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## V2500-A1/A5/D5 SERIES PROPULSION SYSTEMS NON-MODIFICATION SERVICE BULLETIN

# ALERT

This document transmits the Revision 1 to Alert Non-Modification Service Bulletin V2500-ENG-72-A0554

### Document History

#### Service Bulletin Revision Status

Initial Issue Jun.10/08

#### Service Bulletin Revision 1

Remove	Incorporate	Reason for change
All pages of the Service Bulletin	Pages 1 to 7 of the Service Bulletin	To revise the Accomplishment Instructions.
All pages of the Appendix 1	Pages 1 to 2 of the Appendix 1.	To revise the Accomplishment Instructions.

# ALERT V2500-ENG-72-A0554

Transmittal - Page 1 of 1

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ALERT NON-MODIFICATION SERVICE BULLETIN – ENGINE – HP COMPRESSOR STAGE 9 TO 12 DISC  
ASSEMBLY – TO ANNOUNCE A REDUCTION IN CYCLIC LIFE DEPENDENT ON PART NUMBER AND THRUST  
RATING

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5, V2527M-A5 Engines

- (i) High Pressure (HP) compressor stage 9 to 12 disc assembly, P/N 6A4156 or 6A7547.

(2) Airbus A320

(a) V2500-A1 Engines

- (i) HP compressor stage 9 to 12 disc assembly, P/N 2A3200, 2A3300, 2A3400, 2A3500, 6A4131 or 6A7545.

(b) V2524-A5, V2527-A5, V2527E-A5 Engines

- (i) HP compressor stage 9 to 12 disc assembly, P/N 6A4156 or 6A7547.

(3) Airbus A321

(a) V2530-A5, V2533-A5 Engines

- (i) HP compressor stage 9 to 12 disc assembly, P/N 6A4156 or 6A7547.

(4) Boeing MD-90

(a) V2525-D5, V2528-D5 Engines

- (i) HP compressor stage 9 to 12 disc assembly, P/N 6A4156 or 6A7547.

B. Concurrent Requirements

None.

**C. Reason****(1) Condition**

Findings during inspections of the ceramic liner of the HP compressor stage 9 to 12 disc assembly have prompted stress analysis on the HP compressor stage 9 to 12 disc assembly. Calculations have shown that missing ceramic liner material affects thermal gradients at the weld joining discs stage 11 and 12. This results in an increase in the stress in the weld which affects the life of the component.

It was concluded that the cyclic life of early standard HP compressor stage 9 to 12 disc assemblies must be reduced for specific engine models and ratings. This Alert Non-Modification Service Bulletin must be accomplished to meet the expected cyclic life to be revised within a FAA Airworthiness Directive.

The revised cyclic lives given in this Alert Non-Modification Service Bulletin are finite (Refer to Appendix 1, Table 1).

This Alert Non-Modification Service Bulletin only affects HP compressor stage 9 to 12 disc assemblies with a specific part number manufactured prior to 1998. Applicable HP compressor stage 9 to 12 disc assembly part numbers currently or previously operated in engines with V2500-A1, V2530-A5, V2527E-A5, and V2528-D5 thrust rating must be retired from service in accordance with the revised published lives.

Current standard HP compressor stage 9 to 12 disc assemblies (part number 6A7574 for V2500-A1 and part number 6A7546 for V2500-A5 and V2500-D5) are available with no change to the published disc assembly life.

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Also previously released HP compressor stage 9 to 12 disc assemblies (part numbers 2A2100, 2A2200 and 2A2600 for V2500-A1 and part number 6A6546 for V2500-A5 and V2500-D5) can continue to be operated to their listed published lives.

**(2) Objective**

The purpose of this Alert Non-Modification Service Bulletin is to introduce the changed finite cyclic lives for each engine model and rating.

**(3) Substantiation**

The cyclic lives given in this Alert Non-Modification Service Bulletin have been substantiated by Stress Analysis.

## (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:

Not affected.

**D. Description**

- (1) The existing and revised cyclic life for the HP compressor stage 9 to 12 disc assembly part numbers for each engine model and rating are given in Appendix 1, Table 1 and 2.
- (2) The Time Limits Manual 05-10-01 will be revised following AD release.
- (3) The interchangeability of this component across ratings is permitted but it should be noted that if any of the subject components are installed in engines operated at a mix of thrust ratings, the component life will be that of the highest rating employed. Use of the component at a higher thrust rating for even a single flight will invoke the life applicable for the higher thrust rating.

Also, if any of the subject components are transferred to other engines operated at different thrust ratings, the component life will be that of the highest rating employed.

**E. Compliance**

Category Code 3

Accomplish this Alert Non-Modification Service Bulletin,

if the affected HP compressor stage 9 to 12 disc assembly is currently installed, or has previously been installed in an engine operating at thrust ratings of V2500-A1, V2527E-A5, V2530-A5, and V2528-D5 for one or more cycles

then

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the HP compressor stage 9 to 12 disc assembly must be replaced in accordance with section 3. Accomplishment Instructions.

If the HP compressor stage 9 to 12 disc assembly has not been operated at the above thrust ratings, write in the engine log book: "Alert Non-Modification Service Bulletin ENG-72-A0554 - Not Applicable.", unless rating is changed.

