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

400 MAIN STREET, MAIL STOP 121-10
EAST HARTFORD, CT 06108, USA.
TELEPHONE:- 860 565 5515

DATE: Oct. 8/10

V2500-A5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Initial Issue of Non-Modification Service Bulletin V2500-ENG-72-0610.

Non-Modification Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 13 of the Non-Modification Service Bulletin.	Initial Issue.
	Page 1 of the Appendix.	Initial Issue.

V2500-ENG-72-0610
Transmittal - Page 1 of 1

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

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NON-MODIFICATION SERVICE BULLETIN - REPLACEMENT OF PRESSURE KIEL TAPS IN THE TURBINE EXHAUST CASE (TEC) TO IMPROVE THRUST AND ENGINE PRESSURE RATIO (EPR) PERFORMANCE CHARACTERISTICS

1. Planning Information

A. Effectivity Data

(1) Airbus A319

(a) V2522-A5, V2524-A5, V2527M-A5 (A5 SelectOne™ Production Standard)

Engine Serial No. - All engines that have a Turbine Exhaust Case (TEC) group identified in Table 1.

(2) Airbus A320

(a) V2527-A5, V2527E-A5 (A5 SelectOne™ Production Standard).

Engine Serial No. - All engines that have a TEC group identified in Table 1.

(3) Airbus A321

(a) V2530-A5, V2533-A5 (A5 SelectOne™ Production Standard).

Engine Serial No. - All engines that have a TEC group identified in Table 1.

ESN	TEC PN	TEC SN
V15135	2A4261	P503102
V15157	2A4261	P503123
V15175	2A4261	P503148
V15197	2A4261	P503186
V15233	2A4260	P503247
V15234	2A4260	P503226
V15235	2A4260	P503245
V15239	2A4260	P503238
V15241	2A4260	P503241
V15243	2A4260	P503239
V15245	2A4260	P503233
V15247	2A4260	P503228
V15249	2A4260	P503225
V15251	2A4260	P503229
V15253	2A4260	P503234
V15255	2A4260	P503259
V15257	2A4260	P503257
V15265	2A4260	P503265
V15267	2A4260	P503267
V15271	2A4260	P503271
V15273	2A4260	P503277

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V15275	2A4260	P503268
V15277	2A4260	P503278
V15279	2A4260	P503285
V15281	2A4260	P503286
V15283	2A4260	P503293
V15285	2A4260	P503305
V15287	2A4260	P503295
V15289	2A4260	P503297
V15295	2A4260	P503307
V15297	2A4260	P503304
V15299	2A4260	P503309
V15300	2A4260	P503310
V15301	2A4260	P503312
V15303	2A4260	P503315
V15307	2A4260	P503318
V15308	2A4260	P503317
V15312	2A4260	P503322
V15313	2A4260	P503321
V15314	2A4260	P503303
V15315	2A4260	P503323
V15317	2A1400	P503404
V15321	2A1400	P503406
V15323	2A1400	P503407

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Condition:

A limited number of V2500-A5 SelectOne™ engines delivered between March 2009 and December 2009 did not demonstrate the desired level of thrust/EPR performance improvement following incorporation of Pressure Kiel Taps, PN 2A4257 in accordance with Reference 1, Service Bulletin No. V2500-ENG-72-0590. Detailed investigation identified an incorrectly formed radius on the pressure kiel taps. Upon correction, engines successfully completed production pass-off tests.

(2) Background:

The condition was caused by an incorrect machining operation during manufacture of the individual kiel taps.

(3) Objective:

It is recommended that the pressure kiel taps be replaced at overhaul on the 44 affected TECs identified in Table 1 to improve thrust/EPR performance characteristics.

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(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 24 pressure kiel taps as specified in the Accomplishment Instructions of this Non-Modification Service Bulletin.

E. Compliance

Category 8

Accomplish based upon experience with the prior configuration.

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 model listed.

G. Manpower

(1) In Service

Not Applicable

(2) At Overhaul

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

Incorporate Non-Modification Service Bulletin No. V2500-ENG-72-0610 in accordance with accomplishment instructions:

Total: 29 hours.

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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-72-0590 Engine - Case Assembly, Turbine Exhaust - Replacement Or Modification To Increase N1 Margin And Improve Performance During Take Off.

