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V2500-A5/D5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 2 of Non-Modification Service Bulletin V2500-ENG-72-0586.

Document History

Non-Modification Service Bulletin Revision Status

Initial Issue. Jan.27/09.

Revision 1 Jan.28/10

Non-Modification Service Bulletin Revision 2

Remove	Incorporate	Reason for change
All pages of the Non-Modification Service Bulletin.	Pages 1 to 12 of the Non-Modification Service Bulletin.	To update the style and format. To update the Accomplishment Instructions. To update the flow chart.

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

International Aero Engines

SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - ENGINE - HIGH PRESSURE (HP) COMPRESSOR BLADES - SAMPLING OF THE HP COMPRESSOR STAGE 5 ROTOR BLADE RETAINING PLATE SLOT

1. Planning Information

A. Effectivity

(1) Airbus A319, A320, A321

V2500-A5 Engines.

(a) Engines with Serial Number V10003, V10004, V10006, V10007, V10129 and from V10181 to V12373.

(b) Any engine that has had a shop visit since 1st March 1997 at which High Pressure (HP) Compressor stage 5 blades pre Service Bulletin ENG-72-0490 were installed.

(c) Any engine with post Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date prior to 30th June 2006.

NOTE: Any engine that has had full incorporation of new Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date post 30th June 2006 is not affected.

(2) Boeing MD-90

V2500-D5 Engines.

(a) Engines with Serial Number V20001, V20003, V20004, V20005, V20006 and from V20081 to V20286.

(b) Any engine that has had a shop visit since 1st March 1997 at which HPC stage 5 blades pre Service Bulletin ENG-72-0490 were installed.

(c) Any engine with post Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date prior to 30th June 2006.

NOTE: Any engine that has had full incorporation of new Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date post 30th June 2006 is not affected.

B. Concurrent Requirements

None.

C. Reason

R (1) Condition:

Two (2) HPC Stage 5 Rotor blade fractures have occurred in service. Investigation has revealed the blade fracture initiated from an abrupt transition in the retaining plate slot. A non-conforming tool induced the abrupt transition during blade manufacture. The investigation has shown that a number of blades manufactured using this tool were fitted during new production of V2500-A5 HPC module build and also during V2500-A5 and V2500-D5 shop visits after 1st March 1997.

An additional nineteen (19) HPC stage 5 rotor blades have been found cracked in the retaining plate slot. Four (4) of them were P/N 6A8451, not
R covered by initial issue of this Non-Modification Service Bulletin.

R This Non-Modification Service Bulletin has been issued to inspect HPC stage 5 rotor blades that have a broached retaining plate slot.

D. Description

This Non-Modification Service Bulletin details the sampling procedure for the retaining plate slot of HPC stage 5 rotor blade.

R Engines affected are listed under paragraph 1.A. Effectivity

Engines with HPC stage 5 blades manufactured in a specific time frame that were installed during new production module build.

Engines with HPC stage 5 blades manufactured in a specific time frame that were installed during a shop visit.

Both HP Compressor stage 5 blades, pre Service Bulletin ENG-72-0490 and post Service Bulletin ENG-72-0490 with a delivery date prior to 30th June 2006, are affected.

E. Compliance

Category 6

Accomplish when the sub-assembly (i.e. modules, accessories, components, component build groups) is disassembled sufficiently to afford access to the affected spare parts.

For previously installed spare and new spare HP compressor stage 5 rotor blades with a delivery date prior to 30th June 2006, accomplish before installation.

F. Approval

The compliance statement at paragraph E. and the procedures in Section 3
R Accomplishment Instructions of this Non-Modification Service Bulletin comply
R with the Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

G. References

(1) V2500 A5/D5 Engine Manual, Chapter 72-41-10, Assembly/Disassembly.

(2) V2500 A5/D5 Engine Manual, Chapter 72-41-15, Inspection/Check.

(3) V2500 A5/D5 Engine Manual:

(a) TASK 72-00-40-020-000, Remove the HP System Module.

(b) TASK 72-41-00-440-001, Replace HP Compressor Stage 3, 4, 5 and 6 Blades - Surgical Strike Workscope Procedure.

(c) TASK 72-41-15-100-002, Clean the HP Compressor Stages 5 Rotor Blades.

(4) V2500 Standard Practices/Processes manual, Chapters 70-09-00, 70-21-00 and 70-22-03.

