



ENGINE – HP TURBINE ROTOR AND STATOR ASSEMBLY – NEW STAGE 1 HPT AIR SEAL – CATEGORY
CODE 7 – MOD.ENG-72-0111

1. Planning Information

A. Effectivity

- (1) Aircraft: Airbus A320
- (2) Engine: V2500-A1 Engines before Serial No.V0202

NOTE: This Service Bulletin must be incorporated concurrent with or after Service Bulletin V2500-ENG-72-0097.

B. Reason

(1) Condition

- (a) There may be insufficient means to prevent engine debris, and dirt from entering the No.4 Bearing Compartment Carbon Seal area.
- (b) Another engine model experienced a knife edge distress problem.

(2) Background

- (a) Development engine testing has indicated the potential for debris and dirt in the No.4 Bearing Compartment Carbon Seal area.
- (b) Even though the V2500-A1 engine has not experienced knife edge distress problems, the seal material is being changed. No special action is required to run the service engine parts to the expected life.

(3) Objective

- (a) To introduce a Stage 1 HPT Air Seal which will protect the No.4 Bearing Compartment from ingesting debris. This Service Bulletin increases the protection provided by Service Bulletin V2500-ENG-72-0097.
- (b) Changes the Stage 1 HPT Air Seal material to address a potential knife edge distress problem that was experienced on other engine models.

(4) Substantiation

Satisfactory endurance testing.

(5) Effect 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) To provide a new Stage 1 HPT Air Seal with new material and protect the No.4 Bearing Compartment from debris.
- (2) For effect on declared life, see the Engine Manual, 05-10-01, Group 1 Parts Life.

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 7.

Accomplish when the supply of superseded parts has been depleted.

F. Manpower

Estimated manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At overhaul	TOTAL 5 minutes

NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

- (a) To accomplish the reidentification of the components 5 minutes
- TOTAL 5 minutes

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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 | .. | .. | .. | None |
| (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.
89VA057A
- (2) Other references
V2500 Engine Manual.
V2500 Standard Practices Manual.

L. Other Publications Affected

- (1) The V2500 Engine Illustrated Parts Catalog, Chapter/Section 72-45-10, Figure 1, to add the new part.
- (2) The V2500 Engine Manual, Chapter/Section 5-10-01, Group A Parts Lives, to add the new part.
- (3) The V2500 Engine Manual, Chapter/Section 72-45-10, Cleaning, to add the new part.
- (4) The V2500 Engine Manual, Chapter/Section 72-45-10, Inspection/Check, to add the new part.

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- (5) The V2500 Engine Manual, Chapter/Section 72-45-10, Repair, to add the new part.
- (6) The V2500 Engine Manual, Chapter/Section 72-45-00, Assembly to revise the procedure.

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2. Accomplishment Instructions

A. Rework Instructions

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

B. Assembly Instructions

- (1) Replace the 2A0884 Stage 1 HPT Air Seal with 2A1203 Stage 1 HPT Air Seal, by the approved procedure in Reference (1), Chapter/Section 72-45-10, Assembly. See Figure 1.
- (2) For Engines not incorporating V2500-ENG-72-0013, V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A1021 Stage 1 Turbine Rotor Assembly as 2A3921.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A1300 HP Rotor and Stator Assembly as 2A4600.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (3) For Engines incorporating V2500-ENG-72-0011 but not incorporating V2500-ENG-72-0013, V2500-ENG-72-0046 and V2500-ENG-72-0075 identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A1921 Stage 1 Turbine Rotor Assembly as 2A4121.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:

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- 1 Identify the 2A1300 HP Rotor and Stator Assembly as 2A4600.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (4) For Engines incorporating V2500-ENG-72-0011 and V2500-ENG-72-0046 but not incorporating V2500-ENG-72-0013 and V2500-ENG-72-0075 identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A6421 Stage 1 Turbine Rotor Assembly as 2A6921.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A5200 HP Rotor and Stator Assembly as 2A5500.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (5) For Engines incorporating V2500-ENG-72-0046 but not incorporating V2500-ENG-72-0013, V2500-ENG-72-0011 and V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A6321 Stage 1 Turbine Rotor Assembly as 2A6821.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A5100 HP Rotor and Stator Assembly as 2A5400.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.

