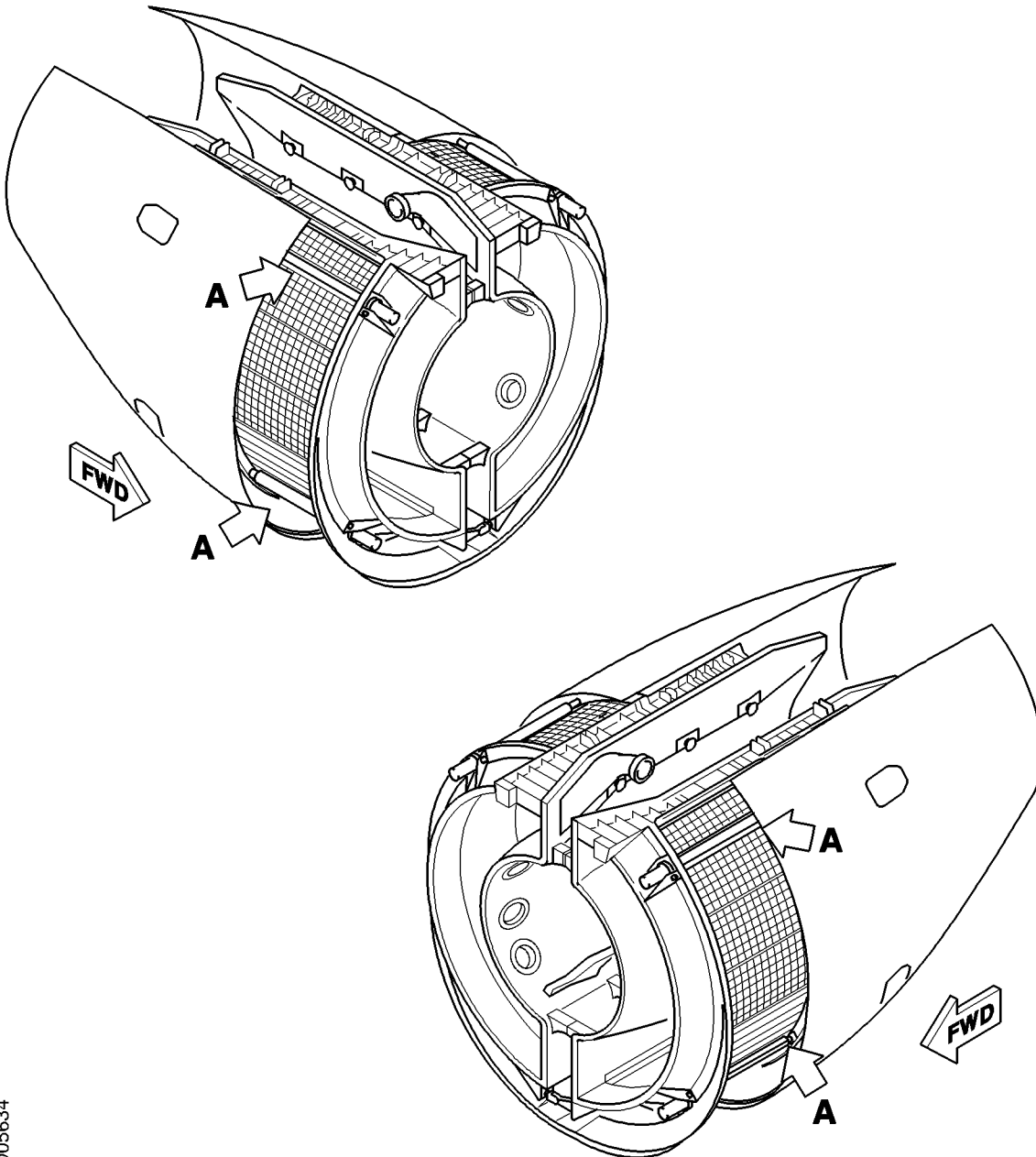
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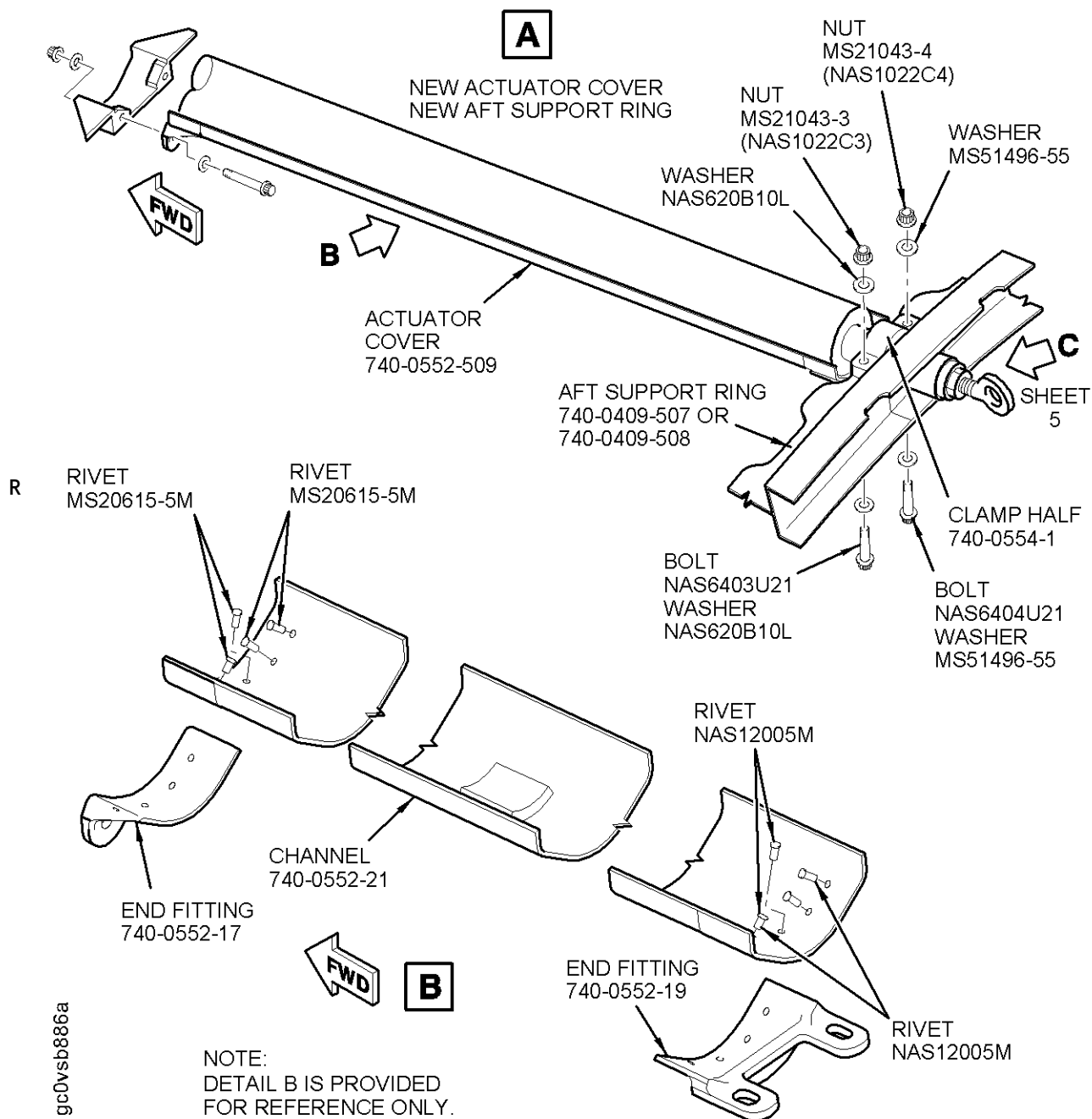
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