P U B L I C A T I O N T R A N S M I T T A L

International Aero Engines

628 Hebron Avenue, Suite 400
Glastonbury, CT 06033, USA.
Tel: +1 (860) 368-3823
Fax: +1 (860) 755-6876

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V2500 A5/D5 SERIES PROPULSION SYSTEM SERVICE BULLETIN

This document transmits the Revision 4 of Service Bulletin V2500-ENG-72-0483.

Document History

Service Bulletin Revision Status

Initial Issue	Jan.26/05
Revision 1	May 4/05
Revision 2	Feb.27/06
Revision 3	Jan. 7/09

Service Bulletin Revision 4

Remove	Incorporate	Reason for change
All pages of the Service Bulletin.	Pages 1 to 19 of the Service Bulletin.	To revise the Accomplishment instruction. To attach the FAA AMOC letter.
All pages of the Appendix 1.	Pages 1 to 12 of the Appendix 1.	To revise the Family Tree Charts.
All pages of the Supplement.	Page 1 of the Supplement.	No change.

SERVICE BULLETIN

ENGINE – NEW FIRST STAGE DUCT SEGMENTS AND HPT VANE SUPPORT

1. Planning Information

A. Effectivity

(1) Airbus A319

Engine Models Applicable

V2522-A5, V2524-A5, V2527M-A5
Engine Serial Nos. V10001 thru V12054
Engine Serial No. V12056
Engine Serial No. V12058
Engine Serial No. V12060
Engine Serial No. V12062
Engine Serial No. V12064
Engine Serial No. V12066
Engine Serial No. V12068

(2) Airbus A320

Engine Models Applicable

V2527-A5, V2527E-A5
Engine Serial Nos .V10001 thru V12054
Engine Serial No. V12056
Engine Serial No. V12058
Engine Serial No. V12060
Engine Serial No. V12062
Engine Serial No. V12064
Engine Serial No. V12066
Engine Serial No. V12068

(3) Airbus A321

Engine Models Applicable

V2530-A5, V2533-A5
Engine Serial Nos. V10001 thru V12054
Engine Serial No. V12056
Engine Serial No. V12058
Engine Serial No. V12060
Engine Serial No. V12062
Engine Serial No. V12064
Engine Serial No. V12066
Engine Serial No. V12068

(4) Boeing MD-90

Engine Models Applicable

V2525-D5, V2528-D5
Engine Serial Nos. V20001 thru V20285

B. Concurrent Requirements

Service Bulletin V2500-ENG-72-0341 (Engine - HP Turbine Rotor And Stator Assembly - Provide A New Stage 1 High Pressure Turbine Support Assembly Which Contains A New Seal) must be incorporated prior to or with this Service Bulletin.

C. Reason

(1) Problem: Field experience has shown that the 1st stage Blade Outer Air Seal Segments (BOAS) have experienced axial cracking and inward radial bowing of the segment.

Due to an increase in A5/D5 1st BOAS distress the category code is being revised to Cat. 5 to facilitate an urgent replacement of the old design. IAE recommends not repairing or installing pre SB ENG-72-0483 (A5 and D5) 1st Stage BOAS. The Field has experienced release of 1st BOAS into gaspath resulting in various operational impacts and collateral damage.

(2) Evidence: This condition could result in an interaction between the BOAS segments and the 1st Stage Blades. This interaction may contribute to increased blade tip clearance and reduced time on-wing. Desert operators have experienced sand plugging which aggravates the distress.

(3) Objective: Redesign the BOAS to improve its durability by enhancing the cooling pattern of the component and increasing the air allocation. This will help alleviate the seal distress and distortion. The BOAS is redesigned with larger cooling holes in both the new Outer Air Seal and the new Impingement Plate. This provides increased cooling to the component. Furthermore, the larger cooling holes will mitigate the sand plugging encountered by the desert operators.

A new 1st Vane Support is opened to increase flow to the 1st Blade Outer Air Seal.

(4) Substantiation: The component was allocated an additional amount of turbine cooling air. Both Bill of Material and redesigned First Outer Air Seals were run in the test engine X804-26, which was a 1000 cycle endurance test. A back to back comparison was performed. The redesigned First Outer Air Seals showed the durability enhancements reduced the axial distress and inward radial bowing, heat distress and erosion.

