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V2500-D5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

Printed in Great Britain

This document transmits the Initial Issue of Service Bulletin V2500-ENG-72-0551 and the Initial Issue of the Supplement

Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 9 of the Service Bulletin	Initial Issue.

Supplement Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 1 of the Supplement	Initial Issue.

V2500-ENG-72-0551

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SERVICE BULLETIN

ENGINE - HIGH PRESSURE (HP) COMPRESSOR - INTRODUCTION OF STAGES 6 AND 7 STATOR VANES WITH EROSION RESISTANT COATING

Printed in Great Britain

1. Planning Information

A. Effectivity

(1) Boeing MD-90

(a) V2525-D5, V2528-D5 Engines

B. Concurrent Requirements

None.

C. Reason

(1) Problem

The Operation of the SAUDI ARABIAN AIRLINES V2500-D5 engines in an erosive desert environment has resulted in the thinning of HP Compressor Stages 6, 7 and 8 rotor and stator airfoils to a degree which could cause fatigue cracking.

(2) Background

The problem has been experienced on engines in service which are mainly used in desert environments.

(3) Substantiation

The changes introduced by this Service Bulletin were the subject of satisfactory engineering analysis. This Service Bulletin complies with the applicable engine certification basis.

(4) Objective

Incorporation of this Service Bulletin is designed to maintain reliability of those engines operating in desert environments.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

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(c) Overhaul

Not affected.

(d) Repair Schemes

Not affected.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

D. Description

This Service Bulletin introduces an erosion resistant coating onto the airfoils of the HP Compressor Stages 6 and 7 stator vanes designed for desert operations as follows:

(1) Revised HP Compressor Stages 6 and 7 stator vanes are introduced similar to the existing parts except for the addition of a chromium nitride coating on the airfoils.

E. Compliance

Category Code 8

Accomplish based upon experience with the prior configuration.

IAE recommends to incorporate this Service Bulletin together with Service Bulletin V2500-ENG-72-0433.

F. Approval

The part number changes and/or part modifications described in sections 2 and 3 of this 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

Applicable (Hours not affected).

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H. Material Price and Availability

Modification kit is not required; parts supplied as single line items.

For prices and availability of spares, refer to supplement to this Service Bulletin.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

Not applicable.

K. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No effect.

(3) Datum

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

L. Electrical Load Data

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

M. Software Accomplishment Summary

Not applicable.

N. References

(1) IAE V2500 Engine Manual (E-V2500-3IA), Chapters 72-00-40, 72-41-00 and 72-41-20.

(2) V2500 Service Bulletin:

V2500-ENG-72-0433 - ENGINE - HP COMPRESSOR BLADES AND VANES - INTRODUCTION OF STAGE 6, 7 AND 8 BLADES AND STAGE 8 STATOR VANES WITH EROSION RESISTANT COATINGS

(3) Internal Reference No.

Engineering Change No. 07VR004.

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(4) ATA Locator - 72-41-22.

O. Other Publications Affected

(1) For effect on Illustrated Parts Catalogue (IPC), refer to 2. Material Information.

P. Interchangeability of Parts

Affected (Refer to paragraph 2.E. Instruction disposition codes).

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2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts to be reworked:

None.

C. New production parts:

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
72-41-22						
01-350	6B1188	4	.Vane, HPC Stage 6, stop	-	6A7424	(1)(S1)
01-400	6B1186	60	.Vane, HPC Stage 6, nominal	-	6A7423C01	(1)(S1)
01-448	6B1186	20 A/R	.Vane, HPC Stage 6, nominal	-	6A7423C01	(1)(2)(S1)
01-450	6B1187	20 A/R	.Vane, HPC Stage 6, undersize	-	6A7423C02	(1)(2)(S1)
02-350	6B1191	4	.Vane, HPC Stage 7, R/H, stop	-	6A7427	(1)(S1)
02-400	6B1189	60	.Vane, HPC Stage 7, nominal	-	6A7425C01	(1)(S1)
02-448	6B1189	24 A/R	.Vane, HPC Stage 7, nominal	-	6A7425C01	(1)(2)(S1)
02-450	6B1190	24 A/R	.Vane, HPC Stage 7, undersize	-	6A7425C02	(1)(2)(S1)

D. Redundant parts:

None.

E. Instruction disposition codes:

(1) The new parts will be available.

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(2) The quantity of the parts to be installed must be calculated during the assembly of the High Pressure (HP) compressor rotor assembly.

(S1) Old and new parts are fully interchangeable as a whole set only.

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3. Accomplishment Instructions

A. Assembly Instructions

(1) Remove the High Pressure (HP) compressor assembly from the engine (Refer to the Engine Manual, Chapter 72-00-41).