(2) V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-50-50 and 72-50-53.

(3) V2500 Standard Practices/Processes Manual (E-V2500-1IA), Chapter/Section 70-10-00, 70-38-24, 70-11-03, 70-35-03, 70-11-26, 70-31-13, 70-37-12 and 70-23-05.

(4) Internal Reference No. - IEN 08VA092R and IEN 08VA092V.

(5) ATA Locator - 72-50-53.

L. Other Publications Affected

None.

M. Interchangeability of Parts

Not Applicable.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (No)

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Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

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2. Material Information

A. Material - Price and Availability

There is no kit provided to do this Non-Modification Service Bulletin.

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

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

F. Reidentified Parts

Not applicable.

G. Other Material Information Data

Not applicable.

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3. Accomplishment Instructions

(1) See Table 1 in the Effectivity Data Section of this Non-Modification Service Bulletin for engine serial number and Turbine Exhaust Case (TEC) group part number and serial number applicability.

(2) Disassemble the TEC assembly shown in Figure 1, Sheet 1 by the procedure in Reference 2, Engine Manual, Task 72-50-50-040-001-C00, Disassembly.

(3) Perform all TEC cleaning and inspection procedures. See Reference 2, Engine Manual, Task 72-50-53-100-002-B00, Cleaning-02; Reference 3, Standard Practices Manual, Task 70-50-53-200-003-B00, Inspection/Check-03

(4) Mask the bearing compartment, the bearing tube Inside Diameter (ID) holes at Struts 5 and 9, the ID holes at Struts 1 - 13, and Struts 3, 6, 8 and 11 at Location B in Figure 1, Sheet 2 to prevent contamination from machining operations. Use mechanical covers and tape. See Reference 3, Standard Practices Manual, SPP Task 70-38-24-300-503, Mask the Parts 03.

(5) Machine to remove material from 24 pressure kiel taps to 0.000 - 0.020 in. (0,00 - 0,51 mm) above the strut leading edge on Struts 4, 7 and 10 at Location C in Figure 1, Sheet 2. Do not remove strut parent material.

(6) Drill the 24 pressure kiel taps for a 10-32 tap. Drill to a maximum depth of 0.400 in. (10,160 mm).

(7) Tap the 24 pressure kiel taps using a 10-32 tap. Tap to a maximum depth of 0.400 in. (10,160 mm).

(8) Partially remove the 24 pressure kiel taps by machining a 0.238 in. (6,045 mm) diameter hole to 0.280 in. (7,112 mm) maximum depth at each pressure kiel tap location. Locate the center of the 0.238 in. (6.045 mm) diameter hole using the center line of the existing 0.2175 in. (5,524 mm) diameter hole. See Figure 1, Sheet 5.

(9) Remove what remains of the 24 pressure kiel taps using a 10-32 slide hammer. Recommended hammer weight is approximately 5.0 lbs. (2,27 kg).

(10) Remove tape and mechanical covers, and remove any residue that remains by solvent wiping. See Reference 3, Standard Practices Manual, Task 70-38-24-300-503, Mask the Parts 03 and Task 70-11-26-300-503, Solvent Cleaning 03.

(11) Clean the TEC by the procedure in Reference 3, Standard Practices Manual, Task 70-11-03-300-503, Aqueous Degrease 03. Thoroughly flush all cavities, strut openings, and the bearing compartment.

(12) Use a rotary stainless steel wire brush or a silicon carbide abrasive wheel to remove oxides and prepare the areas for welding. See Reference 3, Standard practices Manual, Task 70-35-03-300-501, Hand Polish and Blend Procedures.

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(13) Break all edges/corners 0.003 - 0.015 in. (0,08 - 0,38 mm), except as shown in Figure 1, Sheet 5.

(14) Locally clean affected areas. See Reference 3, Standard Practices Manual, Task 70-11-26-300-503, Solvent Cleaning 03.

(15) Do an inspection of the pressure kiel tap holes and strut cavities to ensure they are free from machining chips and coolant.

(a) Select a borescope with a light source. The borescope may be flexible or rigid, must not exceed 0.300 in. (7,620 mm) diameter, and must measure 8.000 in. (203,200 mm) minimum in length.

