



ENGINE - HP TURBINE ROTOR AND STATOR ASSEMBLY - PROVIDE NEW STAGE 2 HPT VANES WHICH
HAVE INCREASED COOLING AIRFLOW - CATEGORY CODE 8 - MOD.ENG-72-0266

1. Planning Information

A. Effectivity

- (1) Aircraft: Airbus A320, A321
- (2) Engine: V2533-A5 Engines before Serial No V10228*

*The serial Number data shown is of a preliminary nature and is provided for advanced planning only. A future revision to this Service Bulletin will confirm final serial number effectivity.

B. Reason

- (1) Condition:

Potentially high operating temperatures in the front and rear knife edge cavities of the high pressure turbine second stage air seal.

- (2) Background:

The possibility of increased high pressure turbine second stage air seal knife edge clearances in overhauled engines can lead to ingestion of hot, flowpath gases into the front and rear air seal cavities. This hot, flowpath gas increases the operating temperatures of the second stage air seal and the second stage disk in the blade attachment area. An interim design to the second stage vanes was provided which increased the flow of the cooling air being fed to the second stage air seal cavities through the vanes by providing an additional machined-in hole adjacent to the cast-in cooling air feed hole.

- (3) Objective:

Increase the flow of cooling air being fed to the second stage air seal cavities through the second stage vane which incorporates a larger cast-in cooling air feed hole to replace the interim vane configuration with the additional machined-in hole.

- (4) Substantiation

The intent of this configuration was demonstrated in a test engine.

- (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) Install new Stage 2 HPT Vane Assemblies.

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 8

Accomplish based upon experience with the prior configuration.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
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(1) In service	Not applicable
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(2) At overhaul	Not applicable
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NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

G. Material – Price and Availability

(1) Modification kit is not required. Parts are supplied as single line items.

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

H. Tooling - Price and Availability

Special tools are not required to accomplish this Service Bulletin.

I. Weight and Balance

- | | |
|-------------------|--|
| (1) Weight change | None |
| (2) Moment arm | No effect |
| (3) Datum | Engine Front mount Centerline
(Power Plant station (PPS) 100) |

J. Electrical Load Data

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

K. References

- (1) Internal Reference No.

95VA021N

- (2) Other References

IAE V2500 Service Bulletins:

V2500-ENG-70-0428 - Engine - HP Turbine Rotor and Stator Assembly -
To Announce The Availability of New Stage 2 Turbine Vanes.

V2500-ENG-72-0237 - Engine - HP Turbine Rotor and Stator Assembly -
Provide a New Stage 2 HPT Vanes

V2500-ENG-72-0259 - Engine - HP Turbine Rotor and Stator Assembly -
Provide a New Stage 2 HPT Vanes

V2500 Engine Manual (E-V2500-1I-A), 72-45-20, Assembly and 72-45-24,
Cleaning, Inspection and Repair.

L. Other Publications Affected

- (1) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-45-24,
Cleaning to add the new part number.
- (2) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-45-24,
Inspection to add the new part number.

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- (3) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-45-24, Repair to add the new part number.

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2. Accomplishment Instructions

- A. Replace the 2A3832 Stage 2 HPT Vane Assembly (2 off) with the 2A3402 Stage 2 HPT Vane Assembly when you assemble the new Stage 2 HPT Ring Segment and Vane Cluster Assembly by the procedure specified in Reference (2), Chapter/Section 72-45-24 Repair 18 (VRS 3391).

NOTE: 2A3812 Ring Segment and Vane Cluster Assemblies can contain the Stage 2 HPT Vane Assembly or combination of Stage 2 HPT Vane Assemblies specified in Table 1, however, this Service Bulletin is incorporated once a complete set of the new parts specified in step A. is installed.

- B. Replace the 2A3842 Stage 2 HPT Vane Assembly (1 off) with the 2A3302 Stage 2 HPT Vane Assembly or replace the 2A3832 Stage 2 HPT Vane Assembly (1 off) with the 2A3402 Stage 2 HPT Vane Assembly when you assemble the new Stage 2 HPT Ring Segment and Vane Cluster Assembly by the procedure specified in Reference (2), Chapter/Section 72-45-24 Repair 18 (VRS 3391).

