ENGINE - INTRODUCE RECONTOURED STAGE 1 AND 2 TURBINE ROTOR HUBS - CATEGORY CODE 8 - MOD.ENG-72-0075

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines before Serial No.V0130 except V0125 and V0128.

B. Reason

(1) Condition

Optimum disk shapes are introduced to compensate for the heatshield thermals and improve the low cycle fatigue life margin.

(2) Background

Introduction of a Stage 2 HPT Heatshield made it optional to recontour the Stage 1 and 2 HPT Hubs.

(3) Objective

To improve the low cycle fatigue margin of the Stage 1 and 2 Hubs. To introduce an improved Lock and Retainer.

(4) Substantiation

Hub designs were verified by the analytical process. Lock and Retainer designs were proven by development tests on an experimental engine.

(5) Effects of Bulletin on Workshop Procedures:

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

(6) Supplemental Information

None

C. Description

(1) Recontoured Hubs and an improved Lock and Retainer have been introduced to increase the low cycle fatigue life margin for Hubs that are used in HP Turbines with heatshielded stage 2 Hub Splines.

(2) For effect on declared life, see Engine Manual 05-10-01, Group A parts lives.

D. Approval

The Part Number changes and/or part modifications described in Sections 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	TOTAL 10 minutes

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

(a) To accomplish the reindentification of components	10 Minutes
TOTAL:	10 Minutes

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. References

(1) Internal Reference No.

87VA081A

87VA081H

(2) Other References

(1) V2500-ENG-77-0011 (Engine - HP Turbine Rotor and Stator Assembly - Rework the stage 2 Turbine Hub Assembly to Incorporate a Turbine Hub Heatshield)

(2) V2500-ENG-77-0046 (Engine - HP Turbine Rotor and Stator Assembly - Provide A New First Stage HPT Cooling Duct Assembly)

(3) V2500 Engine Manual

(4) V2500 Standard Practises Manual

L. Other Publications Affected

(1) The V2500 Engine Illustrated Parts Catalog, Chapter/Section 72-45-10, Figure 1, Chapter/Section, 72-45-11 Figure 1, Chapter/Section 72-45-30, Figure 1, Chapter/section 72-45-31, Figure 1, and Chapter/section 72-45-33, Figure 1, to add the new parts.

(2) The V2500 Engine Manual, Chapter/Section 5-10-01, Group A Parts Lives, to add the new parts.

(3) The V2500 Engine Manual, Chapter/Section 72-45-11, 72-45-31, and 72-45-33, Cleaning, to add the new parts.

(4) The V2500 Engine Manual, Chapter/Section 72-45-11, 72-45-31, and 72-45-33, Inspection/Check, to add the new parts.

(5) The V2500 Engine Manual, Chapter/Section 72-45-10 and 72-45-30, Disassembly, to revise the procedure to include the new parts.

(6) The V2500 Engine Manual, Chapter/Section 72-45-11 and 72-45-31, Repair, to add the new parts.

(7) The V2500 Engine Manual, Chapter/Section 72-45-00, 72-45-10 and 72-45-30, Assembly, 72-00-45, Installation-01 and 72-45-00 Assembly-06 to revise the procedures and to include the new parts.

2. Accomplishment Instructions

A. Rework Instructions

(1) There are no rework instructions necessary to accomplish this Service Bulletin.

B. Assembly Instructions

(1) For Engines incorporating V2500-ENG-72-0011* and V2500-ENG-72-0046.

NOTE: *You cannot do the modification given in this Service Bulletin. This Service Bulletin is replaced by V2500-ENG-72-0075. V2500-ENG-72-0011 is kept only for the record.

(a) Assemble the Stage 1 Turbine Rotor Assembly by the approved procedure in Reference (3), Chapter/Section 72-45-10, Assembly. See Figure 1.

1 Use 2A1221 Stage 1 Turbine Hub Assembly (1 off).

2 Identify the 2A2521 Stage 1 Turbine Rotor Assembly as 2A2121 by the approved procedure in Reference (4), Chapter/Section 70-09-00, Marking of Parts. Mark the new identification adjacent to the old identification. Use the vibration peen method.