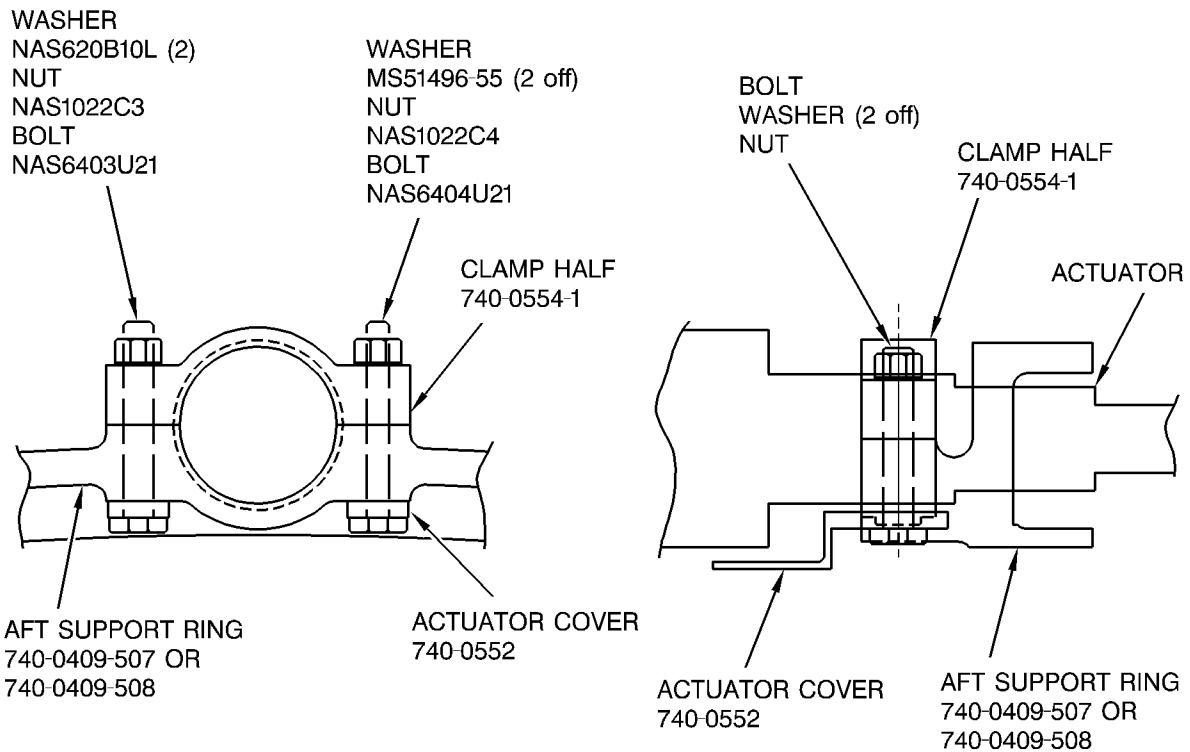
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Replace the Actuator Covers  
Figure 4 (Sheet 1)