NOTE: 2A3822 Ring Segment and Vane Cluster Assemblies can contain any of the combinations of Stage 2 HPT Vane Assemblies specified in Table 1, however, this Service Bulletin is incorporated once a complete set of the new parts specified in step B. is installed.

Ring Segment & Vane Cluster Assy.	Stage 2 HPT Vane Assy.	Quantity
2A3812	2A3402	(2 off)
	OR	
	2A3832	(1 off)
	& 2A3402	(1 off)
2A3822	2A3842	(1 off)
	& 2A3402	(1 off)
	OR	
	2A3832	(1 off)
	& 2A3302	(1 off)
	OR	

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2A3302 (1 off)

&

2A3402 (1 off)

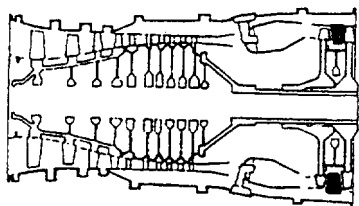
TABLE 1

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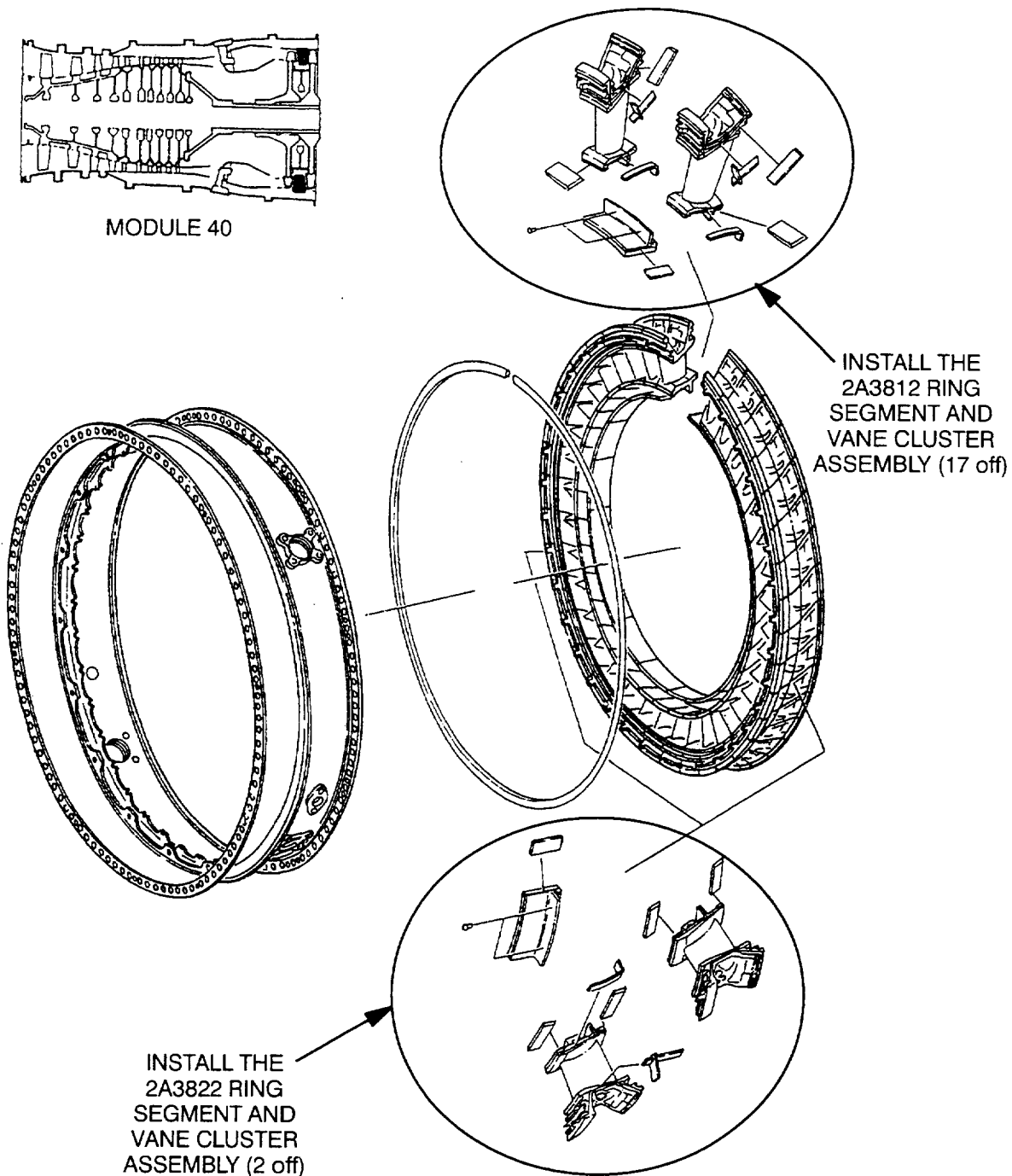
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MODULE 40



