International Aero Engines

SERVICE BULLETIN

ENGINE - HP COMPRESSOR RING CASES - INTRODUCTION OF INTEGRAL HP COMPRESSOR CASES AND ROTOR PATHS

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

7

Internal Reference No.

EC98VR009, EC98VR009A

ENGINE - HP COMPRESSOR RING CASES - INTRODUCTION OF INTEGRAL HP COMPRESSOR CASES AND ROTOR PATHS

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. V10600.

(b) V2524-A5 Engines prior to Serial No. V10600.

(c) V2527-A5 Engines prior to Serial No. V10600.

(d) V2527E-A5 Engines prior to Serial No. V10600.

(e) V2530-A5 Engines prior to Serial No. V10600.

(f) V2533-A5 Engines prior to Serial No. V10600.

(g) V2525-D5 Engines prior to Serial No. V20286.

(h) V2528-D5 Engines prior to Serial No. V20286.

B. Concurrent Requirements

This Service Bulletin must only be installed to engines which embody IAE V2500 Service Bulletin ENG 72-0296. (Refer to 1. L.).

C. Reason

(1) Problem

A design review has shown that manufacture of the rear inner case assemblies and rotor path rings of the HP Compressor can be improved.

(2) Evidence

(Refer to (1) Problem).

(3) Substantiation

A satisfactory engineering analysis, a successful 337 hour endurance test and 5000 short Maximum Take Off power cycles have been done on a V2500 development engine for the changes introduced by this Service Bulletin.

(4) Objective

The purpose of this Service Bulletin is to simplify manufacture.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Affected.

(d) Repair Schemes

Not affected.

(e) Interchangeability

Affected (Refer to 1. N.).

(f) Fits and Clearances

Not affected.

D. Description

This modification introduces integral stages of the rear inner case and rotor path rings of the HP Compressor.

(1) The changes introduced are as follows:

(a) Integral Stage-8, 9, 10 and 11 case and rotor path assemblies are introduced to replace the separate case assemblies and rotor path rings.

(b) An integral Stage-12 case and rotor path assembly is introduced to replace the separate case assembly and rotor path ring. The changes that follow are also included:

(i) To provide sufficient clearance between the boss flange and the radius on the case, the intrascope boss has been moved 0,50 mm to the rear.

(ii) To locate the rear of the Stage-12 heat-shield, a bird mouth feature is introduced at the rear of the Stage-12 case and rotor path assembly.

(c) The Stage-8 heat-shield assembly has been revised. The axial length has decreased.

(d) The Stage 9 heat shield retainer assembly has been revised, to give an 8,00 mm clearance hole. This permits an extension of the anti-rotation pin in the Stage 9 HP Compressor casing assembly.

(e) The Stage 10 heat shield retainer assembly has been revised,

(i) The axial length has decreased.

(ii) An 8,00 mm clearance hole is introduced. This permits an extension of the anti-rotation pin in the Stage 10 HP Compressor casing assembly.

(f) The Stage-11 heat-shield assembly has been revised. The rear edge has becurled to match the bird mouth of the Stage-12 case and rotor path assembly

(g) The special bolts which attach the cross key location ring to the Stage 12 case and rotor
Path assembly are replaced by standard type bolts and washers.

(h) The bolts which attach the heat-shield assemblies to the case assemblies have been revised. The length of the bolts has decreased.

E. Compliance

Category Code 7

Accomplish when there are no superseded parts remaining.

F. Approval

The part number changes 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 manhours necessary to embody this Service Bulletin in full:

(1) In Service

Not applicable.

(2) At Overhaul

No additional time is necessary to embody this modification.

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 prices and availability of future spares.

I. Tooling - Price and Availability

Special tools are not necessary.

J. Weight and Balance

(1) Weight Change

Minus 4.8lb (2.18kg).

(2) Moment Arm

22.3in (566.40mm) to the rear.

(3) Datum

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. Software Accomplishment Summary.

None

M. References

(1) V2500 Service Bulletin

ENG 72-0296	ENGINE - HP COMPRESSOR - INTRODUCTION OF REVISED REAR INNER CASING FRONT SUPPORT RING, REAR HEATSHIELDS AND FASTENERS AND INTEGRAL FRONT SUPPORT CONE RING.

