SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN — ENGINE — PACKING — REMOVAL OF SUSPECT PACKINGS

MODEL APPLICATION

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5

BULLETIN ISSUE SEQUENCE

V2500 Series 72-0705

ATA NUMBER

72-60-21, 72-60-41

Compliance Category

6

P&W Distribution Code

V2500

April 5/19

Summary

The purpose of this Non-Modification Service Bulletin (NMSB) is to provide identification and replacement instructions for Packings, PN AS3209-110 in the gearbox module that may permit external oil leakage.

Planning Information

Effectivity Data

Engine Models Applicable

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5
Engine Serial Nos. V10009, V10020, V10031, V10032, V10046, V10162, V10218, V10219, V10389, V10406, V10489, V10781, V10789, V10883, V11024, V11045, V11059, V11126, V11234, V13147, V16940, V17043, V17311, V17400, and V17455

Concurrent Requirements

There are no concurrent requirements.

Reason

1. Condition: Oil leaks have been found in the gearbox module on several low-TSLSV (Time Since Last Shop Visit) engines maintained at one maintenance center. The leaks only occur at three (3) oil input adapter locations on the main and angle gearbox casing that use Packing, PN AS3209-110. When these packings are removed from leak locations, the material is found to be hard and brittle as well as have also formed a rectangular profile as opposed to the normally circular profile.
2. Background: Packings from leak locations have been returned to IAE. Testing has revealed that the packings were made from a material not consistent with the AS3209 specification. The packings that have be found to not be consistent with the required material have been traced to batch # GMDV2 and Cure # 4Q08 from packing manufacturer Simrit - International Seal, manufactured in the year 2008.
3. Objective: This NMSB provides instructions for the replacement of Packings, PN AS3209-110 for the engine serial numbers and associated gearbox module serial numbers identified in Table 1.
4. Substantiation: The instructions contained in this NMSB return the subject areas of the engine to that of the original design intent. The packing replacement instructions are consistent with the original design. Affected packings at locations other than identified in this NMSB have been evaluated to not affect engine performance or create operational issues.
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.

Description

Replace suspect packings made with incorrect material with new packings.

Compliance

Category 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

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(s) given.

The Aircraft Type Certificate (TC) holder has been informed of this change.

Manpower

1. In Service

   Necessary to Gain Access ..... 0.5 Hours.

   Necessary to Remove Scavenge Oil Pump ..... 1.0 Hours.

   Necessary to Remove Tubes and Oil Input Adapters ..... 1.0 Hours.

   Necessary to Install Tubes and Oil Input Adapters ..... 4.5 Hours.

   Necessary to Install Scavenge Oil Pump ..... 0.5 Hours.

   Necessary to Perform Idle Leak Check ..... 0.5 Hours.

   Necessary to return engine to flyable status ..... 0.5 Hours.

   Total Necessary Man-hours ..... 8.5 Hours.

2. At Overhaul

   ..... Not Applicable.

Weight and Balance

1. Weight Change

   None.

2. Moment Arm

   No Effect.

3. Datum

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

Electrical Load Data

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

Software Accomplishment Summary

Not Applicable.

References

NOTE: In 2014 IAE converted the V2500 Technical Publications to a new system. As a result of the conversion, some manuals were consolidated. All manuals received new P&W part numbers. To facilitate the use of this Service Bulletin, a Technical Publications conversion table is provided in the Appendix.

1. V2500 Standard Practices and Processes, P&W Ref. PN 2A4414, Chapter/Section 70-01-00.
2. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 72-60-21, and 72-60-41.
3. V2500 A1/A5 Series Engine Manual, P&W Ref. PN 2A4407, Chapter/Section 71-00-00, 72-60-21 and 72-60-40.
4. V2500 A1/A5 Series Aircraft Maintenance Manual (AMM), P&W Ref. PN 2A4407, Chapter/Section 71-00-00 and 79-22-41.

Other Publications Affected

Not Applicable.

Interchangeability of Parts

Not Applicable.

Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (No)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

Material Information

Material — Price and Availability

1. Part prices were not available at the time of Service Bulletin publication. Contact IAE Spares Management & Logistics for firm quotations.
2. There is no kit provided to do this Service Bulletin.
3. Part availability information is provided in material data Instructions — Disposition.

Industry Support Program

Not Applicable.

The material data that follows is for each engine.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 Engines:

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	3	*	PACKING	AS3209-110 (72-60-21-01-700) (72-60-21-01-760) (72-60-41-01-220)	(5)(X)
	AR	*	LOCKWIRE	V02-126	(E)

Instructions/Disposition Code Statements:

Parts Modification Conditions

Estimated part prices are provided when they are available at time of publication. The Estimate of Unit Price is only for planning purposes and does not constitute a firm quotation. An asterisk (*) is shown where part pricing information was unavailable. In either case, contact IAE Spares for firm quotations.

