P U B L I C A T I O N T R A N S M I T T A L

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V2500-D5 PROPULSION SYSTEMS NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 1 of Non-Modification Service Bulletin V2500-ENG-72-0630.

Document History

Non-Modification Service Bulletin Revision Status

Initial Issue Apr.16/12.

Non-Modification Service Bulletin Revision 1

Remove	Incorporate	Reason for change
	Pages 1 to 12 of the Non-Modification Service Bulletin.	To update the accomplishment instructions. To update the illustrations.
	Page 1 of the Appendix 1.	To add a reference.
	Page 1 of the Appendix 2.	No change.

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise IAE International Aero Engines AG

SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - NO.4 BEARING SCAVENGE TUBE ASSEMBLY REPLACEMENT PROCEDURE

1. Planning Information

A. Effectivity

(1) Boeing MD-90

(a) V2525-D5, V2528-D5

Engine Serial Nos. V20001 thru V20285.

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Condition: There have been several instances of cracked or fractured No.4 Bearing Scavenge Internal Scavenge Tube, PN 2A2074-01 on V2500-D5 Engine Models.

(2) Background: A higher than desired stress is being experienced by No.4 Bearing Internal Scavenge Tubes, PN 2A2074-01 fleet-wide on the V2500-D5 Engine Model. In addition, previously repaired No.4 Bearing External Scavenge Tubes, PN 6A5254, were causing misalignment during assembly, and resulted in higher stresses to the internal tubes.

(3) Objective:

(a) At the next module level exposure, replace the No.4 Bearing Internal Scavenge Tube, PN 2A2074-01.

(b) Verify the proper alignment and installation of the No.4 Bearing External Scavenge Tube, PN 6A5254, relative to the Tube to Boss Elbow, PN 2A2514 or PN 2A3951-01 on the No.4 Bearing Internal Scavenge Tube, PN 2A2074-01.

(4) Effects of Bulletin on:

Removal/Installation: Not affected.

Disassembly/Assembly: Not affected.

Cleaning: Not affected.

Inspection/Check: Not affected.

Repair: Not affected.

Testing: Not affected.

(5) Supplemental Information

None.

D. Description

Replace the No.4 Bearing Scavenge Internal Tube, PN 2A2074-01 and verify the correct alignment of No.4 Bearing Scavenge External Tube, PN 6A5254.

E. Compliance

Category 5

The actions detailed in the accomplishment instructions must be accomplished every time when the engine is disassembled sufficiently to afford access to the affected subassembly (i.e., modules, accessories, components, build groups) and to all affected spare subassemblies regardless of the planned overhaul actions.

F. Approval Data

The compliance statement and the procedures described in this Non-Modification Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine models listed.

G. Manpower

(1) In Service

Not Applicable.

(2) At Overhaul

(a) Necessary to Mark Flange of PN 2A2074-01 with NMSB Number: 1 minute

(b) Necessary to replace internal tube: 35 minutes

(c) Necessary to install and verify external tube: 7 minutes

(d) Total Necessary Man-Hours: 43 minutes

H. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No Effect.

(3) Datum

Engine Front Mount Centerline (Power Plant Station (PPS) 100).

I. Electrical Load Data

This Non-Modification Service Bulletin has no effect on the aircraft electrical load.

J. Software Accomplishment Summary

Not Applicable.

K. References

(1) V2500 Engine Illustrated Parts Catalogs (S-V2500-3IA, S-V2500-3IB and S-V2500-3IC), Chapter/Section 72-42-20 (02-020), 79-22-49 (03-100).

(2) V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-42-00, 72-00-40.

(3) V2500 Standard Practices/Processes Manual (E-V2500-3IA), Chapter/Section 70-09-00.

R (4) Internal Reference No. - EA 11VC318, EA 11VC318A and EA 12VC238A.

L. Other Publications Affected

None.

M. Interchangeability of Parts

Not applicable.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (No)

Added Data (Yes)

Revision of Table of Limits (No)

Inspection Procedures (No)

2. Material Information

A. Material - Price and Availability

Not applicable.

B. Industry Support Program

Not applicable.

C. The material data that follows is for each engine

This Non-Modification Service Bulletin is for replacing the No.4 Bearing Scavenge Internal Tube, PN 2A2074-01 and to verify the correct alignment of No.4 Bearing Scavenge External Tube, PN 6A5254.