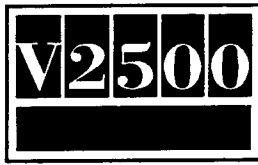
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- (6) For Engine incorporating V2500-ENG-72-0013 and V2500-ENG-72-0046 but not incorporating V2500-ENG-72-0011 and V2500-ENG-72-0075 identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
- (a) Identify the 2A2721 Stage 1 Turbine Rotor Assembly as 2A4521.
- 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
- 1 Identify the 2A1700 HP Rotor and Stator Assembly as 2A4400.
- a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (7) For Engines incorporating V2500-ENG-72-0013, V2500-ENG-72-0046 and V2500-ENG-72-0075 but not incorporating V2500-ENG-72-0011, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
- (a) Identify the 2A2121 Stage 1 Turbine Rotor Assembly as 2A4921.
- 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
- 1 Identify the 2A1700 HP Rotor and Stator Assembly as 2A4400.
- a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (8) For Engines incorporating V2500-ENG-72-0013 but not incorporating V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
- (a) Identify the 2A1621 Stage 1 Turbine Rotor Assembly as 2A4021.

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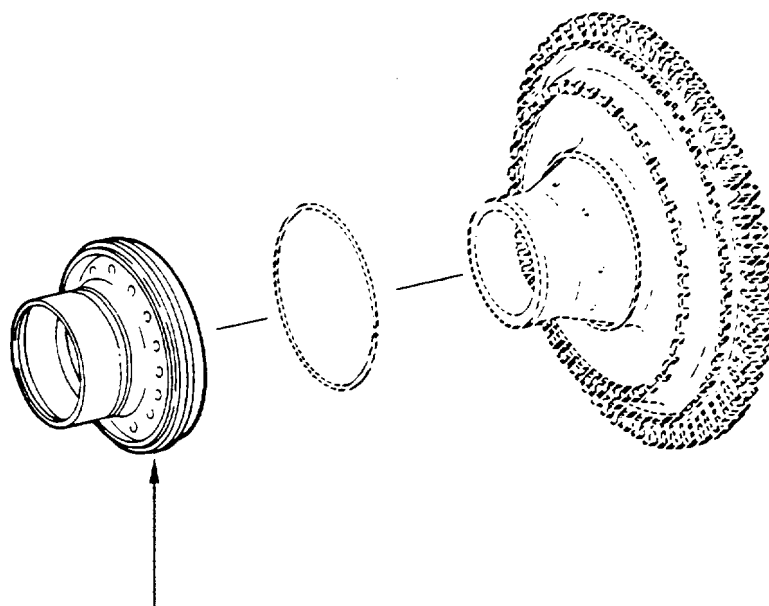
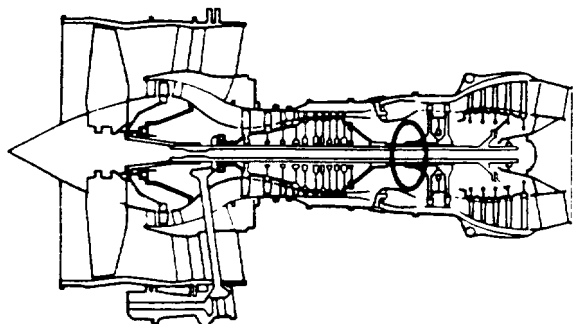
- 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A0400 HP Rotor and Stator Assembly as 2A4500.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (9) For Engines incorporating V2500-ENG-72-0013 and V2500-ENG-72-0011 but not incorporating V2500-ENG-72-0046 and V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A2321 Stage 1 Turbine Rotor Assembly as 2A6721.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A0400 HP Rotor and Stator Assembly as 2A4500.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- (10) For Engines incorporating V2500-ENG-72-0013, V2500-ENG-72-0011 and V2500-ENG-72-0046 but not incorporating V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A2521 Stage 1 Turbine Rotor Assembly as 2A4421.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:

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- 1 Identify the 2A1700 HP Rotor and Stator Assembly as 2A4400.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (11) For Engines incorporating V2500-ENG-72-0013, V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075, identify the Stage 1 Turbine Rotor Assembly and the HP Turbine Rotor and Stator Assembly as follows:
 - (a) Identify the 2A2121 Stage 1 Turbine Rotor Assembly as 2A4921.
 - 1 Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
 - (b) When the HP Rotor and Stator Assembly is assembled by the approved procedure given in Reference (1), Chapter/Section 72-45-00, Assembly, identify the new HP Rotor and Stator Assembly as follows:
 - 1 Identify the 2A1700 HP Rotor and Stator Assembly as 2A4400.
 - a Mark the new part number adjacent to the old part number by the approved procedure given in Reference (2), Control No./TASK 70-09-01, Marking of Parts. Use the vibration peen method.
- C. Recording Instructions
- (1) A record of accomplishment is necessary.