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Location of the Stage 2 High Pressure Turbine (HPT) Vane Assemblies
Fig.1

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3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kit 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
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Applicability: For each V2533-A5 Engine to incorporate this Service Bulletin

2A3812 (72-45-24)	17		Ring Segment & Vane Cluster Assembly	- (02-050)	(S1)(A)(B)
2A3402 (72-45-24)	2		.Vane, HPT, Stage 2, Assembly	2A3832 (02-130)	(S1)(A)(C)
2A3822 (72-45-24)	2		Ring Segment & Vane Cluster Assembly	- (02-260)	(S1)(A)(B)
2A3402 (72-45-24)	1		.Vane, HPT, Stage 2, Assembly	2A3832 (02-350)	(S1)(A)(C)
2A3302 (72-45-24)	1		.Vane, HPT, Stage 2, Assembly	2A3842 (02-420)	(S1)(A)(C)

C. Consumable MaterialsD. Instructions/Disposition Code Statements:

- (S1) Old and New Parts are freely and fully interchangeable.
- (A) The new part is currently available.
- (B) The new part will be supplied on a quotation basis only.
- (C) The old part will no longer be supplied.

NOTE: The estimated 1997 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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MODIFICATIONS

BASELINE

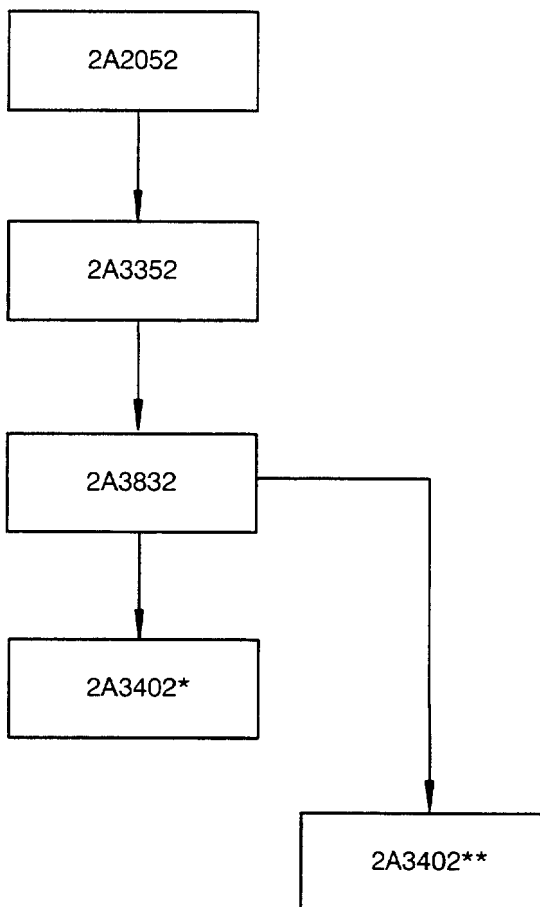
V2500-ENG-70-0428
INFORMATION - ENGINE - HP
TURBINE ROTOR AND STATOR
ASSEMBLY - TO ANNOUNCE
THE AVAILABILITY OF NEW
STAGE 2 HP TURBINE VANES

V2500-ENG-72-0237
ENGINE - HP TURBINE ROTOR
AND STATOR ASSEMBLY -
PROVIDE NEW STAGE 2 HPT
VANES

V2500-ENG-72-0259
ENGINE - HP TURBINE ROTOR
AND STATOR ASSEMBLY -
PROVIDE NEW STAGE 2 HPT
VANES

V2500-ENG-72-0266
ENGINE - HP TURBINE ROTOR
AND STATOR ASSEMBLY -
PROVIDE NEW STAGE 2 HPT
VANES WHICH HAVE
INCREASED COOLING
AIRFLOW

