International Aero Engines

SERVICE BULLETIN

ENGINE - LP COMPRESSOR - PROVIDE A NEW LPC BLEED DUCT ASSEMBLY WITH IMPROVED DURABILITY FEATURES - CATEGORY CODE 6 - MOD.ENG-72-0155

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320, A321
McDonnell Douglas MD-90

(2) Engine: V2500-A5 Engines prior to Serial No. V10010
V2500-D5 Engines prior to Serial No. V20007

B. Reason

(1) Condition

Small bulging may occur on the Rear Fairing Assembly.

(2) Background

A review of the existing design has shown that an increase in number of fasteners securing the Rear Fairing Asembly to the LPC Bleed Duct Assembly is effective. The new design provides stiffer fitting of the Rear Fairing Assembly by equally equipped fasteners. In addition to the improved fastening, rear wall thickness of the LPC Bleed Duct Assembly is increased and it improves durability of the LPC Bleed Duct Assembly.

(3) Objective

To improve durability of the Rear Fairing Assembly and the LPC Bleed Duct Assembly.

(4) Substantiation

The changes introduced by this bulletin were analytically substantiated.

(5) Effects of Bulletin on the following shop functions:

Removal/Installation	Not Affected
Disassembly/Assembly	Affected (See Supplemental Information)
Cleaning	Not Affected
Inspection/Check	Not Affected
Repair	Not Affected
Testing	Not Affected

(6) Supplemental Information

(a) Disassembly/Assembly will be revised to incorporate different procedures due to changes in number of parts and deletion of parts.

C. Description

(1) The changes introduced by this Service Bulletin are as follows:

NOTE: All the following changes must be accomplished to an engine at once. All the changes are in common with both V2500-A5 and V2500-D5 Engine Models unless mentioned differently.

(a) 5W2268 LPC Bleed Duct Assembly supersedes 5W2231 LPC Bleed Duct Assembly of V2500-A5 Engines. 5W2271 LPC Bleed Duct Assembly supersedes 5W2247 LPC Bleed Duct Assembly of V2500-D5 Engines. Following composing parts of the LPC Bleed Duct Assemblies are changed in common with both Engine Models.

(i) Number of MS21076L3 Nut is increased from 18 to 20.

(ii) Number of CCR264CS3-4 Rivet is increased from 36 to 40.

(b) 20 4W2328 Screws supersede 18 4W2330 Bolts.

(c) 5A1497 Support Ring Assembly supersedes 5A0463 Support Ring Assembly.

(d) 5W2270 Seal Retainer made from stainless steel supersedes 5W2230 Seal Retainer made from aluminum.

(e) 4W0162 Bolt supersedes 4W0163 Bolt.

(f) MS9321-10 Washer is deleted.

D. Approval

The part number changes and/or part modifications described in Section 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.

E. Compliance

Category Code 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Est'd Manhours
(1) In service	Not applicable
(2) At overhaul	Not applicable

G. Material - Price and Availability

(1) Modification Kit is not required.

(2) See "Material Information" section for prices and availability of future spares.

H. Tooling - Price and Availability

Special Tools are not required.

I. Weight and Balance

(1) Weight change ..... Plus 3.9 lb (1,77 kg)

(2) Moment arm ..... No effect

(3) Datum ..... Engine front mount centerline (Powerplant Section (P.P.S.) 100)

J. Electrical Load Data

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

K. References

(1) Internal Reference No.

92VJ028

92VJ028-01

92VJ048

(2) Other References

The IAE V2500 Standard Practices/Processes Manual.

The IAE V2500-A5 Engine Illustrated Parts Catalog.

The IAE V2500-D5 Engine Illustrated Parts Catalog.

The IAE V2500-A1/A5 Engine Manual.

The IAE V2500-D5 Engine Manual.

L. Other Publications Affected

(1) The IAE V2500-A5 Engine Illustrated Parts Catalog, 72-32-00, 72-32-60 and 72-32-71 to incorporate new parts and/or changes in number of parts.

(2) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-00, Disassembly-04 Config-3 and Disassembly-08 to add different procedures.

(3) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-00, Assembly-08 Config-2 and Assembly-12 config-3 to add different procedures.

(4) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-60, Cleaning-01 and Cleaning-03 to add new parts.

(5) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-71, Cleaning-01 to add new parts.

(6) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-60, Inspection/Check-01 and Inspection/Check-03 to add new parts.

