



ENGINE - HP TURBINE ROTOR AND STATOR ASSEMBLY - PROVIDE NEW STAGE 1 HPT SUPPORT ASSEMBLY AND A NEW STAGE 1 HPT VANE ASSEMBLY - CATEGORY CODE 8 - MOD.ENG-72-0147

1. Planning Information

A. Effectivity

- (1) Aircraft: Airbus A320, A321
McDonnell Douglas MD-90
- (2) Engine: V2527-A5 Engines before Serial No.V10010
V2530-A5 Engines before Serial No.V10010
V2525-D5 Engines before Serial No.V20007
V2528-D5 Engines before Serial No.V20007

B. Reason

(1) Condition

The Stage 1 High Pressure Turbine Vane Support is heavier than necessary. Also, a change to Stage 1 Vane Cover durability can be improved through minor geometry revisions.

(2) Background

Engine testing has verified that the weight of the Stage 1 Vane Support can be reduced as detailed in this Service Bulletin without impacting engine performance or durability.

(3) Objective

Reduce the weight of the Stage 1 Vane Support by removing the middle flange. This also allows the hardface coating to be moved from the Stage 1 Vanes to the Support Assembly, simplifying the vane configuration. A modified vane cover is also installed on the vane that increased its durability.

(4) Substantiation

None.

(5) Effects of Bulletin on Workshop Procedures:

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Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information

None.

C. Description

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

- (a) A modification of the Stage 1 HPT Support Assembly to remove the middle support rail and add coating to the front face of the support rear rail.
- (b) Remove the coating from the rear face of the Stage 1 HPT Vane Assembly.
- (c) Replace the Stage 1 HPT Vane Covers with new covers that have a decreased flange.

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 8.

Accomplish based upon experience with the prior configuration.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At Overhaul.. .. .	Not applicable

(Note: The parts affected by this Service Bulletin are accessible at overhaul.)

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G. Material - Price and Availability

- (1) Modification Kit not required.
- (2) See "Material Information" section for prices and availability of future spares.

H. Tooling - Price and Availability

None.

I. Weight and Balance

- (1) Weight change Minus 1.5 lb (0,68 kg)
- (2) Moment arm No effect
- (3) Datum Engine front mount Centerline
(Powerplant station P.P.S.100)

J. Electrical Load Data

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

K. Reference

- (1) Internal Reference No.

92VA117

92VA082

- (2) Other References

V2500 Engine Illustrated Parts Catalogs (S-V2500-2IA and S-V2500-3IA),
Chapter/Section 72-44-10 and 72-44-20

V2500 Standard Practices Manual (SPP-V2500-1IA)

V2500 Engine Manual (E-V2500-1IA)

V2500 Engine Manual (E-V2500-3IA)

L. Other Publications Affected

- (1) The V2500 Engine Illustrated Parts Catalog (S-V2500-2IA) Chapter/Section 72-44-10, Figure 1 and 72-44-20 Figure 1, to add the new parts.
- (2) The V2500 Engine Illustrated Parts Catalog (S-V2500-3IA) Chapter/Section 72-44-10, Figure 1 and 72-44-20 Figure 1, to add the new parts.

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- (3) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-44-10 and 72-44-20, Cleaning, to add the new parts.
- (4) The V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-44-10 and 72-44-20, Cleaning, to add the new parts.
- (5) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-44-10 and 72-44-20, Inspection, to add the new parts.
- (6) The V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-44-10 and 72-44-20, Inspection, to add the new parts.
- (7) The V2500 Engine Manual (E-V2500-1IA) Chapter/Section 72-44-10 and 72-44-20, Repair, to add the new parts.
- (8) The V2500 Engine Manual (E-V2500-3IA) Chapter/Section 72-44-10 and 72-44-20, Repair, to add the new parts.