Replace the Actuator Covers  
Figure 4 (Sheet 2)

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**C**

NEW OR OLD ACTUATOR COVER  
NEW AFT SUPPORT RING

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Replace the Actuator Covers  
Figure 4 (Sheet 3)

R

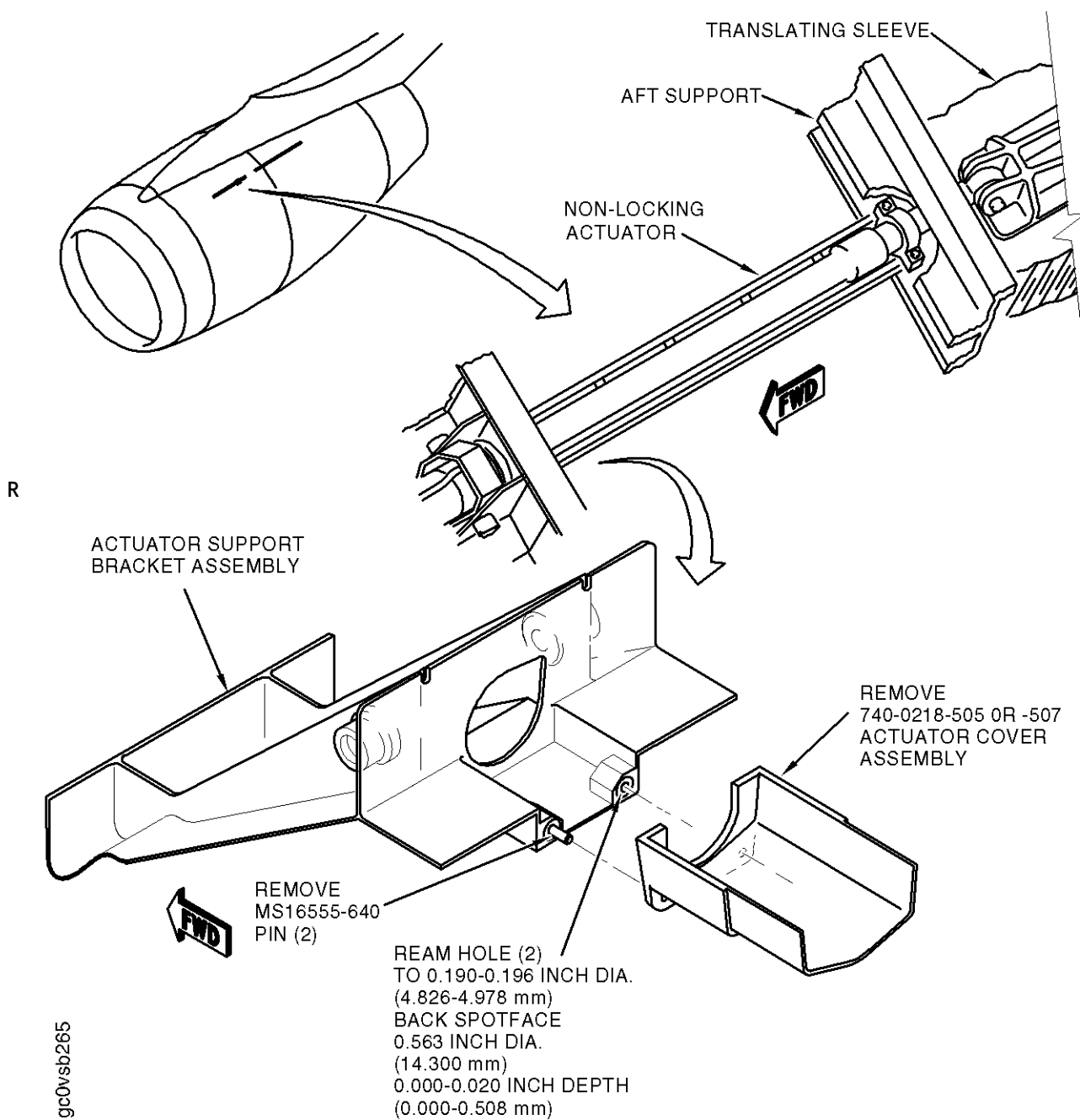
