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DATE ~~R~~ Feb. 5/03**V2500-A5/D5 PROPULSION SYSTEMS SERVICE BULLETIN**

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This document transmits Revision 1 to Service Bulletin EV2500-72-0412 and
 Revision 1 to the Supplement

Document History

Service Bulletin Revision Status
 Initial Issue Dec.17/01

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 Initial Issue Dec.17/01

Bulletin Revision 1

Remove
 All pages of the
 Service Bulletin

Incorporate
 Pages 1 to 9 of the
 Service Bulletin

Reason for change
 To update Engine Effectivity

Supplement Revision 1

Remove
 All pages

Incorporate
 Pages 1 to 5

Reason for change
 To update Engine Effectivity

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CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
 If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England
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LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 to the Bulletin and Revision 1 to the Supplement are as follows:

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ENGINE – PROVIDE ADDITIONAL OIL DRAIN HOLE IN 2ND STAGE TURBINE AIR SEAL

1. Planning Information

A. Effectivity

(1) Airbus A319

R V2522-A5, V2524-A5, V2527M-A5 Engines Serial No. V10001 thru V11323.

(2) Airbus A320

R V2527-A5, V2527E-A5 Engines Serial No. V10001 thru V11323.

(3) Airbus A321

R V2530-A5, V2533-A5 Engines Serial No. V10001 thru V11323.

(4) Boeing Longbeach MD-90

V2525-D5, V2528-D5 Engine Serial No. V20001 thru V20285.

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Problem:

During the oil loss ignition events on the V2500 it was found that there was a possibility of trapping oil in front of the 1-2 seal which if ignited could cause High Pressure Turbine (HPT) Rotor damage.

(2) Evidence:

Oil leakage from the number 4 bearing compartment that pools in the HPT Rotor could ignite during operation and cause HPT distress.

(3) Objective:

Incorporate an oil drainage feature (hole) in front of the 1-2 seal to allow any accumulated oil to properly drain from this cavity prior to ignition.

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(4) Substantiation:

A structure analysis was completed of the added oil drainage hole, in the front of the 1-2 seal. Low cycle fatigue (LCF) life of the seal is still maintained above the certified life of 20K cycles. Thermal mechanical fatigue (TMF) was also looked at and the (TMF) life of the front hole exceeded the (LCF) requirements.

(5) Effects of Bulletin on:

Removal/Installation: None

Disassembly/Assembly: None

Cleaning: None

Inspection/Check: None

Repair: None

Testing: None

(6) Supplemental Information

None.

D. Description

Replace the 2nd stage HPT Air Seal with a seal that has the additional drain hole for proper drainage.

E. Compliance

Category 7

Accomplish when supply of superseded parts has been depleted.

F. Approval Data

The part number changes and/or part modifications specified in the Accomplishment Instructions and Material Information sections of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model(s) given.

G. Manpower

Estimated man-hours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
In Service	Not Applicable



Venue	Estimated Manhours
At Overhaul	Not Applicable

H. Weight and Balance

Weight Change	None
Moment	No Effect
Datum	Engine Front Mount Centerline (Power Plant Station (PPS) 100)

I. Electrical Load Data

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

J. Software Accomplishment Summary

Not Applicable.

K. References

1. IAE V2500 Service Bulletin V2500-ENG-72-0187 (Engine - HP - Turbine Rotor and Stator Assembly - Provide a New Stage 2 Turbine Blade (For Various Model Parts Commonality)).
2. IAE V2500 Service Bulletin V2500-ENG-72-0207 (Engine - HP Turbine Rotor and Stator Assembly - Provide a New Stage 2 HPT Air Seal Assembly Featuring Recontoured Forward and Rearward Mating Surfaces and a Tapered Web).
3. IAE V2500 Service Bulletin V2500-ENG-72-0240 (Engine - High Pressure Turbine Rotor and Stator Assembly - Provide a New Stage 2 HPT Air Seal and New Stage 1 High Pressure Turbine HPT Hub Metering Plugs).
4. IAE V2500 Service Bulletin V2500-ENG-72-0242 (Engine - HP - Turbine Rotor and Stator Assembly - Provide a New Stage 1 HPT Blades).
5. IAE V2500 Service Bulletin V2500-ENG-72-0327 (Engine - High Pressure Turbine Rotor and Stator Assembly - Introduce New Rotating Parts with Potential for Increased Cyclic Life).
6. V2500 Engine Illustrated Parts Catalogs (S-V2500-2IA, S-V2500-2IB, S-V2500-3IA, S-V2500-3IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, and S-V2500-71B), Chapter/Section 72-45-00.
7. V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-45-00.
8. V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-45-00.