2. Accomplishment Instructions

A. Rework Instructions

- (1) Do a modification to the 2A1664 Stage 1 HPT Support Assembly (See Reference (1), Chapter/Section 72-44-10, Figure/Item No. 01-010) and identify as follows:

Procedure	Supplementary Information				
(a) Set-up and machine to remove the middle support rail and prepare the front face of the rear flange for coat.	Refer to Figures 1 and 2.				
(b) Coat the front face of the rear flange. Use CoMat 03-077 plasma spray powder. Keep to the dimensions specified.	Refer to Figure 2 for the location of the plasma coat. Use the procedure given in Reference (2), Control No. TASK No. 70-34-03-340-501.				
(d) Mark the new part number adjacent to the old part number. Use the vibration peen method.	<table><tr><td>Old Part No.</td><td>New Part No.</td></tr><tr><td>2A1664</td><td>2A2703</td></tr></table> <p>See Reference (2), Control No./TASK No. 70-09-00-400-501. Refer to Figure 2.</p>	Old Part No.	New Part No.	2A1664	2A2703
Old Part No.	New Part No.				
2A1664	2A2703				

B. Assembly Instructions

- (1) For V2500-A5 Engines proceed as follows:
- (a) Install the 2A2703 Stage 1 HPT Support Assembly (1 off) by the procedure given in Reference (3), Chapter/Section 72-44-00, Assembly. Refer to Figure 1.

NOTE: The 2A2703 Stage 1 HPT Support Assembly can be used with either the 2A0561 Stage 1 Vane Assembly or the 2A2761 Stage 1 Vane Assembly.

The 2A0561 Stage 1 Vane Assembly can be used with either the 2A2703 or the 2A1664 Stage 1 HPT Support Assembly.

The 2A2761 Stage 1 Vane Assembly cannot be used with the 2A1664 Stage 1 HPT Support Assembly.

- (b) Install the 2A2761 Stage 1 HPT Vanes (40 off). Use the procedure given in Reference (3), Chapter/Section 72-44-00, Assembly. Refer to Figure 3.

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(2) For V2500-D5 Engines proceed as follows:

- (a) Install the 2A2703 Stage 1 HPT Support Assembly (1 off) by the procedure given in Reference (4), Chapter/Section 72-44-00, Assembly. Refer to Figure 1.

NOTE: The 2A2703 Stage 1 HPT Support Assembly can be used with either the 2A0561 Stage 1 Vane Assembly or the 2A2761 Stage 1 Vane Assembly.

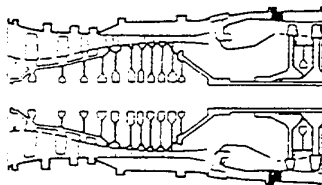
The 2A0561 Stage 1 Vane Assembly can be used with either the 2A2703 or the 2A1664 Stage 1 HPT Support Assembly.

The 2A2761 Stage 1 Vane Assembly cannot be used with the 2A1664 Stage 1 HPT Support Assembly.

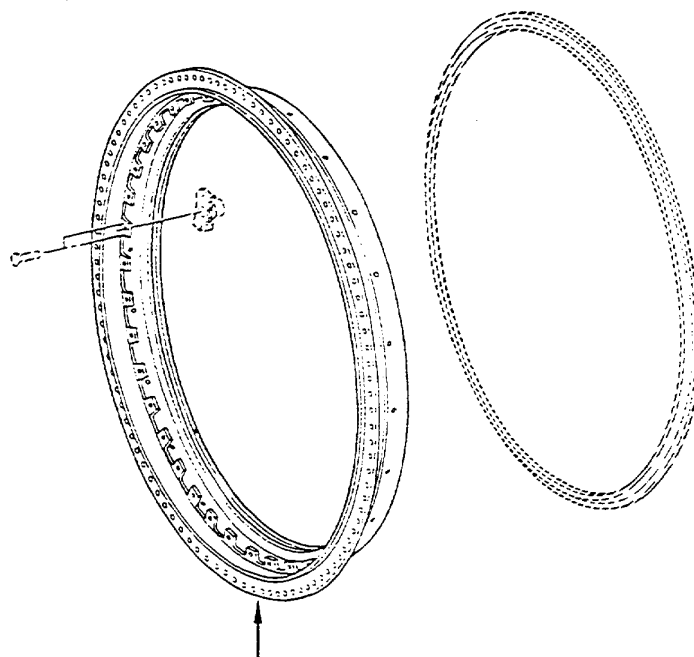
- (b) Install the 2A2761 Stage 1 HPT Vanes (40 off). Use the procedure given in Reference (4), Chapter/Section 72-44-00, Assembly. Refer to Figure 3.