(b) Assemble the Stage 2 Turbine Rotor Assembly by the approved procedure in Reference (3), Chapter/Section 72-45-30, Assembly. See Figures 2 and 3.

1 Use 2A1802 Stage 2 Turbine Hub Assembly (1 off).

NOTE: 2A1097 Stage 2 HPT Lock and 2A1638 Turbine Blade Lock Retainer must be used with 2A1802 Stage 2 Turbine Hub Assembly.

2 Use 2A1097 STage 2 HPT Lock (2 off).

3 Use 2A1638 Turbine Lock Retainer (2 off).

4 Identify the 2A1722 Stage 2 Turbine Rotor Assembly as 2A1922 by the approved procedure in Reference (4), Chapter/Section 70-09-00, Marking of Parts. Mark the new identification adjacent to the old identification. Use the vibration peen method.

(c) Assemble the HP Turbine Rotor and Stator Assembly by the approved procedure in Reference (3), Chapter/Section 72-45-00, Assembly, Config-1 and Config-2.

1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

(d) Install the HP Turbine Assembly by the approved procedure in Reference (3), Chapter/Section 72-00-45, Installation-01.

1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

(e) Install the HP Turbine Assembly by the approved procedure in Reference (3), Chapter/Section 72-40-00, Assembly-06.

1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

(2) For Engines which do not incorporate V2500-ENG-72-0011 but incorporate V2500-ENG-72-0046.

(a) Assemble the Stage 1 Turbine Rotor Assembly by the approved procedure in Reference (3), Chapter/Section 72-45-10, Assembly. See Figure 1.

1 Use 2A2221 Stage 1 Turbine Hub Assembly (1 off).

2 Identify the 2A2721 Stage 1 Turbine Rotor Assembly as 2A2121 by the approved procedure in Reference (4), Chapter/Section 70-09-00, Marking of Parts. Mark the new identification adjacent to the old identification. Use the vibration peen method.

(b) Assemble the Stage 2 Turbine Rotor Assembly by the approved procedure given in Reference (3), Chapter/Section 72-45-30, Assembly. See Figure 2 and 3.

1 Use 2A1802 Stage 2 Turbine Hub Assembly (1 off).

NOTE: 2A1097 Stage 2 HPT Lock and 2A1638 Turbine Blade Lock Retainer must be used with 2A1802 Stage 2 Turbine Hub Assembly.

2 Use 2A1097 Stage 2 HPT Lock (2 off).

3 Use 2A1638 Turbine Blade Lock Retainer (2 off).

4 Identify the 2A1022 Stage 2 Turbine Rotor Assembly as 2A1922 by the approved procedure in Reference (4), Chapter/Section 70-09-00, Marking of Parts. Mark the new identification adjacent to the old identification. Use the vibration peen method.

(c) Assemble the HP Turbine Rotor and Stator Assembly by the approved procedure in Reference (3), Chapter/Section 72-45-00, Assembly, Config-1 and Config-2.

1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

(d) Install the HP Turbine Assembly by the approved procedure in Reference (3), Chapter/Section 72-00-45, Assembly, Installation-01.

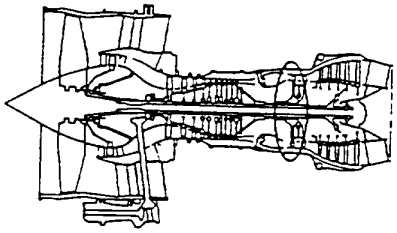
1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

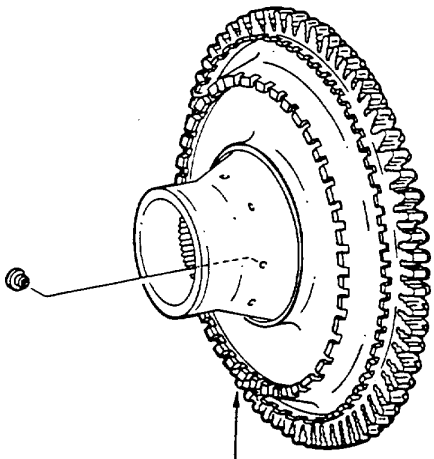
(e) Install the HP Turbine Assembly by the approved procedure in Reference (3), Chapter/Section 72-40-00, Assembly-06.