(5) Do an inspection for the listed Serial Numbers as specified in Table 1 and replace as specified in the Accomplishment Instructions.

Spare Parts Availability

(E) The part is an expendable item necessary to do this bulletin.

(X) See Reference 2 for applicable part replacement.

Vendor Services or Special Components/Materials

Not Applicable.

Tooling — Price and Availability

Special tools are not required to accomplish this Service Bulletin.

Reidentified Parts

Not Applicable.

Other Material Information Data

Not Applicable.

Accomplishment Instructions

For Engines Installed On Aircraft

CAUTION: IN ORDER TO REDUCE THE POTENTIAL FOR MULTIPLE ENGINE IN-FLIGHT SHUT DOWNS, POWER LOSS, OR OTHER ANOMALIES DUE TO MAINTENANCE ERROR, IAE RECOMMENDS THAT OPERATORS AVOID PERFORMING MAINTENANCE ON MULTIPLE ENGINES INSTALLED ON THE SAME AIRCRAFT AT THE SAME TIME. IF IT IS NOT POSSIBLE TO AVOID MAINTENANCE ON MORE THAN ONE ENGINE AT THE SAME TIME, IAE RECOMMENDS THAT ADDITIONAL CONTROLS BE APPLIED IN ORDER TO ENSURE THAT MAINTENANCE TASKS HAVE BEEN COMPLETED AS DEFINED. MAINTENANCE GUIDELINES SHOULD BE REVISED WHERE POSSIBLE, TO PROMOTE THIS RECOMMENDATION.

1. Procedure to remove and replace Packing, PN AS3209-110 for Angle Gearbox, Tube 181 location.

   A. Disconnect the Tube 181 at the Angle Gearbox and at the distributor, and remove Tube 181. See Figure 1 and Figure 4.

      NOTE: With an applicable tool, hold the distributor to prevent movement and remove the Tube 181.

   B. Remove oil input adapter (item 01-200) from the front of the Angle Gearbox Casing. See Figure 5.

      (1) Remove the two bolts (item 01-210) which attach the oil input adapter to gearbox.

      (2) Remove the oil input adapter. Save the packing and return to IAE.

   C. Install new Packing, PN AS3209-110 (item 01-220) into the groove of oil input adapter. See Figure 5.

   D. Install the oil input adapter into the seat of the Angle Gearbox. Align the holes in the adapter flange with the two threaded holes.

   E. Install the two bolts and torque to 85 to 95 lbf-in (9.6 to 10.7 N.m).

   F. Install Tube 181, between AGB and distributor. Torque both ends to 204 to 221 lbf-in (23 to 25 N.m). Safety with V02-126 lockwire. See Figure 1 and Figure 4.

2. Procedure to remove and replace Packing, PN AS3209-110 for Main Gearbox, Left Side, Tube 182 location.

   A. If necessary, remove the Oil Scavenge Pump to gain access to Tube 182 and left side oil input adapter as specified in Reference 4, AMM Task 79-22-41-000-010-A.

   B. Disconnect the Tube 182 at the gearbox and at the distributor, and remove Tube 182. See Figure 2 and Figure 4.

      NOTE: With an applicable tool, hold the distributor to prevent movement and remove the Tube 182.

   C. Remove the oil input adapter (item 01-660) from the mounting flange of the gearbox (left side above oil scavenge pump). See Figure 6.

      (1) Remove the two bolts (item 01-680) which attach the oil input adapter to gearbox.

      (2) Remove the oil input adapter. Save the packing and return to IAE.

   D. Install new Packing, PN AS3209-110 (item 01-700) into the groove of oil input adapter.

E. Install the oil input adapter into the seat on the left hand side of the gearbox. Align the holes in the adapter flange with the two threaded holes.

F. Install the two bolts and torque to 85 to 95 lbf-in (9.6 to 10.7 N.m).

G. Install the Tube 182 on the gearbox between the distributor and the gearbox, adjacent to the scavenge pump. Torque the both ends of the tube to 204 to 221 lbf-in (23 to 25 N.m). Safety with V02-126 Lockwire. See Figure 2 and Figure 4.

H. If removed, install the Oil Scavenge Pump as specified in Reference 4, AMM Task 79-22-41-400-010-A.

3. Procedure to remove and replace Packing, PN AS3209-110 for Main Gearbox, Right Side, Tube 183 location.

A. Disconnect the Tube 183 at the gearbox and at the distributor, and remove the Tube 183. See Figure 3 and Figure 4.

NOTE: With an applicable tool, hold the distributor to prevent movement and remove the Tube 183.