INSTALL 2A1203 STAGE 1
HPT AIRSEAL (1 Off)

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Location of Stage 1 HPT Air Seal
Fig.1

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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
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Applicability: For each V2500-A1 Engine to incorporate this Bulletin which does not incorporate V2500-ENG-72-0013, V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075.

2A4600 (72-45-10)	1		Rotor and Stator Assembly, HPT Module	2A1300 (01-001)	(S1) (1D)
2A3921 (72-45-10)	1		.Turbine Rotor Assembly, Stage 1	2A1021 (01-010)	(S1) (1D)
2A1203 (72-45-13)	1		..Seal, Air, Stage 1, HPT	2A0884 (01-020)	(S1) (A) (B)

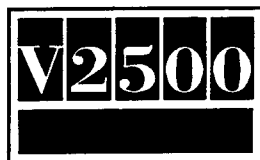
Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0011 but does not incorporate V2500-ENG-72-0013, V2500-ENG-72-0046 and V2500-ENG-72-0075.

2A4600 (72-45-10)	1		Rotor and Stator Assembly, HPT Module	2A1300 (01-001)	(S1) (1D)
2A4121 (72-45-10)	1		.Turbine Rotor Assembly, Stage 1	2A1921 (01-010)	(S1) (1D)
2A1203 (72-45-13)	1		..Seal, Air, Stage 1, HPT	2A0884 (01-020)	(S1) (A) (B)

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0011 and V2500-ENG-72-0046 but does not incorporate V2500-ENG-72-0013 and V2500-ENG-72-0075.

2A5500 (72-45-10)	1		Rotor and Stator Assembly, HPT Module	2A5200 (01-001)	(S1) (1D)
2A6921 (72-45-10)	1		.Turbine Rotor Assembly, Stage 1	2A6421 (01-010)	(S1) (1D)
2A1203 (72-45-13)	1		..Seal, Air, Stage 1, HPT	2A0884 (01-020)	(S1) (A) (B)

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Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0046 but does not incorporate V2500-ENG-72-0013, V2500-ENG-72-0011 and V2500-ENG-72-0075.

2A5400	1	Rotor and Stator	2A5100	(S1) (1D)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A6821	1	.Turbine Rotor	2A6321	(S1) (1D)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013 and V2500-ENG-72-0046 but does not incorporate V2500-ENG-72-0011 and V2500-ENG-72-0075.

2A4400	1	Rotor and Stator	2A1700	(S1) (1D) (C)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A4521	1	.Turbine Rotor	2A2721	(S1) (1D)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013, V2500-ENG-72-0046 and V2500-ENG-0075 but does not incorporate V2500-ENG-72-0011.

2A4400	1	Rotor and Stator	2A1700	(S1) (1D) (C)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A4921	1	.Turbine Rotor	2A2121	(S1) (1D) (C)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013 but does not incorporate V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075.

2A4500	1	Rotor and Stator	2A0400	(S1) (1D)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A4021	1	.Turbine Rotor	2A1621	(S1) (1D)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013 and V2500-ENG-72-0011 but does not incorporate V2500-ENG-72-0046 and V2500-ENG-72-0075.

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2A4500	1	Rotor and Stator	2A0400	(S1) (1D)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A6721	1	.Turbine Rotor	2A2321	(S1) (1D)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013, V2500-ENG-72-0011 and V2500-ENG-72-0046 but does not incorporate V2500-ENG-72-0075.

2A4400	1	Rotor and Stator	2A1700	(S1) (1D) (C)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A4421	1	.Turbine Rotor	2A2521	(S1) (1D)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

Applicability: For each V2500-A1 Engine to incorporate this Bulletin which incorporates V2500-ENG-72-0013, V2500-ENG-72-0011, V2500-ENG-72-0046 and V2500-ENG-72-0075.

