ALERT SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - ENGINE - DISC, HIGH PRESSURE COMPRESSOR 9-12, ASSEMBLY OF - REMOVAL OF

MODEL APPLICATION

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5

BULLETIN ISSUE SEQUENCE

V2500 Series 72-A0652

ATA NUMBER

72-41-12

Compliance Category

3

P&W Distribution Code

V2500

Summary

The purpose of this Non-Modification Service Bulletin (NMSB) is to remove Assembly of High Pressure Compressor (HPC) 9-12 Disks, to be referred to as HPC 9-12 disc, which have operated with any of the seven (7) specific HPC rear shafts. These seven (7) specific HPC rear shafts with a previously accepted oversized spigot diameter can affect the life of mating HPC 9-12 discs. The life of the affected HPC 9-12 discs, which have been mated to the seven (7) HPC rear shafts, are reduced to 19,500 cycles, originally 20,000 cycles. The seven (7) HPC rear shaft serial numbers are identified in Table 1 of this Service Bulletin. Operators should review current and past engine build records and follow the recommendations of this Service Bulletin for any of the 9-12 discs that have operated with one of these HPC rear shafts. Reference 8, V2500-ENG-72-0639 Non-Modification Service Bulletin - Engine - Shaft, Assembly, Rear High Pressure Compressor - Removal And Replacement, gives the instructions for removal of the HPC rear shafts.

Planning Information

Effectivity Data

Engine Models Applicable

V2522-A5, V2524-A5, V2527M-A5, V2527-A5, V2527E-A5, V2530-A5, V2533-A5 with a HPC 9-12 disc which is currently or was previously mated to an HPC rear shaft listed in Table 1.
Any engine as applicable.

V2525-D5, V2528-D5 with a HPC 9-12 disc which is currently or was previously mated to an HPC rear shaft listed in Table 1.
Any engine as applicable.

Concurrent Requirements

There are no concurrent requirements.

Reason

1. Condition: HPC 9-12 discs operated with an HPC rear shaft previously accepted with an oversized spigot diameter have a reduced cyclic life limit.
2. Background: Finite element analysis was used to assess the effect of interference fits between the spigot diameters of the HPC 9-12 discs and the HPC rear shaft. It was concluded that seven (7) HPC rear shafts, previously accepted with an oversized spigot diameter, can potentially have an adverse effect on the HPC 9-12 disc cyclic life limit.
3. Objective: This NMSB has been issued to instruct removal and disposal of HPC 9-12 discs which have been operated with any of the seven (7) HPC rear shafts listed in Table 1.
4. Substantiation: Analysis has confirmed that the affected HPC 9-12 discs must be removed from service no later than 19,500 cycles since new.
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

Remove and dispose of HPC 9-12 discs which are currently or were previously mated to an HPC rear shaft listed in Table 1.

Compliance

Category 3

Accomplish before the affected HPC 9-12 discs reach 19,500 cycles since new.

Table 1

HPC Rear Shaft Serial No.
RCQYX0448
RCQYX0450
RCQYX0464
RCQYX0469
RCQYX0473
RCQYX1885
RCQYX2052

NOTE: The serial numbers listed above can be applicable to the following HPC Rear Shafts, PN 6A4157, PN 6A5867, PN 6A7711, PN 6A7713 and PN 6B1426.

NOTE: It is possible that the serial numbers listed above are additionally marked by “/A”. This only indicates “Assembly” and has no impact on the applicability of this Service Bulletin.

Approval Data

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 aircraft Type Certificate (TC) holder has been informed of this inspection.

Manpower

1. In Service

..... Not Applicable.

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 Non-Modification 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. ATA Locator — 72-41-12.
2. Internal Reference No. — 15VC415.
3. V2500 Standard Practices and Processes, P&W Ref. PN 2A4414, Chapter/Section 72-00-40, 72-00-41, 72-41-00 and 72-41-10.
4. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 72-41-12.
5. V2500-D5, Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 72-41-12.
6. V2500 A1/A5 Series Engine Manual, P&W Ref. PN 2A4407, Chapter/Section 72-00-40, 72-00-41, 72-41-00 and 72-41-10.
7. V2500-D5 Series Engine Manual, P&W Ref. PN 2A4416, Chapter/Section 72-00-40, 72-00-41, 72-41-00 and 72-41-10.
8. V2500 Service Bulletin V2500-ENG-72-0639 Non-Modification Service Bulletin - Engine - Shaft, Assembly, Rear High Pressure Compressor - Removal And Replacement.

Other Publications Affected

None.

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 for some parts 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
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A4156 (72-41-12-01-600)	(5)(X)
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A7547 (72-41-12-01-600)	(5)(X)
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A6546 (72-41-12-01-600)	(5)(X)
	1	419,540.00	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A7546 (72-41-12-01-600)	(5)(X)

The material data that follows is for each engine.

For V2525-D5, V2528-D5 Engines:

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A4156 (72-41-12-01-600)	(5)(X)
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A7547 (72-41-12-01-600)	(5)(X)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	1	*	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A6546 (72-41-12-01-600)	(5)(X)
	1	419,540.00	DISK - HPC STAGE 9-12, ASSEMBLY OF	6A7546 (72-41-12-01-600)	(5)(X)

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 Compliance and replace as specified in Accomplishment Instructions if applicable.

Spare Parts Availability

(X) See Reference 4 or 5 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

1. Perform a check of the HPC 9-12 disc part number currently installed.

   A. For HPC 9-12 Discs, PN 6A4156 or PN 6A7547:

      (1) No further action is necessary. A record of accomplishment is required.

   B. For HPC 9-12 Discs, PN 6A6546 or PN 6A7546:

      (1) Make a check of current and past engine records to check if an HPC rear shaft listed within Table 1 of the Compliance is currently or has been previously mated to the current HPC 9-12 disc.

      CAUTION: FAILURE TO REMOVE THE AFFECTED HPC 9-12 DISC PRIOR TO REACHING 19,500 CYCLES SINCE NEW CAN RESULT IN DAMAGE TO THE ENGINE

      (a) If the HPC 9-12 disc is or has been mated to an affected HPC rear shaft, remove and discard the affected HPC 9-12 disc prior to reaching 19,500 cycles since new. Refer to Reference 6 or 7, Engine Manual, Chapter/Section 72-00-40, 72-00-41, 72-41-00 and 72-41-10.

      NOTE: Refer to Table 2 for reference to engines to which the HPC rear shafts were fitted at production. It is possible that the HPC rear shafts are or have been installed in other engines. It is possible that the HPC rear shafts have been installed with other HPC 9-12 discs.

      (b) A record of accomplishment is required.

Table 2

Production Engine Serial No.	HPC Rear Shaft Serial No.
V10108	RCQYX0448
V10107	RCQYX0450
V10096	RCQYX0464
V10097	RCQYX0469
Spare	RCQYX0473
No record	RCQYX1885
V10718	RCQYX2052

Appendix

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EA15VC415	MJM/JAC

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

To calculate part life, include the hours and/or cycles since the part was made. Use the total hours or cycles to calculate life limits that are the result of part modification, a part used in an engine with different thrust, or for some other reason.

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, the following Technical Publications cross reference table is provided.

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	