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

N. Other Publications Affected

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

(3) A5/D5 Engine Manual (EM), Chapter/Section 72-41-21, Cleaning and Inspection/Check.

O. Interchangeability of Parts

Parts must be installed as a complete set.

2. Accomplishment Instructions

A Rework Instructions

None.

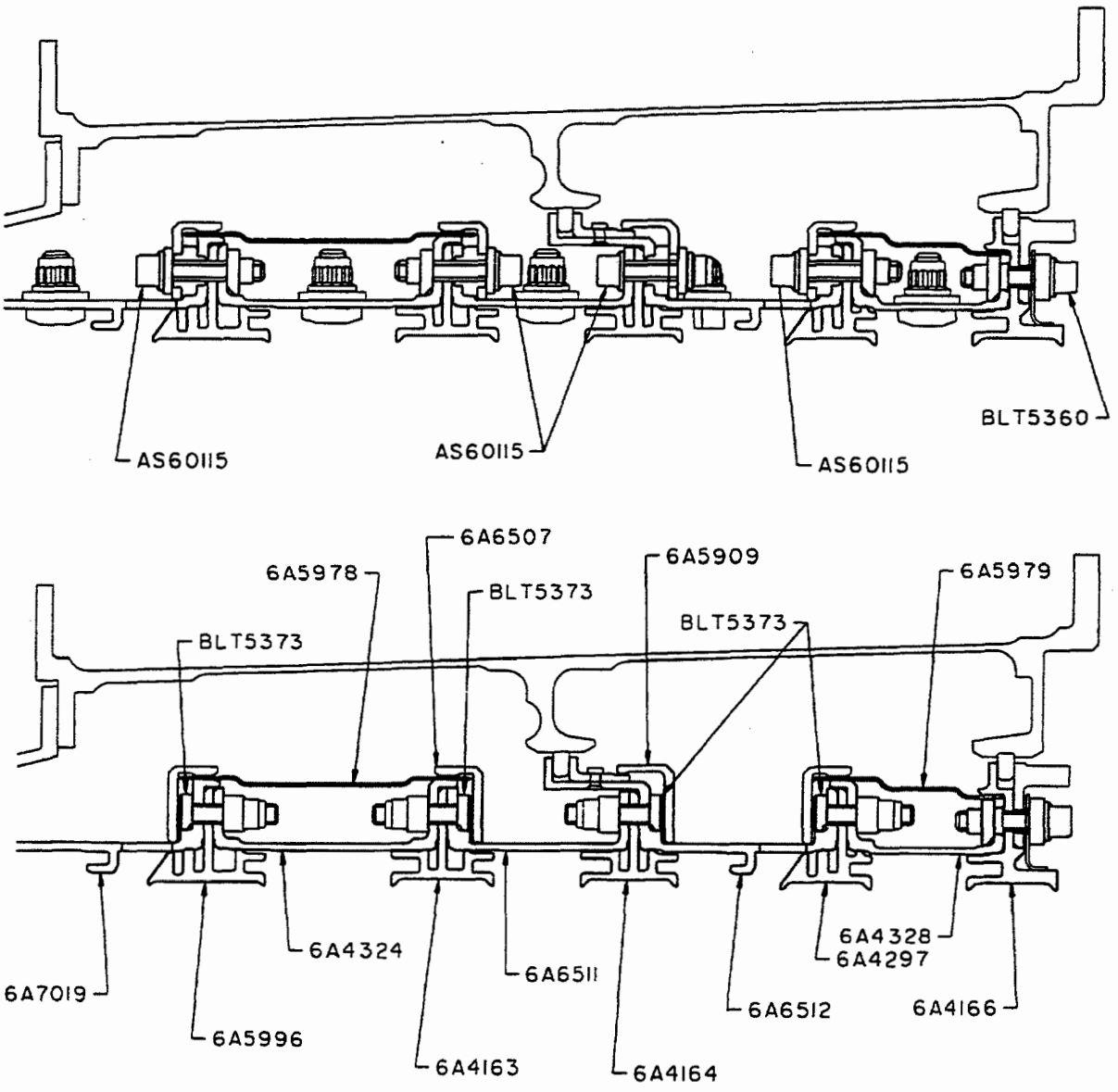
B Assembly Instructions

(1) For the correct removal/installation procedures refer to the:

(a) A5/D5 Engine Manual (EM), Chapter/Section 72-41-20, Assembly/Disassembly.