D. Instruction/Disposition Code Statements

Parts Modification Conditions

Not applicable.

Spare Parts Availability

Not applicable.

Cleaning, Inspection and Repair Information

Not applicable.

E. Tooling - Price and Availability

Special tools are not required to accomplish this Non-Modification Service Bulletin.

F. Reidentified Parts

Not Applicable.

G. Other Material Information Data

Not Applicable.

3. Accomplishment Instructions

A. Assembly Instructions

NOTE: Accomplishment instructions include PART 1 and PART 2, and both must be performed. PART 1 details the procedure to replace the internal tube. PART 2 provides the procedure for installation of the external tube and instructions to verify the correct alignment.

PART 1

(1) Remove the No.4 Bearing Scavenge Internal Tube, PN 2A2074-01 from the Diffuser and Combustor group per Reference 2 Engine Manual TASK 72-42-00-040-001.

(2) Discard this tube and make it unserviceable in an acceptable manner which is described in FAA - Order: 8120.11 "Disposition of scrap or salvageable aircraft parts and materials", dated 2/12/96.

R (3) Obtain a new No.4 Bearing Scavenge Internal Tube, PN 2A2074-01.

R (4) Mark the new tube at the location shown in Figure 1 with this
R Non-Modification Service Bulletin number and quarter/year. For example,
R mark the tube "0630, Q1/2013" if the tube was replaced in the 1st quarter
R of the year 2013. See Reference 3, Standard Practices Manual,
R Chapter/Section 70-09-00, Marking of Parts. Approved marking methods are
R deep electrolytic etch, metal stamp (press or roll), or drag impression.

R (5) Install the new No.4 Bearing Scavenge Internal Tube, PN 2A2074-01 to the Diffuser and Combustor group per Reference 2 Engine Manual TASK 72-42-00-430-001 except the SUBTASKs 72-42-00-430-067 and 72-42-00-430-052. Follow the procedure provided in the SUBTASKs 72-42-00-430-067 and 72-42-00-430-052 as shown below. Refer to Engine Manual for Fig. 1003 and Fig. 1003A.

(a) SUBTASK 72-42-00-430-067 - Install the No. 4 Bearing Scavenge Tube.

(i) Refer to Fig. 1003 and Fig. 1003A.

(ii) Install gasket 1 (72-42-20,02-160) off into recess on the diffuser case boss and hold in place with CoMat 10-041, white petrolatum.

(iii) Install the heatshield (72-42-20,02-140) into diffuser case boss.

(iv) Install the sealing sleeve (72-42-20,02-180) over the previously installed gasket (72-42-20,01-160) in to the inner diameter of the diffuser case boss.

(1) Align the sealing sleeve screw holes to the left and right sides of the eight hole pad on the diffuser case.

(v) Secure the sealing sleeve with the two lubricated screws (72-42-20,02-200). Torque the two screws to the diffuser case assembly to 65.0 to 85.0 lbfin (7,344 to 9,604 Nm).

(vi) Install the metal seal ring (72-42-20,02-320) into the groove on elbow (72-42-20,02-340).

(vii) Install the No.4 bearing scavenge tube (72-42-20,02-020) from the inside of the diffuser case.

(viii) Install the upper and lower locks (72-42-20,02-220) and (72-42-20,02-240) with flat face inward into the groove at the end of previously installed No.4 bearing scavenge which is protruding through the center of eight hole pad.

(ix) While holding the locks in place, install the gasket (72-42-20,02-300) and elbow (72-42-20,02-340) over the locks. See Fig.72-42-00-990-071.

(1) Align dowel pin in the elbow with dowel holes in lower lock and in gasket.

(x) Secure the elbow (72-42-20,02-340) with four lubricated bolts (72-42-20,02-360), finger tight only. Do not tighten and torque the bolts at this time.

(xi) Place the sealing sleeve (72-42-20,02-260) on the bench with smaller O.D. facing down. Install gasket 1 (72-42-20,02-160) off into the recess on the sealing sleeve. Use CoMat 01-573 wax paraffin blend to hold the gasket in the sleeve.