B. Remove the oil input adapter (item 01-720) from the mounting flange of the gearbox (right side). See Figure 6.

(1) Remove the two bolts (item 01-740) which attach the oil input adapter to gearbox.

(2) Remove the oil input adapter. Save the packing and return to IAE.

C. Install new Packing, PN AS3209-110 (item 01-760) into the groove of oil input adapter.

D. Install the oil input adapter into the seat on the right hand side of the gearbox. Align the holes in the adapter flange with the two threaded holes. See Figure 6.

E. Install the two bolts and torque to 85 to 95 lbf-in (9.6 to 10.7 N.m).

F. Install the Tube 183 on the gearbox between the distributor and the gearbox, adjacent to the Integrated Drive Generator (IDG). Torque the both ends of the tube to 204 to 221 lbf-in (23 to 25 N.m). Safety with V02-126 Lockwire. See Figure 3 and Figure 4.

4. Perform Oil Leak Check And Record Completion Of Accomplishment Instructions.

A. Perform an oil leak check.

(1) Perform an oil leak check as specified in Reference AMM 4, Task 71-00-00-710-012-B.

B. Recording Instructions.

(1) A record of accomplishment is required.

For Engines Not Installed On Aircraft

1. Replace Packing, PN AS3209-110 with new at the angle gearbox near Tube 181 as specified in Reference 3, EM Task 72-60-40-040-001 and Task 72-60-40-440-001. See Figure 5.

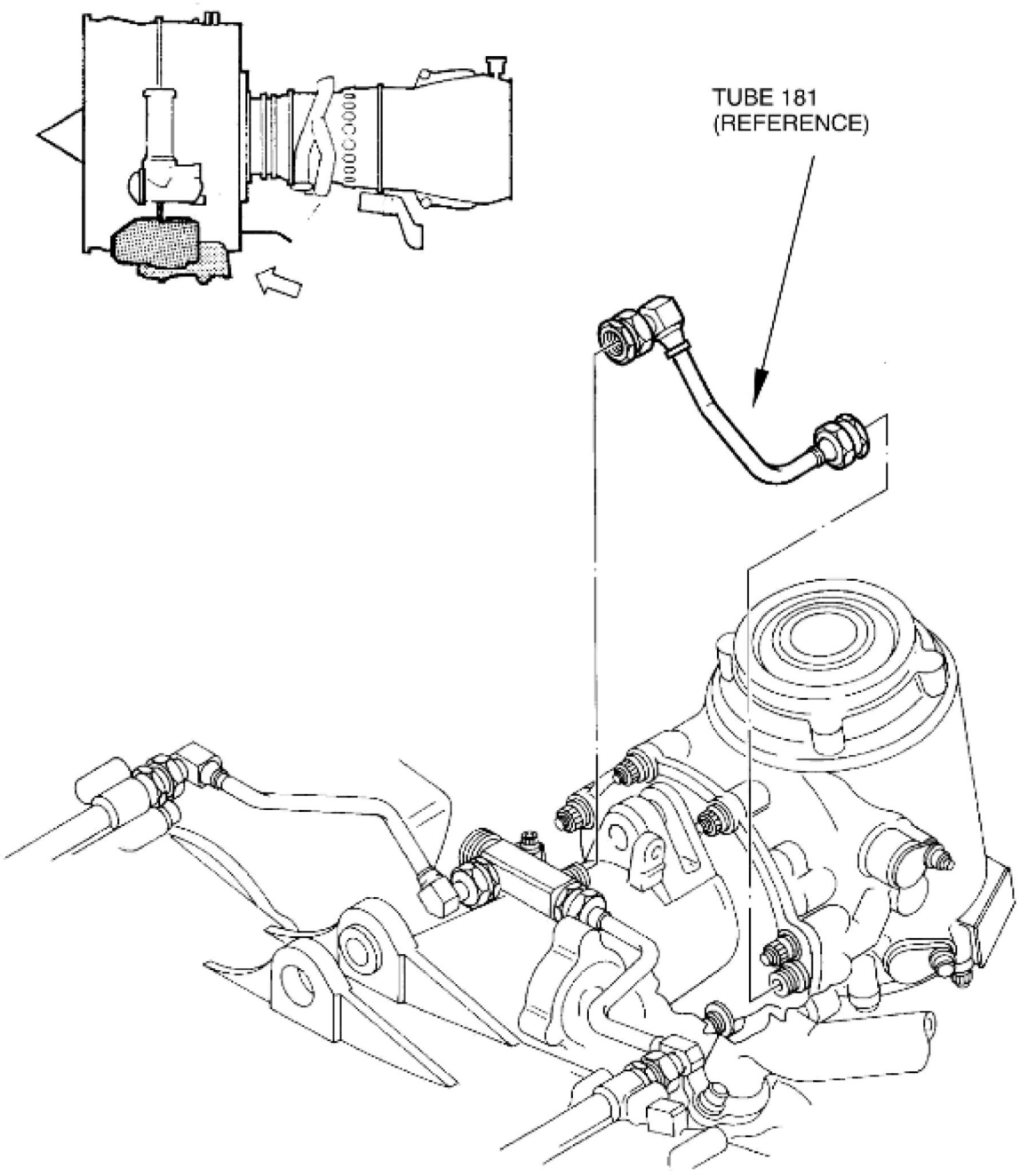
2. Replace Packing, PN AS3209-110 with new at gearbox left side near Tube 182 as specified in Reference 3, EM Task 72-60-21-040-001 and Task 72-60-21-440-001. See Figure 6.