(7) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-71, Inspection/Check-06 to add new parts.

(8) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-60, Repair-001 VRS1316, Repair-002 VRS1317 and Repair-003 VRS1318 to add new parts.

(9) The IAE V2500-A1/A5 Engine Manual, Chapter/Section 72-32-71, Repair to add new parts.

(10) The IAE V2500-D5 Engine Illustrated Parts Catalog, 72-32-00, 72-32-60 and 72-32-71 to incorporate new parts and/or changes in number of parts.

(11) The IAE V2500-D5 Engine Manual, Chapter/Section 72-32-00, Disassembly-04 and -08 to add different procedures.

(12) The IAE V2500-D5 Engine Manual, Chapter/Section 72-32-00, Assembly-08 and -12 to add different procedures.

(13) The IAE V2500-D5 Engine Manual, Chapter/Section 72-32-60, Cleaning-01 and Cleaning-03 to add new parts.

(14) The IAE V2500-D5 Engine Manual, Chapter/Section 72-32-60, Inspection/Check-03 to add new parts.

2. Accomplishment Instructions

A. Rework Instructions

(1) There are no rework instructions necessary for this Service bulletin.

B. Assembly Instructions

(1) For assembly of the Booser Stage Bleed Valve And Actuation Mechanism Assembly for V2500-A5 engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Assemble the Booster Stage Bleed Valve And Actuation Mechanism with 5A1497 Support Ring Assembly by the approved procedure given in Reference (4), Chapter/Section 72-32-70, Assembly.

(2) For assembly of the Booster Stage Bleed Valve And Actuation Mechanism Assembly for V2500-D5 engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Assemble the Booster Stage Bleed Valve and Actuation Mechanism with 5A1497 Support Ring Assembly by the approved procedure given in Reference (5), Chapter/Section 72-32-70, Assembly.

(3) For installation of the LPC Bleed Duct Assembly to V2500-A5 Engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Prepare the Fan Frame for installation of 5W2268 LPC Bleed Duct Assembly.

(i) Make sure that procedures in Reference (4), Chapter/Section 72-32-00, Assembly-01 through -06, and Assembly-07 Config-2 have been accomplished.

(b) Prepare the LPC Bleed Duct Assembly for installation.

(i) Put the LPC Bleed Duct Assembly on a work bench with the rear end up.

(ii) Put two 5W2106 Seals in to the two recesses in the LPC Bleed Duct Assembly.

(iii) Put two 5W2270 Seal Retainers on to the Seals.

(iv) Secure the Seals and the Seal Retainers with four 4W0162 Bolts. Torque the Bolts to 85 to 105 lbfin (10,00 to 12,00 Nm), refer to Reference (1) Chapter/Section 70-41-00, General Torque Tightening Techniques.

(c) Install the LPC Bleed Duct Assembly to the Fan Frame.

(i) Apply Jointing Compound to the mating surface of the Fan Frame by the approved procedure given in Reference (4), Chapter/Section 72-32-00, Assembly-08 Config-2.

(ii) Turn the LPC Bleed Duct Assembly with the front end up.

(iii) Lubricate the seal strip of the Fan Frame with CoMat 10-038 petroleum jelly.

(iv) Align the TOP mark of the LPC Bleed Duct Assembly with the top position (No.1 strut) of the Fan Frame.

(v) Put the LPC Bleed Duct Assembly on to the Fan Frame.

(d) Install the Booster Stage Bleed Valve and Actuating Mechanism on to the LPC Bleed Duct Assembly, and secure the Booster Stage Bleed Valve And Actuating Mechanism and the LPC Bleed Duct Assembly to the Fan Frame by the approved procedure given in Reference (4), Chapter/Section 72-32-00, Assembly-08 Config-2.

NOTE: The LPC Bleed Duct Assembly and Actuating Mechanism must be composed by 5A1497 Support Ring Assembly.

(4) For installation of the LPC Bleed Duct Assembly to V2500-D5 Engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Prepare the Fan Frame for installation of 5W2271 LPC Bleed Duct Assembly.

(i) Make sure that procedures in Reference (5), Chapter/Section 72-32-00, Assembly-01 through -07 have been accomplished.

(b) Prepare the LPC Bleed Duct Assembly for installation.

(i) Put the LPC Bleed Duct Assembly on a work bench with the rear end up.

(ii) Put two 5W2106 Seals in to the two recesses in the LPC Bleed Duct Assembly.