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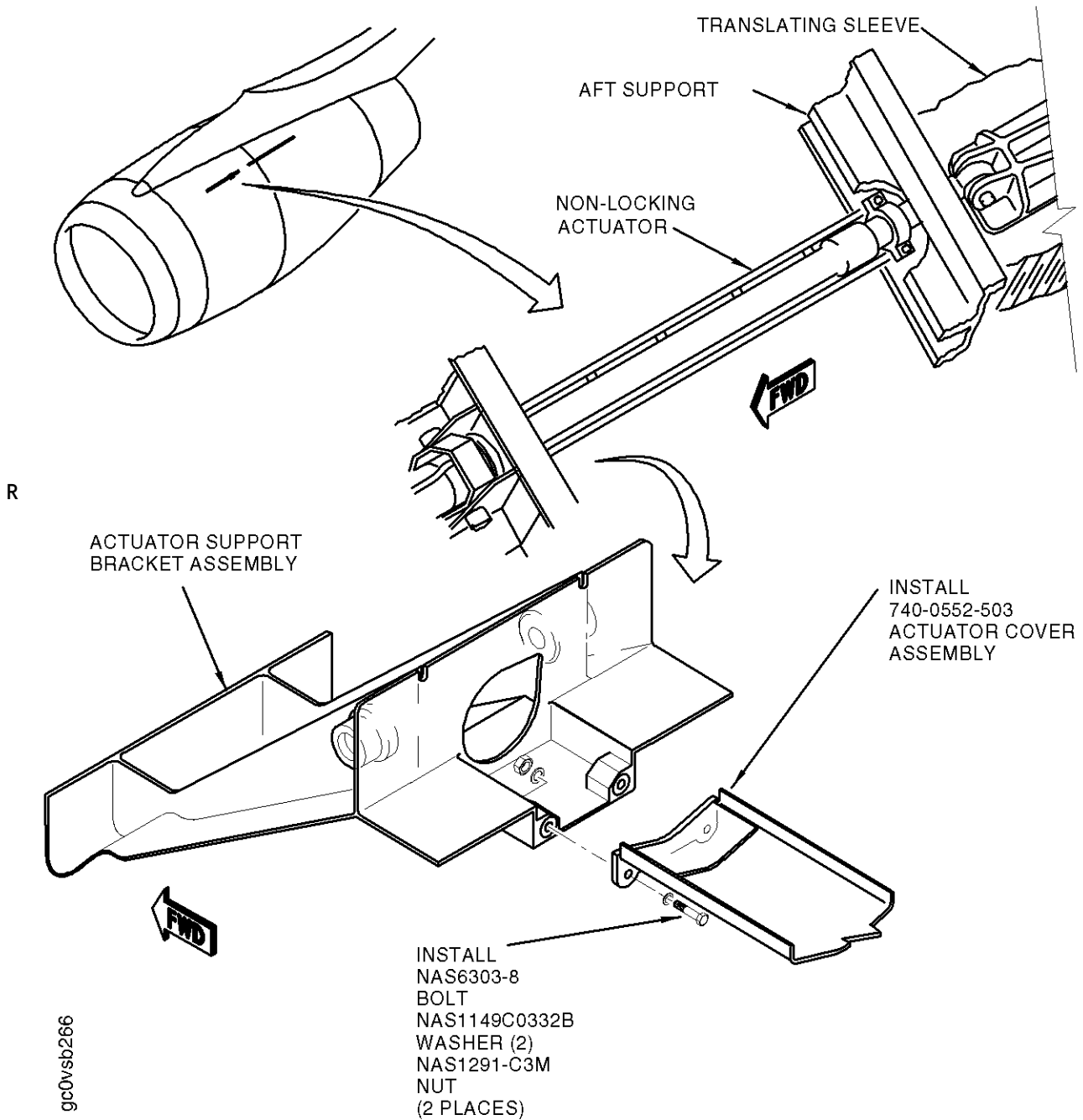
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Remove Actuator Cover and Ream Holes  
Figure 5 (Sheet 1)

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Installation of Actuator Cover Assembly (Forward End)  
Figure 5 (Sheet 2)

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