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

International Aero Engines

628 Hebron Avenue, Suite 400
Glastonbury, CT 06033, USA.
Tel: +1 (860) 368-3823
Fax: +1 (860) 755-6876

DATE: Mar.26/12

V2500-A5 PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits the Initial Issue of Service Bulletin V2500-ENG-73-0225.

Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 10 of the Service Bulletin.	Initial Issue.
	Page 1 of the Appendix.	Initial Issue.

V2500-ENG-73-0225

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

SERVICE BULLETIN

ENGINE – FUEL AND CONTROL – PLUG, DATA ENTRY – MODIFICATION TO PERMIT A MORE OPEN VARIABLE STATOR VANE SCHEDULE

1. Planning Information

A. Effectivity

(1) Airbus A321

V2533-A5 (A5 Standard).

Engine Serial Nos. – V10198 and above.

B. Concurrent Requirements

This Service Bulletin must be done at the same time or after Reference 2, Service Bulletin No. V2500-ENG-72-0295 and Reference 4, Service Bulletin No. V2500-ENG-73-0222.

C. Reason

(1) Condition: Some V2500-A5 V2533 standard configuration engines have difficulties in meeting the N2 margin pass-off acceptance criteria at the V2533 maximum take-off rating at post overhaul and repair acceptance test.

(2) Background: N2 margin is reduced after engine refurbishment due to the overhaul process not fully restoring engine component hardware back to production standard.

(3) Objective: The Reference 4, Service Bulletin No. V2500-ENG-73-0222, FADEC SCN21 software introduces a more open Variable Stator Vane (VSV) schedule at higher airflows for the standard V2533 engine only. The more open VSV schedule increases the N2 margin limit to 13820 rpm. This Service Bulletin provides a Data Entry Plug (DEP) modification that enables the more open VSV schedule.

The data entry plug modification introduces two new variants for the V2533 standard configuration engine as follows:

Variant 01 – More open VSV schedule

Variant 11 – More open VSV schedule with 4% climb thrust increase

(4) Effect of Bulletin on:

(a) Removal/Installation

Not affected.

(b) Disassembly/Assembly

Not affected.

(c) Cleaning

Not affected.

(d) Inspection/Check

Not affected.

(e) Repair

Not affected.

(f) Testing

Affected (V2500 Engine Manual E-V2500-1IA, Chapter/Section 71-00-00, Testing 11 will be updated).

(5) Supplemental Information

None.

D. Description

Modify the data entry plug as specified in the Accomplishment Instructions.

E. Compliance

Category 8

Accomplish based upon experience with the prior configuration.

F. Approval Data

The part number changes and/or part modifications specified in the Accomplishment Instructions and Material Information sections of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model given.

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.

G. Manpower

(1) At Overhaul

NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

(a) Necessary to Remove DEP Assembly: 1 minute

(b) Necessary to Modify the DEP Assembly: 13 minutes

(c) Necessary to Install the DEP Assembly: 1 minute

(d) Necessary to Mark and Install the Engine Identification Plate: 5 minutes

(e) Total Necessary Man-hours: 20 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 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-72-0285 Engine - Conversion - Provide Instructions To Change The V2500-A5 Engine Rating By Modifying The Data Entry Plug.

(2) IAE V2500 Service Bulletin V2500-ENG-72-0295 Engine HP Compressor Blades Introduction Of A Redesigned Stage 4 Blade Assembly.

(3) IAE V2500 Service Bulletin V2500-ENG-72-0584 Engine - LP Compressor - To Apply The Multi-Rating Engine Identification Plate To All A5 Engine Models.

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

(5) V2500 Engine Manual (E-V2500-1IA), Chapter/Section 71-00-00.

(6) Internal Reference No. - EC 10VA014.

(7) ATA Locator - 73-22-35.

L. Other Publications Affected

(1) V2500 Engine Manual (E-V2500-1IA), Chapter/Section 71-00-00, Testing 11.

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

Not applicable.

B. Industry Support Program

Not applicable.

C. The material data that follows is for each engine

Not applicable.

D. Instructions/Disposition Code Statements:

Not applicable.

E. Tooling - Price and Availability

Not applicable.

F. Reidentified Parts

Not applicable.

G. Other Material Information Data

Not applicable.

3. Accomplishment Instructions

(1) Determine if your engine requires a more open VSV schedule as follows:

(a) Complete Reference 5, Engine Manual, TASK 71-00-00-700-010-B00, Testing 10 - Test No. 10, Performance Test and determine the corrected N2 at 1,40 EPR.

(b) Continue with incorporation of this Service Bulletin if the corrected N2 at 1.40 EPR is > 13765 rpm and < or = 13820 rpm.

(2) Remove the Data Entry Plug Assembly , PN 2A3106 as specified in Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, SUBTASK 71-00-00-060-055.