C. Recording Instructions

- (1) A record of accomplishment is necessary.



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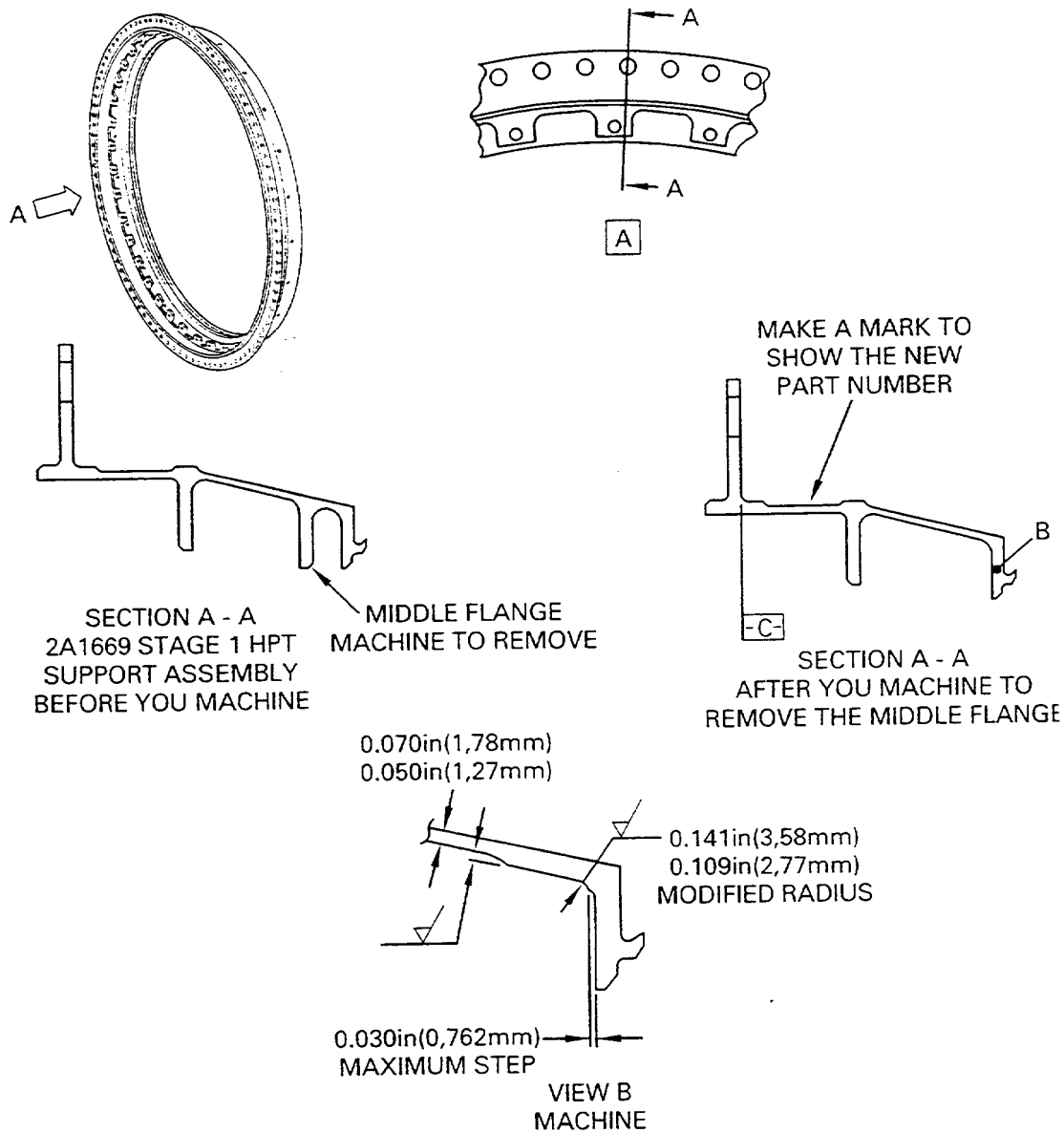