(5) Effects of Bulletin on:

Removal/Installation: Not affected.

Disassembly/Assembly: Not affected.

Cleaning: Not affected.

Inspection/Check: Not affected.

Repair: Not affected.

Testing: Not affected.

(6) Supplemental Information

Spare and Service Engines:

Incorporation of new IAE V2500 Service Bulletin V2500-ENG-72-0475 (reference 13) and this Service Bulletin independently at overhaul is acceptable for engine operation and operability with negligible impact on EGT margin and fuel burn. Spare and Service engines which incorporate this Service Bulletin without Service Bulletin V2500-ENG-72-0475 (reference 13) are projected to have EGT margin reduced by 0.9 degree C and fuel burn increased by 0.12%.

Refer to Chart 4 for reference information regarding 1st Stage Turbine Rotor, Hub, Plug, and Blade configuration not to be used in model V2533-A5 engines.

D. Description

Replace the 1st Stage Duct Segments and HPT Vane Support with new parts that provide greater cooling.

E. Compliance

Category 5

Accomplish when the engine is disassembled sufficiently to afford access to the affected subassembly (i.e., modules, accessories, components, build groups) and to all affected spare subassemblies.

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.

R The compliance statement and the procedures described in this Service Bulletin
R have been shown to comply with the applicable Federal Aviation Regulations and
R are FAA-APPROVED for the Engine Model listed.

R Revision 4 of this Service Bulletin was FAA-Approved as an Alternate Means Of
R Compliance (AMOC) to AD 2011-25-08.

G. Manpower

(1) In Service

Not Applicable.

(2) At Overhaul

(a) To incorporate Section 1 - Rework Instructions

2 Hrs 45 Minutes

(b) To incorporate Section 2 - Assembly

1 Minute

(c) To incorporate Section 3 - Recording

5 Minutes

(3) Total Necessary Man-hours

2 Hours 51 Minutes

H. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No Effect.

(3) 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-72-0147 (Engine - HP Turbine Rotor And Stator Assembly - Provide New Stage 1 HPT Support Assembly And A New Stage 1 HPT Vane Assembly).

2. 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)).

3. IAE V2500 Service Bulletin V2500-ENG-72-0236 (Engine - HP Turbine Rotor And Stator Assembly - Provide A New Orifice Plate With An Increased Opening Size).

4. IAE V2500 Service Bulletin V2500-ENG-72-0237 (Engine - HP Turbine Rotor And Stator Assembly - Provide New Stage 2 HPT Vanes).

5. 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).

6. IAE V2500 Service Bulletin V2500-ENG-72-0242 (Engine - HP Turbine Rotor And Stator Assembly - Provide New Stage 1 HPT Blades).

7. IAE V2500 Service Bulletin V2500-ENG-72-0310 (Engine - High Pressure Turbine - Provide New Stage 1 And 2 High Pressure Turbine Duct Segments).

8. IAE V2500 Service Bulletin V2500-ENG-72-0341 (Engine - HP Turbine Rotor And Stator Assembly - Provide A New Stage 1 High Pressure Turbine Support Assembly Which Contains A New Seal).

9. IAE V2500 Service Bulletin V2500-ENG-72-0364 (Engine - High Pressure Turbine - Provide New Stage 2 High Pressure Turbine Duct Segments).

10. IAE V2500 Service Bulletin V2500-ENG-72-0365 (Engine - Provide Pretrenched Second Stage HPT Air Sealing Ring Segments).

11. IAE V2500 Service Bulletin V2500-ENG-72-0368 (Engine - Provide New 2nd Stage High Pressure Turbine (HPT) Vanes).

12. IAE V2500 Service Bulletin V2500-ENG-72-0412 (Engine - Provide Additional Oil Drain Hole In 2nd Stage Turbine Air Seal).

13. IAE V2500 Service Bulletin V2500-ENG-72-0475 (Engine - HP Turbine Rotor Assembly - Introduce New First Stage Turbine Blades And Stage 1 HPT Cooling Duct Assembly With Decreased Flow).

14. V2500 Engine Illustrated Parts Catalogs (S-V2500-3IA, S-V2500-3IB), Chapter/Section 72-44-10 Figure 1 Item 010 and 72-45-23 Figure 01 Items 060 and 062.