(b) Insert the borescope through the external bosses on the case at Location C in Figure 1, Sheet 2.

(c) If you find machining chips or coolant, then clean the TEC again by the procedure in Reference 3, Standard Practices Manual, Task 70-11-03-300-503, Aqueous Degrease 03. Thoroughly flush all cavities, strut openings and the bearing compartment.

CAUTION: ATTACH A GROUNDING CLAMP TO THE STRUT BEING WELDED TO PREVENT ARCING ACROSS BEARING FEATURES.

(16) Install 24 new Pressure Kiel Taps, PN 2A4257, on the struts and weld them to the struts. Use CoMat 03-378 Welding Wire and the Gas Tungsten Arc Weld (GTAW) method. See Reference 3, Standard Practices Manual, SPP Task 70-31-13-310-501, Fusion Welding, except the theoretical throat requirement is waived. Actual throat shall be 0.020 in. (0,508 mm) minimum. Refer to Figure 1, Sheets 3 and 4.

(17) Locally heat treat the 24 pressure kiel tap weldments as specified in Reference 3, Standard Practices Manual, SPP Task 70-37-12-370-501, Heat Treating. Full furnace heat is not permitted.

(18) Do an inspection of the 24 pressure kiel tap weldments, strut ID weldments and strut OD weldments as specified in Reference 3, Standard Practices Manual, SPP Task 70-23-05-230-501, Penetrant Inspection, using CoMat 06-065. No crack indications are permitted. If strut cracks are detected, repair them as specified in Reference 2, Engine manual, Task 72-50-53-300-073, Repair 073, VRS3522.

(19) Assemble the TEC assembly by the procedure in Reference 2, Engine Manual, Task 72-50-50-440-001-C00, Assembly.

(20) Record Instructions

(a) A record of accomplishment is required.

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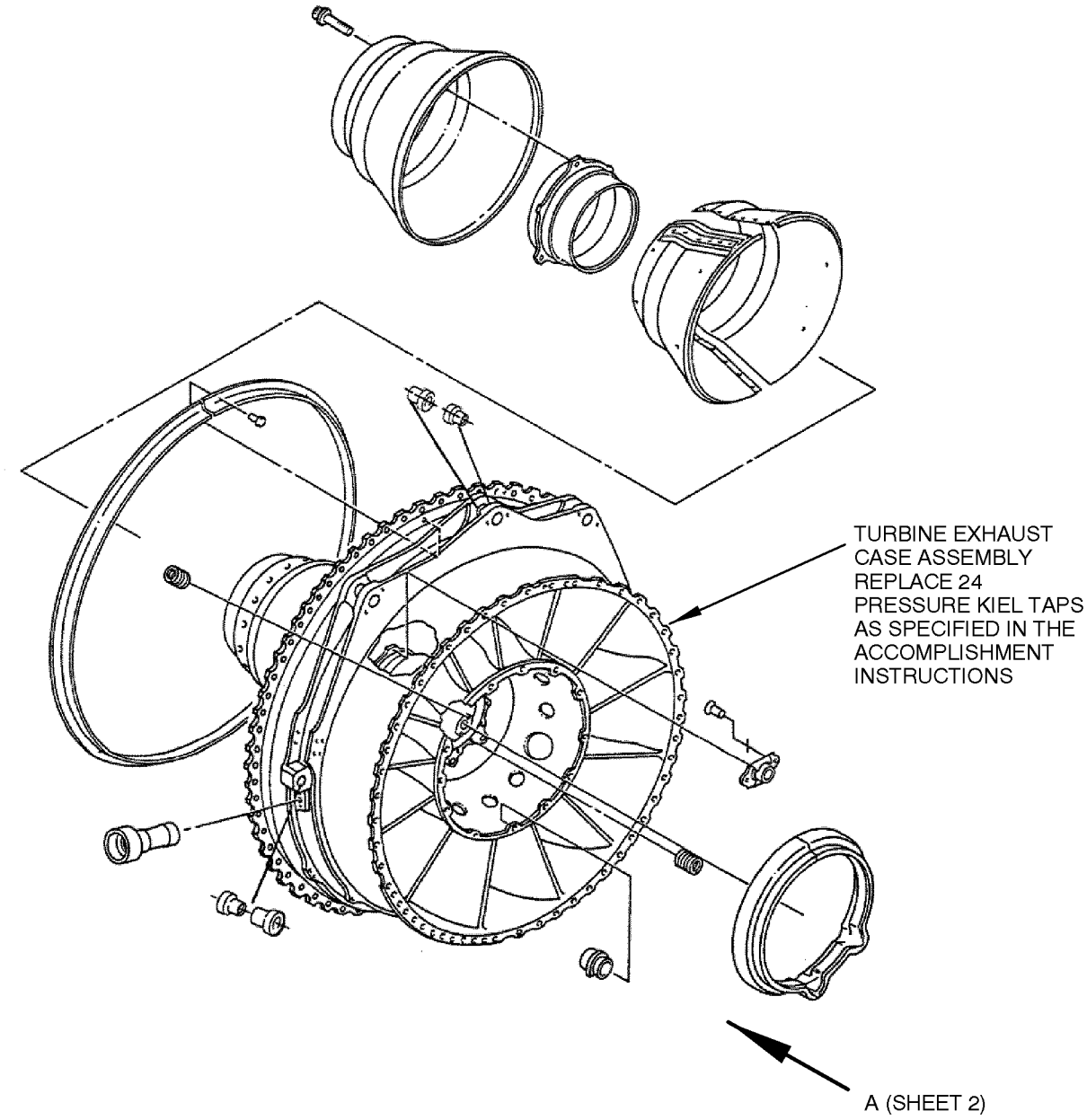