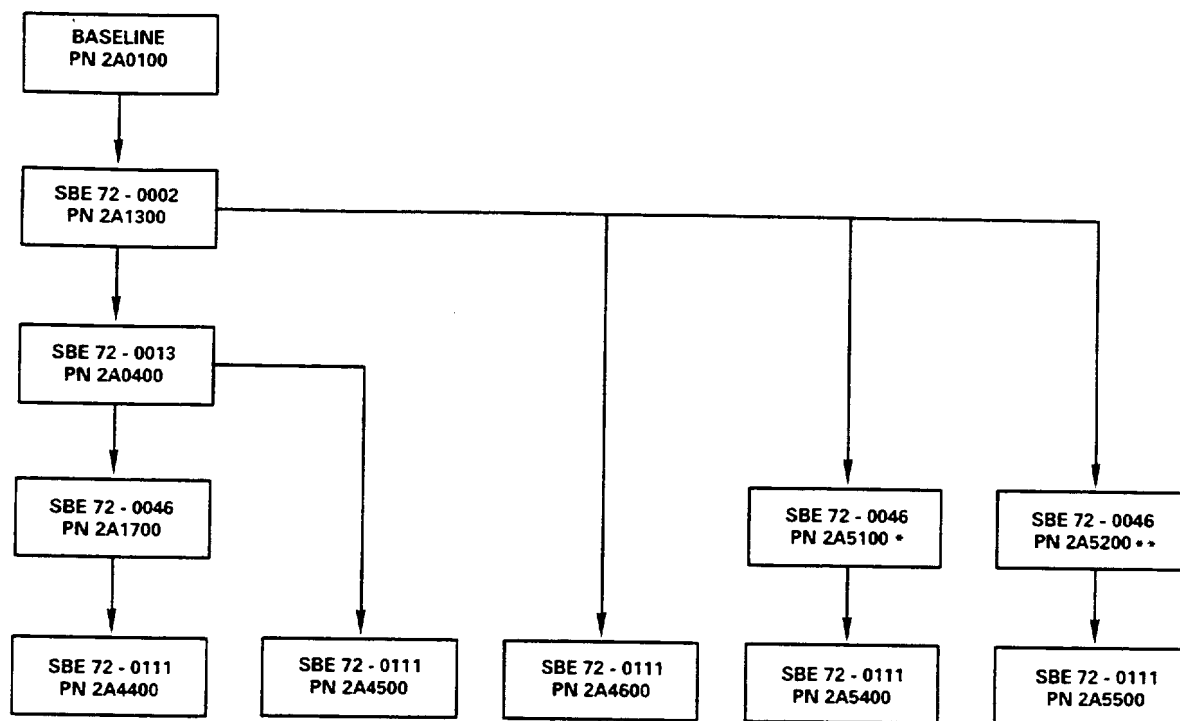
2A4400	1	Rotor and Stator	2A1700	(S1) (1D) (C)
(72-45-10)		Assembly, HPT Module	(01-001)	
2A4921	1	.Turbine Rotor	2A2121	(S1) (1D) (C)
(72-45-10)		Assembly, Stage 1	(01-010)	
2A1203	1	..Seal, Air, Stage 1,	2A0884	(S1) (A) (B)
(72-45-13)		HPT	(01-020)	

C. Instruction/Disposition Code Statements:

- (S1) New Parts coded S1 must replace Old parts coded S1 as a COMPLETE SET per engine except the Old 2A0891-01 No.4 Rear Bearing Cooling Duct Assembly from V2500-ENG-72-0097 can be used with the New 2A1203 Air seal or the New 2A1203 Air Seal must be used with the New 2A1204-01 No.4 Bearing Heatshield.
- (1D) A modification can be done to the Old Part and it can be identified to the New Part Number.
- (A) New part is currently available.
- (B) The Old Part will no longer be available for sale.
- (C) This Assembly is a nonprovisioned item, not normally stocked as a spare item.

