

International  
Aero Engines

V2500 Propulsion System — Nacelle

# SERVICE BULLETIN

NACELLE - FIRE PROTECTION - FIRE DETECTOR ASSEMBLIES AND SUPPORT  
BRACKETS, ACCESSORY AND CORE - REPLACEMENT OF

## MODEL APPLICATION

V2500-D5

## BULLETIN INDEX LOCATOR

26-00-00

## Compliance Category Code

4

## Internal Reference No.

BC/LL/AC 94VN409/C

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## 1. Planning Information

### A. Effectivity

(1) Aircraft: MD90

(2) Nacelle: V2500-D5 Quick Engine Change (QEC) Kits serial numbers 0025002 and 0025003.

### B. Reason

(1) Condition

Existing core fire detector support rail and core and accessory brackets may not provide sufficient support to prevent vibratory stress.

(2) Background

This condition was discovered during laboratory vibration testing.

(3) Objective

To improve support of core fire detector support rail and strengthen core and accessory brackets.

(4) Substantiation

Vibration testing of revised core fire detector support rail and core and accessory brackets was successful.

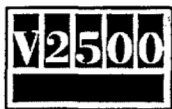
(5) Impact of Bulletin on Workshop Procedures:

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

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## (6) Supplemental Information

It is assumed that Service Bulletins V2500-NAC-26-0006 and V2500-NAC-26-0007 have been incorporated prior to or concurrently with this service bulletin.

### C. Description

The change introduced by this Bulletin is to replace core and accessory zone fire detector support brackets and core fire detector assembly.

### D. Approval

Incorporation of this Service Bulletin must be accomplished only in conjunction with Douglas Aircraft Company Service Bulletin MD90 26-001 which has received exclusive FAA approval for MD-90 Series aircraft.

### E. Compliance

#### Category 4

Accomplish at the first visit of the 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 to incorporate the full intent of this Bulletin:

### VENUE

### ESTIMATED MAN HOURS

- (1) In Service
- (2) At Overhaul

Not Applicable

- (a) To rework

4.00 M/Hrs

Total 4.00 M/Hrs

## G. Material Cost and Availability

The parts to accomplish this Service Bulletin are available from the supplier as kit V2526008-555 and V2526008-557 at no cost to the operator.

Operators with units listed in Paragraph 1.A should submit a no-charge purchase order for the applicable quantity of kits. The purchase order must specify this service bulletin number and only the parts listed herein. Operators will have one year from the issue date of the Service Bulletin to place an order. After one year, kits will no longer be available and Operators will have to order parts individually at catalog prices, if they desire to incorporate the change.

Direct Purchase order to:

Rohr Inc.

P.O. Box 878

Chula Vista, CA 91912

U.S.A.

Attn: Manager, Spares Operations - Bldg. 107A  
(Ref. Service Bulletin No. V2500-NAC-26-0008)

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## H. Tooling Cost and Availability

Not applicable.

## I. Weight and Balance

- (1) Weight change .....No effect
- (2) Moment arm .....No effect
- (3) Datum .....Front Engine Mount Centerline  
.....(Power Plant Station (PPS) 95.1)

## J. Electrical Load Data

Not affected.

## K. References

### Chapter/Section

MD90 Aircraft Maintenance  
Manual

26-11-15

## L. Other Publications Affected

MD90 Engine Illustrated  
Parts Catalog

26-12-15  
26-12-17

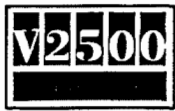
MD90 Power Plant Buildup  
Manual

71-00-02

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## 2. Accomplishment Instructions

### A. Prerequisite Instructions

None

### B. Rework or Modification Instructions (For installed 290K9001-1 OEC Kit)

- (1) Find the 290-5132-511 core fire detector assembly on left hand engine.

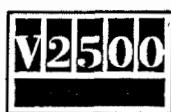
NOTE: The procedure is the same to disconnect the electrical harness connections on both ends of the core zone fire detector.

- (2) Remove the MS21043-08 and MS21043-3 nuts and AN960C8L and AN960C10L washers from the NAS1802-08-6 and NAS1802-3-6 bolts connecting the electrical harness wires to the fire detector. Remove the NAS1802-08-6 and NAS1802-3-6 bolts from the fire detector terminal lugs, and the terminal lugs on the electrical harness wires at two positions. See Figure 1.
- (3) Use a slotted screwdriver to apply pressure to the captive stud and rotate it counterclockwise one-quarter turn to release the clamp. This will free the electrical harness wires.
- (4) Remove and retain the MS9556-06 bolts, the C10GT3-08 clampbands and the C10GT3-08 clampshells from the four locations attaching the core zone fire detector to the engine. See Figure 2.
- (5) Remove the 290-5132-511 fire detector assembly from the engine.