(2) Disassemble the HP compressor front case assembly (Refer to the Engine Manual, Chapter 72-41-00).

(a) Remove the HP compressor stage 6 stator vanes from the HP compressor front cases

(i) Remove the four old HP compressor stage 6 rotor stop vanes (72-41-22, 01-350), P/N 6A7424 from the HP compressor front cases.

(ii) Remove the 60 old nominal HP compressor stage 6 stator vanes (72-41-22, 01-400), P/N 6A7423C01 from the HP compressor front cases.

(iii) Remove the installed quantity of old nominal HP compressor stage 6 stator vanes (72-41-22, 01-448), P/N 6A7423C01 from the HP compressor front cases.

(iv) Remove the installed quantity of old undersize HP compressor stage 6 stator vanes (72-41-22, 01-450), P/N 6A7423C02 from the HP compressor front cases.

(3) Disassemble the HP compressor rear cases and vanes (Refer to the Engine Manual, Chapter 72-41-20)

(a) Remove the HP compressor stage 7 stator vanes from the HP compressor rear cases

(i) Remove the four old right HP compressor stage 7 stator stop vanes (72-41-22, 02-350), P/N 6A7427 from the HP compressor rear cases.

(ii) Remove the 60 old nominal HP compressor stage 7 stator vanes (72-41-22, 02-400), P/N 6A7425C01 from the HP compressor rear cases.

(iii) Remove the installed quantity of old nominal HP compressor stage 7 stator vanes (72-41-22, 02-448), P/N 6A7425C01 from the HP compressor rear cases.

(iv) Remove the installed quantity of old undersize HP compressor stage 7 stator vanes (72-41-22, 02-450), P/N 6A7425C02 from the HP compressor rear cases.

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(4) Assemble the HP compressor rear cases and vanes (Refer to the Engine Manual, Chapter 72-41-20)

(a) Install the HP compressor stage 7 stator vanes on the HP compressor rear cases

(i) Install the 60 new nominal HP compressor stage 7 stator vanes (72-41-22, 02-400), P/N 6B1189 on the HP compressor rear cases.

(ii) Install the required quantity of new nominal HP compressor stage 7 stator vanes (72-41-22, 02-448), P/N 6B1189 on the HP compressor rear cases.

(iii) Install the required quantity of new undersize HP compressor stage 7 stator vanes (72-41-22, 02-450), P/N 6B1190 on the HP compressor rear cases.

(iv) Install the four new right HP compressor stage 7 stator stop vanes (72-41-22, 02-350), P/N 6B1191 on the HP compressor rear cases.

(5) Assemble the HP compressor front case assembly (Refer to the Engine Manual, Chapter 72-41-00)

(a) Install the HP compressor stage 6 stator vanes on the HP compressor front cases

(i) Install the 60 new nominal HP compressor stage 6 stator vanes (72-41-22, 01-400), P/N 6B1186 on the HP compressor front cases.

(ii) Install the required quantity of new nominal HP compressor stage 6 stator vanes (72-41-22, 01-448), P/N 6B1186 on the HP compressor front cases.

(iii) Install the required quantity of new undersize HP compressor stage 6 stator vanes (72-41-22, 01-450), P/N 6B1187 on the HP compressor front cases.

(iv) Install the four new HP compressor stage 6 stator stop vanes (72-41-22, 01-350), P/N 6B1188 on the HP compressor front cases.

(6) Install the HP compressor assembly to the engine (Refer to the Engine Manual, Chapter 72-00-41).

(7) Make sure that the work area is clean and clear of tools, equipment and other unwanted materials.

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B. Recording Instructions

(1) A record of accomplishment is required.

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SERVICE BULLETIN

ENGINE – HIGH PRESSURE (HP) COMPRESSOR – INTRODUCTION OF STAGES 6 AND 7 STATOR VANES WITH EROSION RESISTANT COATING

SUPPLEMENT – PRICES AND AVAILABILITY

Printed in Great Britain

The prices (if shown) are for estimating purposes only and as such are given in good faith, without commercial liability for advanced planning purposes only. Refer to IAE Spares and/or current price catalogue for current prices.

1. Modification Kit:

Not applicable.

2. New Production Parts:

Part No.	Description	Unit Price US Dollars
6B1188	.Vane, HPC Stage 6, stop	P.O.A.
6B1186	.Vane, HPC Stage 6, nominal	P.O.A.
6B1187	.Vane, HPC Stage 6, undersize	P.O.A.
6B1191	.Vane, HPC Stage 7, R/H, stop	P.O.A.
6B1189	.Vane, HPC Stage 7, nominal	P.O.A.
6B1190	.Vane, HPC Stage 7, undersize	P.O.A.

P.O.A. – Price On Application

3. Tools

None.

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