INSTALL THE 2A2703
STAGE 1 HPT SUPPORT
ASSEMBLY

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Location of Stage 1 HPT Duct Support Assembly
Fig.1

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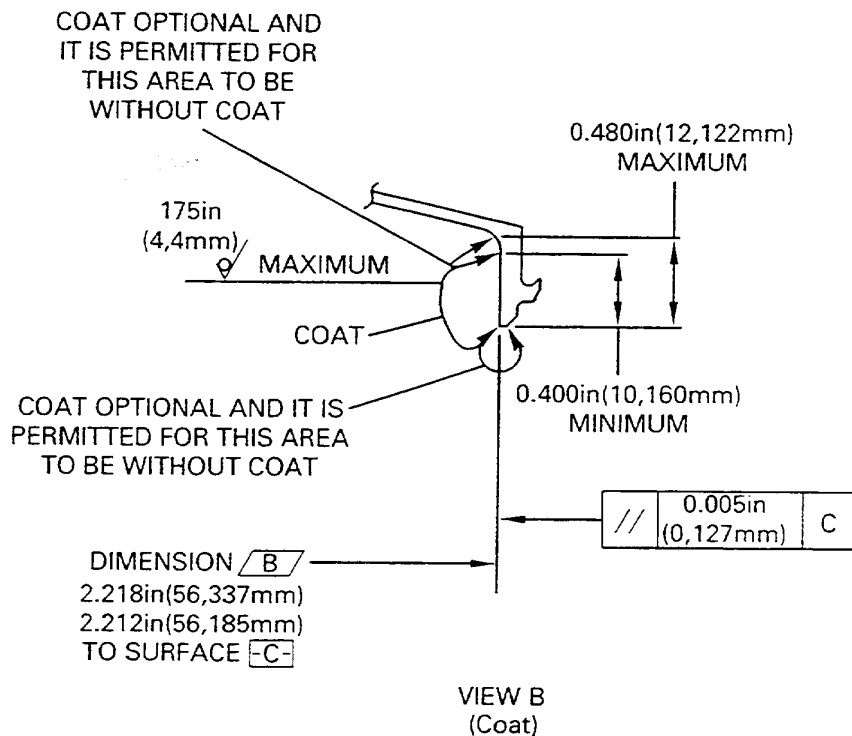
NOTE: IN A FREE STATE SURFACE -C-

IS	<div style="border: 1px solid black; padding: 2px; display: inline-block;"><div style="width: 10px; height: 10px; border-bottom: 1px solid black; margin-bottom: 2px;"></div>0.010in (0,254mm)</div>
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Modification of Stage 1 HPT Duct Support Assembly
Fig.2 (Sheet 1)

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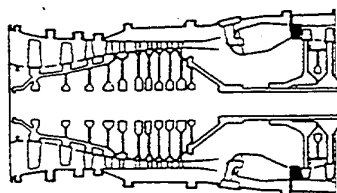


