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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DATE: Jun.10/13

V2500-A5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Initial Issue of Non-Modification Service Bulletin V2500-ENG-73-0232.

Non-Modification Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 20 of the Non-Modification Service Bulletin.	Initial Issue.
	Page 1 of the Appendix.	Initial Issue.

V2500-ENG-73-0232
Transmittal - Page 1 of 1

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
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International Aero Engines

SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - ENGINE PRESSURE RATIO (EPR) MODIFIER CLASS CORRECTION DUE TO TEST CELL CALIBRATION SHIFT

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5, V2527M-A5

Engines from Serial No. - As specified in Table 1

(2) Airbus A320

(a) V2527-A5, V2527E-A5

Engines from Serial No. - As specified in Table 1

(3) Airbus A321

(a) V2530-A5, V2533-A5

Engines from Serial No. - As specified in Table 1

Table 1

Affected Engine Serial Numbers	
V16519	V16523
V16527	V16531
V16535	V16539
V16543	V16547
V16549	V16555
V16561	V16567
V16569	V16577
V16581	V16585
V16589	V16591
V16597	V16599
V16603	V16607
V16615	

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Condition:

A total of 23 V2500-A5 engines tested at one test facility with specific test equipment were delivered with a minor EPR Modifier Class (Thrust) shortfall. In coordination with Airbus, a performance assessment determined that the thrust shortfall does not pose any operational impact at the aircraft level and engine parameters (EPR, speeds, etc.) would not be noticeable on the flight deck.

(2) Background:

Duct Set (DS) equipment was refurbished and subsequent statistical evaluations of DS re-correlation results show an EPR Modifier Class shortfall. Data analysis for these (23) engines indicate the EPR Modifier Class setting needs to be increased by one (1) class.

(3) Objective:

Change the Data Entry Plug (DEP) EPR Modifier Class on Engine Serial Numbers listed in Effectivity within 20 weeks of receipt of this Non-Modification Service Bulletin (NMSB).

(4) Substantiation:

The changes introduced with this Non-Modification Service Bulletin were the subject of satisfactory engineering analysis and test. This Non-Modification Service Bulletin complies with the applicable engine certification basis.

(5) 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.

(6) Supplemental Information

None.

D. Description

Inspect the affected Engines and rewire the DEP to provide the correct EPR Modifier Class.

E. Compliance

Category Code 3

Accomplish within 20 weeks of receipt of this Non-Modification Service Bulletin, V2500-ENG-73-0232.

F. Approval

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

The inspection procedures described in this Service Bulletin are reviewed and technically accepted by Airbus Design Office to apply to the Airbus fleet affected.

This Service Bulletin does not contain any change information that revises the equipment definition covered by Airbus approved modifications.

G. Manpower

(1) In Service

To do modification and test the DEP: 15 minutes

(2) At Overhaul

Not applicable.

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) IAE V2500 Service Bulletin V2500-ENG-73-0222 (Engine - Fuel And Control - Provide A New Electronic Engine Control (EEC) With SCN21/AA Software).

(2) IAE V2500 Service Bulletin V2500-ENG-72-0378 (Engine - LP Compressor - To Announce The Availability Of New Engine Identification Plate With Designation Of All A5 Model Ratings).

(3) V2500-A5 Aircraft Maintenance Manual (AMM), ATA 73-22-34, 73-22-35.

(4) V2500 Standard Practices/Processes Manual (SPPM V2500-1IA), Chapter/Section 70-09-00.

(5) Internal Reference No. - EA 13VC031 and 13VC031A.

(6) ATA Locator - 73-22-34, 73-22-35.

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 to Table of Limits (No)

Inspection Procedures (No)

2. Material Information

A. Material - Price and Availability

The following jumper pins and engine identification plate can be required to change the DEP EPR Modifier Class and Bias:

Part Number	Part Name	ATA / Figure / Item	Quantity
2A2315 (HAA18704)	Lead, Electrical (Jumper 1)	73-22-35 / 01 / 145	AR
2A2304 (HAA19931)	Lead, Electrical (Jumper 2)	73-22-35 / 01 / 155	AR
2A2305 (HAA19932)	Lead, Electrical (Jumper 3)	73-22-35 / 01 / 165	AR
2A2306 (HAA19933)	Lead, Electrical (Jumper 4)	73-22-35 / 01 / 175	AR
5A1874	Engine Identification Plate (single rated)	72-32-82 / 03 / 120	1
5A1942	Engine Identification Plate (multi rated)	72-32-82 / 03 / 120	1

B. Industry Support Program

Not applicable.

C. The material data that follows is for each engine

Not applicable.

D. Instructions/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

Refer to Reference 3, Aircraft Maintenance Manual for special tools.

F. Reidentified Parts

Not applicable.

G. Other Material Information Data

Not applicable.

3. Accomplishment Instructions

NOTE: Accomplishment of this Non-Modification Service Bulletin requires making a change to the Engine Identification Plate. In certain circumstances, this can require obtaining a new Engine Identification Plate from your IAE representative. Before beginning the work on this Non-Modification Service Bulletin, make sure there is enough time to obtain the new Engine Identification Plate.

NOTE: Non-Modification Service Bulletin incorporation on engines installed on aircraft can be desirable and should be individually evaluated.

(1) Gain access and remove the Data Entry Plug (DEP). Refer to Reference 3, AMM Task 73-22-35-000-011.