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LOCATION OF THE TURBINE EXHAUST CASE ASSEMBLY AND REPLACEMENT OF THE PRESSURE KIEL TAPS, 72-50-53
FIGURE 1, SHEET 1

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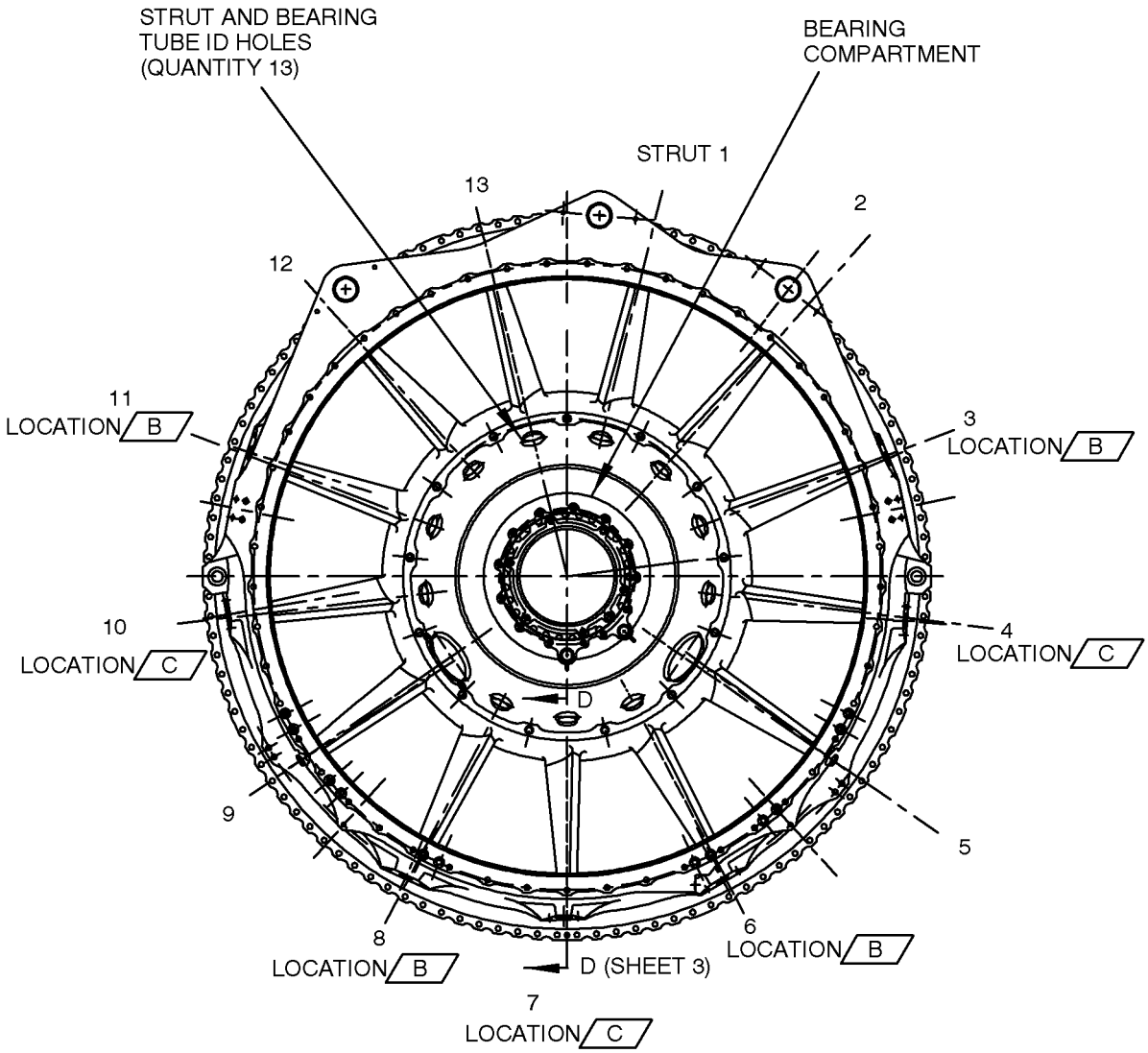