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9. V2500 Standard Practices/Process Manual (SPP-V2500-1IA), 70-09-00 Marking of Parts.

R 10. Internal Reference - 01VA021, 01VA021A, 01VA021B.

R 11. ATA Locator - 72-45-00.

L. Other Publications Affected

1. V2500 Engine Manuals (E-V2500-1IA and E-V2500-3IA), Chapter/Section 72-45-00 Cleaning, Inspection and Repair, to add the new part.

M. Interchangeability of Parts

Old and new parts are directly interchangeable.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (Yes)

Added Data (No)

Revision to Table of Limits (No)

Inspection Procedures (No)

**2. Material Information****A. Material – Price and Availability**

1. Part prices were not available at the time of Service Bulletin publication. Contact IAE's Spare Parts Sales Department for firm quotations.
2. There is no kit provided to do this Service Bulletin.
3. Part availability information is provided in material data Instructions-Disposition.

B. Industry Support Program

Not Applicable.

C. The material data that follows is for each engine.

NOTE: The prices shown are for estimating purposes only and as such are given in good faith without commercial liability for advanced planning purposes only. Refer to IAE Spares and/or current Price Catalog for current prices.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines: Incorporating Service Bulletin V2500-ENG-72-0327

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions-Disposition
2A9300	1	*	Rotor and Stator Assy, HPT Module	2A8400 (72-45-00-01-001)	(1)(F)
2A3596	1	*	.Seal-Air, HPT, 2 Stage	2A3425 (72-45-00-01-080)	(2)(B)(D)(N)

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines: Prior to Service Bulletin V2500-ENG-72-0327

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions-Disposition
2A9300	1	*	Rotor and Stator Assy, HPT Module	2A8400 (72-45-00-01-001)	(1)(F)



New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions- Disposition
2A3596	1	*	.Seal-Air, HPT, 2 Stage	2A3179 (72-45-00-01-080)	(2)(B)(D)(N)

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2525-D5, V2528-D5 Engines: For Delivered Engines Incorporating Service Bulletin V2500-ENG-72-0242 and containing a combination of blades 2A8521, 2A8701, 2A8801, 2A8521-001, 2A8321, and 2A8321-001.

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions- Disposition
2A7000-004	1	*	Rotor and Stator Assy, HPT Module	2A7000-003 (72-45-00-01-001)	(1)(M)
2A3596	1	*	.Seal-Air, HPT, 2 Stage	2A3179 (72-45-00-01-080)	(2)(B)(D)(N)

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, Engines: For Delivered Engines Incorporating Service Bulletin V2500-ENG-72-0327 and containing a combination of blades 2A8521, 2A8701, 2A8801, 2A8521-001, 2A8321, and 2A8321-001.

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions- Disposition
2A4200-004	1	*	Rotor and Stator Assy, HPT Module	2A4200-003 (72-45-00-01-001)	(1)(M)
2A3596	1	*	.Seal-Air, HPT, 2 Stage	2A3425 (72-45-00-01-080)	(2)(B)(D)(N)

D. Instructions/Disposition Code Statements:

- (1) The new part can be obtained by modification of the old part as specified in the Accomplishment Instructions.
- (2) The new part is a replacement part only, and cannot be obtained by modification of the old part.
- (B) The new part will be available approximately January 15, 2002.
- (D) The new part is a detail of the assembly. It is available as a replacement part.

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(F) The new part will be available on a Full Manufacturing Lead time quote basis only.

(M) It is possible to get the new part only by modification.

(N) The old part is not available.

E. Tooling – Price and Availability

Special tools are not required to accomplish this Service Bulletin.