3. Replace Packing, PN AS3209-110 with new at gearbox right side near Tube 183 as specified Reference 3, EM Task 72-60-21-040-001 and Task 72-60-21-440-001. See Figure 6.

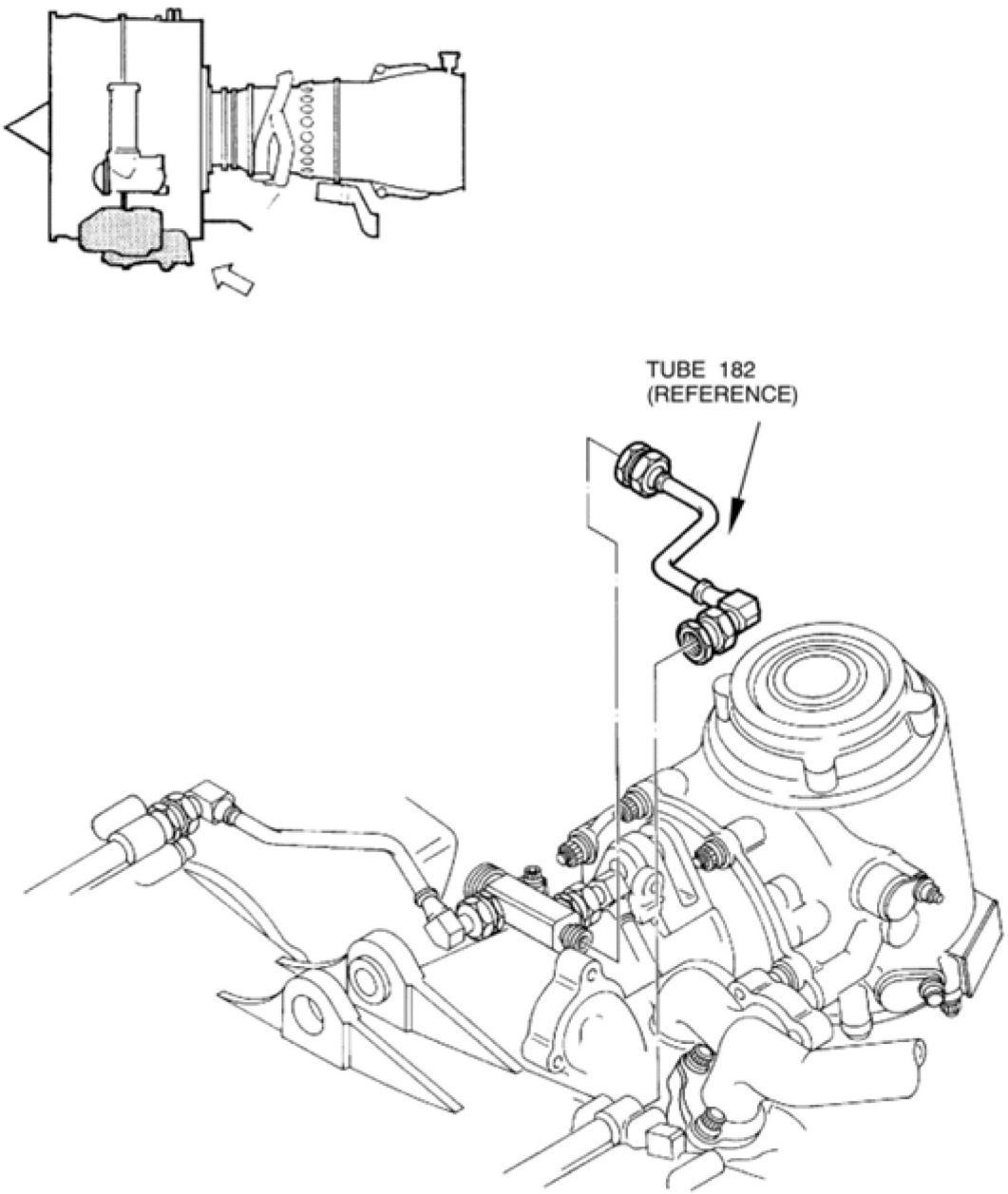
4. Perform an oil leak check as specified in Reference 3, EM Task 71-00-00-700-003-B00.
5. Recording Instructions.
   A. A record of accomplishment is required.