VIEW IN DIRECTION A

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LOCATION OF THE TURBINE EXHAUST CASE ASSEMBLY AND REPLACEMENT
OF THE PRESSURE KIEL TAPS
FIGURE 1, SHEET 2

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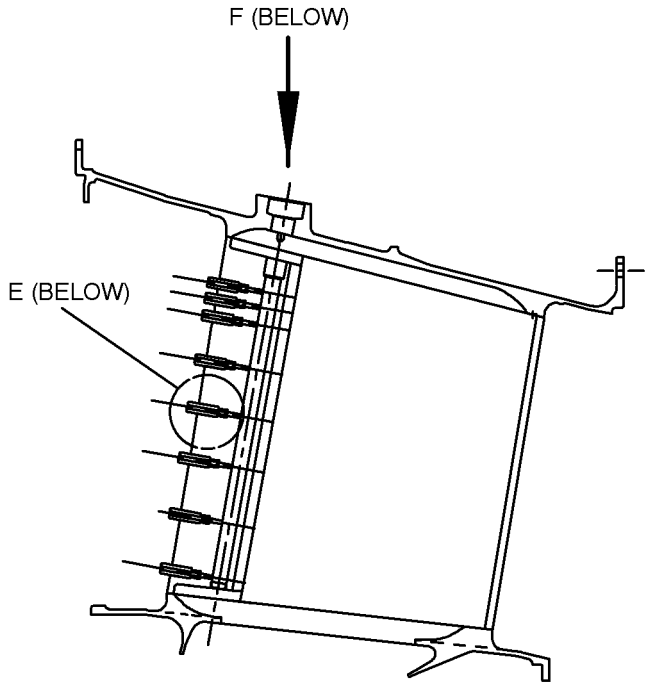

SECTION D - D
(TYPICAL 3 PLACES AT LOCATION C)
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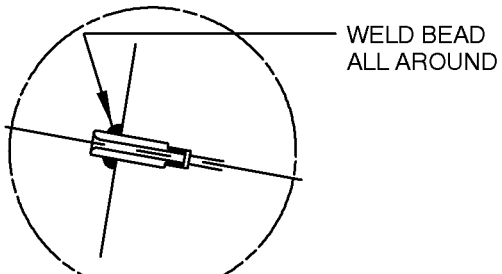
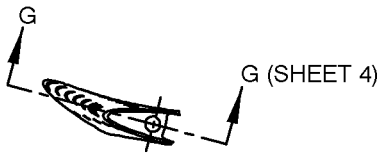


VIEW E
TYPICAL 8 LOCATIONS



VIEW IN DIRECTION F
(TYPICAL 3 PLACES AT LOCATION C)