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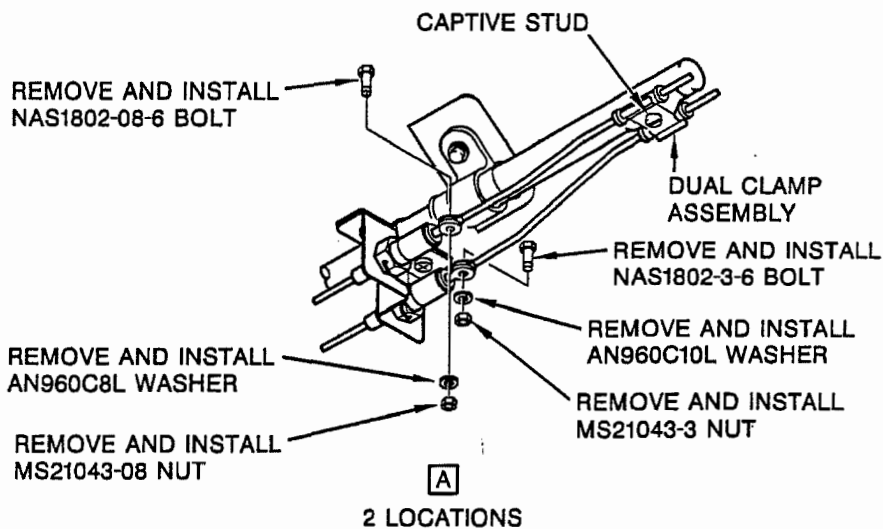
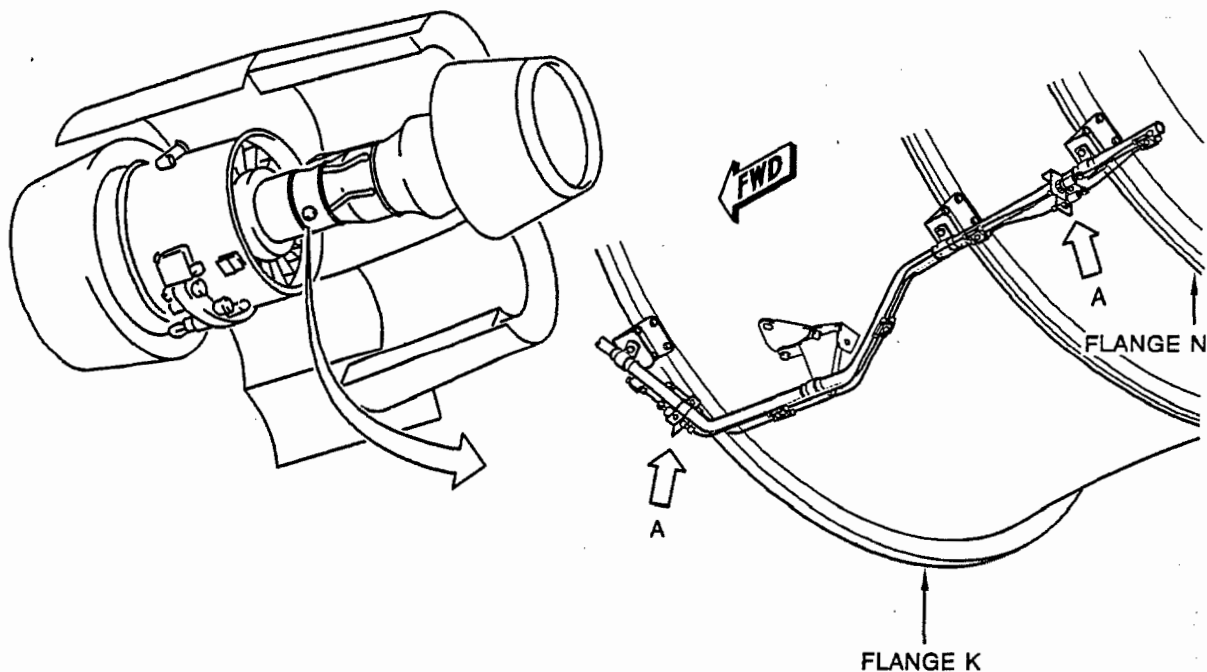
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VSB309

LEFT HAND ENGINE CORE ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 1

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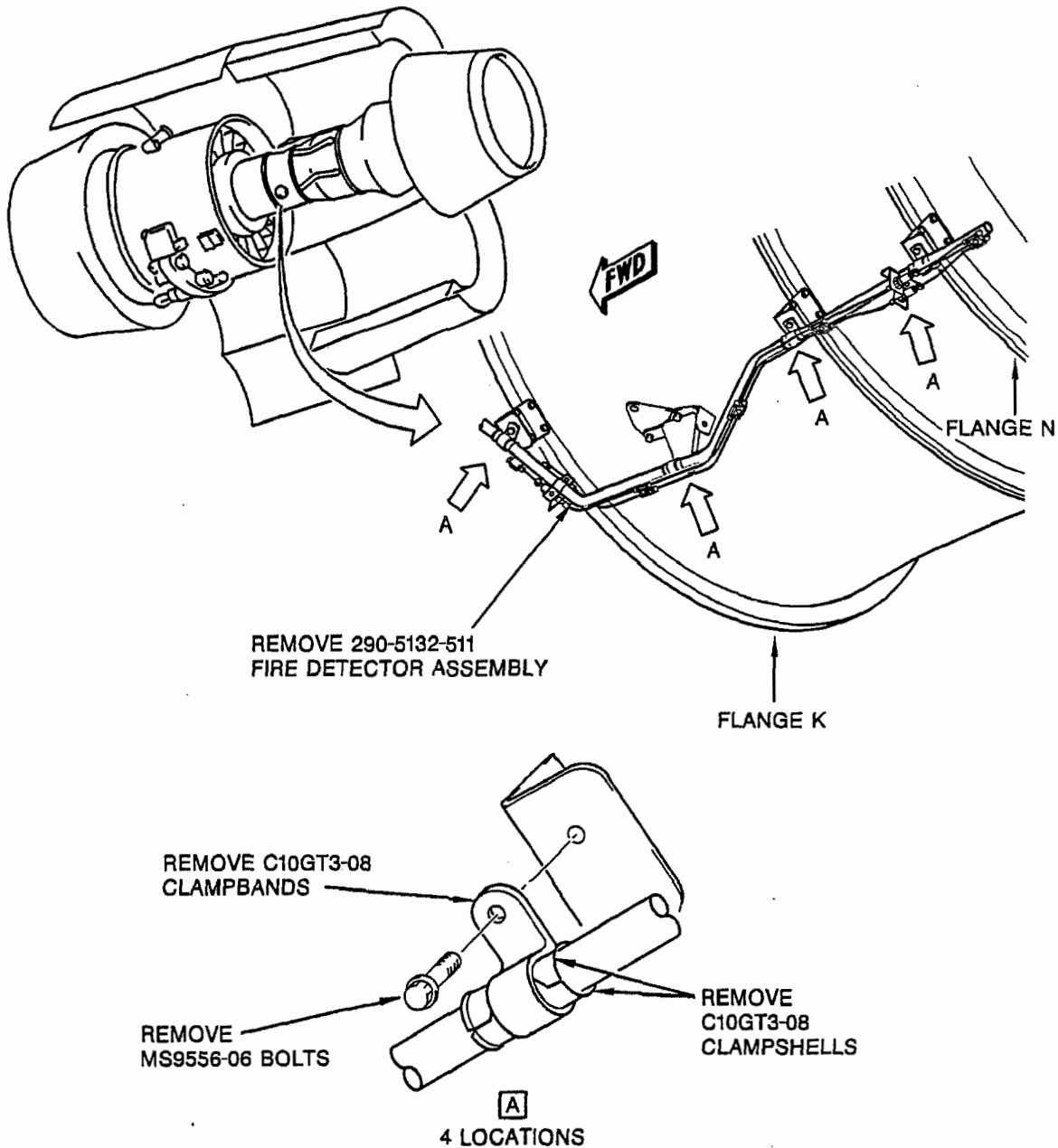
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VSΒ310