Table 1: Engine Serial Number

ESN	Gearbox Module PN	Gearbox Module SN		ESN	Gearbox Module PN	Gearbox Module SN
V10009	4A1075	600605		V10883	4A1075	602647
V10020	4A1075	600687		V11024	4A1075	602814
V10031	4A1075	602852		V11045	4A1075	602806
V10032	4A1075	600629		V11059	4A1075	602828
V10046	4A1075	600642		V11126	4A1075	603893
V10162	4A1075	600711		V11234	4A1075	603005
V10218	4A1075	600681		V13147	4A1077	606333
V10219	4A1075	600779		V16940	4A1077	608338
V10389	4A1075	602152		V17043	4A1077	608406
V10406	4A1075	602169		V17311	4A1077	608657
V10489	4A1075	602249		V17400	4A1077	608751
V10781	4A1075	603543		V17455	4A1077	608831
V10789	4A1075	602551				



LOCATION OF TUBE 181
FIGURE 1



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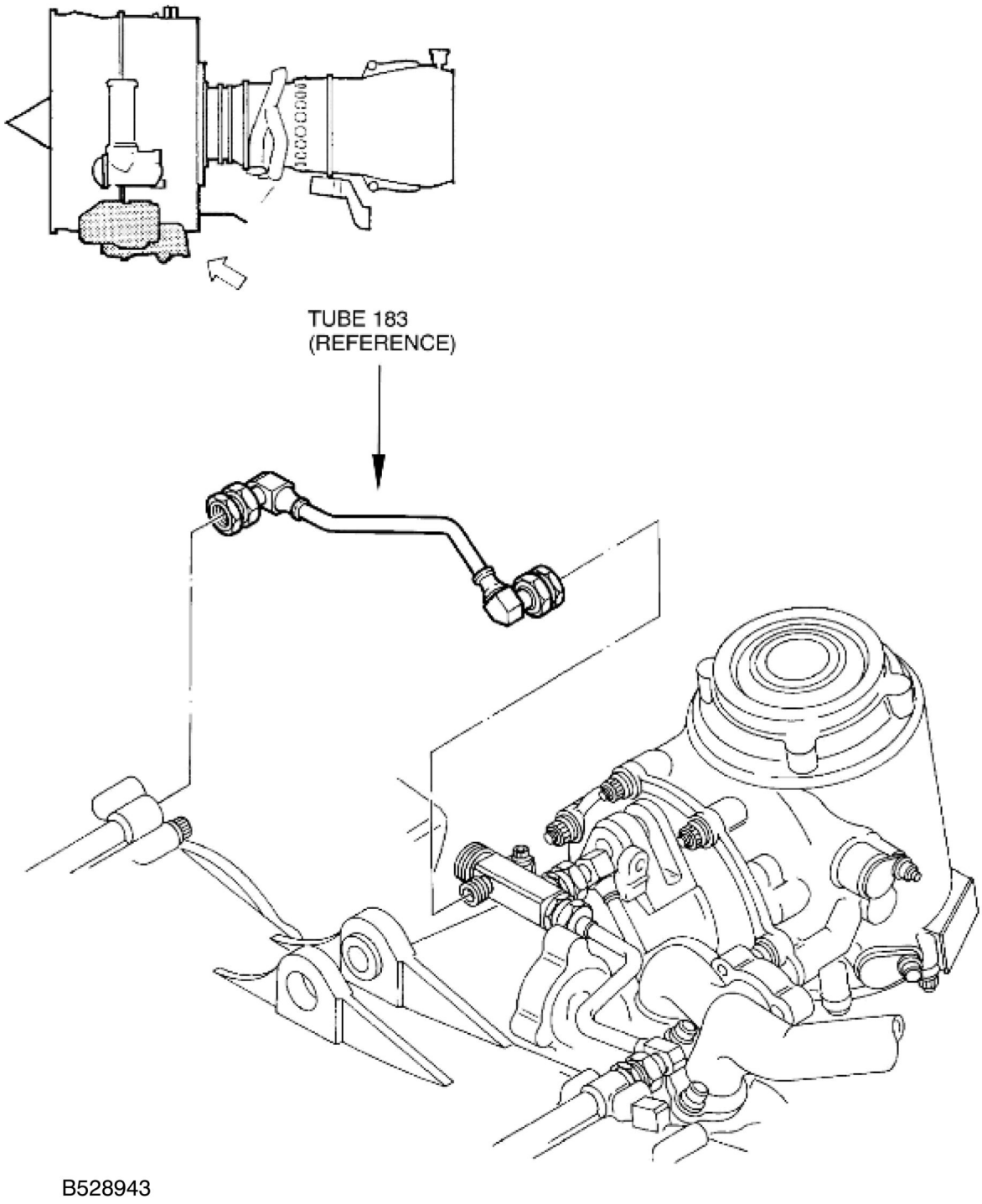
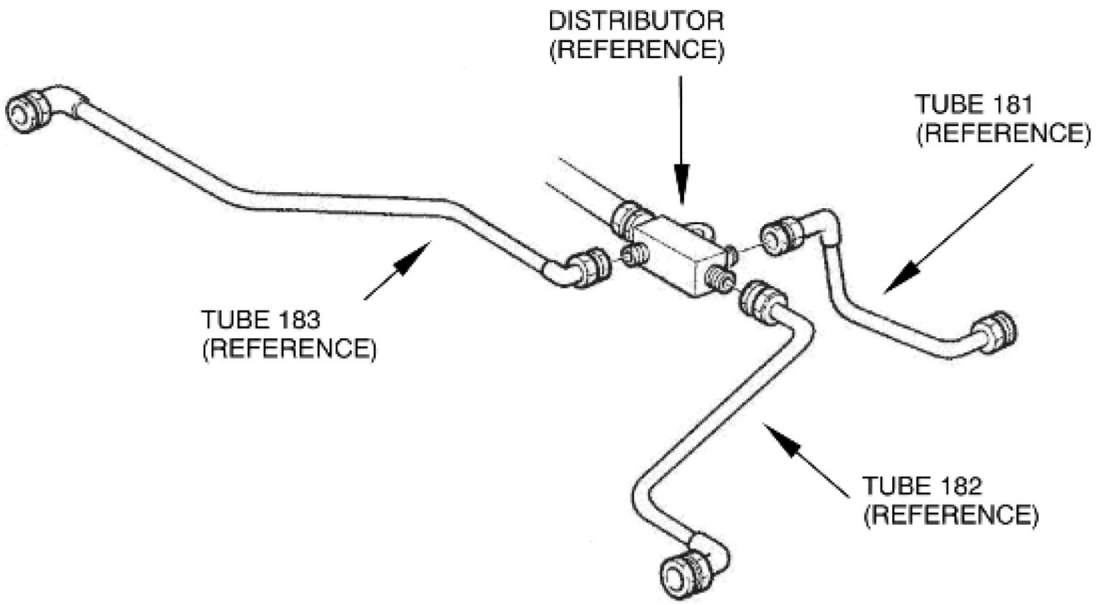
LOCATION OF TUBE 182
FIGURE 2