1 Use 1.194 to 1.214 in. (30,33 - 30,84 mm) as the new HP Turbine Assembly Running Distance dimension.

C. Recording Instructions

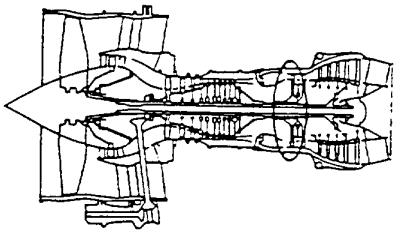
(1) A record of accomplishment is necessary.

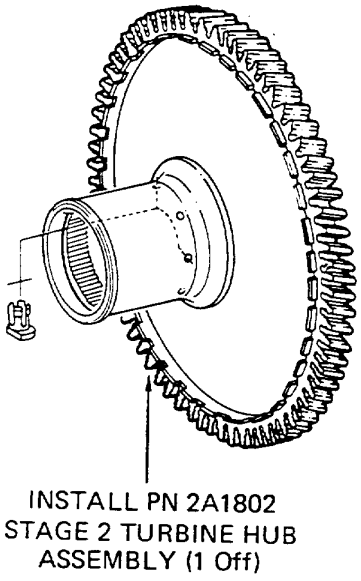




19753

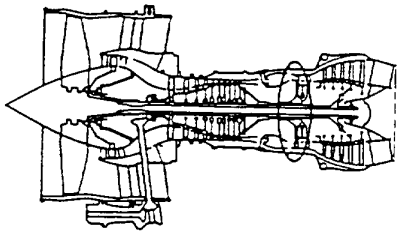
Location of stage 1 Turbine Hub Assembly
Fig.1

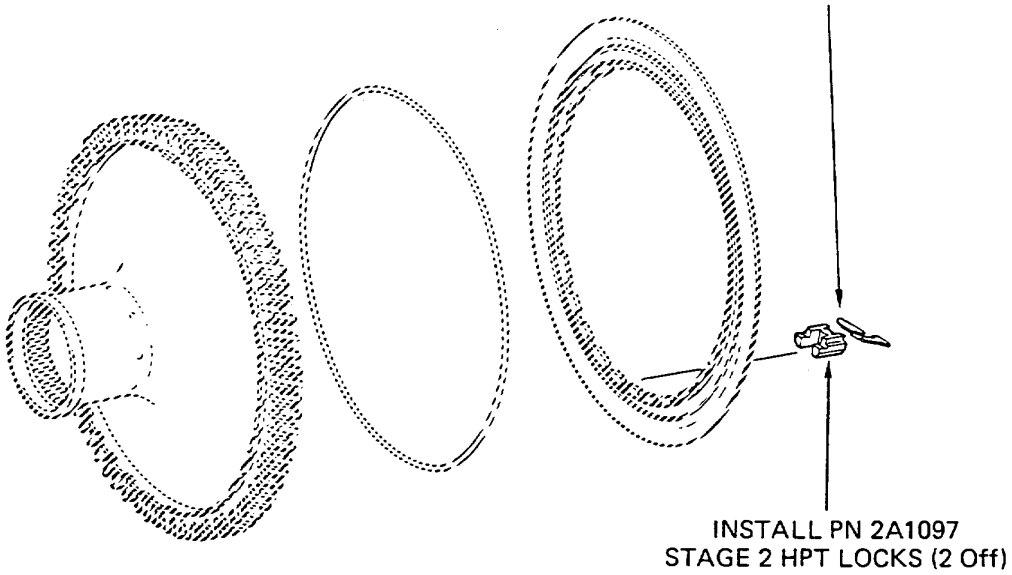




19754

Location of stage 2 Turbine Hub Assembly
Fig.2





Location of stage 2 HPT Lock
Fig.3

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:

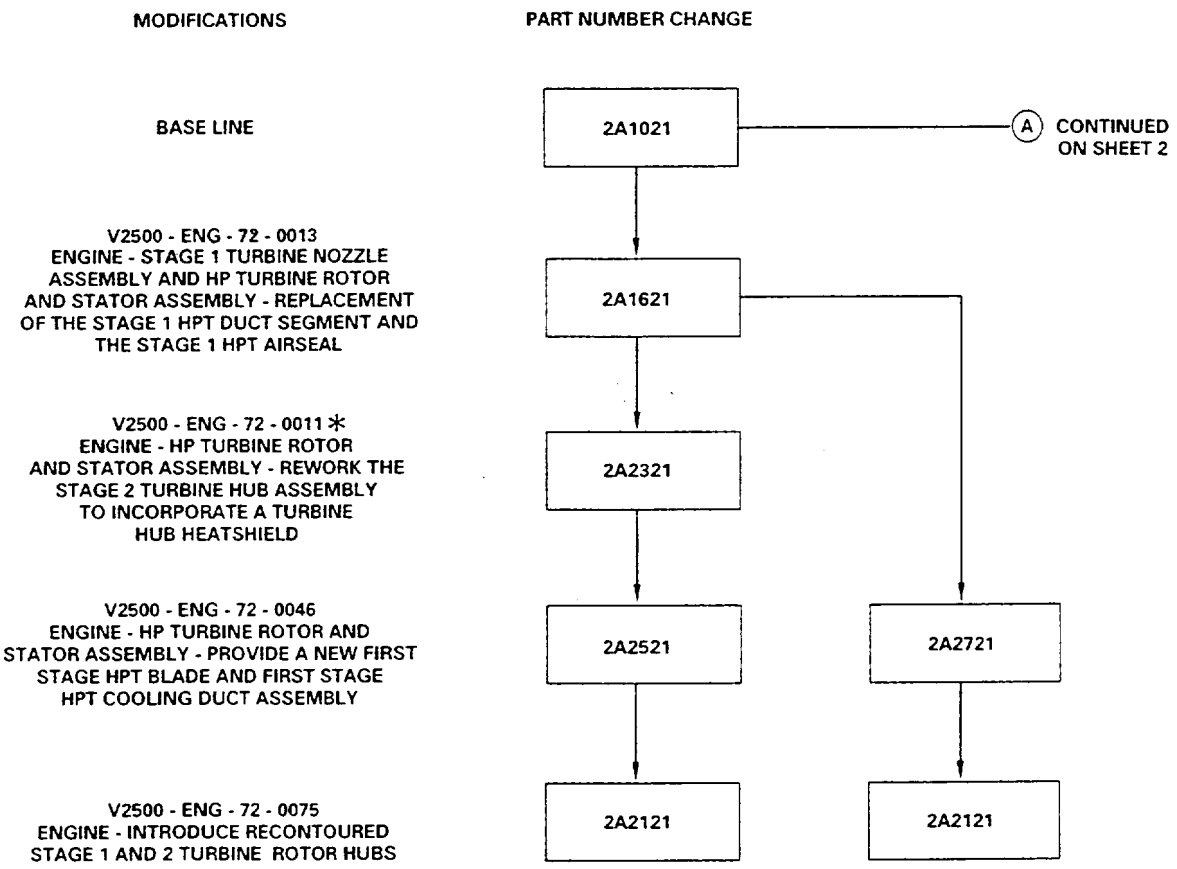
New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
Applicability: For each V2500 Engines to incorporate this Bulletin which incorporates V2500-ENG-72-0011 and V2500-ENG-72-0046.					
2A2121 (72-45-10)	1	-	Turbine Rotor - Stage 1, Assembly	2A2521 (01-010)	(A)
2A2221 (72-45-11)	1	-	Hub Assembly Turbine, Stage 1	2A2021 (01-010)	(S1)(B)(C)
2A1801 (72-45-11)	1	-	Hub Turbine Stage 1	2A1901 (01-011)	(E)
2A1922 (72-45-30)	1	-	Turbine Rotor - Stage 2, Assembly	2A1722 (01-010)	(A)
2A1802 (72-45-31)	1	-	Hub Assembly Turbinr, Stage 2	2A1702 (01-010)	(S1)(B)(C)
2A1202 (72-45-31)	1	-	Hub - Turbine, Stage 2	2A1302 (01-011)	(S1)(B)(C)
2A1097 (72-45-33)	2	153.00	Lock HPT, Stage 2	2A1812 (01-060)	(S1)(B)(F)
2A1638 (72-45-33)	2	19.60	Retainer - Turbine, Blade Lock	2A0143 (01-040)	(S1)(B)(F)
Applicability: For each V2500 Engines to incorporate this Bulletin which does not incorporate V2500-ENG-72-0011, but does incorporate V2500-ENG-72-0046.					
2A2121 (72-45-10)	1	-	Turbine Rotor - Stage 1, Assembly	2A2721 (01-010)	(A)
2A2221 (72-45-11)	1	-	Hub Assembly Turbine, Stage 1	2A1121 (01-010)	(S1)(B)(C)
2A1801 (72-45-11)	1	-	Hub Turbine, Stage 1	2A1101 (01-011)	(E)
2A1922 (72-45-30)	1	-	Turbine Rotor - Stage 2, Assembly	2A1022 (01-010)	(A)
- (72-45-31)	1	-	Hub - Turbine, Stage 2	2A0902 (01-010)	(C)
2A1802 (72-45-31)	1	-	Hub Assembly Turbine, Stage 2	- (01-010)	(S1)(B)
2A1202	1	-	Hub - Turbine,	-	(S1)(B)