LEFT HAND ENGINE CORE ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 2

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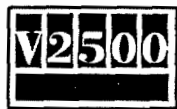
- (6) Remove and retain two MS9556-08 bolts and two NAS1149C0332R washers which attach ground wires and 290-5139-501 bracket to 6A5512 stub bracket on flange K. Discard 290-5139-501 bracket. Refer to Figure 3.
- (7) Remove and retain two 4W0471 bolts and two 4W0003 nuts from 6A5512 stub bracket on flange K. Discard stub bracket.
- (8) Remove and retain two MS9556-06 bolts which attach 290-5146-501 bracket to engine bracket. Discard bracket.
- (9) Remove and retain two 4W0475 bolts and two 4W0003 nuts which attach 6A5514 stub bracket and 290-5140-503 bracket to flange M. Discard two brackets.
- (10) Install 290-5139-503 bracket on flange K with two 4W0471 bolts and two 4W0003 nuts. Tighten the nuts to a torque of 23-25 lbfin (3 Nm). Refer to Figure 4.
- (11) Attach ground wires to 290-5139-503 bracket with MS9556-08 bolt, AN960C10L washer, two NAS1149C0332R washers, and NAS1805-3P nut. Put ground wire terminals between two NAS1149C0332R washers on bolt head side of bracket.
- (12) Install 290-5146-503 bracket on engine bracket with two MS9556-06 bolts. Torque bolts to 23-25 in-lb (2.6-2.8 Nm.).
- (13) Install 290-5140-505 bracket on flange M with two 4W0475 bolts and two 4W0003 nuts. Torque bolts to 23-25 in-lb (2.6-2.8 Nm.).
- (14) Put the 290-5132-519 fire detector assembly on the engine brackets with the four sets of retained C10GT3-08 clampshells, four C10GT3-08 clambands, and four MS9556-06 bolts. See Figure 5.
- (15) Torque the MS9556-06 bolts to 23-25 in-lb (2.6-2.8 Nm.).

**NOTE:** Lubricants must not be used on threads during assembly

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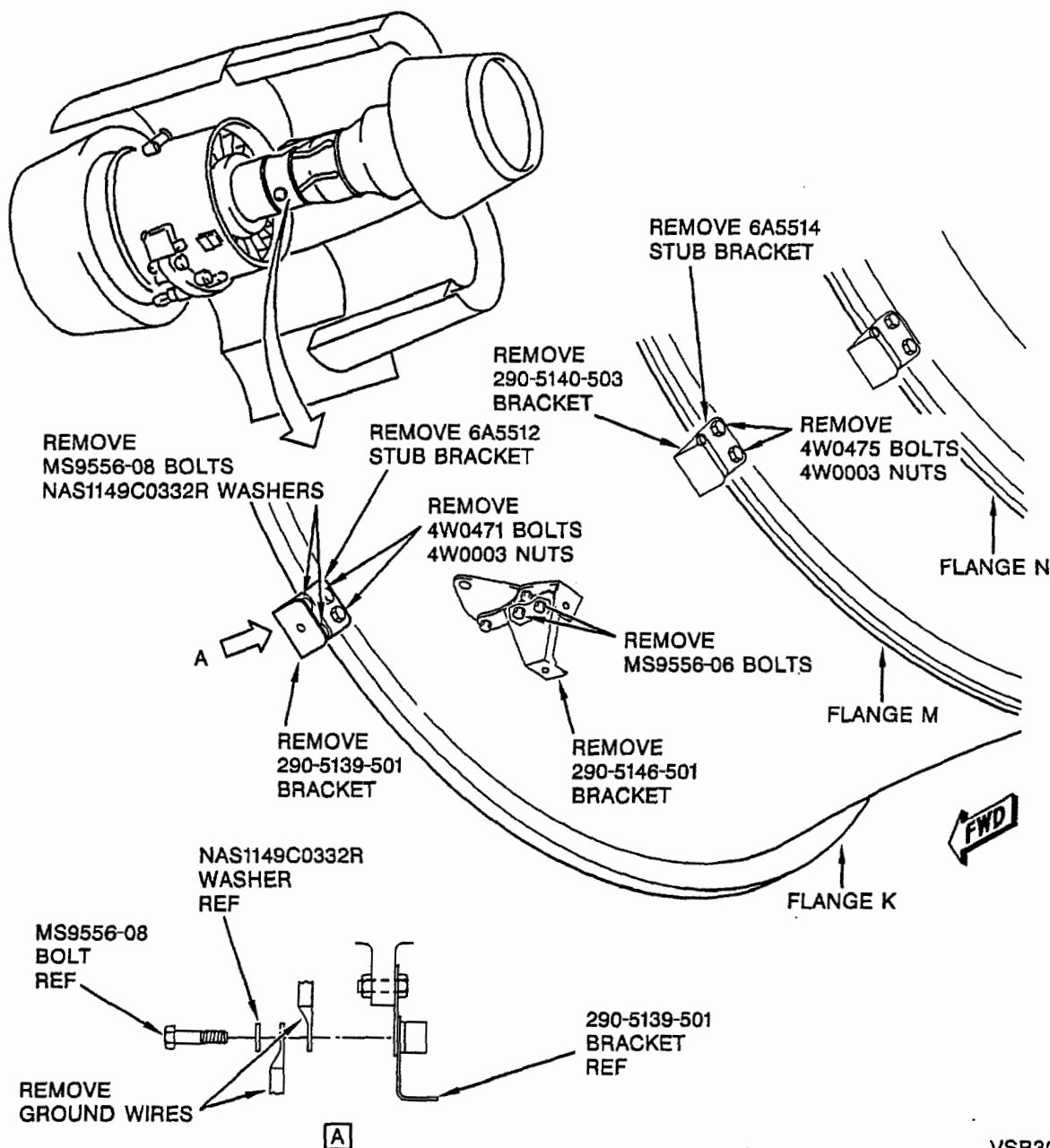
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LEFT HAND ENGINE CORE ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 3