LOCATION OF TUBE 183
FIGURE 3



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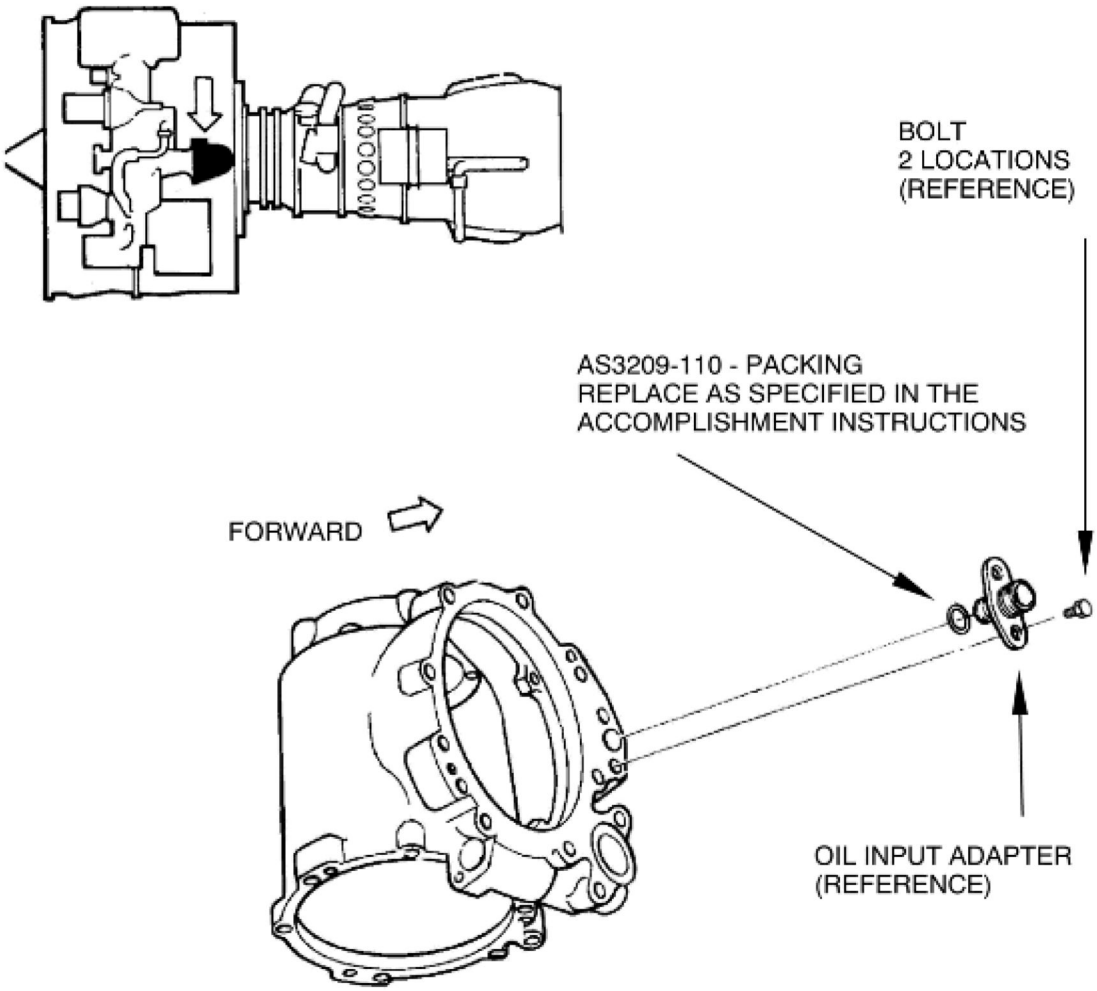
LOCATION OF DISTRIBUTOR
