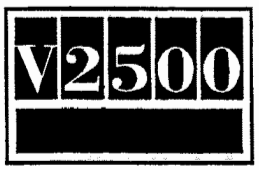

International Aero Engines

SERVICE BULLETIN

Jan. 15/99

Subject: Transmittal of Revision 1 to Service Bulletin V2500-ENG-72-0296.

Service Bulletin Revision History:

Event	Date
Initial Issue	Feb. 13/98.
Revision 1	Jan. 15/99.

Reason for Revision:

(1) Change Effectivity at 1. A. (2) (g) and (h).

(2) Editorial changes to bring SB up to latest standards.

Effect on Past Compliance:

None.

List of Effective Pages:

Page No.	Revision No.	Effective Date
1 to 11	Revision 1	Jan. 15/99.

International Aero Engines

SERVICE BULLETIN

ENGINE - HP COMPRESSOR - INTRODUCTION OF INTEGRAL FRONT SUPPORT CONE/STAGE 7 ROTOR PATH AND REVISED HEATSHEILD AND FASTENER CONFIGURATION

MODEL APPLICATION

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

BULLETIN INDEX LOCATOR

72-41-00

Compliance Category Code	Internal Reference No.
7	EC97VR005

ENGINE - HP COMPRESSOR - INTRODUCTION OF INTEGRAL FRONT SUPPORT CONE/STAGE 7 ROTOR PATH AND REVISED HEATSHEILD AND FASTENER CONFIGURATION

1. Planning Information

A. Effectivity

(1) Aircraft:

(a) Airbus A319.

(b) Airbus A320.

(c) Airbus A321.

(d) Boeing-Douglas MD-90.

(2) Engines:

(a) V2522-A5 Engines prior to Serial No. V10375.

(b) V2524-A5 Engines prior to Serial No. V10375.

(c) V2527-A5 Engines prior to Serial No V10375.

(d) V2527E-A5 Engines prior to Serial No. V10375.

(e) V2530-A5 Engines prior to Serial No. V10375.

(f) V2533-A5 Engines prior to Serial No. V10375.

(g) V2525-D5 Engines prior to Serial No. V20234.

R (h) V2528-D5 Engines prior to Serial No. V20234.

B. Concurrent Requirements

None.

C. Reason

R (1) Problem

R (a) A design review has shown that manufacture of the HP Compressor assemblies that
R follow can be optimised:

R (i) The front support cone of the rear-inner-case.

R (ii) The Stage-7 rear, Stage-9 front, and the Stage-10 front and rear heatshields.

R (2) Evidence

(Refer to (1) Problem).

R (3) Substantiation

A satisfactory engineering analysis, SC01 finite element analysis and a successful test on a development engine have been done on the changes introduced by this Service Bulletin.

R (4) Objective

The purpose of this Service Bulletin is to simplify manufacture.

R (5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Affected.

(d) Repair Schemes

Affected.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Affected

D. Description

R (1) The Stage-7 and Stage-10 heatshields of the HP Compressor have been revised, the changes
R introduced are as follows:

R (a) The retaining ring assemblies of the Stage-7 and Stage-10 (Rear) heatshield have changed
R as follows:

(i) The undercut and clearance scallops are deleted.

(ii) The outside diameter has decreased.

R (b) The retaining ring assemblies of the Stage-9 heatshield have changed as follows:

(i) The material is changed from Titanium to Jethete.

(ii) The undercut and scallops are deleted.

(iii) The outside diameter has decreased.

R (b) The front Stage-10 heatshield has changed as follows:

(i) The material is changed from Titanium to Inconel.

(ii) The undercut and scallops are deleted.

(iii) The outside diameter has decreased.

R (iv) The shape of the bridge piece has changed from curved to straight.

(d) The Stage-7 case assembly has changed as follows:

R (i) To give sufficient clearance with the cone and rotor path assembly, the front
R flange has a 60 degree chamfer.

R (ii) To match the revised bolts, the ten 8,00mm diameter holes are replaced by ten
R clearance holes.