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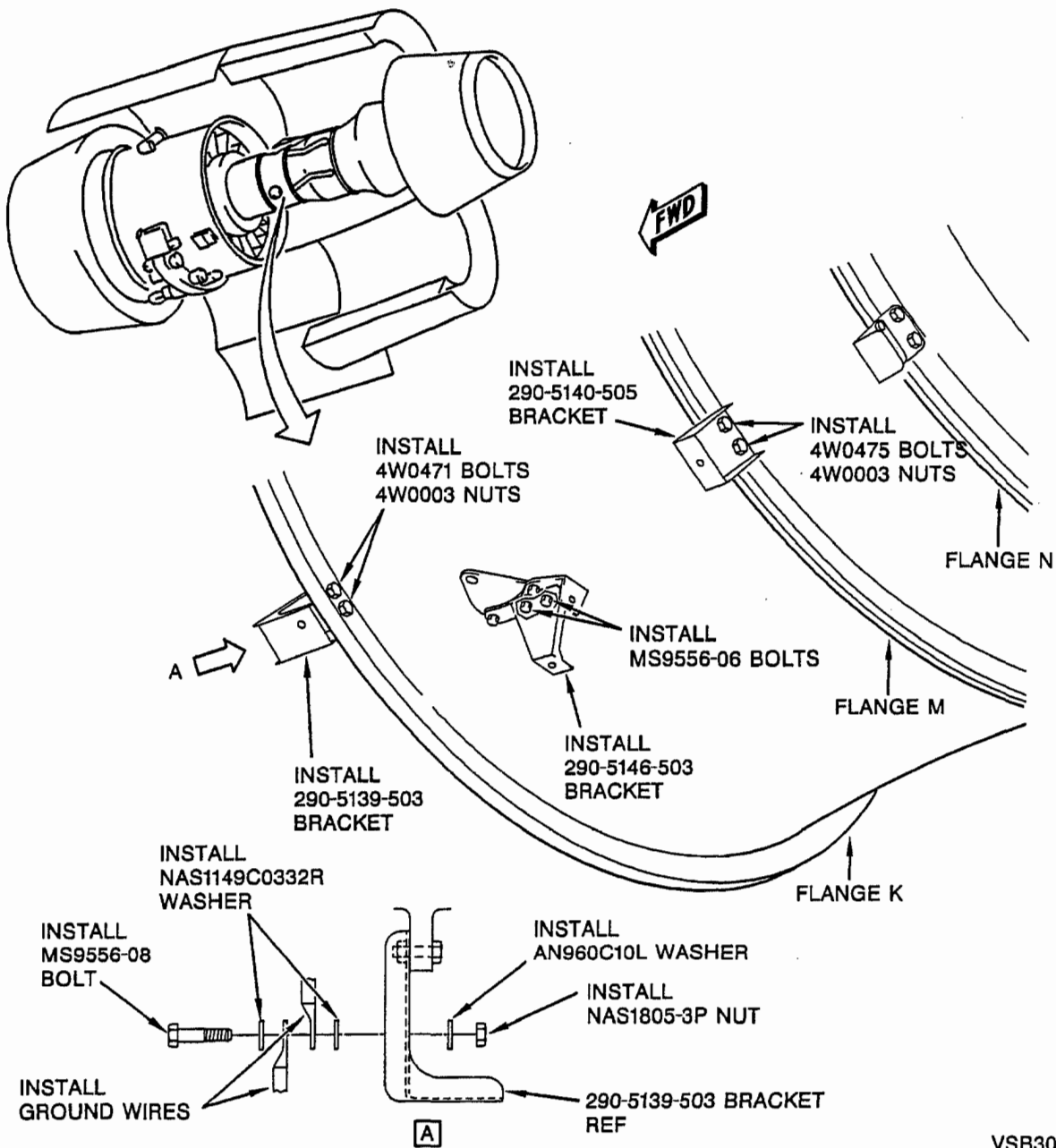
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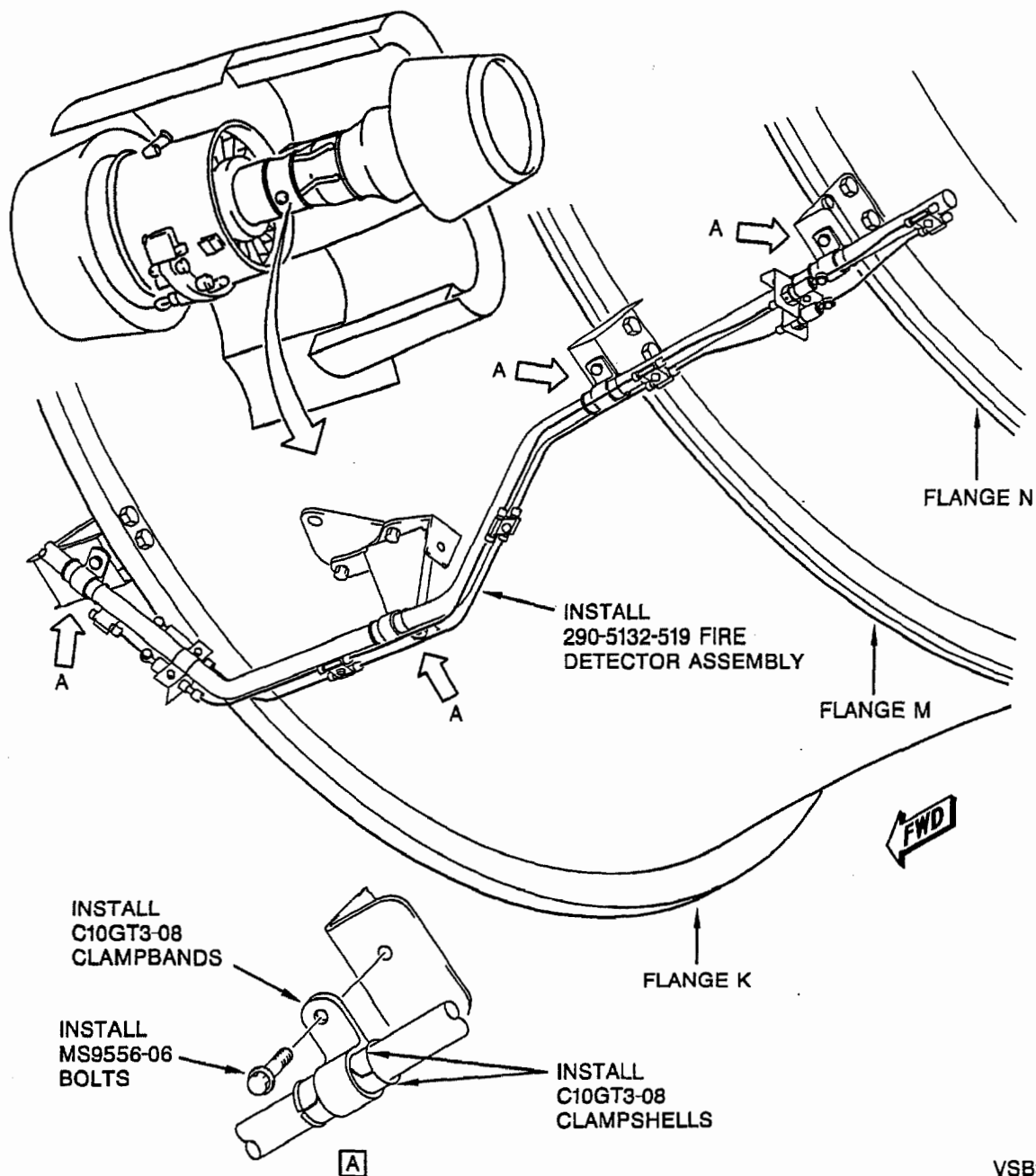
LEFT HAND ENGINE CORE ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 4