F. Approval

The technical content of this Alert Non-Modification Service Bulletin comply with the Federal Aviation Regulations and is FAA approved for the engine models and ratings listed.

NOTE: It is expected that the actions in this Alert Non-Modification Service Bulletin will be contained within a FAA Airworthiness Directive.

G. Manpower

Not applicable.

H. Material Price and Availability

Not applicable.

I. Tooling Price and Availability

Not applicable.

J. References

(1) Internal Reference No.:

Engineering Change: 07VR958.

(2) Service Bulletin V2500-ENG-72-0273 - Engine - HP Compressor Discs (Stages 9-12) - Introduction of a revised HP Compressor stage 9-12 disc assembly.

K. Other Publications Affected

(1) Time Limits Manual (TLM) Chapter/Section 05-10-01.

**2. Material Information**

None.

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### 3. Accomplishment Instructions

#### R A. Inspection Instructions

None.

#### B. Rework Instructions

None.

#### C. Repair Instructions

None.

#### D. Disassembly/Assembly Instructions

R NOTE: For HP compressor stage 9 to 12 disc assemblies, which could exceed the  
R revised life limit as per Appendix 1, Table 1 prior to June 09, 2012, it  
R is highly recommended to plan for a shop visit to remove the component  
R prior to exceeding the revised life limit.

R NOTE: Whenever a HP compressor stage 9 to 12 disc assembly, is exposed prior  
R to June 09, 2012, and it already exceeds the revised life as per  
R Appendix 1, Table 1, it must be replaced.

R (1) If, the HP compressor stage 9 to 12 disc assembly exceeds the revised life  
R as per Appendix 1, Table 1 prior to June 09, 2012 accomplish the steps  
R that follows:

R (a) Remove the HP compressor stage 9 to 12 disc assembly at the earliest  
R opportunity, but not later than the existing life as per Appendix 1,  
R Table 1, or not later than June 09, 2012, whichever comes first.

R (b) Replace the HP compressor stage 9 to 12 disc assembly with the  
R recommended P/N that follows (Refer to Engine Manual, Chapter  
R 72-41-10):

R (i) For V2500-A1:

R P/N 6A7574

R (ii) For V2500-A5 and V2500-D5:

R P/N 6A7546



- R (2) If, the HP compressor stage 9 to 12 disc assembly does not exceed the  
R revised life as per Appendix 1, Table 1 prior to June 09, 2012 accomplish  
R the steps that follows:
- R (a) Remove the HP compressor stage 9 to 12 disc assembly when the  
R component has reached the revised life as per Appendix 1, Table 1.
- R (b) Replace the HP compressor stage 9 to 12 disc assembly with the  
R recommended P/N that follows (Refer to Engine Manual, Chapter  
R 72-41-10):
- R (i) For V2500-A1:  
R P/N 6A7574
- R (ii) For V2500-A5 and V2500-D5:  
R P/N 6A7546

#### E. Recording Instructions

Refer to Time Limits Manual 05-10-01 for Life Limited Part Monitoring requirements.

A record of accomplishment is required.



APPENDIX 1

Table 1. Revised Life of the HP compressor stage 9-12 disc assembly

Model	HP Comp stage 9-12 disc assembly part number	Existing Life	Revised Life
V2500-A1	2A3200	15,000	14,600
V2500-A1	2A3300	15,000	14,600
V2500-A1	2A3400	15,000	14,600
V2500-A1	2A3500	15,000	14,600
V2500-A1	6A4131	15,000	14,600
V2500-A1	6A7545	15,000	14,600
V2527E-A5	6A4156 / 6A7547	12,000	11,800
V2530-A5	6A4156 / 6A7547	12,000	11,800
V2528-D5	6A4156 / 6A7547	13,200	11,800

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Table 2. Unchanged published life of the HP compressor stage 9-12 disc assembly (For information only)

Model	HP Comp stage 9-12 disc assembly part number	Existing Life	Revised Life
V2500-A1	2A2100	12,000	no change
V2500-A1	2A2200	12,000	no change
V2500-A1	2A2600	12,000	no change
V2500-A1	6A7574	15,000	no change
V2522-A5	6A4156 / 6A7547	14,300	no change
V2522-A5	6A6546 / 6A7546	20,000	no change
V2524-A5	6A4156 / 6A7547	14,300	no change
V2524-A5	6A6546 / 6A7546	20,000	no change
V2527-A5	6A4156 / 6A7547	14,300	no change
V2527-A5	6A6546 / 6A7546	20,000	no change
V2527E-A5	6A6546 / 6A7546	20,000	no change
V2527M-A5	6A4156 / 6A7547	14,300	no change
V2527M-A5	6A6546 / 6A7546	20,000	no change
V2530-A5	6A6546 / 6A7546	20,000	no change
V2533-A5	6A4156 / 6A7547	8,000	no change
V2533-A5	6A6546 / 6A7546	20,000	no change
V2525-D5	6A4156 / 6A7547	15,700	no change
V2525-D5	6A6546 / 6A7546	20,000	no change
V2528-D5	6A6546 / 6A7546	20,000	no change