(2) Confirm that all data marked on the DEP agrees with the information on the Engine Identification Plate. Also confirm that the Engine Pressure Ratio (EPR) Modifier Class and Bias marked on the DEP and Engine Identification Plate agrees with the existing EPR Modifier Class and Bias in Table 2 for that Engine Serial Number. If not, contact your local IAE Representative.

NOTE: The marking format for EPR Modifier Class and Bias is "EPR MOD XX-YY", where XX represents EPR Modifier Class and YY represents EPR Modifier Bias.

(3) Disassemble and re-wire the DEP to change the EPR Modifier Class and Bias per the following procedure:

(a) Remove the backshell assembly from the DEP to access the jumper wire. Refer to repair VRS3500 in Reference 3, AMM Task 73-22-35.

NOTE: Do not remove the jumper pin connections at this time.

(b) Make two copies of Figure 5 (Contact Hole Locations) of this Non-Modification Service Bulletin. Identify one diagram as "Pre SB 73-0232 Jumper Pin Connectors" and the other as "Post SB 73-0232 Jumper Pin Connectors".

(c) Mark the existing DEP connections on the diagram in "Pre SB 73-0232 Jumper Pin Connectors". Make sure that the existing DEP wiring connections for EPR Modifier Class and Bias confirms to the wiring connections provided in Table 3 under "Existing EPR Modifier Class and Bias" for the corresponding Engine Serial Number listed in Table 2. After marking, make sure that all the connections originate from the ground pin to the non-ground pin. If not, re-arrange the marking to meet this requirement. See Figure 6 for ground pins in the DEP.

NOTE: Jumper wires are utilized for the Engine variant, Engine serial number and EPR modifier class/bias. Only the jumper pins for the EPR Modifier Class and Bias require removal.

(d) Locate the existing EPR Modifier Class and Bias in Table 2 for the corresponding Engine Serial Number. Make note of the pin connections for Channel A and B listed in Table 3. Highlight only these pin connections in "Pre SB 73-0232 Jumper Pin Connectors".

(e) Locate the revised EPR Modifier Class and Bias using Table 2. Make note of the pin connections for Channel A and B listed in Table 3 on the diagram in "Post SB 73-0232 Jumper Pin Connectors".

(f) Ignore the highlighted EPR Modifier Class and Bias connections in "Pre SB 73-0232 Jumper Pin Connectors" and copy the rest of the connections to the diagram in "Post SB 73-0232 Jumper Pin Connectors".

(g) Determine the jumper pin changes required from the differences between the diagrams in "Pre SB 73-0232 Jumper Pin Connectors" and "Post SB 73-0232 Jumper Pin Connectors" and new jumpers needed. See Figure 2.

CAUTION: INSTALLATION OF AN INCORRECTLY WIRED DATA ENTRY PLUG CAN LEAD TO OPERATIONAL ISSUES INCLUDING THE POSSIBILITY OF AN ENGINE SURGE.

CAUTION: WHILE RE-WIRING THE DATA ENTRY PLUG PER FIGURE "POST SB 73-0232 JUMPER PIN CONNECTORS" FOR REVISED EPR MODIFIER CLASS AND BIAS, MAKE NOTE OF GROUND PINS AND RE-WIRE ACCORDINGLY. SEE FIGURE 6 FOR GROUND PINS IN THE DATA ENTRY PLUG.

(h) Modify the DEP Connector to change the wiring per diagram in "Post SB 73-0232 Jumper Pin Connectors". Refer to repair VRS3500 in Reference 3, AMM Task 73-22-35.

(i) Install the backshell assembly on the DEP. Refer to repair VRS3500 in Reference 3, AMM Task 73-22-35.

(j) Do an electrical wiring test on the DEP assembly. Refer to repair VRS3500 in Reference 3, AMM Task 73-22-35.

(4) Cross out the existing EPR Modifier Class and Bias on the DEP Backshell and mark with the revised EPR Modifier Class and Bias. Refer to Reference 4, SPPM Task 70-09-00 for marking of parts. Use vibropeen method.

(5) Install the DEP Assembly on the EEC. Refer to Reference 3, AMM Task 73-22-35-400-011.

(6) Cross out the existing EPR Modifier Class and Bias on the Engine Identification Plate and mark with the revised EPR Modifier Class and Bias. Refer to Reference 4, SPPM Task 70-09-00 for marking of parts. Use vibropeen method.

NOTE: If there was not sufficient room to mark the revised EPR Modifier Class and Bias on the Engine Identification Plate, contact your local IAE Representative.

(7) If required, install a new Engine Identification Plate. See Figure 3.

(a) If Engine Identification Plate, PN 5A1874 is replaced by the same Part Number plate:

(i) Remove the four Bolts, PN 4W0102 that hold the Engine Identification Plate to the bracket.

(ii) Permanently deface the old Engine Identification Plate and return it to your IAE representative. Engine Model and Serial Number must remain visible in order to allow verification by IAE Quality Assurance.

(1) Recommended technique is to vibropeen a wavy line through the Type Certificate and Production Certificate Numbers.

(iii) Get the new Engine Identification Plate, PN 5A1874 from your local IAE Representative.

(iv) Mark the Engine Identification Plate with all the old information except using the revised EPR Modifier Class and Bias. Refer to Reference 4, SPPM Task 70-09-00 for marking of parts. Use vibropeen method.

(v) Install the Engine Identification Plate to the Name Plate Bracket with the four Bolts, PN 4W0102.