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LEFT HAND ENGINE CORE ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 5

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procedures in this section because standard torque load values assume dry thread assembly techniques.

**NOTE:** The procedure is the same to connect the electrical harness connections on both ends of the fire detector assembly.

- (16) Push the NAS1802-08-6 and NAS1802-3-6 bolts through the terminal lugs on the electrical harness wires and the sensor terminal lugs. Install the AN960C8L and AN960C10L washers and the MS21043-08 and MS21043-3 nuts on the bolts. Refer to Figure 1.
- (17) Torque the MS21043-08 and MS21043-3 nuts to 50-70 in-lb (5.6-7.8 Nm.).
- (18) Remove left hand engine accessory zone fire detector assembly as follows:
  - (a) Remove the MS21043-08 and MS21043-3 nuts and AN960C8L and AN960C10L washers from the NAS1802-08-6 and NAS1802-3-6 bolts connecting the electrical harness wires to the fire detector. Remove the NAS1802-08-6 and NAS1802-3-6 bolts from the fire detector terminal lugs, and the terminal lugs on the electrical harness wires at two positions. Retain attach hardware. Refer to Figure 6.

**NOTE:** The procedure is the same to disconnect the electrical harness connections on both ends of the core zone fire detector.

- (b) Use a slotted screwdriver to apply pressure to the captive stud and rotate it counterclockwise one-quarter turn to release the clamp. This will free the electrical harness wires.
- (c) Remove and retain the MS9556-06 bolts, the C10GT3-08 clampbands and the C10GT3-08 clampshells from the eight locations attaching the accessory zone fire detector assembly to the engine.

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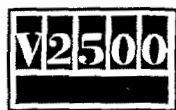
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- (d) Remove the accessory zone fire detector assembly from the engine.
- (19) Remove two MS9557-06 bolts, two AN960C416L washers, and 290-5135-503 bracket from accessory gearbox. Retain bolts and washers. Discard bracket. See Figure 7.
- (20) Remove two MS9557-06 bolts, two AN960C416L washers, and 290-5136-503 bracket from accessory gearbox. Retain bolts and washers. Discard bracket.
- (21) Remove two MS9557-06 bolts, two AN960C416L washers, and 6A5817 bracket from accessory gearbox. Retain bolts and washers. Discard bracket.
- (22) Remove two AS21512 bolts and 6A5582 bracket from accessory gearbox bracket. Retain bolts. Discard bracket.
- (23) Remove two existing bolts, washers, and 290-5137-505 bracket from angle drive. Retain bolts and washers. Discard bracket.
- (24) Install 290-5137-507 bracket to angle drive with existing bolts and washers. Tighten bolts to a torque of 63-70 in-lb (7.2-7.9 Nm.). Refer to Figure 8.
- (25) Install 290-5198-501 bracket to accessory gearbox with two AS21512 bolts. Tighten bolts to a torque of 63-70 in-lb (7.2-7.9 Nm.).
- (26) Install 290-5199-501 bracket to accessory gearbox with two MS9557-06 bolts and two AN960C416L washers. Torque bolts to 63-70 in-lb (7.2-7.9 Nm.).
- (27) Install 290-5136-505 bracket to accessory gearbox with two MS9557-06 bolts and two AN960C416L washers. Torque bolts to 63-70 in-lb (7.2-7.9 Nm.).
- (28) Install 290-5135-505 bracket to accessory gearbox with two MS9557-06 bolts and two AN960C416L washers. Torque bolts to 63-70 in-lb (7.2-7.9 Nm.).