F. Reidentified Parts

Re-identified Parts Data

New PN	Keyword	Old PN
2A9300	Rotor and Stator Assy., HPT Module	2A8400
2A4200-004	Rotor and Stator Assy., HPT Module	2A4200-003
2A7000-004	Rotor and Stator Assy., HPT Module	2A7000-003

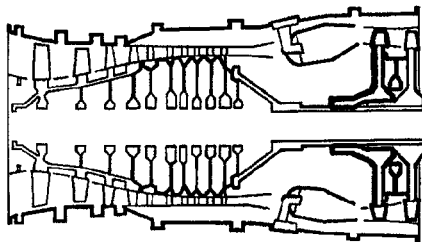
G. Other Material Information Data

Not Applicable.



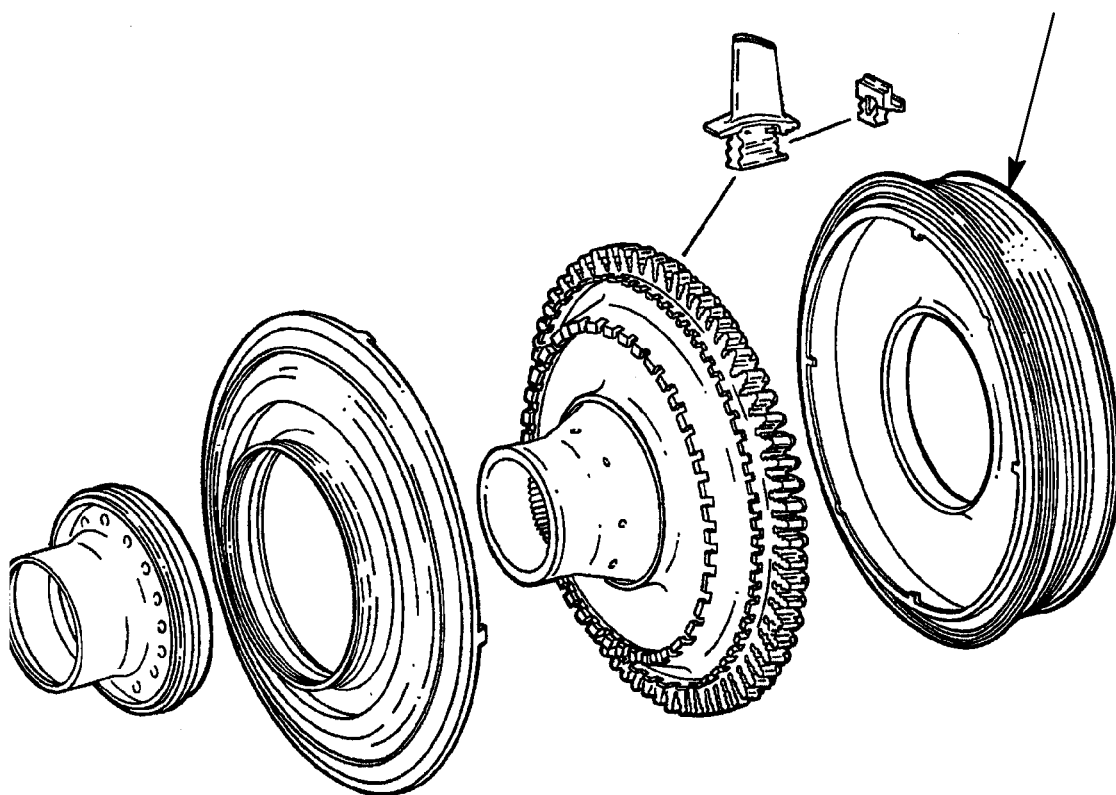
3. Accomplishment Instructions

- (1) Install the 2A3596 Stage 2 High Pressure Turbine Air Seal when you assemble the High Pressure Turbine Rotor And Stator Assembly by the procedure given in Reference (7) or (8), Engine Manual, Chapter/Section 72-45-00, Assembly. See Figure 1.
- (2) When you assemble the new High Pressure Turbine Rotor and Stator Assembly identify it by the procedure given in Reference (9), Chapter/Section 70-09-00 Marking of Parts.
- (3) Recording Instructions
 - (a) A record of accomplishment is required.