(vi) Torque the four Bolts PN 4W0102 to 36 to 45 lbfin (4 to 5 Nm).

(b) If Engine Identification Plate, PN 5A1874 is replaced by re-usable Engine Identification Plate, PN 5A1942:

(i) Remove the Name Plate bracket, Engine Identification Plate and Module Identification Plate per Reference 2, SB V2500-ENG-72-0378.

NOTE: The removed bracket should be discarded and replaced with new bracket, PN 5A1856.

(ii) Permanently deface the old Engine Identification Plate and return it to your IAE representative. Engine Model and Serial Number must remain visible in order to allow verification by IAE Quality Assurance.

(1) Recommended technique is to vibropeen a wavy line through the Type Certificate and Production Certificate Numbers.

(iii) Get the new Name Plate bracket, PN 5A1856.

(iv) Get the new reusable Engine Identification Plate, PN 5A1942, from your IAE Representative.

(v) Get the new Engine Rating Indicator, PN 5A1857 (IAE Rivet).

(vi) Mark the Engine Identification Plate with all the old information except using the revised EPR Modifier Class and Bias. Refer to Reference 4, SPP TASK 70-09-00 for marking of parts. Use vibropeen method.

(vii) Install the Engine Rating Indicator, PN 5A1857 in the Engine Identification Plate at the appropriate "TAKE-OFF RATING/VARIANT" position.

(1) Drill a hole 0.098 to 0.101 in. (2,49 to 2,57 mm) diameter at the circle marked on the Engine Identification Plate at the designated rating, and deburr the hole.

(2) Install the Engine Rating Indicator, PN 5A1857 through the Engine Identification Plate, PN 5A1942 at the designated rating and squeeze with the power riveter.

(viii) Install the Engine Identification Plate to the Name Plate Bracket with four Bolts, PN 4W0102 and four Nuts, PN 4W0001.

(ix) Torque the four bolts PN 4W0102 to 36 to 45 lbfin (4 to 5 Nm).

(x) Install the Module Identification Plate to the Name Plate Bracket with two bolts, PN 4W0102 and two nuts, PN 4W0001.

(xi) Torque the two bolts to 36 to 45 lbfin (4 to 5 Nm).

(xii) Install the Name Plate Bracket to the Fan Case Flange FE with two bolts, PN 4W0164.

(xiii) Torque the two bolts to 85 to 105 lbfin (10 to 12 Nm).

(8) Check the DEP wiring by interrogating the MCDU and comparing the EEC CONFIGURATION information output to the Data Plate information, when the EEC and DEP are installed on the aircraft. Refer to repair VRS3500 in Reference 3, AMM Task 73-22-35.

NOTE: If this does not agree, the Data Entry Plug must be corrected or replaced; until then the aircraft cannot be dispatched.

(9) Do an operational test of the EEC. Refer to AMM Task 73-22-34-710-040-A.

(10) Recording Instructions

(a) A record of accomplishment is required.

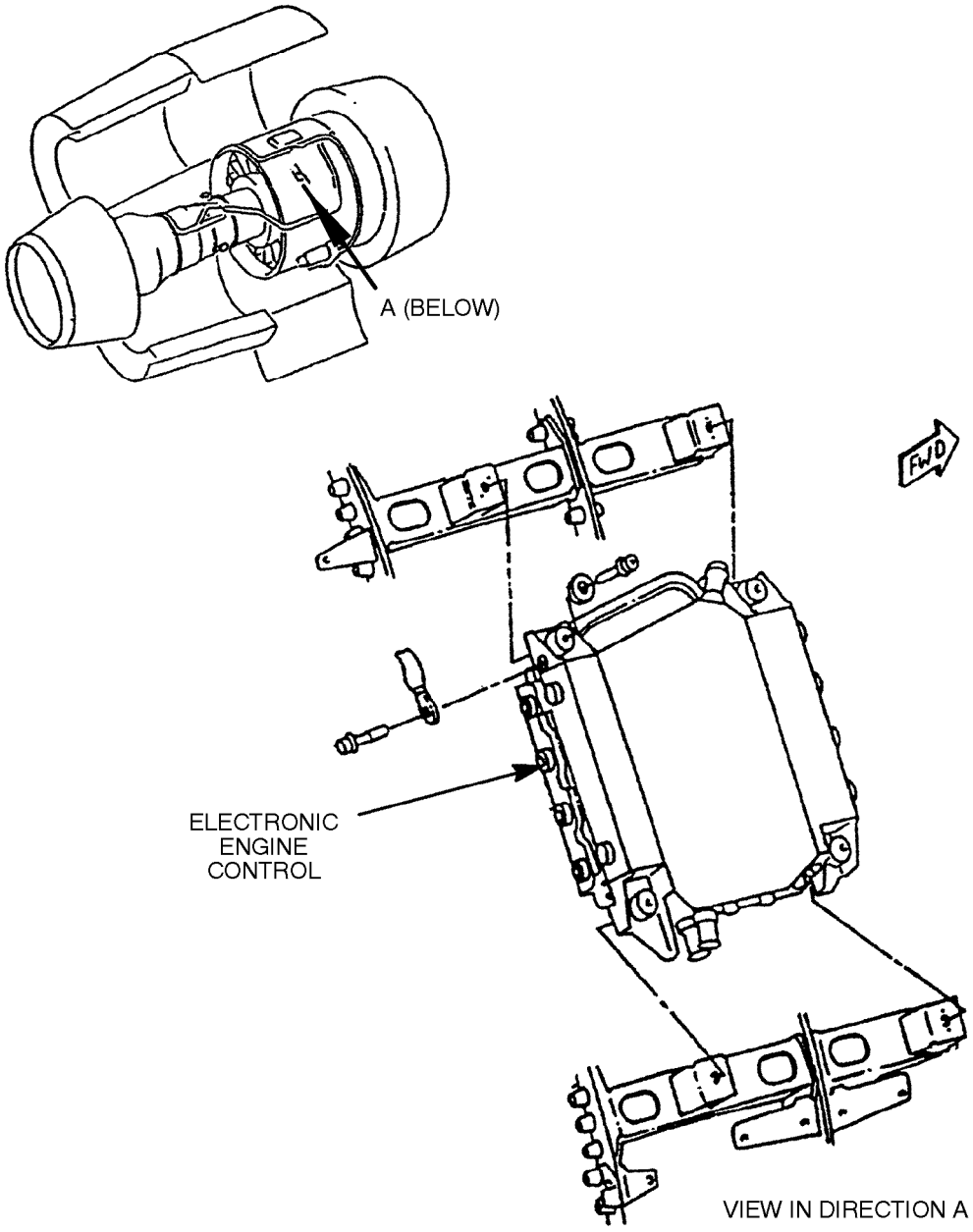
Table 2: Engines that require revised EPR Modifier Class and Bias