(iii) The ten Stage-7 heatshield support spacers in the front flange are deleted.

(e) The Stage-9 and 10 case assemblies have changed as follows:

(i) The location land for the retaining ring on the distance piece has been removed.

R (ii) To maintain the existing clearance of the compressor bolt flange, the height of the
R distance piece has increased by 0,60 mm.

(f) The special bolts installed on the Stages-7, 9 and 10 (10 per stage) are replaced by standard bolts and additional washers.

(g) The support cone, stiffening ring and Stage 7 rotor path are replaced by an integral support cone and Stage-7 rotor path.

(i) To improve stiffness, the shape of the rotor path at the front end has changed.

(ii) The lining material has changed from Metco 54 to Metco 313. To reduce the blade radial-tip clearance, the rotor path machined diameter has decreased from 524,610 to 524,450 ± 0,040.

(iii) The material for the support cone and Stage-7 rotor path assembly has changed from Titanium to corrosion resistant steel (Jethete).

(h) The special bolts which attach the cone and rotor path assembly to the Stage-7 case are replaced by standard bolts. The quantity of bolts and nuts is increased from 37 to 47.

(i) A revised standard of 60 bolts is introduced to attach the cone and rotor path assembly to the rear outer case assembly.

(j) The support cone stiffening ring is deleted.

(k) The front Stage-7 heatshield assemblies are deleted.

(l) The ten washers, nuts and bolts which attach the heatshields are deleted.

E. Compliance

Category Code 7.

Accomplish when there are no superseded parts remaining.

F. Approval

The part number and/or part modification are given in Section 2 and 3 of this Service Bulletin. They comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine models listed.

G. Manpower

Estimate of man-hours necessary to embody this Service Bulletin in full:

(1) In service — Not applicable

(2) At overhaul — No additional time is necessary to embody this Service Bulletin.

NOTE: It is possible to get access to the parts affected by this Service Bulletin at overhaul.

H. Material - Price and Availability

(1) A modification kit is not necessary.

(2) Refer to 2. Material Information for the prices and availability of future spares.

I. Tooling - Price and Availability

Special tools are not necessary.

R J. Weight and Balance

(1) Weight Change

(a) Minus 0.9kg (2.0lb)

(2) Moment Arm

(b) 388.60mm (15.3in) to the rear.

(3) Datum

(c) Engine front mount centreline (Power Plant Station (PPS) 100)

K. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

L. References

R (1) A5/D5 Engine Manual (EM), Chapter/Section 72-41-20, Disassembly/Assembly-01, -03
R and -04.

M. Other Publications Affected

(1) Illustrated Parts Catalogue (IPC), Chapter/Sections 72-41-00 and 72-41-21.

(2) A5/D5 Engine Manual (EM), Chapter/Section 72-41-20, Disassembly/Assembly-01, -03 and -04.

R 2. Material Information

A. Kits necessary for this Service Bulletin:

None.

B. Parts affected by this Service Bulletin:

	NEW PART No. (ATA No.)	QTY	EST'D UNIT PRICE ($)	PART TITLE	OLD PART No. (IPC No.)	INSTR DISP
R	AS60213 (72-41-00)	60	21.10	.Bolt, bihex hd (.250 dia x .812)	AS21013 (01-484)	(A) (1D) (S1)
	- (72-41-00)	10		.Nut, self locking db1 hex (.190 dia)	4W0001 (01-540)	(B) (1D)
	- (72-41-00)	10		.Bolt, bihex hd (.190 dia x 1.312)	AS60121 (01-544)	(B) (1D)
	- (72-41-00)	10		.Washer (01-548)	UP60024	(B) (1D)
	4W0001 (72-41-00)	10	2.80	.Nut, self locking db1 hex (.190 dia)	4W0001 (01-550)	(A) (S2) (2D)
	AS60110 (72-41-00)	10	5.20	.Bolt, bihex hd (.190 dia x .625)	BLT5378 (01-552)	(A) (S2) (2D)
	AS60115 (72-41-00)	10	11.10	.Bolt, bihex hd (.190 dia x .938)	BLT5485 (01-564)	(A)(E)(S2) (S5)(S6)
	AS12943 (72-41-00)	10	0.80	.Washer, flat, csk (.190 dia)	- (01-565)	(A)(C)(S2) (S5)
	AS60115 (72-41-00)	10		.Bolt, bihex hd (.190 dia x .938)	BLT5485 (01-584)	(A)(E)(S3) (S7)(S8)
	AS12943 (72-41-00)	10		.Washer, flat, csk (.190 dia)	- (01-585)	(A)(C)(S3) (S7)
	AS60115 (72-41-00)	10		.Bolt, bihex hd (.190 dia x .938)	BLT5485 (01-624)	(A)(E)(S4) (S9)(S10)