(72-45-31)			Stage 2	(01-011)	
2A1041	1	3248.00	Heatshield, Stage 2,	-	(S1)(B)
(72-45-31)			HPT	(01-020)	
2A1125	4	31.70	Metering Plug, Stage 2,	-	(S1)(B)
(72-45-31)				(01-040)	
2A1097	2	153.00	lock HPT, Stage 2,	-	(S1)(B)
(72-45-33)				(01-060)	
2A1638	2	19.60	Retainer - Turbine,	2A0143	(S1)(B)
(72-45-33)			Blade Lock	(01-040)	(F)

C. Instruction/Disposition Code Statements:

(S1) New parts coded (S1) must replace old parts coded (S1) in a COMPLETE SET per Engine.
(A) This assembly is available and will be supplied on a full lead time quote basis only.
(B) New part is currently available.
(C) Old part will no longer be supplied.
(E) New Part is a detail of a new assembly incorporated by the accomplishment instructions.
(F) Old part will continue to be supplied.

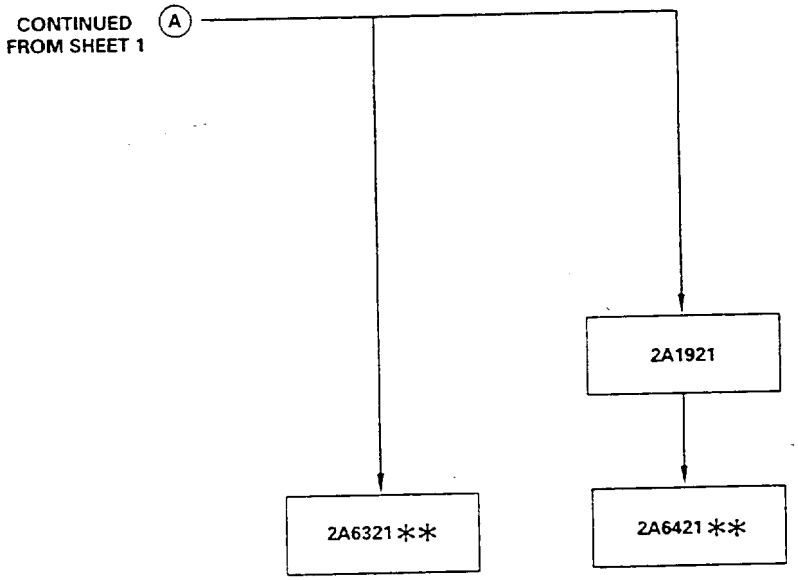
NOTE: The estimated 1993 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.