Engine Serial Number	Existing EPR Modifier Class and Bias	Revised EPR Modifier Class and Bias	Change in EPR Modifier Class	Change in EPR Modifier Bias
V16519	06-01	07-02	01	01
V16523	07-02	08-02	01	N/A
V16527	07-00	08-01	01	01
V16531	06-02	07-02	01	N/A
V16535	06-01	07-01	01	N/A
V16539	07-01	07-00	N/A	-01
V16543	07-01	08-01	01	N/A
V16547	06-01	07-01	01	N/A
V16549	06-01	07-01	01	N/A
V16555	07-01	07-00	N/A	-01
V16561	05-01	06-01	01	N/A
V16567	07-01	08-01	01	N/A
V16569	06-01	07-01	01	N/A
V16577	06-01	07-01	01	N/A
V16581	06-01	07-01	01	N/A
V16585	06-00	07-01	01	01
V16589	06-01	07-01	01	N/A
V16591	06-01	07-01	01	N/A
V16597	05-01	06-01	01	N/A
V16599	06-01	07-01	01	N/A
V16603	06-02	06-01	N/A	-01
V16607	06-01	07-01	01	N/A
V16615	07-01	08-01	01	N/A

Table 3: DEP Pin Selection for EPR Modifier Classes and Bias

EPR Modifier Class	EPR Modifier Bias	Channel A	Channel B	EEC Software
05	00	Z* to a	No Pins	SCN 20 or Later
06	00	Z* to m	No Pins	SCN 20 or Later
07	00	Z* to m c* to a	g* to r	SCN 20 or Later
08	00	No Pins	g* to P	SCN 20 or Later
05	01	Z* to a	g* to r h to T	SCN 20 or Later
06	01	Z* to m	g* to r h to T	SCN 20 or Later
07	01	Z* to m c* to a	h to T	SCN 20 or Later
08	01	No Pins	g* to r h to T j* to P	SCN 20 or Later
06	02	b to G Z* to m	g* to r	SCN 20 or Later
07	02	b to G Z* to m c* to a	No Pins	SCN 20 or Later
08	02	b to G	g* to r j* to P	SCN 20 or Later

NOTE: In some cases, connector holes g and Z are used in the variant number, connector holes c and j are used in the engine serial number wiring. Find which are to be connected for Engine Serial Number, EPR Modifier Class/Bias and variant number and choose the necessary jumper pins.