MODULE 40

INSTALL THE 2A3596
STAGE 2 HIGH PRESSURE
TURBINE AIR SEAL (1 OFF)



pw000e8429

location of the stage 2 high pressure turbine air seals
Fig 1



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ENGINE - PROVIDE ADDITIONAL OIL DRAIN HOLE IN 2ND STAGE TURBINE AIR SEAL

Alternate or Optional Procedures

None

Parts Progression To Show the Changed Part in Relation to Other Parts

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MODIFICATIONS

PART NUMBER CHANGE

BASE LINE

2A1160 *

V2500-ENG-72-0207
ENGINE – HP TURBINE ROTOR AND
STATOR ASSEMBLY – PROVIDE A NEW
STAGE 2 HPT AIR SEAL ASSEMBLY
FEATURING RECONTOURED FORWARD AND
REWARD MATING SURFACES
AND A TAPERED WEB

2A3108 *

V2500-ENG-72-0242
ENGINE – HP TURBINE ROTOR AND
STATOR ASSEMBLY – PROVIDE NEW
STAGE 1 HPT BLADES

2A3179

V2500-ENG-72-0327
ENGINE – HIGH PRESSURE TURBINE
ROTOR AND STATOR ASSEMBLY –
INTRODUCE NEW ROTATING PARTS WITH
POTENTIAL FOR INCREASED CYCLIC LIFE

2A3425

V2500-ENG-72-0412
ENGINE – PROVIDE ADDITIONAL OIL DRAIN
HOLE IN 2ND STAGE TURBINE AIR SEAL

2A3596

* DO NOT USE IN V2533-A5 ENGINES

E8430
PWH

Family tree stage 2 high pressure turbine air seal Ref. Catalog Sequence No.
72-45-00, Fig 01 Item 082
Fig 2

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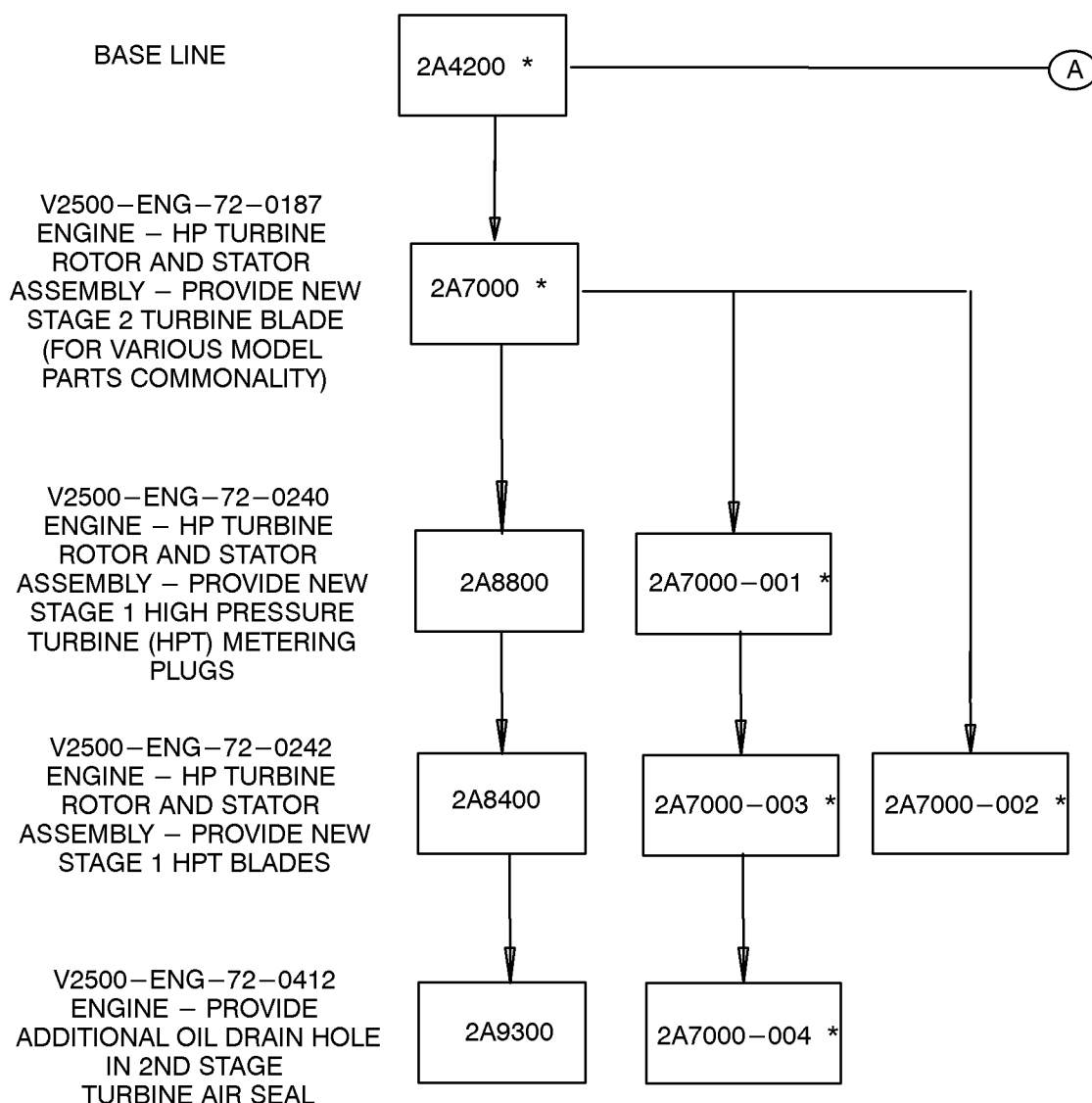
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MODIFICATIONS