(5) V2500 Overhaul Processes and Consumable Index, Section 06.

(6) SEN5085.

(7) NMSB-ENG-72-0585.

(8) Internal Reference No.

Stage 5 blade replica report TRV83140.

R Engineering Change No. 08VR923, 08VR923A and 08VR923B.

(9) ATA locator 72-41-15.

H. Manpower

R Estimated man-hours to accomplish this Non-Modification Service Bulletin in full:

(1) In Service

R Not applicable.

(2) At Overhaul

R Eight (8) hours for inspection of the removed (64) HPC stage 5 rotor
R blades.

I. Tools and Equipment

None.

2. Material Information

None.

3. Accomplishment Instructions

A. Remove the HP System Module from the engine

(1) Remove the HP System Module in accordance with EM 72-00-40-020-000.

B. Gain access to the High Pressure Compressor (HPC) Front Case

(1) Remove the HPC front cases.

NOTE: EM 72-41-00-040-001, HPC Surgical Strike Procedure may be used.

C. Removal of the HPC stage 5 rotor blades

(1) Remove all HPC stage 5 rotor blades from the HPC rotor assembly.

NOTE: EM TASK 72-41-00-440-001, Surgical Strike Workscope procedure may be used.

D. Cleaning of the HPC stage 5 rotor blades

(1) Clean each part in accordance with EM TASK 72-41-15-100-002.

E. Inspection of the HPC stage 5 rotor blades

(1) All parts

R NOTE: HPC stage 5 rotor blades shall be inspected as a complete set from the same engine.

R (a) Examine the Stage 5 Rotor Blade retaining plate slots for cracks in accordance with SPM TASK 70-23-01-230-501.

(b) If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades.

R (c) If rejected, quarantine the whole set of HPC stage 5 blades and inform your local IAE office.

NOTE: Any blade set found with a cracked blade may need to be returned to IAE Technical Services for further investigation.

(d) Complete the Feedback Form to record the number of HPC stage 5 rotor
R blades that have been inspected disregarding the result of the
R inspection.

(e) If no blade is found cracked in the retaining plate slot, refer to Step 3.E(2).

(2) HPC stage 5 rotor blades that passed inspection in 3.E(1).

R (a) Visually examine the retaining plate slot of the HPC stage 5 rotor blade with minimum 10x magnification.

(b) Examine the Stage 5 Rotor Blade retaining plate slots for cracks.

(c) Compare each blade to Figure 1 and Figure 2.

(d) Reject any HP compressor stage 5 rotor blade with a crack or an abrupt transition in accordance with Figure 1.

(e) If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades.

R (f) If rejected, quarantine the whole set of rejected HPC stage 5 blades and inform your local IAE office.

NOTE: Any blade set found with a cracked blade may need to be returned to IAE Technical Services for further investigation.

(g) Complete the Feed back Form to record the number of HPC stage 5 rotor
R blades that have been inspected disregarding the result of the
R inspection.

(3) HPC stage 5 rotor blades that passed inspection in 3.E(1) and 3.E(2).

(a) Identify the inspected HP compressor stage 5 blades (Refer to the Standard Practices/Processes Manual, Chapter 70-09-00).

R (i) Vibro peen 'N 586' on each HPC stage 5 rotor blade that passed
R inspection in 3.E(1) in allocated area (Fig.5).

R NOTE: Do not vibro peen outside the marking area.

R NOTE: Any blade marked outside the marking area must be
R scrapped.

R (4) HPC stage 5 rotor blades that failed inspection in 3.E(1) and 3.E(2)

R (a) Reject all HPC stage 5 rotor blades that failed inspection in 3.E(1)
R and 3.E(2).

F. Record of Accomplishment

(1) Record NMSB-ENG-72-0586 in the applicable engine records.

NOTE: Para 3.F(1) must be performed prior to engine dispatch.

(2) Complete the feedback form on page 12 of this Non-Modification Service Bulletin.

(a) When the accomplishment instructions are completed, inform the local IAE office that this Non-Modification Service Bulletin has been accomplished.

(b) Pass the feedback Form and any available pictures to the local IAE office.