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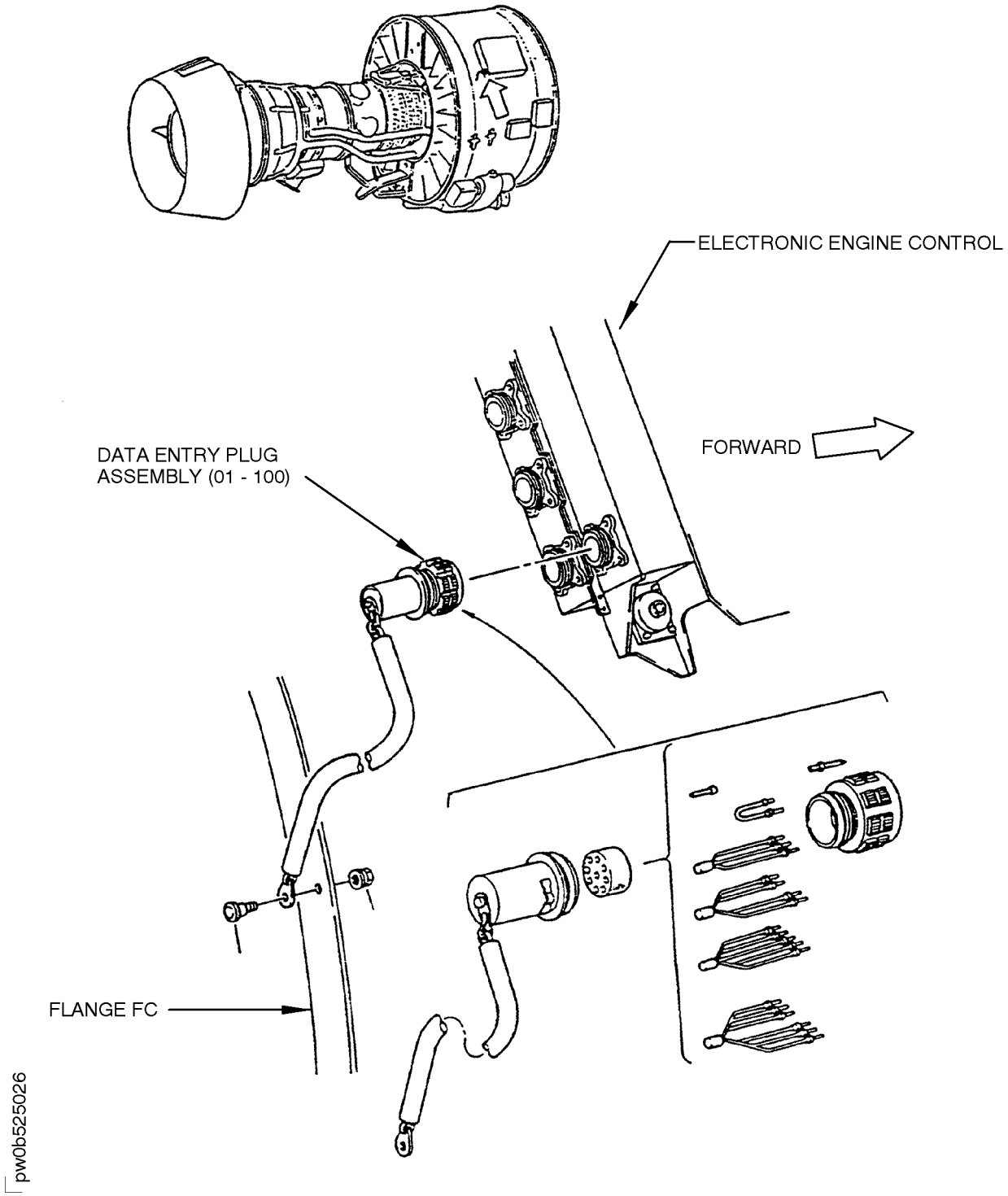
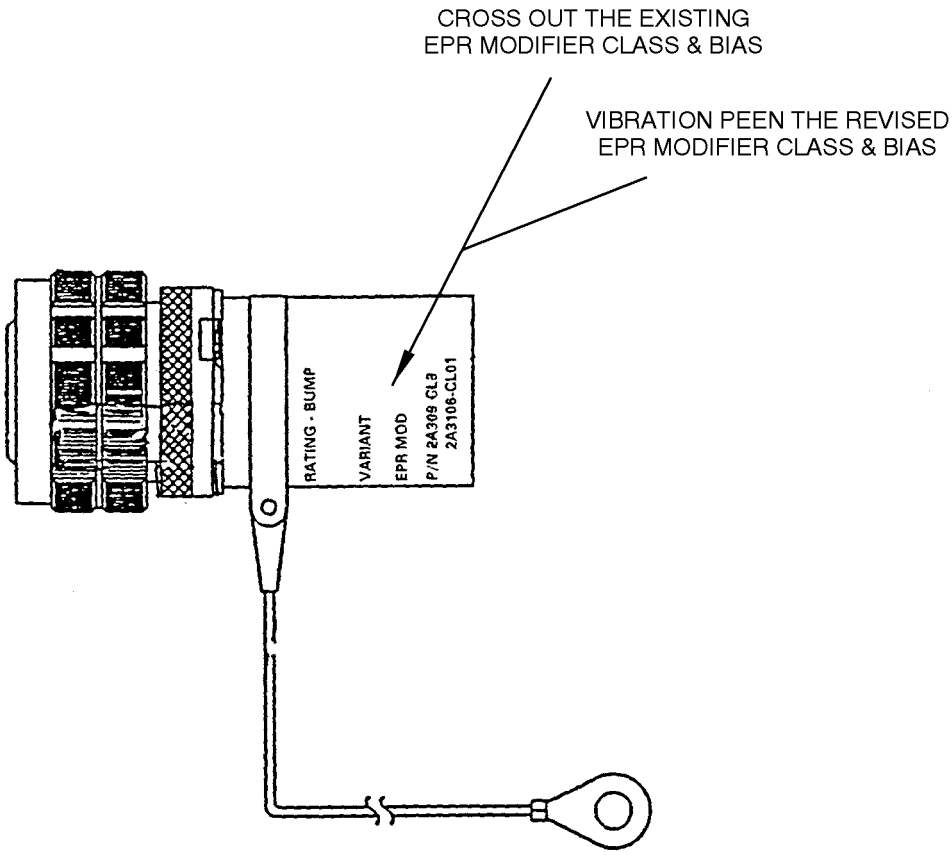
LOCATION OF THE ELECTRONIC ENGINE CONTROL (EEC)
FIGURE 1