* THIS INFORMATION IS GIVEN ONLY FOR THE RECORD.THIS CONFIGURATION WAS NOT ASSEMBLED AND IS REPLACED BY THE CONFIGURATION GIVEN IN V2500 - ENG - 72 - 0075. IF IT BECOMES NECESSARY TO INCORPORATE THE APPLICABLE MODIFICATION, YOU MUST DO V2500 - ENG - 72 - 0075.

B8873

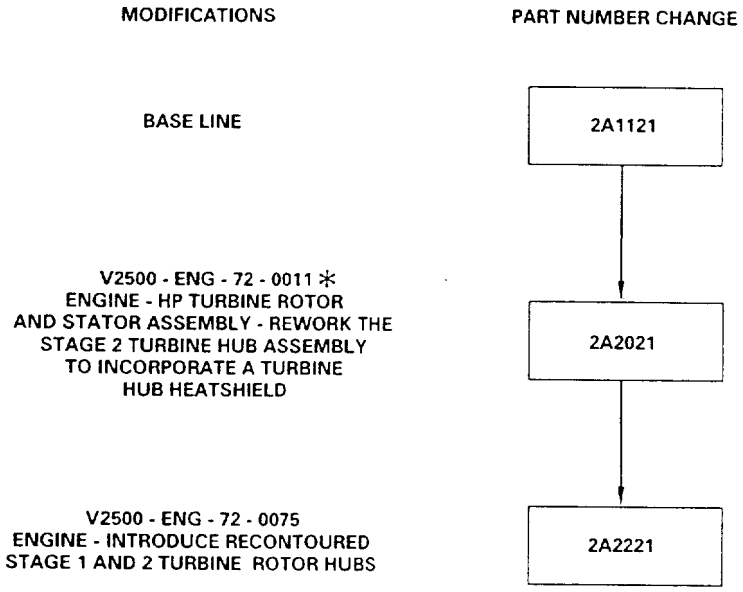
Family Tree - Stage 1 HPT Rotor Assembly
Fig.4



** THERE IS NO PROCEDURE TO ADVANCE THIS CONFIGURATION

B8874

Family Tree - Stage 1 HPT Rotor Assembly
Fig.4



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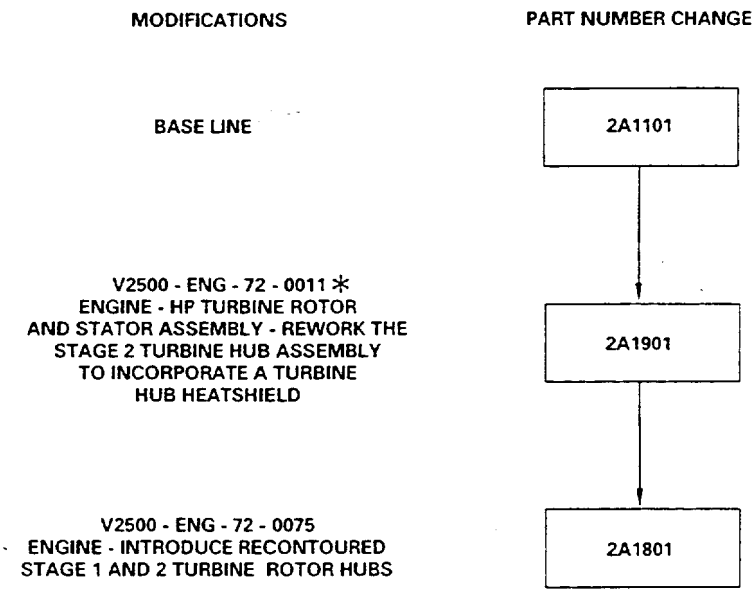
Family Tree - Stage 1 HPT Hub Assembly
Fig.5