FIGURE 4



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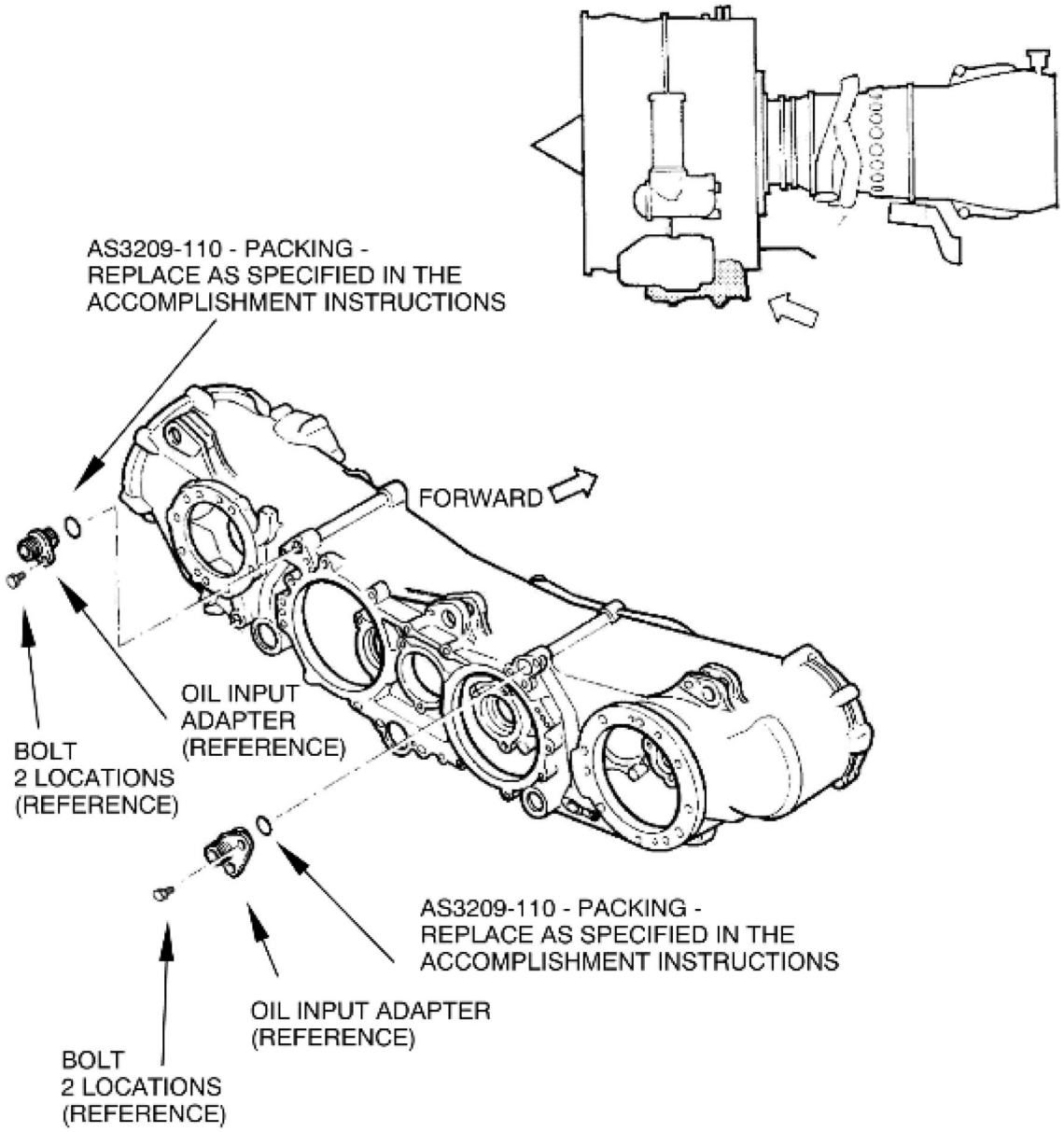
LOCATION OF PACKING (TUBE 181 LOCATION)
FIGURE 5