PART NUMBER CHANGE



*FOR V2527-A5, V2530-A5, V2525-D5 AND V2528-D5

**FOR V2533-A5

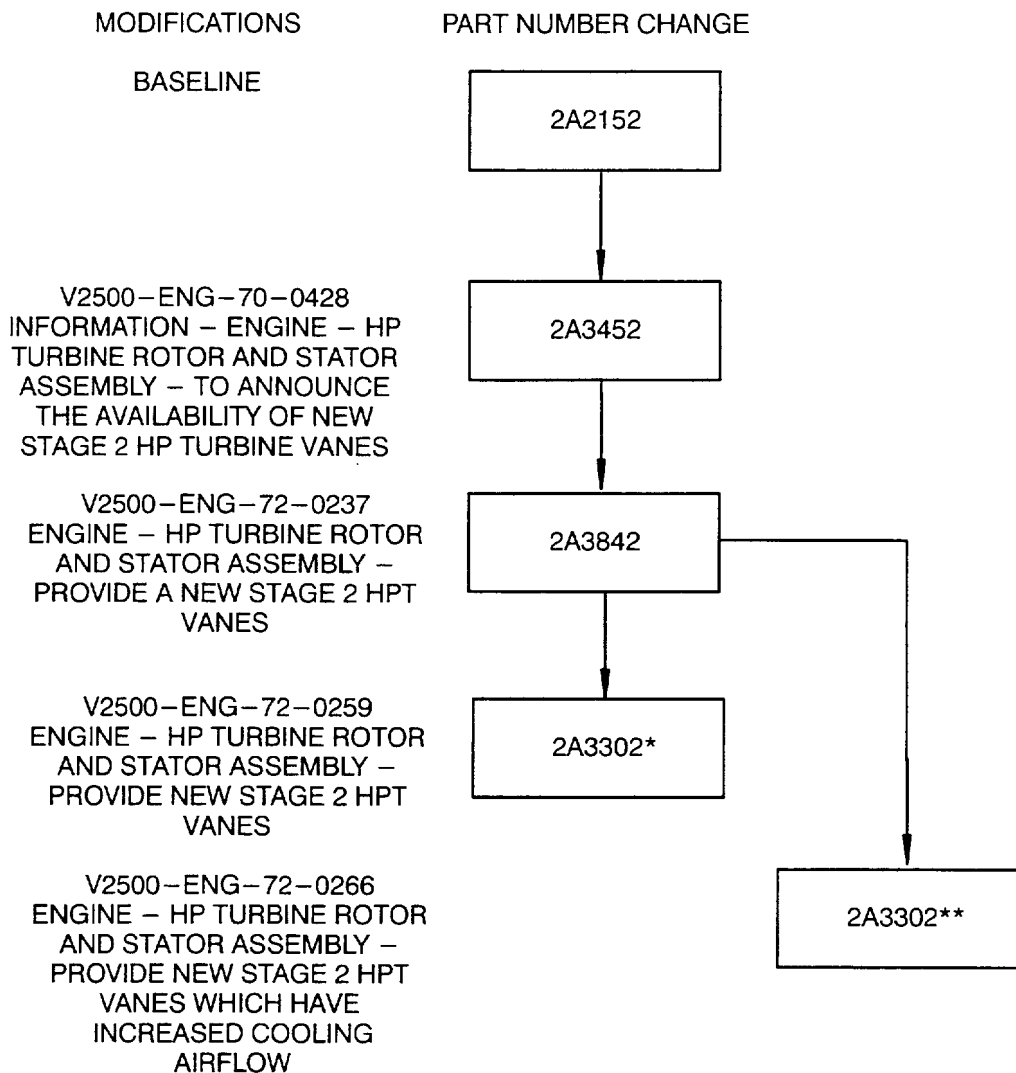
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Family Tree - Stage 2 High Pressure Turbine Vane Assembly Ref. Catalog Sequence No.
72-45-24. Fig. 02 Items 130 and 350
Fig.2

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*FOR V2527-A5, V2530-A5, V2525-D5 AND V2528-D5

**FOR V2533-A5

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Family Tree - Stage 2 High Pressure Turbine Vane Assembly Ref. Catalog Sequence No.
72-45-24. Fig. 02 Item 420
Fig.3

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