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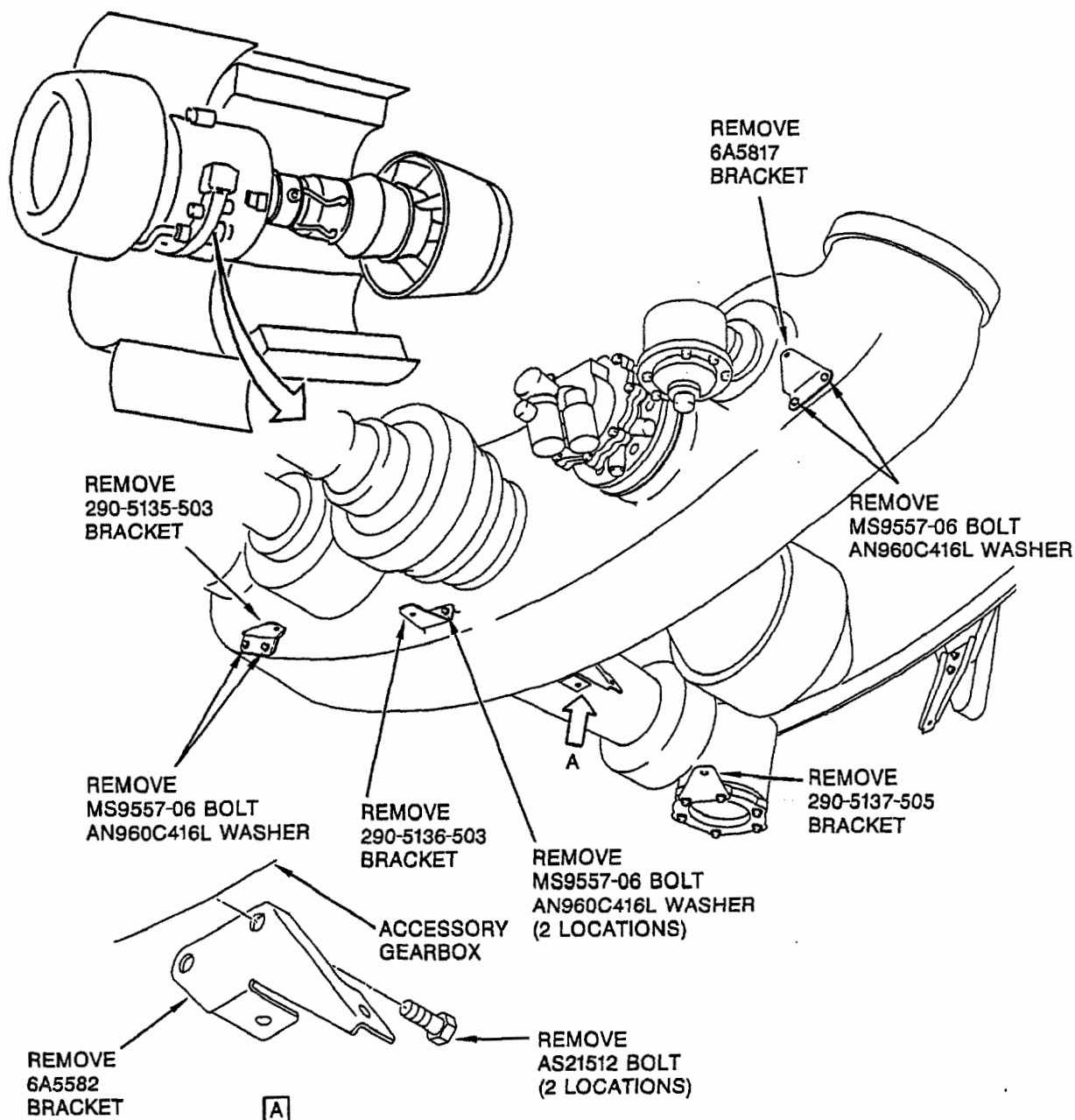
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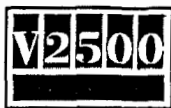
LEFT HAND ENGINE ACCESSORY ZONE FIRE DETECTOR ASSEMBLY.  
FIGURE 7

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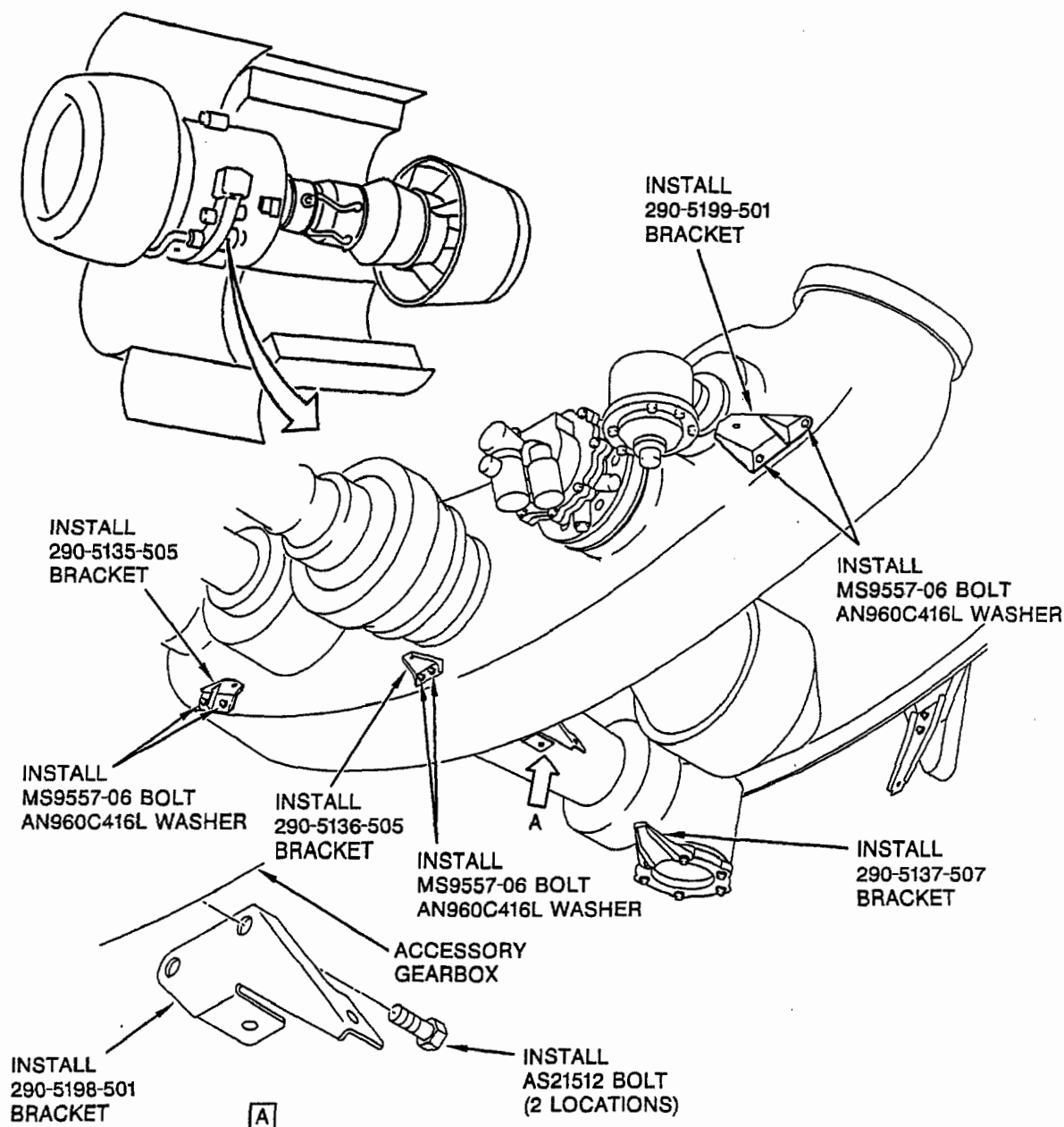




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VSB312

LEFT HAND ENGINE ACCESSORY ZONE FIRE DETECTOR ASSEMBLY.