(iii) Put two 5W2270 Seal Retainers on to the Seals.

(iv) Secure the Seals and the Seal Retainers with four 4W0162 Bolts. Torque the Bolts to 85 to 105 lbfin (10,00 to 12,00 Nm), refer to Reference (1) Chapter/Section 70-41-00, General Torque Tightening Techniques.

(c) Install the LPC Bleed Duct Assembly to the Fan Frame.

(i) Apply Jointing Compound to the mating surface of the Fan Frame by the approved procedure given in Reference (5), Chapter/Section 72-32-00, Assembly-08.

(ii) Turn the LPC Bleed Duct Assembly with the front end up.

(iii) Lubricate the seal strip of the Fan Frame with CoMat 10-038 petroleum jelly.

(iv) Align the TOP mark of the LPC Bleed Duct Assembly with the top position (No.1 strut) of the Fan Frame.

(v) Put the LPC Bleed Duct Assembly on to the Fan Frame.

(d) Install the Booster Stage Bleed Valve And Actuating Mechanism on to the LPC Bleed Duct Assembly, and secure the Booster Stage Bleed Valve And Actuating Mechanism and the LPC Bleed Duct Assembly to the Fan Frame by the approved procedure given in Reference (5), Chapter/Section 72-32-00, Assembly-08.

NOTE: The LPC Bleed Duct Assembly And Actuating Mechanism must be composed by 5A1497 Support Ring Assembly.

(5) For installation of the Rear Fairing Assembly to V2500-A5 Engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Make sure that Paragraphs 2.B.(1) and (3) of this Bulletin, and procedures given in Reference (4), Chapter/Section 72-32-00, Assembly-08 Config-2, Assembly-10 config-2 and Assembly-11 have been accomplished.

(b) Prepare the Fan Frame And Fan Case Assembly for Installation of the Rear Fairing Assembly.

(i) Turn the Fan Frame And Fan Case Assembly horizontally by the approved procedure given in Reference (4), Chapter/Section 72-32-00, Assembly-12.

CAUTION: CAREFULLY INSTALL THE REAR FAIRING TO PREVENT DAMAGE TO THE SCREEN.

(c) Install the Rear Fairing Assembly to the Fan Frame And Fan Case Assembly.

(i) Attach the Rear Fairing Assembly to the LPC Bleed Duct Assembly with the 20 4W2328 Screws.

(ii) Torque the Screws to between 36 and 45 lbfin (4,00 and 5,00 Nm), refer to Reference (1) Chapter/Section 70-41-00, General Torque Tightening Techniques.

(6) For installation of the Rear Fairing Assembly to V2500-D5 Engines proceed as follows:

NOTE: Refer to Figure 1 for accomplishment of the procedures given below.

(a) Make sure that Paragraphs 2.B.(2) and (4) of this Bulletin, and procedures given in Reference (5), Chapter/Section 72-32-00, Assembly-08, Asembly-10 and Assembly-11 have been accomplished.

(b) Prepare the Fan Frame And Fan Case Assembly for Installation of the Rear Fairing Assembly.

(i) Turn the Fan Frame And Fan Case Assembly horizontally by the approved procedure given in Reference (5), Chapter/Section 72-32-00, Assembly-12.

CAUTION: CAREFULLY INSTALL THE REAR FAIRING TO PREVENT DAMAGE TO THE SCREEN.