(xii) Install sealing sleeve (72-42-20,02-260) with the larger O.D. towards diffuser and gasket (72-42-20,02-160) over the elbow to seat on the eight hole pad.

(xiii) Secure the sealing sleeve (72-42-20,02-260) with six lubricated bolts (72-42-20,02-280), finger tight only. Do not tighten and torque the bolts at this time.

(xiv) Attach a caution tag to one of the last installed bolts and mark the tag "Torque 10 bolts".

(b) SUBTASK 72-42-00-430-052 Attach the Tubes to the No.4 Bearing Front Compartment.

CAUTION: USE ONLY COMAT 01-573 ASSEMBLY FLUID TO HOLD GASKET IN PLACE. DO NOT USE COMAT 01-223 PARAFFIN WAX.

(i) Attach the No.4 bearing oil pressure tube.

NOTE: The No. 4 bearing oil pressure tube must be installed per EM TASK 72-42-10-440-001.

(1) Install (72-42-20,01-040) gasket 1 off in the recess of the pressure tube adjacent to the bearing compartment.

(2) Lubricate the threads on the three bolts (72-42-20,01-080) with CoMat 10-129 anti-seize paste.

(3) Attach the pressure tube to the front bearing compartment with the three bolts (72-42-20,01-080).

(4) Torque the bolts which attach the pressure tube to the No.4 bearing compartment to 45.0 to 60.0 lbfin (5,084 to 6,779 Nm). Safety with CoMat 02-141 lockwire.

(5) Torque the bolts which attach the pressure tube to the diffuser case assembly to 65.0 to 85.0 lbfin (7,344 to 9,604 Nm). Safety with CoMat 02-141 lockwire.

CAUTION: USE ONLY COMAT 01-573 ASSEMBLY FLUID TO HOLD GASKET IN PLACE. DO NOT USE COMAT 01-223 PARAFFIN WAX.

(ii) Attach the No.4 Bearing scavenge tube.

(1) Install (72-42-20,02-001) gasket 1 off in the recess of the scavenge tube adjacent to the No.4 bearing compartment.

(2) Lubricate the threads on the four bolts (72-42-20,02-040) with CoMat 10-129 anti-seize paste.

(3) Attach the scavenge tube to the bearing compartment with the four bolts (72-42-20,02-040).

(4) Torque the bolts which attach the scavenge tube to the bearing compartment to 45.0 to 60.0 lbfin (5,084 to 6,779 Nm). Safety with CoMat 02-141 lockwire.

NOTE: Remove the caution tag from one of the bolts.

(5) Torque the six bolts which attach the sealing sleeve to the diffuser case assembly to 75.0 to 85.0 lbfin (8,474 to 9,604 Nm). Safety with CoMat 02-141 lockwire.

(6) Using 180 degree alternating torque pattern, torque the four bolts which attach the elbow to the scavenge tube to 25.0 to 30.0 lbfin (2,825 to 3,390 Nm). Using the same 180 degree alternating torque pattern, apply final torque of 75.0 to 85.0 lbfin (8,474 to 9,604 Nm). See Fig. 72-42-00-990-070 for torque pattern. Safety with CoMat 02-141 lockwire.

(iii) Make sure the cooling air tubes engage the cooling air duct.

(1) Torque the nine bolts (72-42-20,05-040) which attach the three cooling air tubes (72-42-20,05-020) to the outer side of the diffuser case assembly to 65.0 to 85.0 lbfin (7,344 to 9,604 Nm). Safety with CoMat 02-141 lockwire.

(2) Torque the six bolts (72-42-20,05-220) which attach the three cooling air sleeves (72-42-20,05-250) to the inner side of the diffuser case assembly to 65.0 to 85.0 lbfin (7,344 to 9,604 Nm). Safety with CoMat 02-141 lockwire.

(3) Remove the IAE 1P16108 cover from the front of the No.4 bearing front compartment.

PART 2

(1) Install the No.4 Bearing External Scavenge Tube (Tube 55) per Reference 2 V2500-D5 Engine Manual TASK 72-00-40-420-004, except the SUBTASK 72-00-40-420-092 (Step 15. A.). Follow the procedure provided in the SUBTASK 72-00-40-420-092 (Step 15.A) as shown below. Refer to Reference 2 Engine Manual for Fig. 412.