(3) Remove the backshell assembly to access the jumper wires by the procedures specified in Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, SUBTASK 71-00-00-060-056.

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

(4) Make two copies of Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, Contact hole locations Fig.71-00-00-990-420 (Fig. 1301). Mark one as Figure A and one as Figure B.

(a) Record the following information in the corresponding fields on Figure A from the DEP connector:

(i) Engine serial number

(ii) Bump rating

(iii) Variant

(iv) EPR modifier and Bias

(b) Mark the existing Data Entry Plug connections on the diagram in Figure A. After marking the existing Data Entry Plug wiring in Figure A, make sure 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 1 for an illustration of which pins are the ground pins. See Figure 2 for an example of correcting the marking of the Data Entry Plug diagram. The illustration shown in Figure 2 is only an example that utilizes 27K rating but the concept of correct marking applies to all engine ratings.

NOTE: Jumper wires are utilized for the engine serial number, bump rating, variant, EPR modifier and EPR bias. Only the jumpers for the variant require removal. The other connections need to be maintained per the four steps that follow.

(c) Locate the current variant number in Reference 1, Service Bulletin No. V2500-ENG-72-0285, Table 6 (for standard A5 engines). Make note of the pin connections for Channel A and B listed in this table. Highlight only these pin connections in Figure A.

(d) Using the table that follows, locate the variant of the desired new configuration. Mark these pin connections on the diagram in Figure B.

Variant Table

Variant No.	Engine Rating	Thrust Level	Bump No.	Crank (sec)	Channel A	Channel B	** EEC Software
01	2	33	00	30	E to Z	R to g	SCN-21/ AA
11	2	33	02	30	Y to C, D to Z, E to Z	N to q, f to g, R to g	SCN-21/ AA

NOTE: ** Indicated EEC software standard or later must be installed.

(e) Ignore the highlighted variant connections in Figure A and copy the rest of the connections to the diagram in Figure B. This figure now contains all the required connections for the new DEP.

CAUTION: WHILE RE-WIRING THE DATA ENTRY PLUG PER FIGURE B FOR NEW ENGINE VARIANT, DO NOT DISCONNECT THE GROUND PINS. SEE FIGURE 1 FOR GROUND PINS IN THE DATA ENTRY PLUG.

(f) Determine the jumper pin changes required from the differences between the diagrams in Figure A and Figure B and any new jumpers needed.

(5) Modify the DEP connector as specified in Reference 5; Engine Manual; TASK 71-00-00-700-011-B00; Testing 11, SUBTASK 71-00-00-350-002, 71-00-00-350-003 and 71-00-00-350-060.

(6) Assemble the DEP assembly as specified in Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, SUBTASK 71-00-00-460-053.

(7) Test the DEP assembly as specified in Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, SUBTASK 71-00-00-750-115.

(8) Install the DEP as specified in Reference 5, Engine Manual, TASK 71-00-00-700-011-B00, Testing 11, SUBTASK 71-00-00-450-053.

(9) Perform engine marking as follows:

(a) If Engine Identification Plate, PN 5A1874 is being replaced with the same part number, do as follows:

(i) Remove four Bolts, PN 4W0102; four Nuts, PN 4W0001; and Engine Identification Plate, PN 5A1874.

(ii) Obtain a new engine identification plate with all applicable information from your IAE Representative and return the existing engine identification plate.

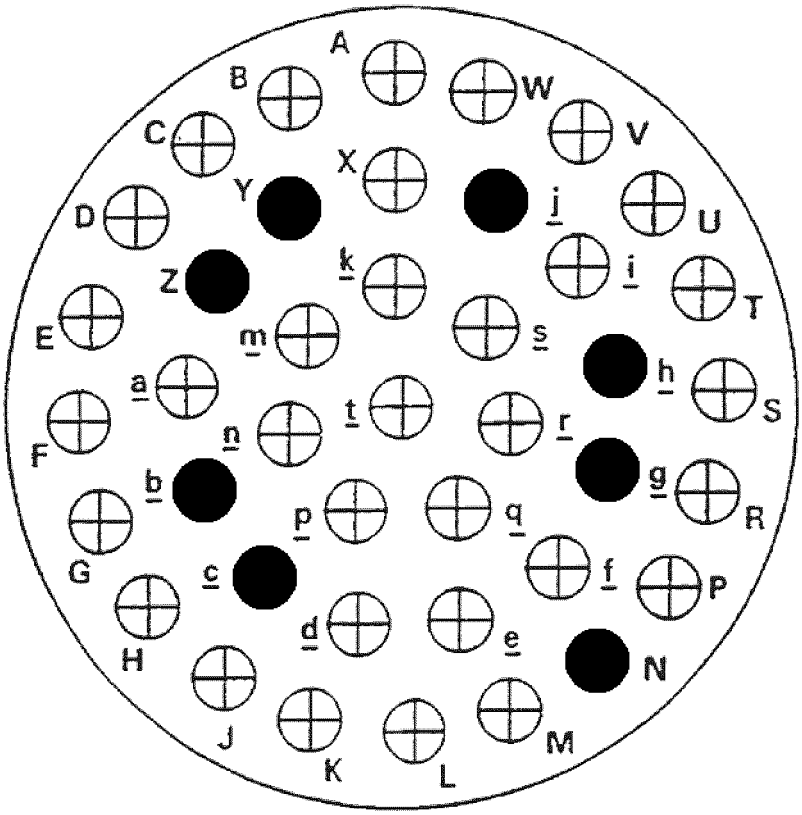
(iii) Install the new engine identification plate with four Bolts, PN 4W0102 and four Nuts, PN 4W0001. Tighten the bolts to 36.0 - 45.0 lbfin (4,067 - 5,084 Nm).