NEW PART No. (ATA No.)	QTY	EST'D UNIT PRICE ($)	PART TITLE	OLD PART No. (IPC No.)	INSTR DISP
AS12943 (72-41-00)	10		.Washer, flat, csk (.190 dia)	- (01-625)	(A)(C)(S4) (S9)
- (72-41-21)	2	12755.00	.Heatshield, A/O - Stage-7, front	6A4570 (03-180)	(B)
6A6540 (72-41-21)	1		.Cone & Rotor path assy - HP Compressor, Stage-7	6A4177 (03-300)	(A) (S2)
- (72-41-21)	1		.Ring - Stiffening, support cone	6A4568 (03-350)	(B)
- (72-41-21)	1		.Ring, Stage-7 - Rotor path - HP Compressor	6A5995 (03-450)	(B)
6A7019 (72-41-21)	1	11455.00	.Case assy, Stage-7 - HP Compressor	6A4569 (03-500)	(A) (E) (S2)
6A6511 (72-41-21)	1	14320.00	.Case assy, Stage-9 - HP Compressor	6A4326 (03-800)	(A) (E) (S3)
6A6506 (72-41-21)	2	3000.00	.Retainer assy, Stage-7	6A4259 (03-880)	(A) (E) (S2)
6A6507 (72-41-21)	2	3000.00	.Retainer assy, Stage-9 - front	6A4261 (03-920)	(A) (E) (S3)
6A6512 (72-41-21)	1	40830.00	.Case assy, Stage-10 - HP Compressor	6A5624 (04-350)	(A)(S4)(1D)
6A6508 (72-41-21)	2	3500.00	.Retainer assy, Stage-10 - Rear	6A4262 (04-450)	(A) (E) (S4)
6A6509 (72-41-21)	2	4750.00	.Shield, heat assy, Stage-10 - front	6A4263 (04-500)	(A) (B) (S4)

R NOTE: The unit prices, if shown, are an estimate and they are given for the purposes of planning only.
R For actual prices, refer to the IAE Price Catalogue or contact IAE's spare parts sales department.

C. Instruction Disposition Codes

R (1) (A) New part is available.

R (2) (B) Redundant part.

R (3) (C) Additional.

R (4) (E) Old part will be discontinued.

R (5) (S1) New and old parts are fully interchangeable.

R (6) (S2) New parts coded (S2) can replace old parts coded (S2) as a complete engine set.

R (7) (S3) New parts coded (S3) can replace old parts coded (S3) as a complete engine set.

R (8) (S4) New parts coded (S4) can replace old parts coded (S4) as a complete engine set.

R (9) (S5) New parts coded (S5) can replace old parts coded (S6) as a complete engine set.

R (10) (S7) New parts coded (S7) can replace old parts coded (S8) as a complete engine set.

R (11) (S9) New parts coded (S9) can replace old parts coded (S10) as a complete engine set.

R (12) (1D) Old part can be used on other applications.

R (13) (2D) Quantity increased from 37 to 47.

R 3. Accomplishment Instructions

A. Rework Instructions

None.

B. Assembly Instructions

R (1) For the correct removal/installation procedures refer to the A5/D5 Engine Manual (EM),
R Chapter/Section 72-41-20, Disassembly/Assembly-01, -03 and -04.

C. Recording Instructions

(1) A record of accomplishment is necessary.