SUBTASK 72-00-40-420-092 Install the No.4 Bearing Scavenge Tube.

Step 15. Install the HP Compressor Bleed Valve Air Tube (16), the Oil Scavenge Tubes (20 and 55), the P4.9/EEC Tube (56) and the Bifurcation Disconnect Tube (249), Fig.72-00-40-990-128-001 (Fig. 412, Sheet 1).

CAUTION: YOU MUST STOP THE TUBE AND ELBOW/UNION TURNING WHEN YOU TORQUE THE TUBE NUTS. USE A SPANNER ON THE REAR OF THE ELBOW AND MATING UNION. THIS WILL PREVENT ANY STRAIN ON THE ELBOW/TUBE AND HELP PREVENT LEAKS.

(a) Attach the tube 55 (79-22-49,03-100) to the fan case No.4 scavenge union (72-32-03,01-994) and the diffuser case elbow (72-42-20,02-340).

Refer to Fig.72-00-40-990-128-001 (Fig. 412, Sheet 1).

(i) Connect the tube 55.

(1) Connect the tube 55 to the Fan case No.4 scavenge union. Tighten the nut by hand.

(2) Connect the tube 55 to the Diffuser case elbow. Tighten the nut by hand.

(ii) Install the clips, the clipnuts and the bolts at the clip positions 7038 and 7040. Torque the bolts to 36.0 to 45.0 lbfin (4,067 to 5,084 Nm).

Refer to Fig.72-00-40-990-128-001 (Fig. 412, Sheet 1).

(iii) Install the clips, the bolts and the nuts at the clip positions 7039 and 7054. Torque the nuts to 36.0 to 45.0 lbfin (4,067 to 5,084 Nm).

Refer to Fig.72-00-40-990-128-001 (Fig. 412, Sheet 1) and Fig.72-00-40-990-128-002 (Fig. 412, Sheet 2).

(iv) Install the clips, the spacers, the bolts and the nuts at the clip positions 7093 and 7094. Torque the nuts to 36.0 to 45.0 lbfin (4,067 to 5,084 Nm).

Refer to Fig.72-00-40-990-128-002 (Fig. 412, Sheet 2).

(v) Torque the tube 55.

(1) Torque the tube nut at the fan case No.4 scavenge union to
R 566.0 to 611.0 lbfin (63,949 to 69,034 Nm). Use the IAE 1R18003 wrench.

(2) Torque the tube nut at the Diffuser case elbow to 566.0 to
R 611.0 lbfin (63,949 to 69,034 Nm). Use the IAE 1R18003 wrench.

(3) Check the tube 55 at the diffuser case elbow as follows:

A Fully loosen the tube nut at the diffuser case elbow.

B Make sure that the tube is still aligned and in free
R condition. The end of the conical fitting of the tube
R 55 must be inside the top conical seat of the elbow,
R PN 2A2514 or PN 2A3951-01 as illustrated in Figure 2 of this Service Bulletin.