DATA ENTRY PLUG (DEP) ASSEMBLY
FIGURE 2



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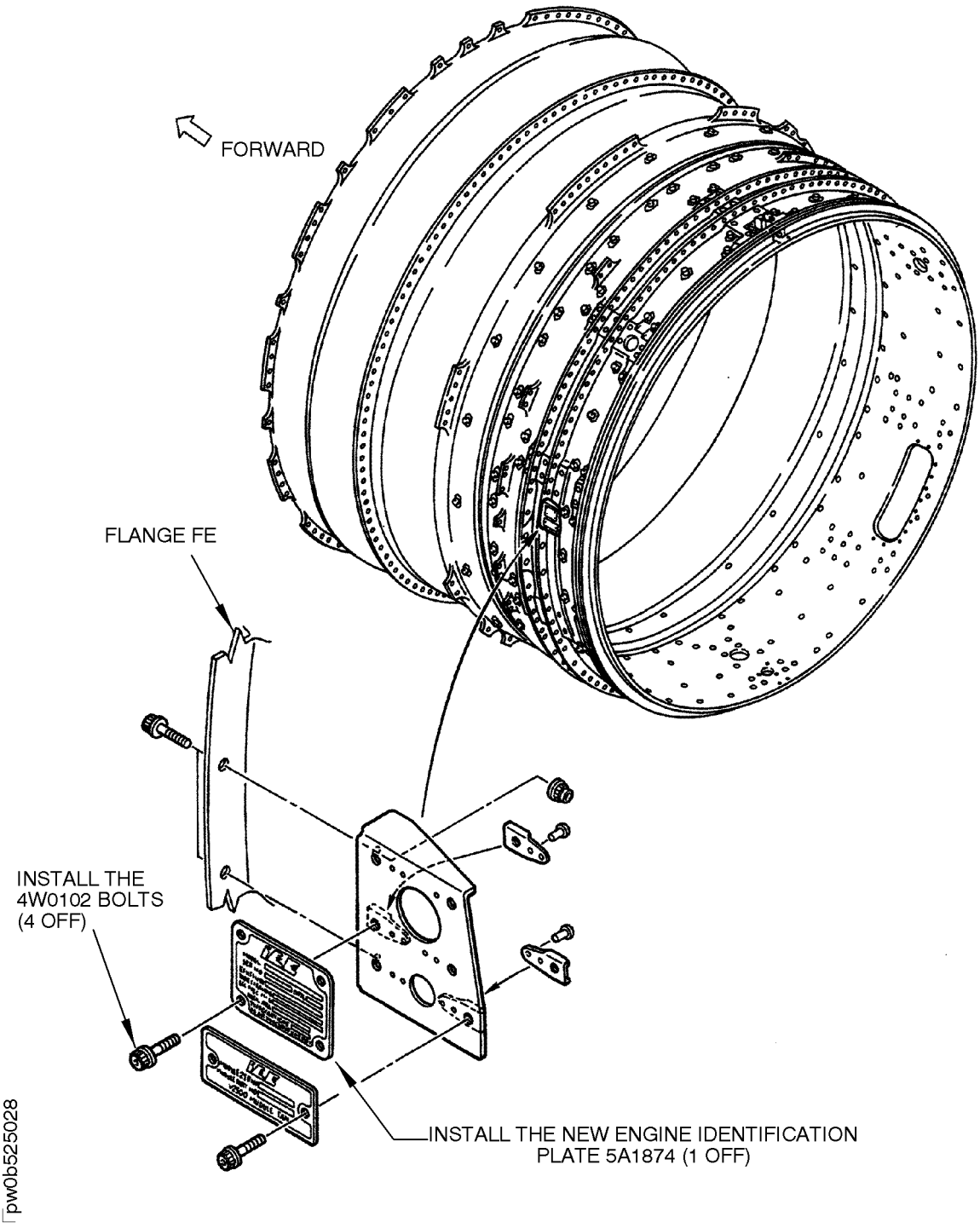
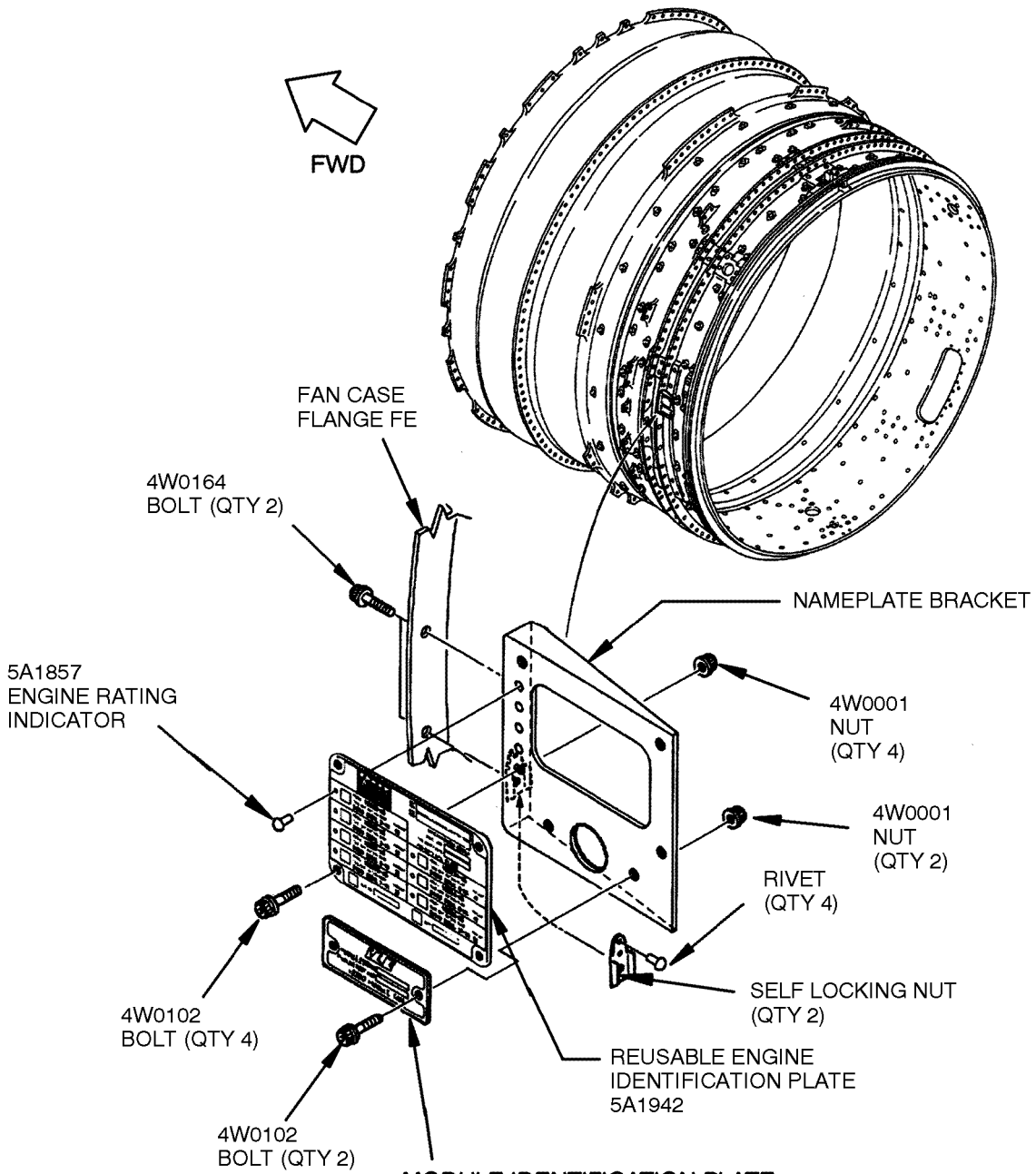
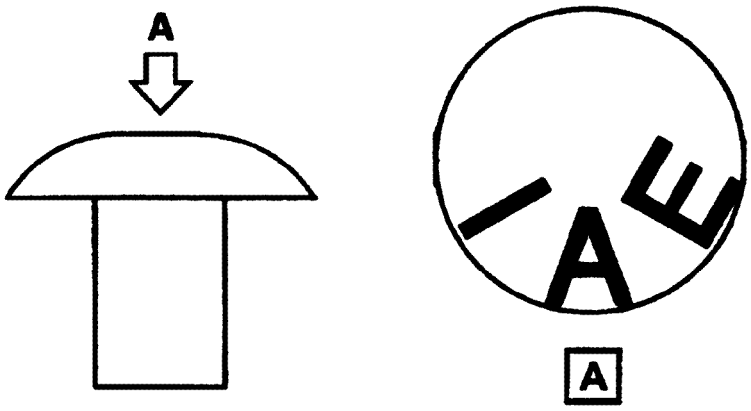
IDENTIFICATION OF THE EPR MODIFIER CLASS AND THE DATA ENTRY PLUG ASSEMBLY
FIGURE 3