R 15. V2500 Engine Illustrated Parts Catalogs (S-V2500-2IA, S-V2500-2IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, S-V2500-7IB), Chapter/Section 72-44-10 Figure 1 Item 010 and 72-45-23 Figure 1 Items 060 and 062.

R 16. V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-44-00 and 72-45-20.

R 17. V2500 Engine Manual (E-V2500-1IA), Chapter/Section 77-44-00 and 72-45-20.

18. V2500 Standard Practices/Processes Manual (E-V2500-3IA), Chapter/Section 70-09-00-400-501.

R 19. Internal Reference No. - 01VC042, 01VC042S, 01VC042S-03, 05VK004, EC 08VA058, EC 01VC042-01 and EA 13VC056.

20. ATA Locator - 72-44-00 and 72-45-00.

L. Other Publications Affected

None.

M. Interchangeability of Parts

Old and new parts are directly interchangeable in complete sets.

NOTE: Incorporation of new IAE V2500 Service Bulletin V2500-ENG-72-0475 (reference 13) and this Service Bulletin independently at overhaul is acceptable for engine operation and operability with negligible impact on EGT margin and fuel burn. Spare and Service engines which incorporate this Service Bulletin without Service Bulletin V2500-ENG-72-0475 (reference 13) are projected to have EGT margin reduced by 0.9 degree C and fuel burn increased by 0.12%.

N. Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (Yes)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

2. Material Information

A. Industry Support Program

Not Applicable.

B. The material data that follows is for each production engine.

R 72-44-00

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
R 72-44-00						
01-001	2A3915	1	Turbine Nozzle Group	-	2A3915	(NP)
R 72-44-10						
01-010	2A3896	1	. Support, HPT, 1st Stage, Assy Of	-	2A3367	(NP)

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

72-45-00

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-001	2A9800	1	Rotor and Stator Assy, HPT Module	-	2A9800	(F)

D. The material data that follows is for each production engine.

72-45-20

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-005	2A3916	1	.Case and Vane Assy	-	2A3475	(1) (F) (N)

E. The material data that follows is for each production engine.

72-45-23

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-060	2A3886-01	38	. . Duct Segment, 1st Stg Assy	-	2A3579-01	(2) (B) (N) (I)
01-062	2A3888	1	. . Cover	-	2A3561	(2) (B) (N)

F. The material data that follows is for each delivered engine.

72-44-00

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-001	2A8600-006	1	Turbine Nozzle Group	-	2A8600	(3) (NP)
01-001	2A8600-007	1	Turbine Nozzle Group	-	2A8600-005	(3) (NP)

G. The material data that follows is for each delivered engine.

72-44-10

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-010	2A3896	1	. Support, HPT, 1st Stg, Assy Of	-	2A2703	(4) (B) (N)
			OR			
01-010	2A3896	1	. Support, HPT, 1st Stg, Assy Of	-	2A3367	(4) (B) (N)
01-015	2A3895	1	. . Support	-	2A2704	(1) (NP)
01-060	2A3328	1	. . Seal, HPT, 1st Stg	-	2A0170	(2) (A) (N)

H. The material data that follows is for each delivered engine.

72-45-00

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-001	2A4200-007	1	Rotor and Stator Assy, HPT Module	-	2A4200-002	(#) (3)
			OR			
01-001	2A4200-009	1	Rotor and Stator Assy, HPT Module	-	2A4200-001	(#) (3)
			OR			
01-001	2A4200-010	1	Rotor and Stator Assy, HPT Module	-	2A4200-003	(#) (3)
			OR			
01-001	2A4200-011	1	Rotor and Stator Assy, HPT Module	-	2A4200	(#) (3)
			OR			
01-001	2A4200-012	1	Rotor and Stator Assy, HPT Module	-	2A4200-005	(3)
			OR			
01-001	2A7000-008	1	Rotor and Stator Assy, HPT Module	-	2A7000-001	(#) (3)
			OR			
01-001	2A7000-009	1	Rotor and Stator Assy, HPT Module	-	2A7000-002	(#) (3)
			OR			
01-001	2A7000-010	1	Rotor and Stator Assy, HPT Module	-	2A7000-003	(#) (3)
			OR			