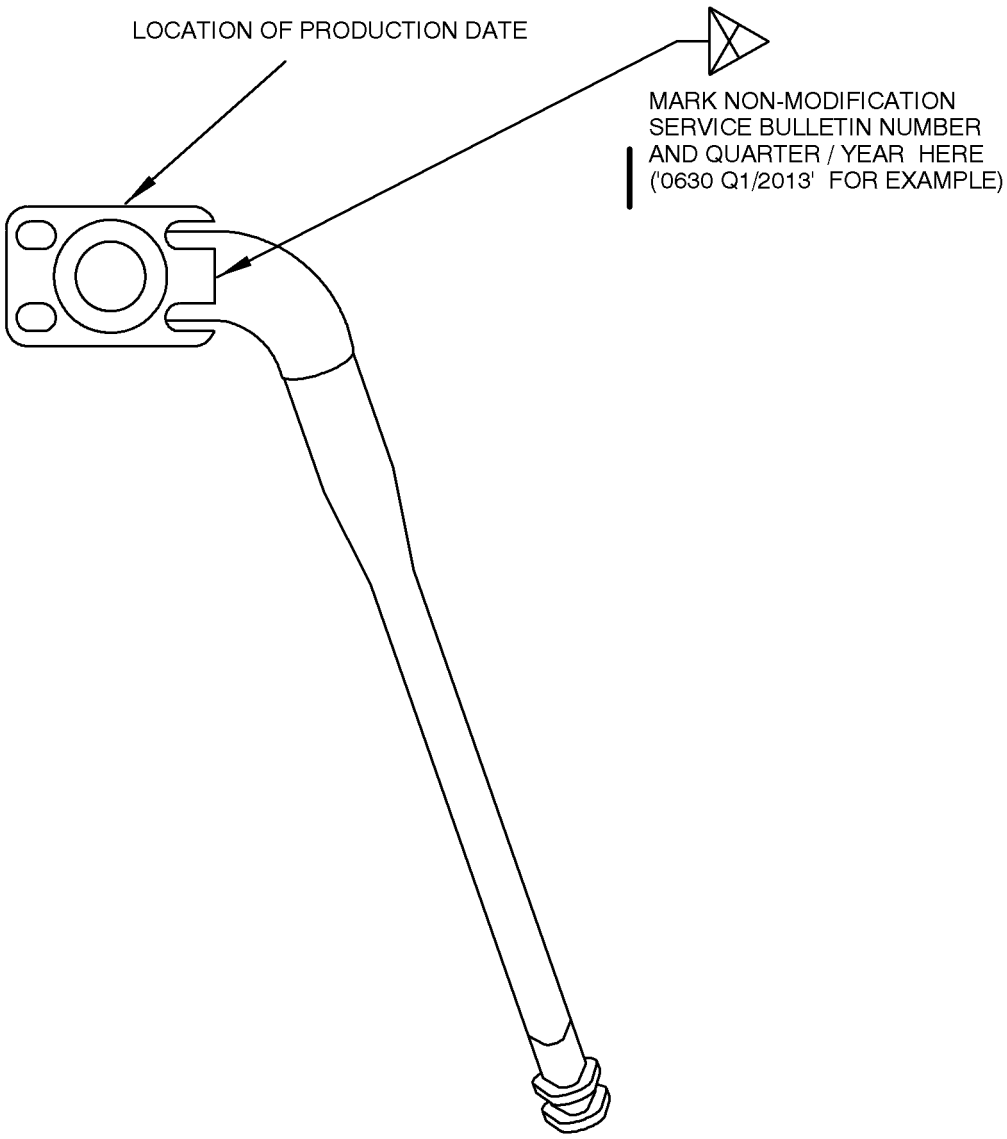
C If the tube is still aligned and in free condition, torque the nut to 566.0 to 611.0 lbfin (63,949 to
R 69,034 Nm). Use the IAE 1R18003 wrench.

D If the tube is mis-aligned, reject the tube 55 and replace with the new tube. Repeat steps (i) to (v). Discard the old tube and make it unserviceable in an acceptable manner which is described in FAA - Order: 8120.11 "Disposition of scrap or salvageable aircraft parts and materials", dated 2/12/96.

E Safety wire the tube nut and tube connector with CoMat 02-126 lockwire.