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LOCATION OF THE TURBINE EXHAUST CASE ASSEMBLY AND REPLACEMENT
OF THE PRESSURE KIEL TAPS
FIGURE 1, SHEET 3

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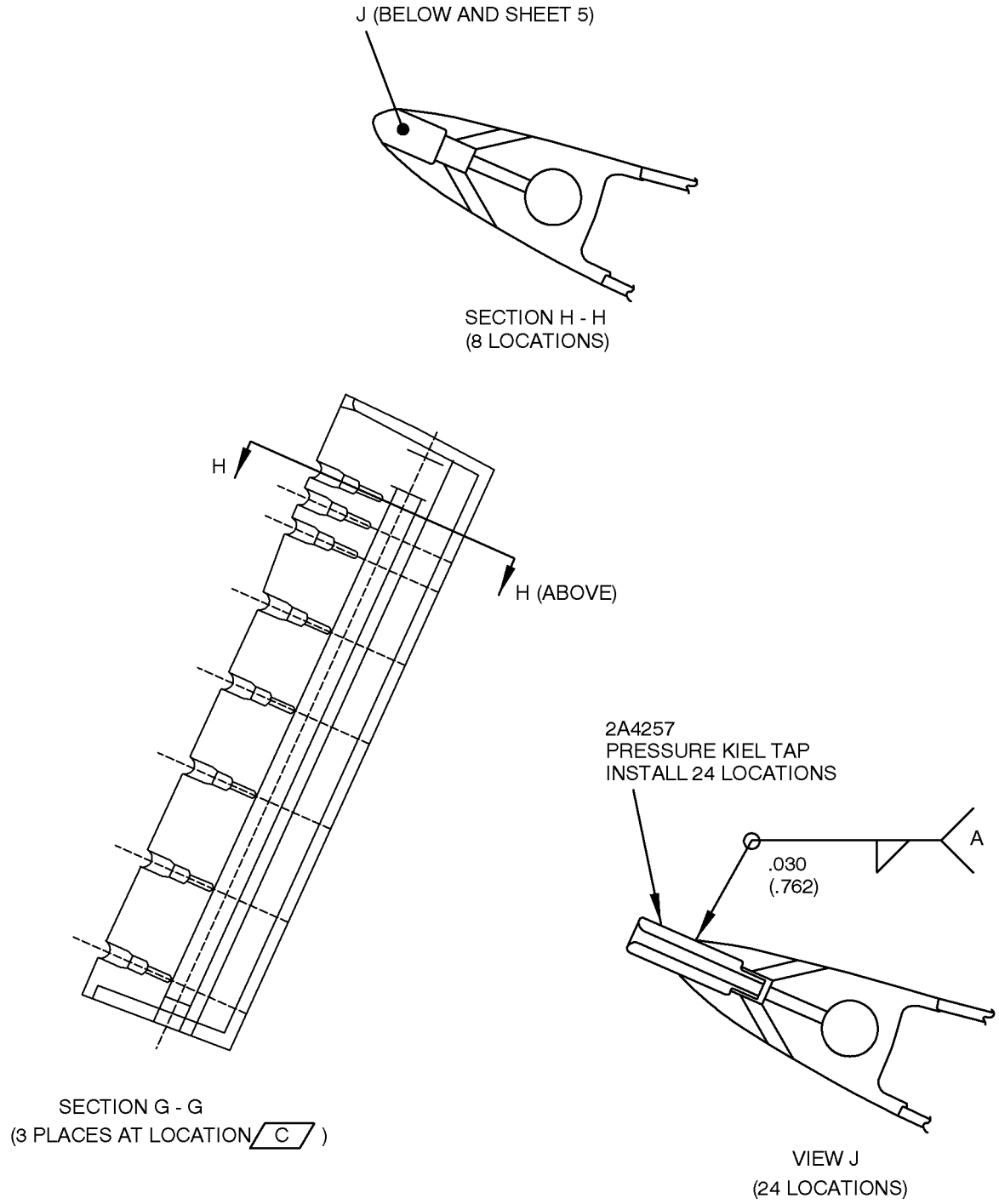