NOTE: The estimated 1991 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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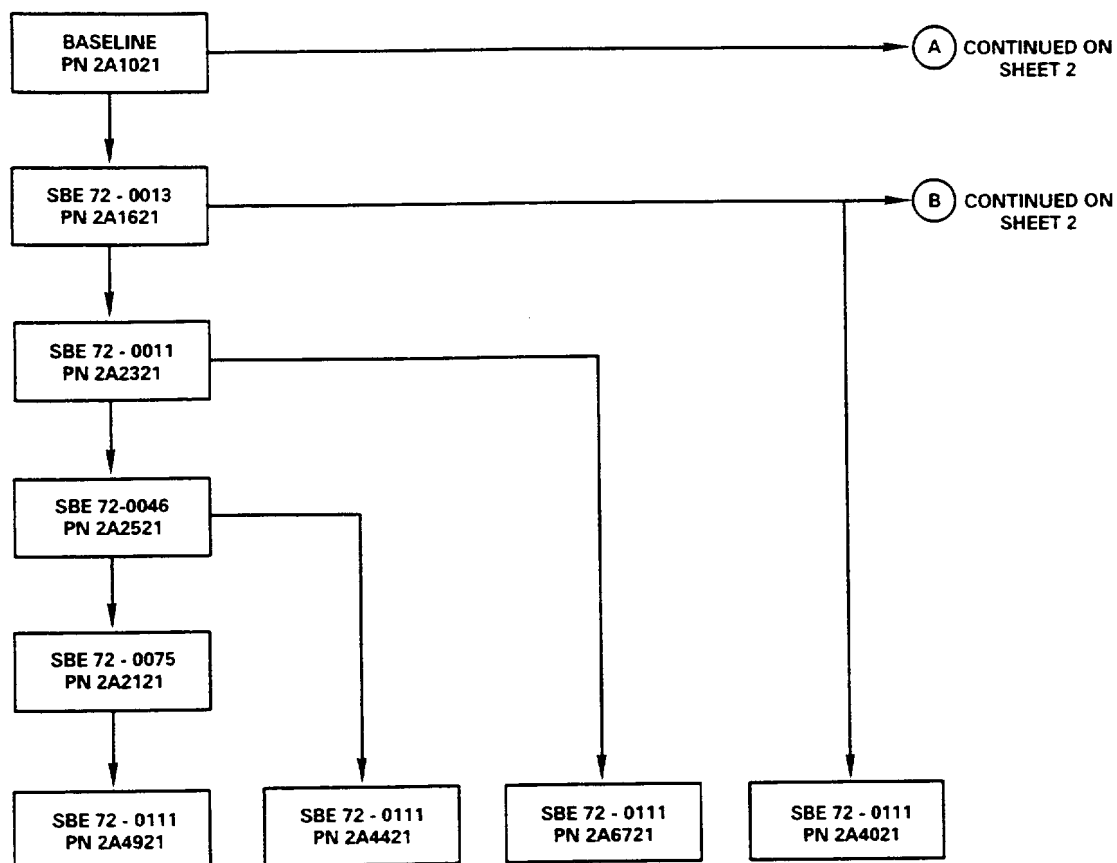
* FOR ENGINES NOT INCORPORATING V2500 - ENG - 72 - 0011

** FOR ENGINES INCORPORATING V2500 - ENG - 72 - 0011

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Family tree - Rotor and stator assembly HPT Module
Fig.2