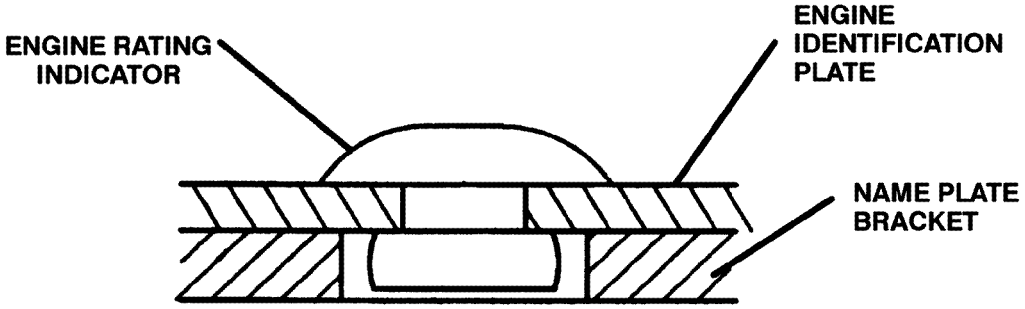
ENGINE IDENTIFICATION PLATE
FIGURE 4 (SHEET 1)



ENGINE IDENTIFICATION PLATE
FIGURE 4 (SHEET 2)