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LOCATION OF PACKING (TUBE 182 AND TUBE 183)
FIGURE 6

Appendix

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EA19VC011	RB/RCM

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

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Technical Publications Cross Reference Table

Publication	Engine Model(s)	IAE IETM Pub Ref	P&W Part Number
ENGINE MANUAL — A1, A5	All	E-V2500-1IA	2A4407
CMM-EHC — A1, A5	All	EHC-V2500-1IA	2A4409
CMM-FN — A1, A5	All	FN-V2500-1IA	2A4410
CMM-MMC — A1, A5	All	MECH-V2500-1IA	2A4411
CMM-THD — A1, A5	All	THD-V2500-1IA	2A4412
TLM — A1, A5	All	T-V2500-1IA	2A4408
ENGINE MANUAL — D5	All	E-V2500-3IA	2A4416
CMM-EHC — D5	All	EHC-V2500-31A	2A4418
CMM-FN — D5	All	FN-V2500-3IA	2A4419
CMM-MMC — D5	All	MECH-V2500-3IA	2A4420
CMM-THD — D5	All	THD-V2500-3IA	2A4423
TLM — D5	All	T-V2500-3IA	2A4417
SPPM (SPM) — A1, A5, D5	All	SPP-V2500-1IA	2A4414
EIPC — A1	V2500-A1102Q00	S-V2500-1IA	2A4427

Publication	Engine Model(s)	IAE IETM Pub Ref	P&W Part Number
EIPC — A5	V2522/V2524/V2527M-AQ02	S-V2500-6IA	2A4428
	V2522/V2524/V2527M-AQ03	S-V2500-6IB	
	V2522/V2524/V2527M-SQ02	S-V2500-6SA	
	V2522/V2524/V2527M-SQ03	S-V2500-6SB	
	V2522/V2524/V2527M-SQ04	S-V2500-6NA	
	V2522/V2524/V2527M-SQ05	S-V2500-6NB	
	V2527/V2527E-AQ02	S-V2500-7IA	
	V2527/V2527E-AQ03	S-V2500-7IB	
	V2527/V2527E-SQ02	S-V2500-7SA	
	V2527/V2527E-SQ03	S-V2500-7SB	
	V2527/V2527E-SQ04	S-V2500-7NA	
	V2527/V2527E-SQ05	S-V2500-7NB	
	V2530-AQ02	S-V2500-2IA	
	V2530-AQ03	S-V2500-2IB	
	V2530-SQ02	S-V2500-2SA	
	V2530-SQ03	S-V2500-2SB	
	V2530-SQ04	S-V2500-2NA	
	V2530-SQ05	S-V2500-2NB	
	V2533-AQ02	S-V2500-5IA	
	V2533-AQ03	S-V2500-5IB	
	V2533-SQ02	S-V2500-5SA	
	V2533-SQ03	S-V2500-5SB	
	V2533-SQ04	S-V2500-5NA	
	V2533-SQ05	S-V2500-5NB	
EIPC — D5	V2525/V2528-AQ02	S-V2500-3IA	2A4426
	V2525/V2528-AQ03	S-V2500-3IB	
	V2525/V2528-AQ04	S-V2500-3IC	