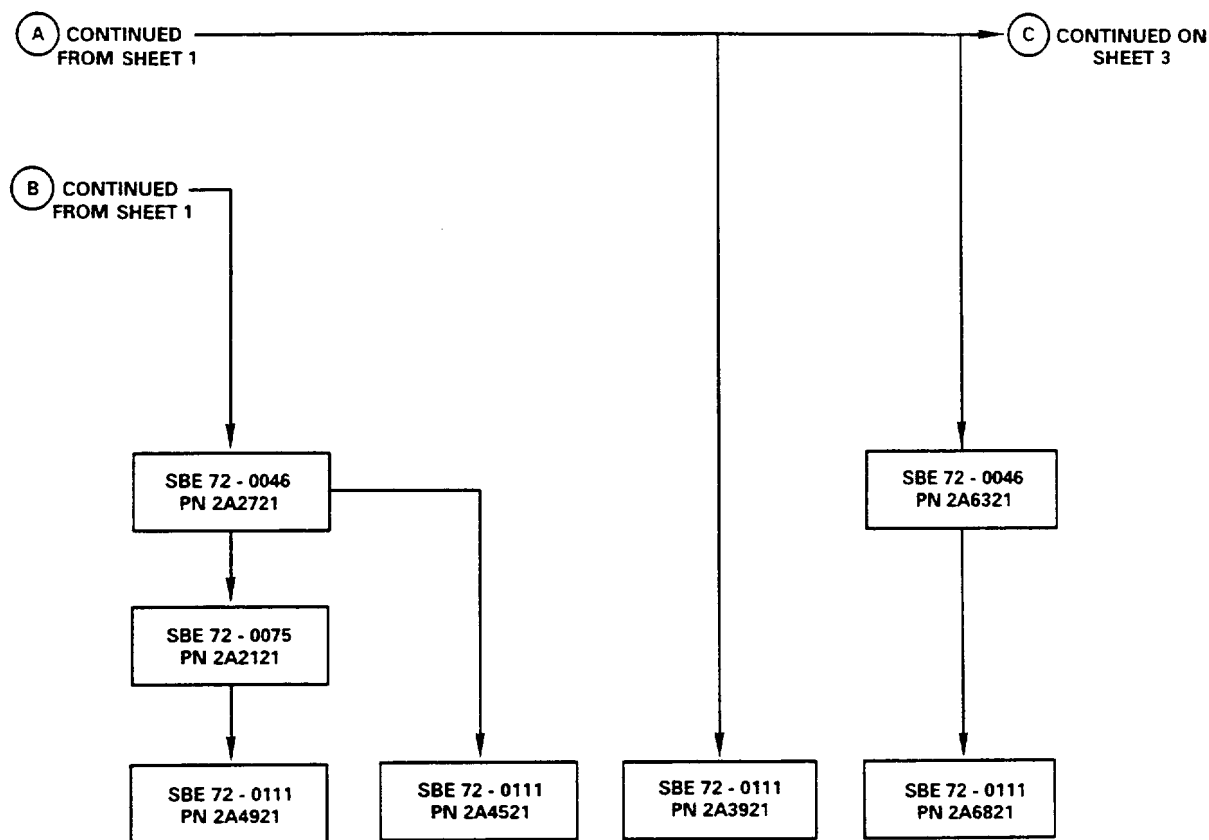
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Family tree - Stage 1 rotor assembly
Fig.3 Sheet 1 of 3

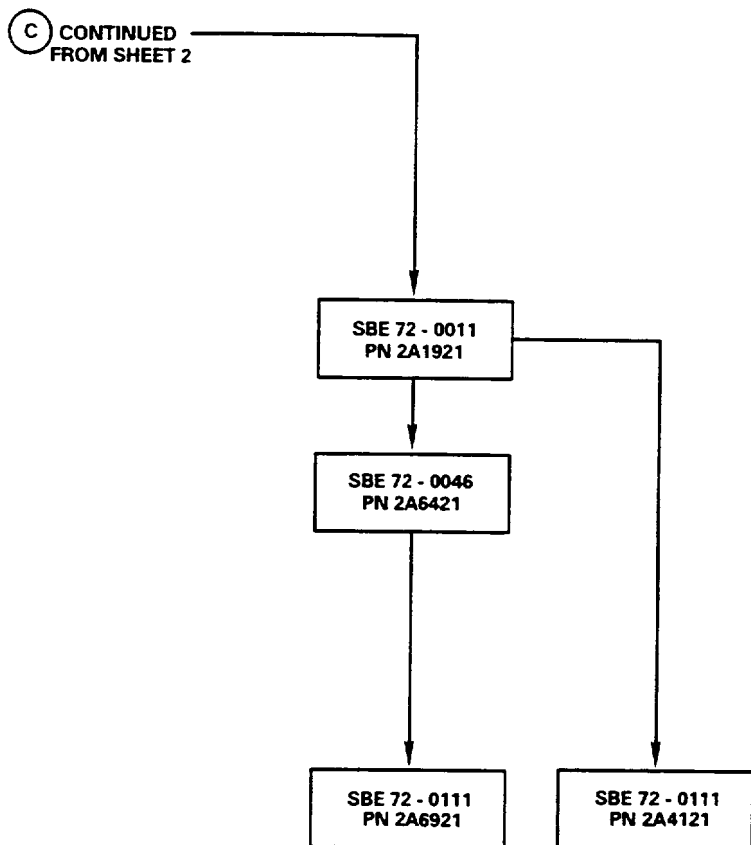
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Family tree - Stage 1 rotor assembly
Fig.3 Sheet 2 of 3

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Family tree - Stage 1 rotor assembly
Fig.3 Sheet 3 of 3

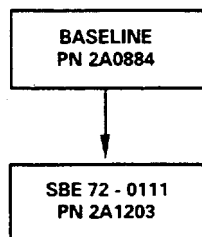
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Family tree - Stage 1 HPT air seal
Fig.4

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