C Recording Instructions

A record of accomplishment is necessary.



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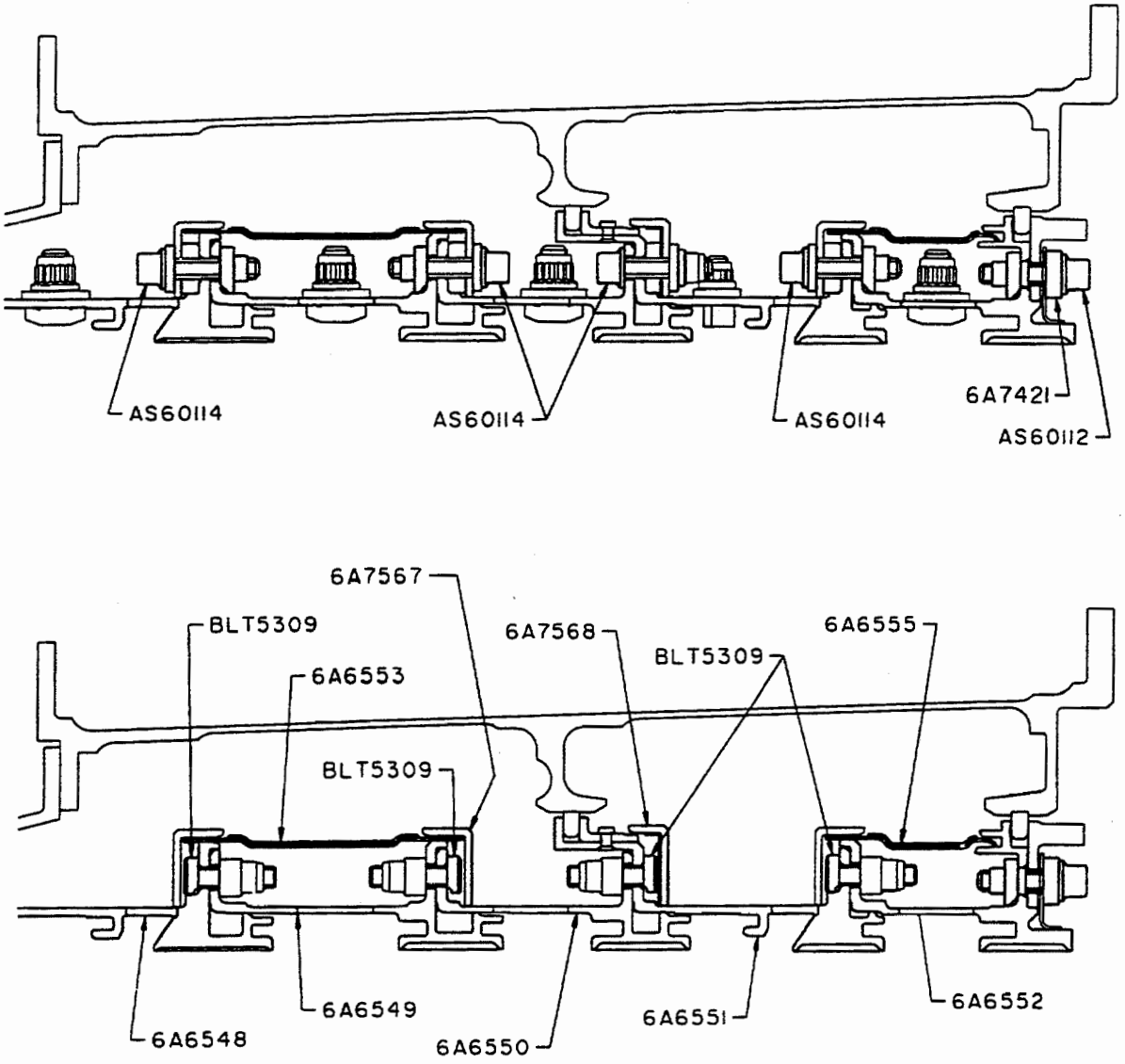
HP Compressor ring cases - Before alteration
Figure 1