FIGURE 1
APPEARANCE OF ABRUPT TRANSITION

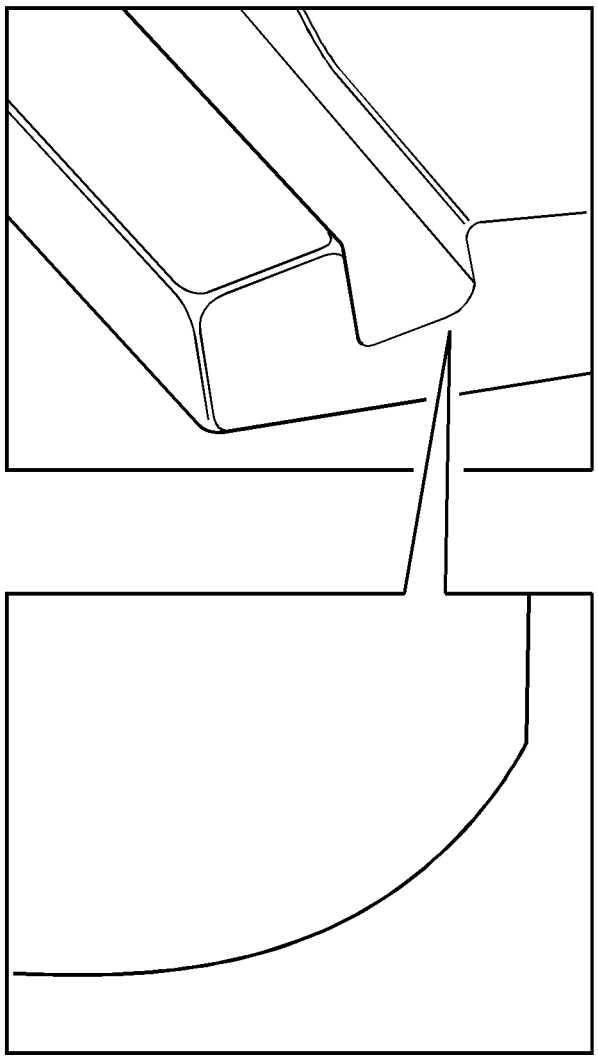

FIGURE 2
APPEARANCE OF NOMINAL SLOT

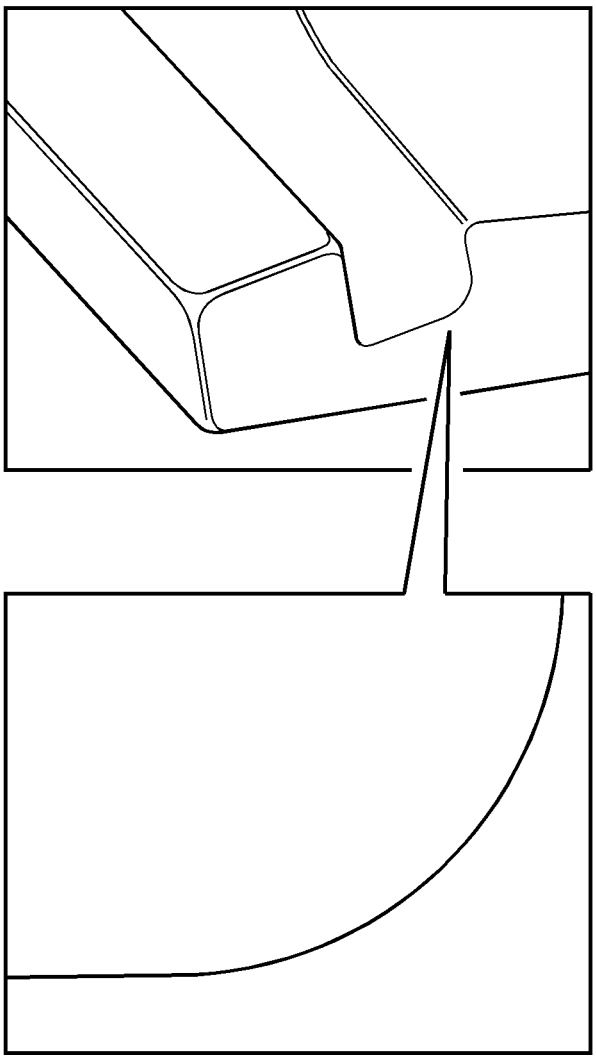

FIGURE 3
REPLICA APPEARANCE OF ABRUPT TRANSITION

FIGURE 4
REPLICA APPEARANCE OF NOMINAL SLOT