PART NUMBER CHANGE



* DO NOT USE IN V2533-A5 ENGINES

E8431
PWHFamily tree Rotor and stator assembly HPT module V2522-A5, V2524-A5, V2527-A5,
V2527E-A5, V2527M-A5, V2530-A5 and V2533-A5 engines

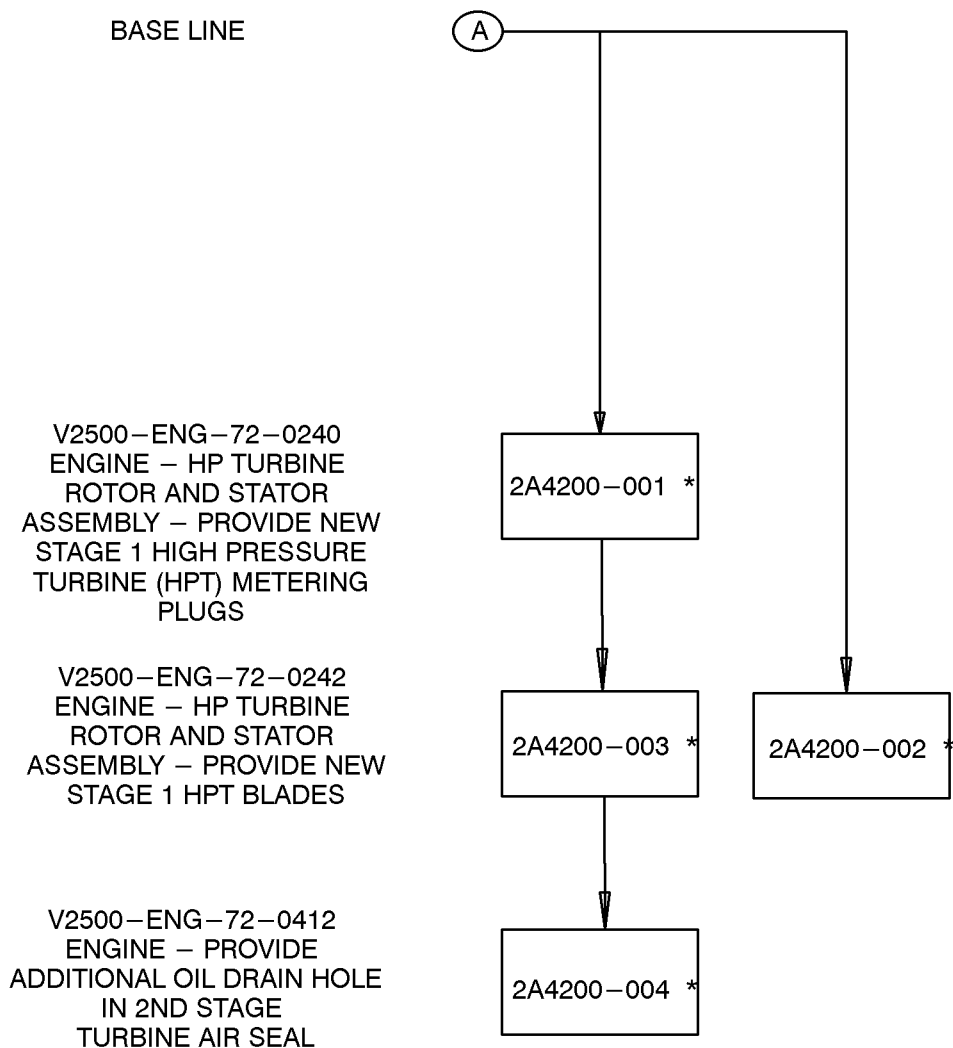
Fig 3 (sheet 1)