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HP Compressor ring cases - After alteration
Figure 2

3 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
AS60114 (72-41-00)	10	14.90	.Bolt, bihex hd (.190 dia x .875Lgth)	AS60115 (01-564)	(A) (S1)
BLT5309 (72-41-00)	28	4.28	.Bolt	BLT5373 (01-572)	(A) (S1)
AS60114 (72-41-00)	10		.Bolt, bihex hd (.190 dia x .875Lgth)	AS60115 (01-584)	(A) (S1)
BLT5309 (72-41-00)	37		.Bolt	BLT5373 (01-592)	(A) (S1)
AS60114 (72-41-00)	10		.Bolt, bihex hd (.190 dia x .875Lgth)	AS60115 (01-604)	(A) (S1)
BLT5309 (72-41-00)	37		.Bolt	BLT5373 (01-612)	(A) (S1)
AS60114 (72-41-00)	10		.Bolt, bihex hd (.190 dia x .875Lgth)	AS60115 (01-624)	(A) (S1)
BLT5309 (72-41-00)	37		.Bolt	BLT5373 (01-632)	(A) (S1)
AS60112 (72-41-00)	47	6.00	.Bolt, bihex hd (.190 dia x .750Lgth)	BLT5360 (01-644)	(A) (S1)
6A7421 (72-41-00)	47	1.90	.Washer	- (01-646)	(B) (C)
6A6548 (72-41-21)	1	14200.00	.Case assy, rotor path St.8 - HP Compressor	6A7019 (03-500)	(B) (S1)

NEW PART No. (ATA No.)	QTY	EST'D UNIT PRICE ($)	PART TITLE	OLD PART No. (IPC No.)	INSTR DISP
- (72-41-21)	1		.Ring, Stage 8 - Rotor path - HP Compressor	6A5996 (03-600)	(E)
6A6549 (72-41-21)	1	14930.00	.Case assy, rotor path St.9 - HP Compressor	6A4324 (03-650)	(B) (S1)
- (72-41-21)	1		.Ring, Stage 9 - HP Compressor	6A4163 (03-750)	(E)
6A6550 (72-41-21)	1	14860.00	.Case assy, rotor path St.10 - HP Compressor	6A6511 (03-800)	(B) (S1)
6A6553 (72-41-21)	1	1403.00	.Shield assy - Heat - Stage 8 - HP Compressor	6A5978 (03-900)	(B) (S1)
6A7567 (72-41-21)	2	3190.00	Retainer assy – Stage 9 Heat shield - HP Compressor	6A6507 (03-920)	(B) (S1)
- (72-41-21)	1		.Ring, Stage 10 - HP Compressor	6A4164 (04-300)	(E)
6A6551 (72-41-21)	1	42660.00	.Case assy, rotor path St.11 - HP Compressor	6A6512 (04-350)	(B) (S1)
6A7568 (72-41-21)	2	5972.00	.Shield assy, heat - Stage 10 - HP Compressor	6A5909 (04-500)	(B) (S1)
6A6555 (72-41-21)	1	804.00	.Shield assy, heat - Stage 11 - HP Compressor	6A5979 (04-520)	(B) (S1)
- (72-41-21)	1		.Ring, Stage 11 - HP Compressor	6A4297 (04-550)	(E)
6A6552 (72-41-21)	1	16970.00	.Case assy, rotor path St.12 - HP Compressor	6A4328 (04-600)	(B) (S1)
- (72-41-21)	1		.Ring, Stage 12 - HP Compressor	6A4166 (04-700)	(E)

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

C. Instruction Disposition Codes

(1)	(A)	New part is available.
(2)	(B)	New part will be available from April 1999.
(3)	(C)	Additional.
(4)	(E)	Redundant part.
(5)	(S1)	New and old parts are not interchangeable.