LOCATION OF THE TURBINE EXHAUST CASE ASSEMBLY AND REPLACEMENT
OF THE PRESSURE KIEL TAPS
FIGURE 1, SHEET 4

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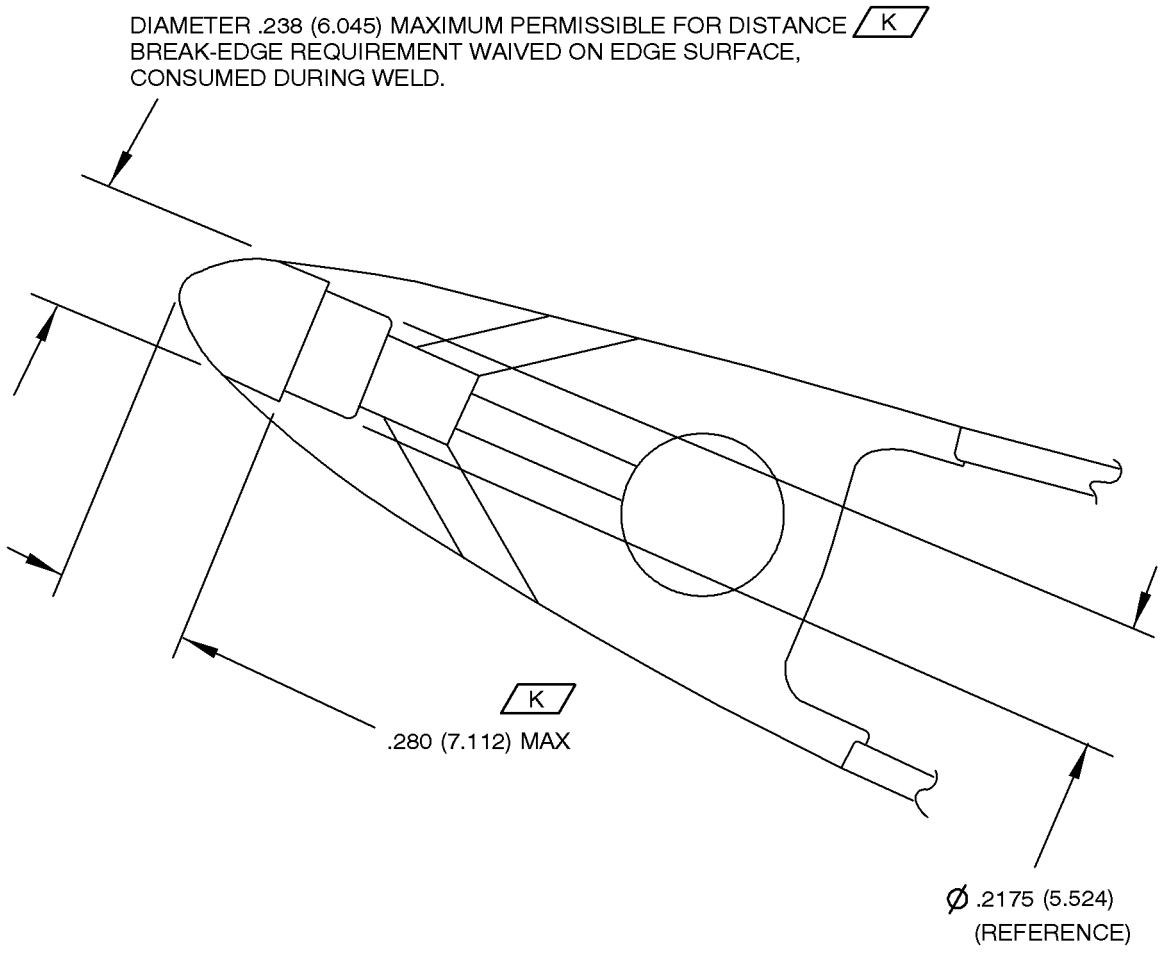

VIEW J
(24 LOCATIONS)

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LOCATION OF THE TURBINE EXHAUST CASE ASSEMBLY AND REPLACEMENT
OF THE PRESSURE KIEL TAPS
FIGURE 1, SHEET 5

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APPENDIX

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	IEN08VA092R IEN08VA092V	RG/JDH

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

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