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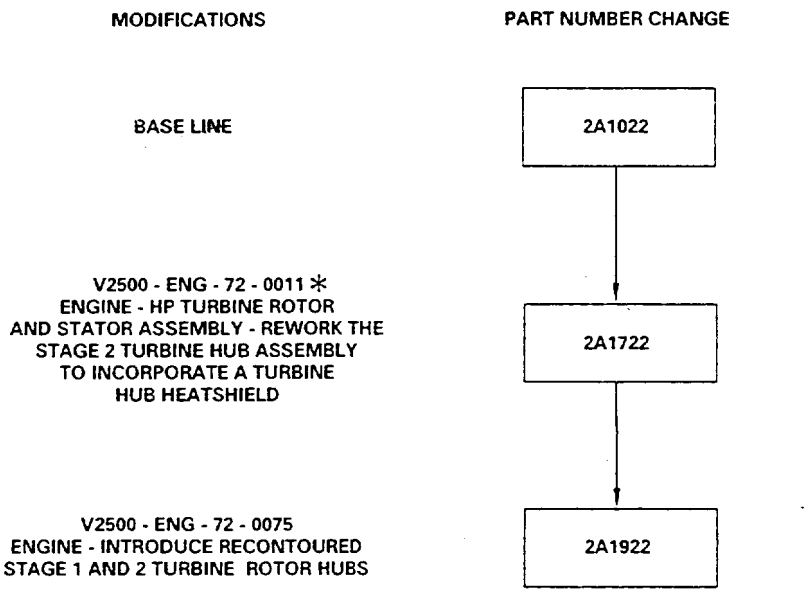
B8898

Family Tree - Stage 1 HPT Hub
Fig.6



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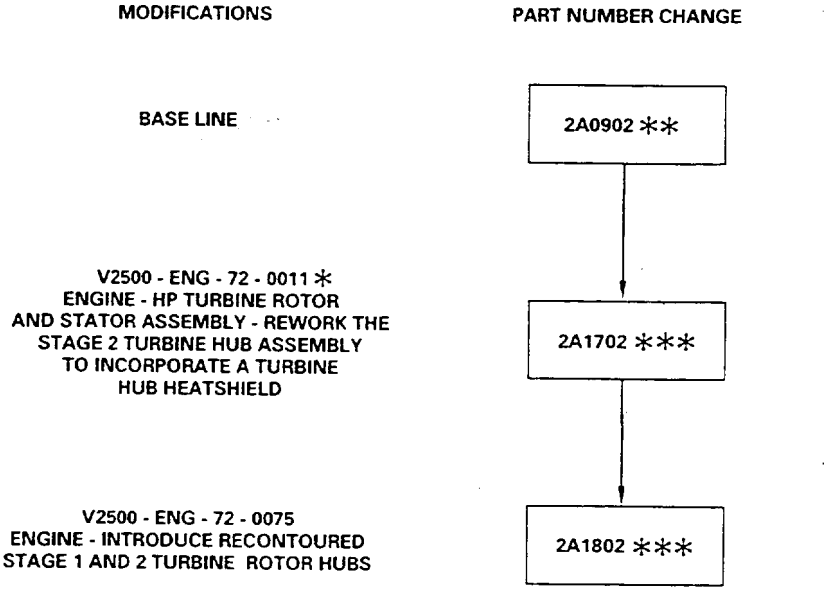
B8899

Family Tree - Stage 2 HPT Rotor Assembly
Fig.7



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** DETAIL PART

*** ASSEMBLY

B8900

Family Tree - Stage 2 HPT Hub or Hub Assembly
Fig.8

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