FIGURE 8

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(29) Install the accessory zone fire detector assembly as follows:

- (a) Put the 290-5132-519 fire detector assembly on the engine brackets with the eight sets of retained C10GT3-08 clampshells, eight C10GT3-08 clampbands, and eight MS9556-06 bolts. See Figure 9.
- (b) Torque the MS9556-06 bolts to 23-25 in-lb (2.6-2.8 Nm.).

NOTE: Lubricants must not be used on threads during assembly procedures in this section because standard torque load values assume dry thread assembly techniques.

- (c) Push the NAS1802-08-6 and NAS1802-3-6 bolts through the terminal lugs on the electrical harness wires and the sensor terminal lugs. Install the AN960C8L and AN960C10L washers and the MS21043-08 and MS21043-3 nuts on the bolts.
- (d) Torque the MS21043-08 and MS21043-3 nuts to 50-70 in-lb (5.6-7.8 Nm.).

NOTE: The procedure is the same to connect the electrical harness connections on both ends of the fire detector assembly.

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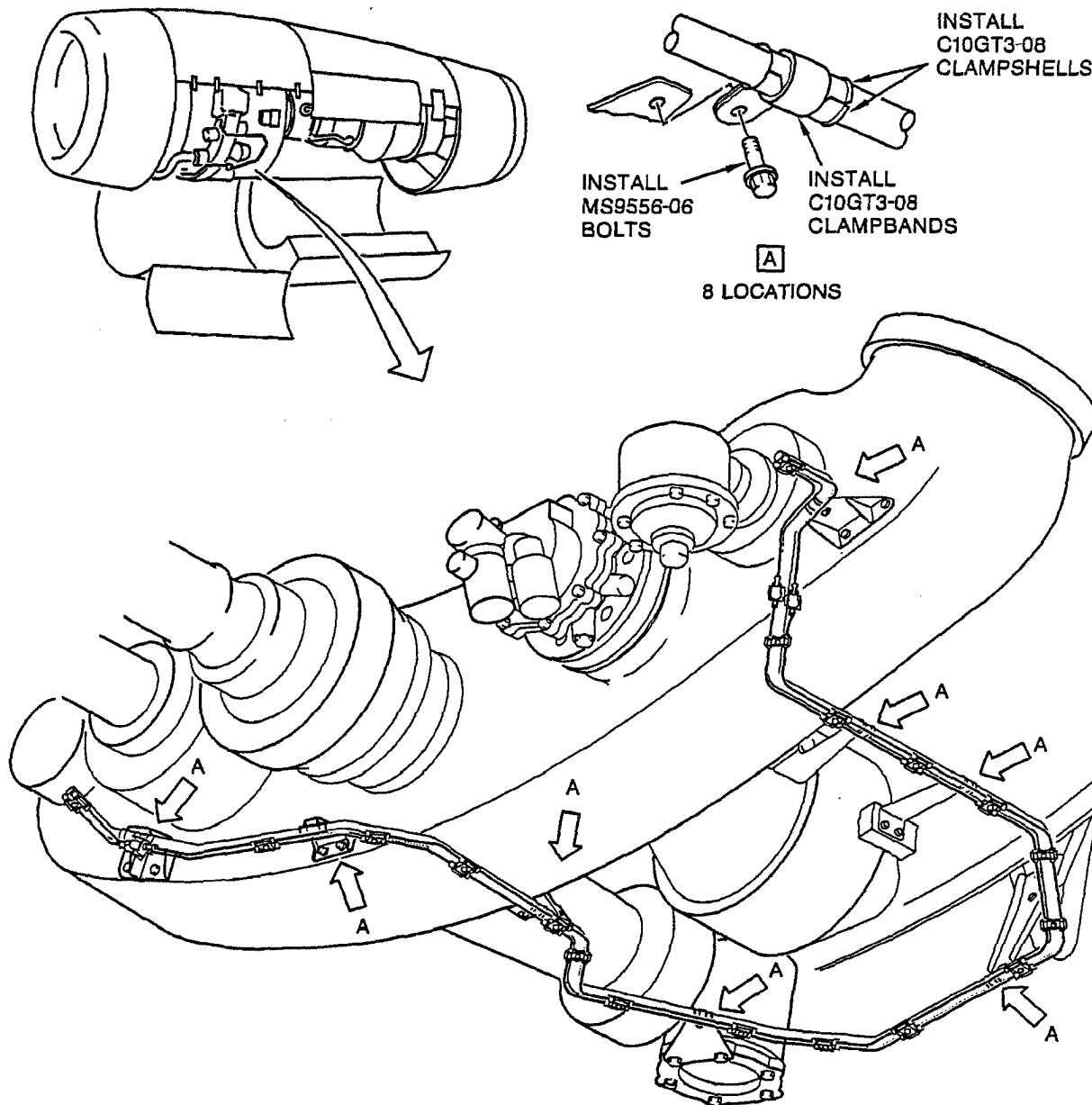
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VSB330

ACCESSORY ZONE FIRE DETECTOR ASSEMBLY  
FIGURE 9

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C. Post-requisite Instructions

None

D. Quick Engine Change (QEC) Kit (Not Installed 290K9001-3 QEC Kit)

- (1) Open 290K9001-3 QEC kit container.
- (2) Remove 290-5132-513 fire detector assembly, 290-5142-501 bracket, two 290-5143-501 brackets, 290-5135-503 bracket, 290-5136-503 bracket, and 290-5137-505 bracket.
- (3) Put contents of kit V2526008-557 in QEC kit container.
- (4) Close QEC kit container.

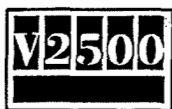
E. Recording Instructions

A Record of Accomplishment is necessary. Write in engine log or QEC Kit log that Service Bulletin V2500-NAC-26-0008 has been done.