ENGINE RATING INDICATOR AS SUPPLIED BY IAE



ENGINE RATING INDICATOR AS PLACED ON THE ENGINE IDENTIFICATION PLATE

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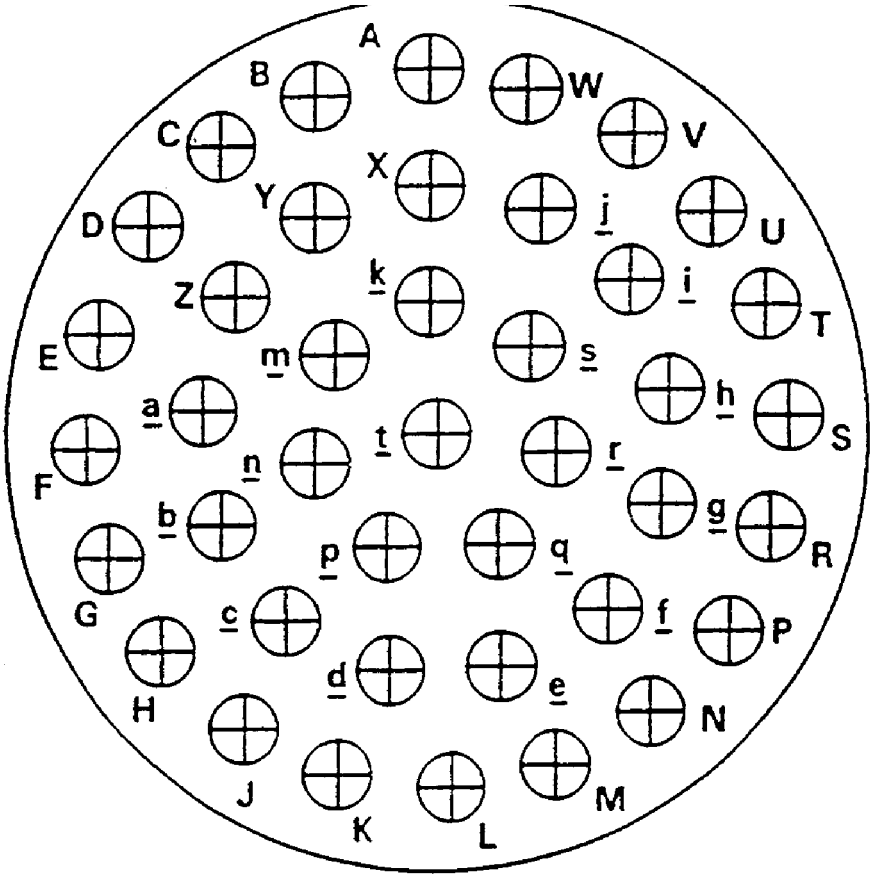
ENGINE IDENTIFICATION PLATE
FIGURE 4 (SHEET 3)



NOTE: Upper case I, O, and Q are not used.
Lower case l and O are not used.

ENGINE NO. _____

RATING - BUMP _____

VARIANT _____

EPR MOD. _____

P/N 2A3106-CL01

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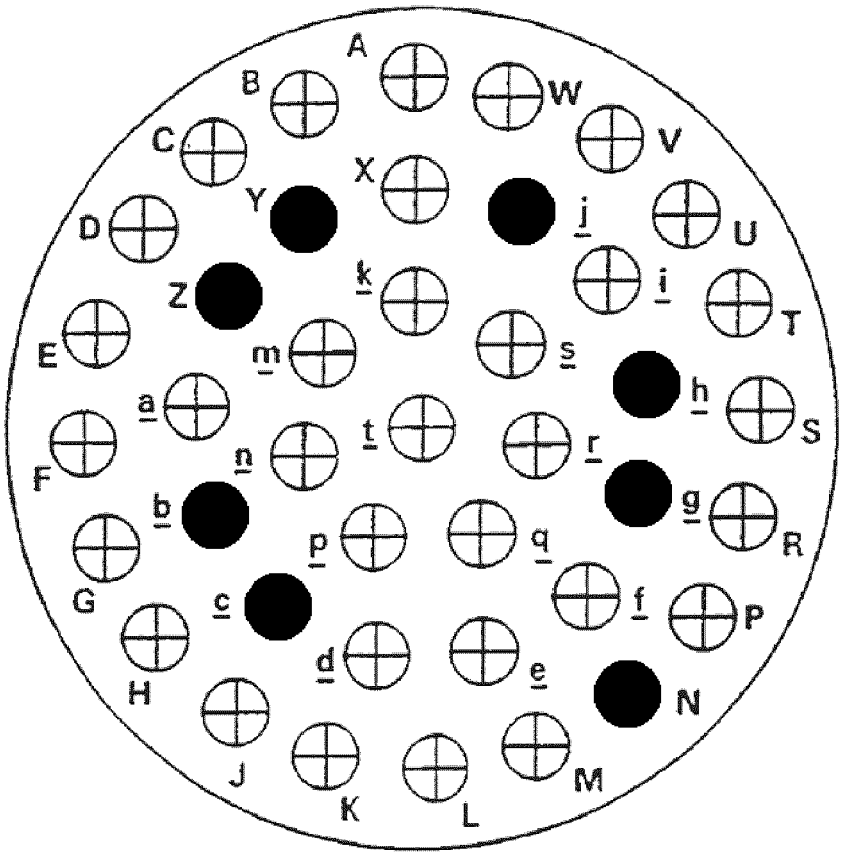
NOTE: Make two (2) copies of this diagram and identify one diagram as "Pre SB 73-0232 Jumper Pin Connections' and the other as "Post SB 73-0232 Junper Pin Connections"

CONTACT HOLE LOCATIONS
FIGURE 5



NOTE: The black dotted letters - Y, Z, b, c, j, h, g & N are ground pins

NOTE: While re-wiring the DEP for a revised EPR Modifier Class and Bias, make sure that the jumper pins are connected to its corresponding ground pins

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GROUND PIN LOCATIONS
FIGURE 6

APPENDIX

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EA13VC031 and EA13VC031A	PS/CMS

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

SERVICE BULLETIN FEEDBACK FORM

Please use this form to give feedback on the quality of this Service Bulletin. The input you provide will be used to analyse areas of improvement and to take action to further improve on the quality of our Service Bulletins.

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:

Please send the completed Service Bulletin Feedback Form to IAE, Customer Support.
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