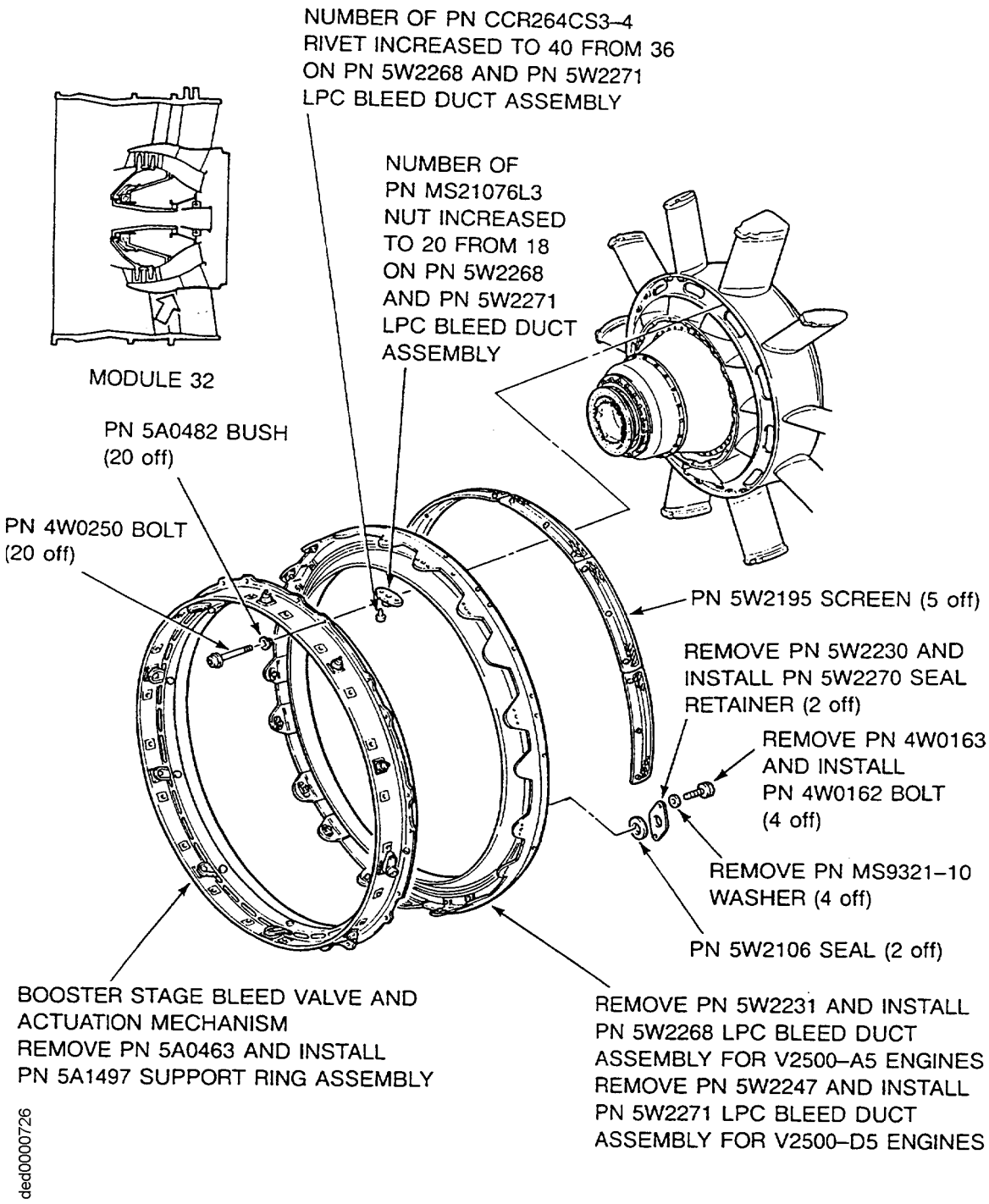
(c) Install the Rear Fairing Assembly to the Fan Frame And Fan Case Assembly.

(i) Attach the Rear Fairing Assembly to the LPC Bleed Duct Assembly with the 20 4W2328 Screws.

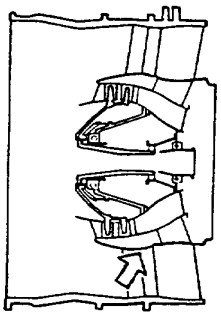
(ii) Torque the Screws to between 36 and 45 lbfin (4,00 and 5,00 Nm), refer to Reference (1) Chapter/Section 70-41-00, General Torque Tightening Techniques.