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## 3. Material Information

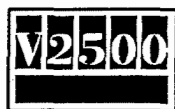
### A. Kits associated with this Bulletin:

NEW PART NO (ATA NO)	QTY	EST'D UNIT PRICE	KEYWORD	OLD PART NO (IPC NO)	INSTR/ DISPOS
V2526008-555 (LH QEC Kit)	1		Kit		(A)
Consisting of:					
290-5132-519	1		Fire Det Assy		
290-5139-503	1		Bracket		
290-5140-505	1		Bracket		
290-5146-503	1		Bracket		
290-5135-505	1		Bracket		
290-5136-505	1		Bracket		
290-5137-507	1		Bracket		
290-5198-501	1		Bracket		
290-5199-501	1		Bracket		
NAS1805-3P	3		Nut		
NAS1149C0332R	4		Washer		
V2526008-557 (RH QEC Kit)	1		Kit		(A)
Consisting of:					
290-5132-521	1		Fire Det Assy		
290-5142-503	1		Bracket		
290-5143-503	1		Bracket		
290-5193-501	1		Bracket		
290-5135-505	1		Bracket		
290-5136-505	1		Bracket		
290-5137-507	1		Bracket		
290-5198-501	1		Bracket		
290-5199-501	1		Bracket		
NAS1805-3P	2		Nut		
NAS1149C0332R	2		Washer		

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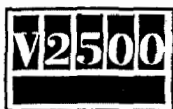
## B. Parts affected by this Bulletin:

NEW PART NO (ATA NO)	QTY	EST'D UNIT PRICE	KEYWORD	OLD PART NO (IPC NO)	INSTR/ (DISPOS)
Applicability: For left hand V2500-D5 Quick Engine Change (QEC) Kit:					
290-5135-505 (26-12-15)	1		Bracket	290-5135-503 (10-160)	(B)(2D) (S1)
290-5136-505 (26-12-15)	1		Bracket	290-5136-503 (10-170)	(B)(2D) (S1)
290-5198-501 (26-12-15)	1		Bracket	- - - (10-176)	(B)(S1)
290-5137-507 (26-12-15)	1		Bracket	290-5137-505 (10-200)	(B)(2D) (S1)
290-5199-501 (26-12-15)	1		Bracket	- - - (10-210)	(B)(S1)
290-5132-519 (26-12-17)	1		Detector	290-5132-511 (05-010)	(B)(2D) (S1)
NAS1805-3P (26-12-17)	1		Nut	- - - (05-011) (05-028) (05-141)	(B)(S1)
NAS1149C0332R (26-12-17)	1		Washer	- - - (05-013) (05-029)	(B)(S1)
	2		Washer	NAS1149C0332R (05-162)	(1D)
290-5146-503 (26-12-17)	1		Bracket	290-5146-501 (05-100)	(B)(2D)(S1)
290-5139-503 (26-12-17)	1		Bracket	290-5139-501 (05-140)	(B)(2D)(S1)
290-5140-505 (26-12-17)	1		Bracket	290-5140-503 (05-160)	(B)(2D)(S1)

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NEW PART NO (ATA NO)	(QTY)	EST'D UNIT PRICE	KEYWORD	OLD PART NO (IPC NO)	INSTR/ DISPOS
- - - (26-12-17)	2		Bolt	MS9556-06 (05-164)	(1D)
324506 (26-12-17)	2		Grommet	- - - (05-064)	(C)
324352 (26-12-17)	6		Grommet	- - - (05-066)	(C)
446517 (26-12-17)	1		Bracket	346233 (05-091)	(C)
290-5134-513 (26-12-17)	1		Tube	290-5134-509 (05-120)	(C)
- - - (26-12-17)	1		Bolt	MS9556-08 (05-144)	(D)

**Applicability:** For right hand V2500-D5 Quick Engine Change (QEC) Kit:

290-5135-505 (26-12-15)	1		Bracket	290-5135-503 (10-160)	(B)(2D) (S1)
290-5136-505 (26-12-15)	1		Bracket	290-5136-503 (10-170)	(B)(2D) (S1)
290-5198-501 (26-12-15)	1		Bracket	- - - (10-176)	(B)(S1)
290-5137-507 (26-12-15)	1		Bracket	290-5137-505 (10-200)	(B)(2D) (S1)
290-5199-501 (26-12-15)	1		Bracket	- - - (10-210)	(B)(S1)
NAS1805-3P (26-12-17)	1		Nut	- - - (06-011) (06-028)	(B)(S1)
NAS1149C0332R (26-12-17)	1		Washer	- - - (06-013) (06-029)	(B)(S1)
	2		Washer	NAS1149C0332R (06-142)	(1D)

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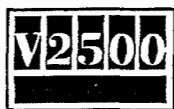
<u>NEW PART NO</u> <u>(ATA NO)</u>	<u>(QTY)</u>	<u>EST'D</u> <u>UNIT</u> <u>PRICE</u>	<u>KEYWORD</u>	<u>OLD PART NO</u> <u>(IPC NO)</u>	<u>INSTR/</u> <u>DISPOS</u>
290-5132-521 (26-12-17)	1		Detector	290-5132-513 (06-010)	(B)(2D)(S1)
290-5142-503 (26-12-17)	1		Bracket	290-5142-501 (06-140)	(B)(2D)(S1)
290-5193-501 (26-12-17)	1		Bracket	290-5143-501 (06-150)	(B)(2D)(S1)
290-5143-503 (26-12-17)	1		Bracket	290-5143-501 (06-160)	(B)(2D)(S1)
	2		Bolt	MS9556-06 (06-144)	(1D)
324506 (26-12-17)	2		Grommet	- - - (06-064)	(C)
324352 (26-12-17)	6		Grommet	- - - (06-066)	(C)
446517 (26-12-17)	1		Bracket	346233 (06-091)	(C)
290-5134-515 (26-12-17)	1		Tube	290-5134-511 (06-120)	(C)

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International  
Aero Engines

V2500 Propulsion System — Nacelle

# SERVICE BULLETIN

C. Instructions/Disposition Code Statements:

- (A) Kit is currently available.
- (B) Part supplied as a detail of the kit.
- (C) New part will be available as a spare. Detail of fire detector assembly.
- (D) Quantity changed from 2 to 1.
- (1D) Old part may continue to be used in other locations.
- (2D) Discard old part.
- (S1) New parts must be fitted as a set. Mixing of old and new parts is not permissible.

**NOTE:** The estimated 1995 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. These materials are to be procured by the Operator or obtained from his stock:

None.

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