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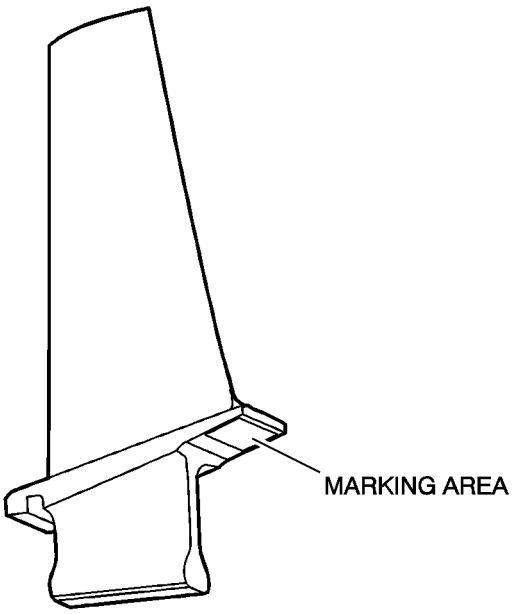
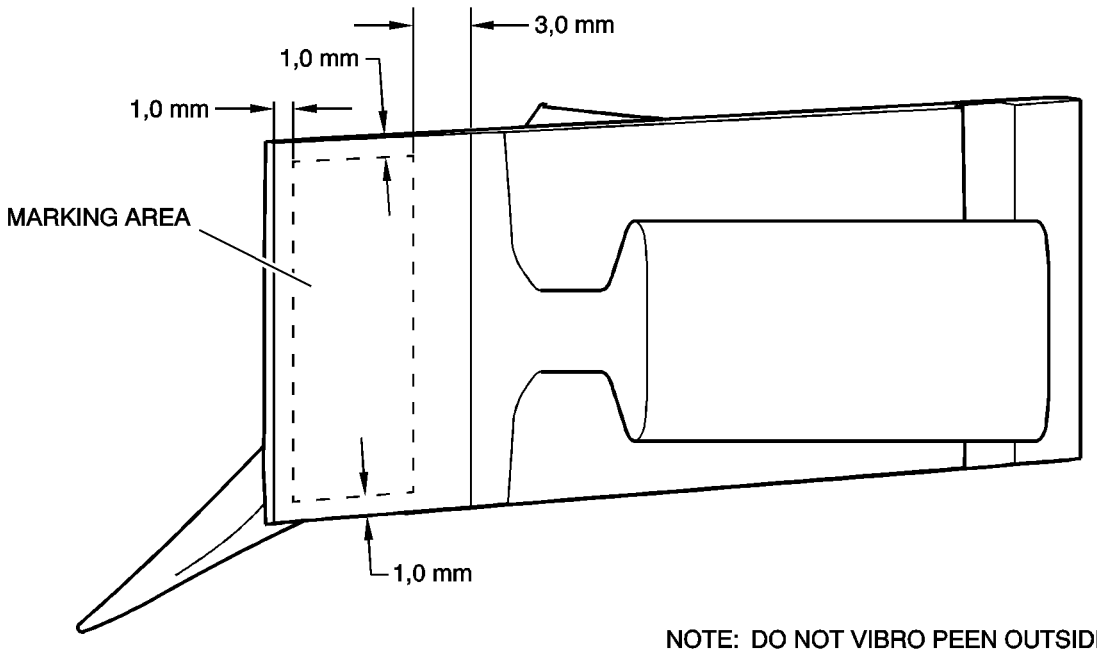
Figures 1, 2, 3 and 4





NOTE: DO NOT VIBRO PEEN OUTSIDE THE MARKING AREA.

NOTE: ANY BLADE MARKED OUTSIDE THE MARKING AREA MUST BE SCRAPPED.