(b) If Engine Identification Plate, PN 5A1875 is being replaced with PN 5A1942, follow the procedures in Reference 3, Service Bulletin No. V2500-ENG-72-0584.

(c) If Engine Identification Plate, PN 5A1942 is being replaced with the same part number or revised, follow the procedures in Reference 3, Service Bulletin No. V2500-ENG-72-0584.

(10) Recording Instructions

(a) A record of accomplishment is required.

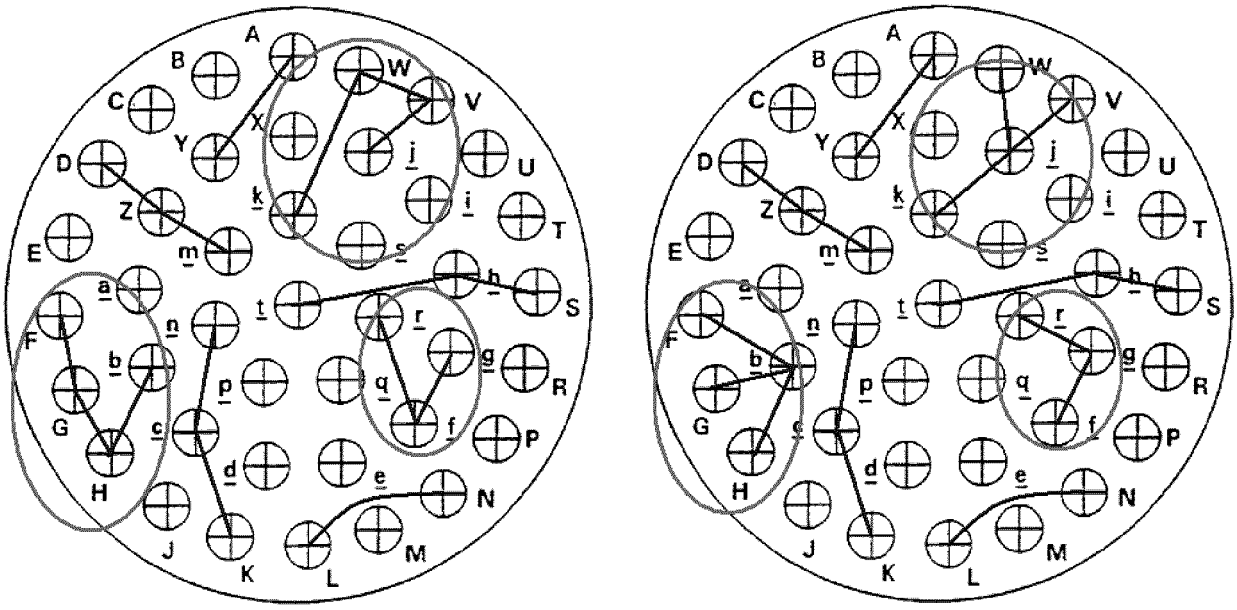


NOTE: The black dotted letters - Y, Z, b, c, j, h, g & N are ground pins

NOTE: While re-wiring the DEP for a new engine variant, make sure that the jumper pins are connected to its corresponding ground pins.

pw0b524090

GROUND PIN LOCATIONS
Figure 1



Incorrect Marking

Correct Marking

NOTE: The above illustration (left side) shows the incorrect marking between ground pins b, g, and J, and non-ground pins. The right side shows correct marking.

NOTE: Upper Case letters - I, O, and Q are not used.
Lower Case Letters l, and O are not used.

ENGINE NO.	V15319
RATING - BUMP	27k
VARIANT	34
EPR - MOD	06-02
P/ N	243106-CL01

pw0b524091

CORRECT MARKING EXAMPLE
Figure 2

APPENDIX

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC1OVAO14	DTL/JDH

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.
Email: GPIAECUSTCOM@IAEV2500.COM