: ALL DIMENSION ARE BEFORE COAT
EXCEPT DIMENSION $\angle B$ WHICH IS
AFTER COAT

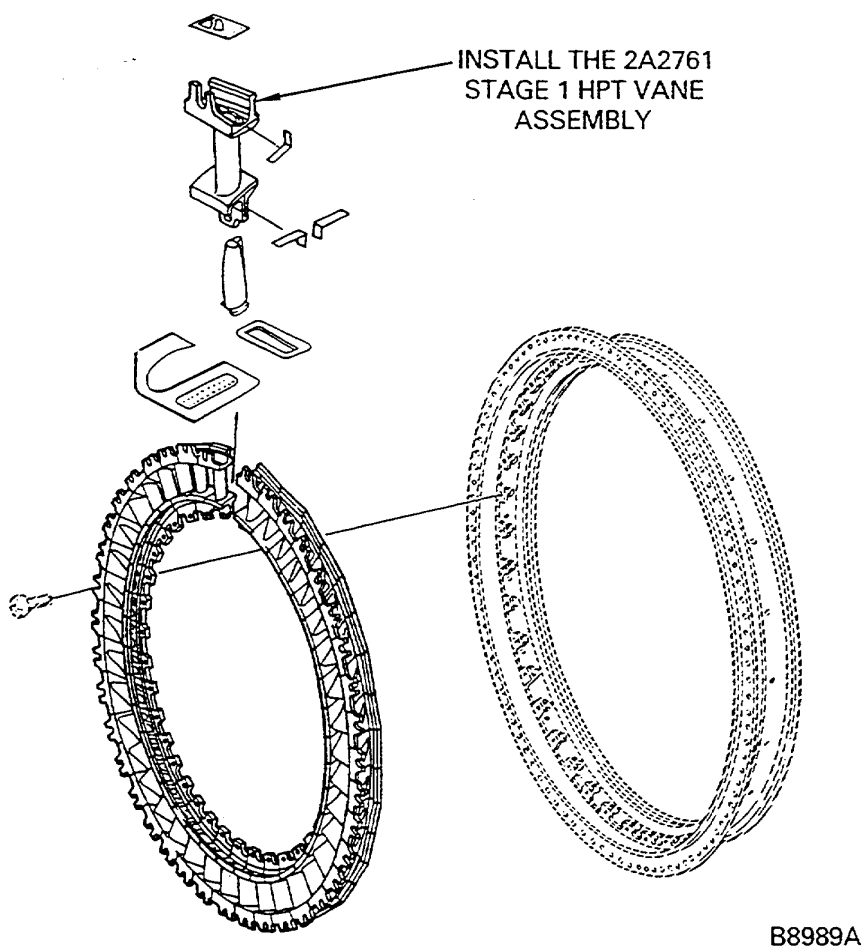
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Modification of Stage 1 HPT Duct Support Assembly
Fig.2 (Sheet 2)

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Location of Stage 1 HPT Vane Assembly
Fig.3

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SERVICE BULLETIN

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this 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
2A2703 (72-44-10)	1		.Support, HPT, Stage 1, Assembly	2A1664 (01-010)	(S1) (1D) (A) (B)
2A2761 (72-44-20)	40	-	.Vane, Stage 1, Assembly	2A0561 (01-240)	(S1) (A) (B)
2A2765 (72-44-20)	1		..Cover, HPT Vane, Assembly	2A0538 (01-310)	(S1) (A) (B)

C. Instruction/Disposition Code Statements:

(S1) New parts coded (S1) must replace old parts coded (S1) as a COMPLETE SET per engine except:

The 2A2703 Stage 1 HPT Support Assembly can be used with either the 2A0561 Stage 1 Vane Assembly or the 2A2761 Stage 1 Vane Assembly.

The 2A0561 Stage 1 Vane Assembly can be used with either the 2A2703 or the 2A1664 Stage 1 HPT Support Assembly.

The 2A2761 Stage 1 Vane Assembly cannot be used with the 2A1664 Stage 1 HPT Support Assembly.

(1D) You can do a modification to the old part number and identify it as the new part number.

(A) New part is currently available.

(B) Old part will no longer be available.

D. Consumable Materials required to incorporate this Service Bulletin

CoMat 03-077 Plasma Spray Powder

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International Aero Engines

SERVICE BULLETIN

CoMat 03-077 Plasma Spray Powder

NOTE: The estimated 1995 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.

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