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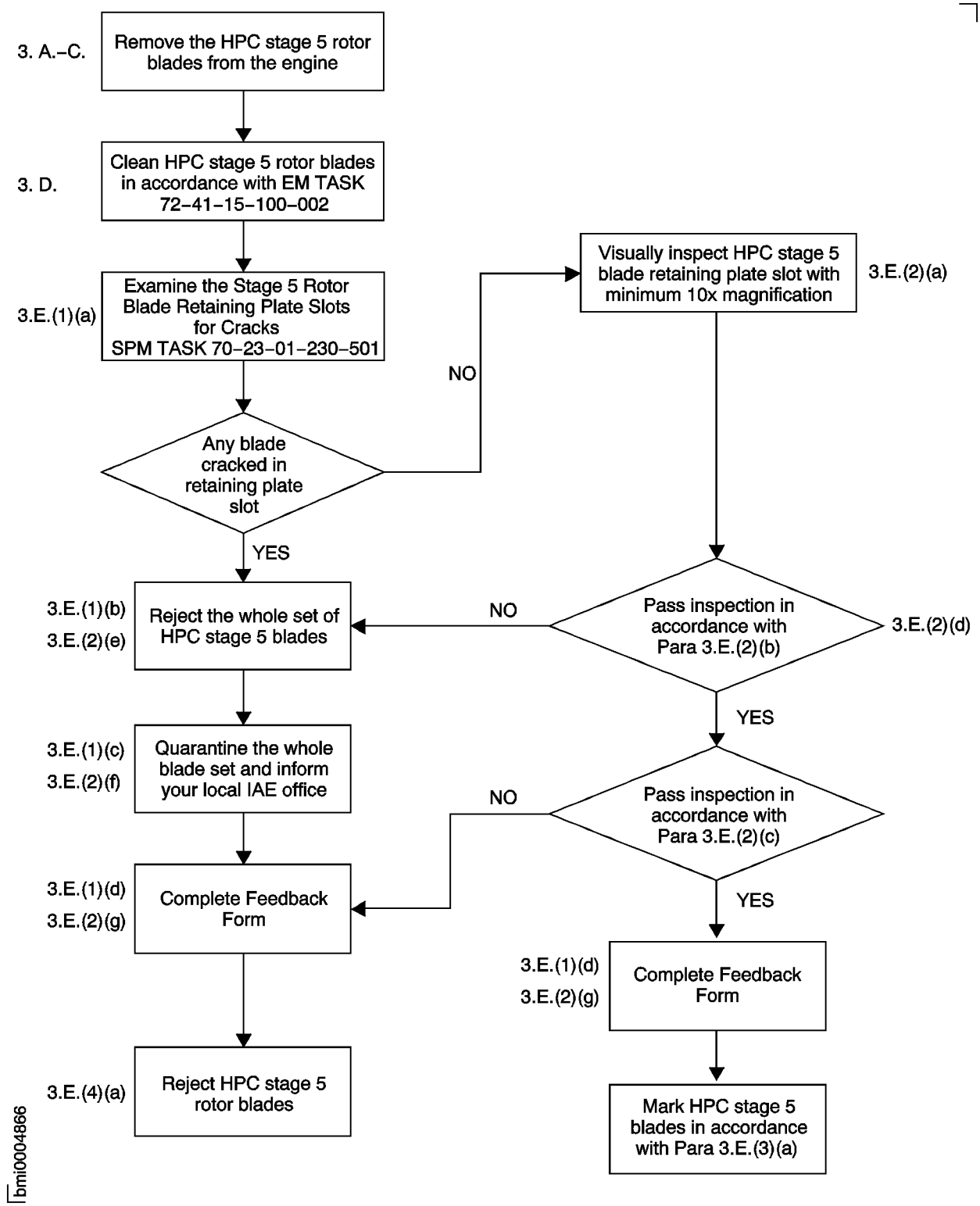
R Area allocated for Part Marking (N 586)
Figure 5



R Flow Chart of Inspection Procedure
R Figure 6

Stage 5 Blade Inspection Feedback Form

Engine Details

Engine Serial Number: _____ TSN: _____ CSN: _____

Overhaul shop: _____

Inspection Details

NOTE: If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades

Crack tested as per	Para 3.E.(1)(a)	Para 3.E.(2)(c)
P/N	Total number of cracked blades	Total number of cracked blades

Full set of HPC stage 5 rotor blades rejected	
Yes	No

Date _____
Crack tested by _____ Signature _____

Inspected as per Para 3.E.(2)(b)		
P/N	Number of passed blades	Number of rejected blades

NOTE: Total number of blades inspected must equal 64 or none

Date _____
Crack tested by _____ Signature _____

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Stage 5 Blade Inspection Feedback Form
Figure 7

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