MODIFICATIONS

PART NUMBER CHANGE

BASE LINE



* DO NOT USE IN V2533-A5 ENGINES

E8432
PWH

Family tree Rotor and stator assembly HPT module V2522-A5, V2524-A5, V2527-A5,
V2527E-A5, V2527M-A5, V2530-A5 and V2533-A5 engines

Fig 3 (sheet 2)

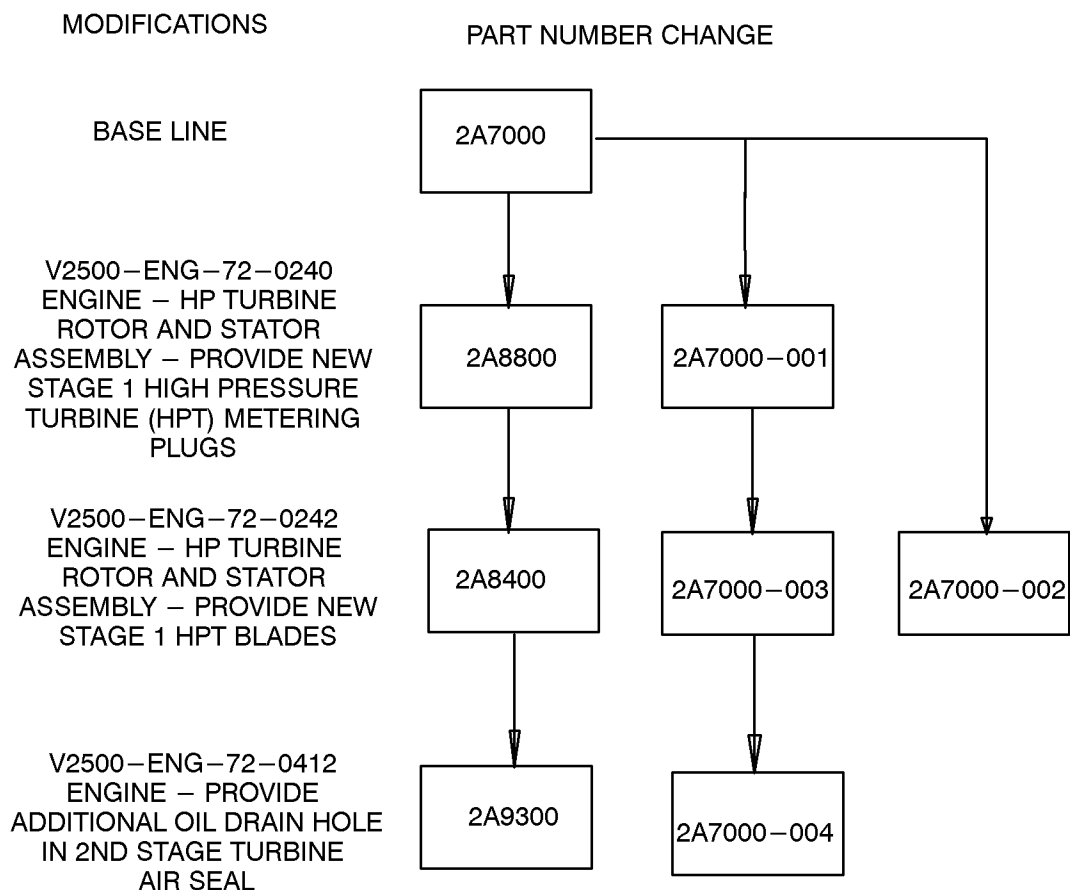
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E8433
PWH

Family tree Rotor and stator assembly HPT module V2525-D5 and V2528-D5 engines Ref
Catalog Seq. No. 72-45-00 Fig 01 Item 001

Fig 4

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