B. Recording Instructions

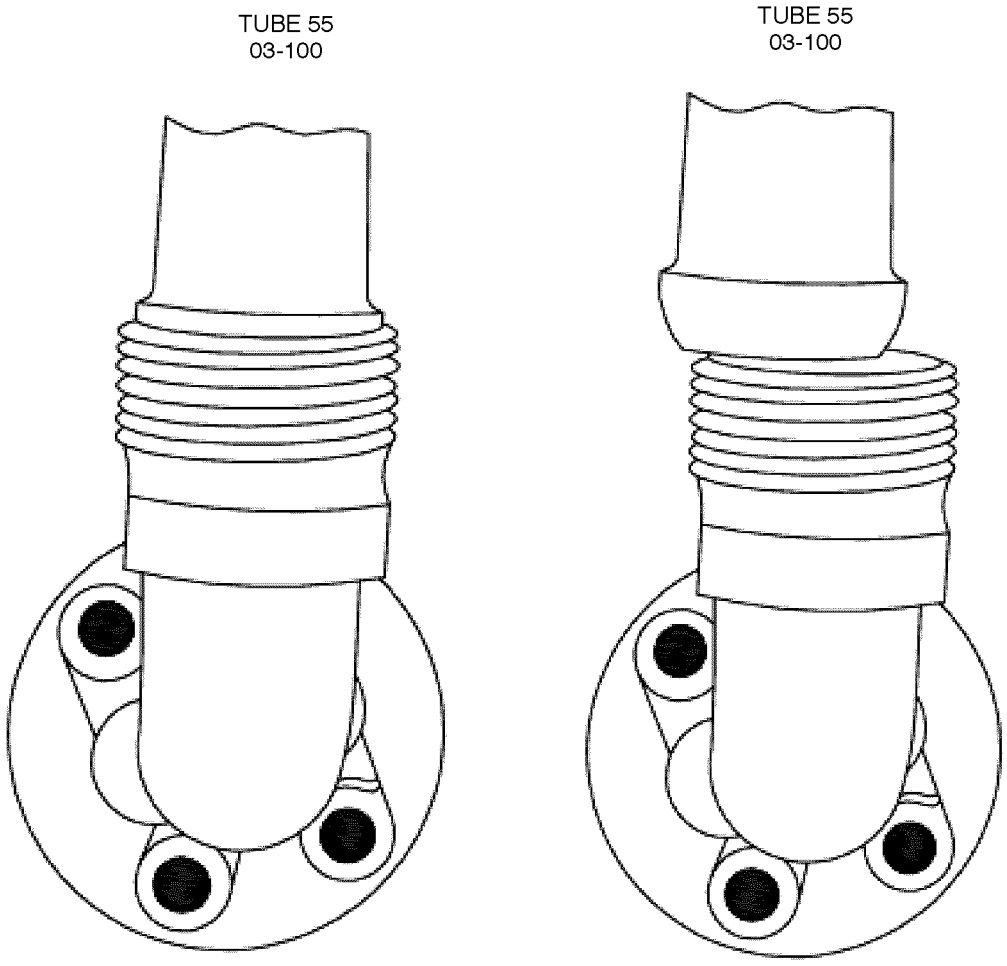
(1) A record of accomplishment is required.



R

pw0b524340A

R LOCATION OF MARKING POSITION ON NO.4 BEARING INTERNAL SCAVENGE TUBE
R FIGURE 1



EXAMPLES OF ALIGNED AND MIS-ALIGNED NO.4 BEARING EXTERNAL SCAVENGE TUBE
FIGURE 2

APPENDIX 1

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EA 11VC318 EA 11VC318A	JK/CMS
R 1	EA 12VC238A	JK/CMS

Number values shown in parentheses adjacent to U.S. values are International System of units (SI) equivalents.

APPENDIX 2

V2500-D5 No. 4 Scavenge Tubes Replacement and Inspection Confirmation

Operator / Customer:

Engine Serial Number:

TSN/CSN:

Date of Inspection:

MRO Location:

PN 2A2074-01 replaced: Yes / No

PN 6A5254 inspection result: Passed / Failed

Complete the form in Appendix 2 and send it to IAE Operations and Programs via PSCOMM:

Category: FPROG: Fleet Programs

Subject: V2500-ENG-72-0630

Or scan and e-mail a copy to: gpiaefltpgm@iaev2500.com

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We thank you for the time you spent in completing this form.

Please rate on a scale of 1 to 5, with 5 being the highest score:

- General quality rating of this Service Bulletin	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Accomplishment Instructions	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Illustration	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Is this Service Bulletin easy to understand ?	☐ Yes ☐ No

If you have had difficulties to perform this Service Bulletin please quote below the area(s) and give a short description of the issue:

Planning Information Section:		Material Information Section:	Accomplishment Instruction Section:
☐ 1.A.	☐ 1.I.	☐ 2.A.	☐ General
☐ 1.B.	☐ 1.J.	☐ 2.B.	☐ Get Access
☐ 1.C.	☐ 1.K.	☐ 2.C.	☐ Removal/Installation
☐ 1.D.	☐ 1.L.	☐ 2.D.	☐ Inspection
☐ 1.E.	☐ 1.M.	☐ 2.E.	☐ Test
☐ 1.F.	☐ 1.N.	☐ 2.F.	☐ Close the Access
☐ 1.G.	☐ 1.O.		☐ Log Book Entry
☐ 1.H	☐ 1.P.		

Explanatory notes:

Operator:	Overhaul Site:
Name/Title:	Date:

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