B. Recording Instructions

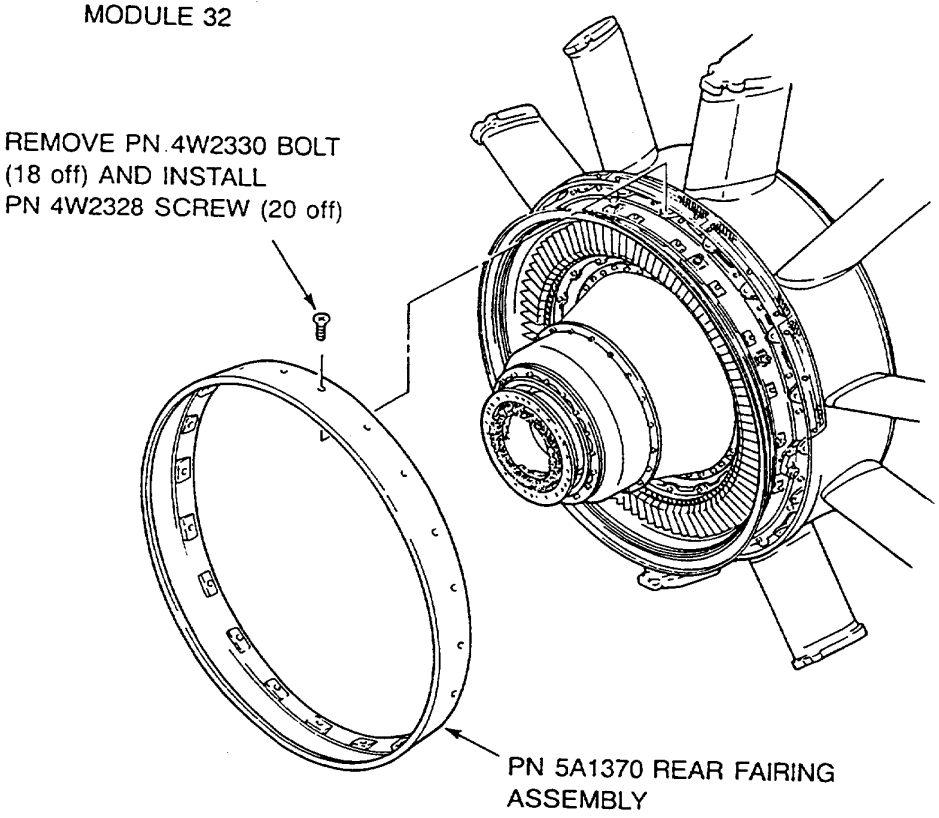
(1) A record of accomplishment is necessary.



Replacement of LPC Bleed Duct Assembly and Support Ring Assembly
Fig.1 (Sheet 1 of 2)



MODULE 32



ded0000727

Replacement of LPC Bleed Duct Assembly and Support Ring Assembly
Fig.1 (Sheet 2 of 2)

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with the Bulletin:

None

B. Parts Affected by this Bulletin:

NEW PART NO. (ATA NO.)	QTY	EST'D UNIT PRICE ($)	KEYWORD	OLD PART NO. (IPC NO.)	INSTRUCTIONS DISPOSITION
4W2328 (72-32-00)	20		.Screw	---- (02-852)	(S1)(S2)(A)
---- (72-32-00)	18		.Bolt	4W2330 (02-852)	(S1)(S2)(C) (4D)
5W2270 (72-32-60)	2		.Retainer, Seal	5W2230 (01-100)	(S1)(S2)(A) (B)
4W0162 (72-32-60)	4		.Bolt	4W0163 (01-120)	(S1)(S2)(A) (C)(3D)(4D)
---- (72-32-60)	4		.Washer	MS9321-10 (01-130)	(S1)(S2)(C) (3D)(4D)
5W2268 (72-32-60)	1		.Duct, A/O LPC Bleed	5W2231 (01-250)	(S1)(A)(B)
5W2271 (72-32-60)	1		.Duct, A/O LPC Bleed	5W2247 (01-250)	(S2)(A)(B)
MS21076L3 (72-32-60)	20		..Nut	MS21076L3 (01-256)	(S1)(S2)(1D)
CCR264CS3-4 (72-32-60)	40		..Rivet, Counter Sunk Head	CCR264CS3-4 (01-257)	(S1)(S2)(2D)
5A1497 (72-32-71)	1		. Ring, A/O Support	5A0463 (02-600)	(S1)(S2)(A) (B)

C. Instruction/Disposition Code Statements:

(S1) Parts Coded (S1) are applicable to V2500-A5 Engines and must be fitted in set.
(S2) Parts Coded (S2) are applicable to V2500-D5 Engines and must be fitted in set.
(A) New part is currently available for sale.
(B) Old part will no longer be available for sale.
(C) Old part will continue to be available for sale.
(1D) Number of part is increased to 20 from 18.
(2D) Number of part is increased to 40 from 36.
(3D) Old part can be used up to other locations of V2500-A5 Engine.
(4D) Old part can be used up to other locations of V2500-D5 Engine.

D. Consumables required to incorporate this bulletin:

CoMat 01-038 petroleum jelly

NOTE: The estimated 1994 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.