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-001	2A7000-011	1	Rotor and Stator Assy, HPT Module	-	2A7000-004	(#) (3)
			OR			
01-001	2A7000-012	1	Rotor and Stator Assy, HPT Module	-	2A7000	(#) (3)
			OR			
01-001	2A7000-013	1	Rotor and Stator Assy, HPT Module	-	2A7000-005	(3)
			OR			
01-001	2A7000-014	1	Rotor and Stator Assy, HPT Module	-	2A7000-006	(3)
			OR			
01-001	2A7000-015	1	Rotor and Stator Assy, HPT Module	-	2A7000-007	(3)
			OR			
01-001	2A8400-003	1	Rotor and Stator Assy, HPT Module	-	2A8400-002	(3)
			OR			
01-001	2A8400-004	1	Rotor and Stator Assy, HPT Module	-	2A8400	(3) (N)
			OR			
01-001	2A9300-003	1	Rotor and Stator Assy, HPT Module	-	2A9300	(3) (N)
			OR			
01-001	2A9300-004	1	Rotor and Stator Assy, HPT Module	-	2A9300-002	(3)

I. <u>The material data that follows is for each delivered engine.</u>

72-45-20

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-005	2A3215-011	1	.Case and Vane Assy	-	2A3215-001	(#)(3)
			OR			
01-005	2A3215-012	1	.Case and Vane Assy	-	2A3215-002	(#)(3)
			OR			
01-005	2A3215-013	1	.Case and Vane Assy	-	2A3215-003	(#)(3)
			OR			

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-005	2A3215-014	1	.Case and Vane Assy	-	2A3215-004	(#)(3)
			OR			
01-005	2A3215-015	1	.Case and Vane Assy	-	2A3215-005	(#)(3)
			OR			
01-005	2A3219-002	1	.Case and Vane Assy	-	2A3219	(3)
			OR			
01-005	2A3364-005	1	.Case and Vane Assy	-	2A3364-001	(3)
			OR			
01-005	2A3364-004	1	.Case and Vane Assy	-	2A3364	(3) (N)
			OR			
01-005	2A3469-002	1	.Case and Vane Assy	-	2A3469	(3) (N)
			OR			
01-005	2A3416-002	1	.Case and Vane Assy	-	2A3416	(3) (N)
			OR			
01-005	2A3916	1	.Case and Vane Assy	-	2A3475	(1) (F) (N)

J. The material data that follows is for each delivered engine.

72-45-23

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5 Engines:

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-060	2A3886-01	38	. . Duct Segment, 1st Stg Assy Of	-	2A3061-01	(2) (B) (N) (I)
			OR			
01-060	2A3886-01	38	. . Duct Segment, 1st Stg Assy Of	-	2A3579-01	(2) (B) (N) (I)
01-062	2A3888	38	. . Cover, HPT Duct Segment	-	2A3061-02	(2) (B) (N) (I)
			OR			
01-062	2A3888	38	. . Cover, HPT Duct Segment	-	2A3561	(2) (B) (N) (I)
01-066		1	. . . Pin, Straight Headless	-	2A3062	(N)
			OR			

FIG- ITEM NUMBER	NEW PART NUMBER	QTY	PART TITLE	MAT	OLD PN	INSTR - DISP
01-068		1	. . . Pin, Straight Headless	-	2A3062CL1	(N)
			OR			
01-070		1	. . . Pin, Straight Headless	-	2A3062CL2	(N)
			OR			
01-072		1	. . . Pin, Straight Headless	-	2A3062CL3	(N)
			OR			
01-074		1	. . . Pin, Straight Headless	-	2A3062CL4	(N)
			OR			
01-076		1	. . . Pin, Straight Headless	-	2A3062P3	(N)
			OR			
01-078		1	. . . Pin, Straight Headless	-	2A3062P5	(N)

K. Instructions/Disposition Code Statements:

Parts Modification Conditions

(#) See applicable Family Tree for A533 model restrictions.

(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.

(3) The new part is a field identification of an assembly incorporating this Service Bulletin.

(4) The new part can be obtained by modification of the old part as specified in V2500-ENG-72-0341 then follow these Accomplishment Instructions.

Spare Parts Availability

(A) The new part is available.

(B) The new part will be available approximately January, 2005.

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

(N) The old part is not available.

(NP) The part is an item that is usually not procured as a spare item.

Cleaning, Inspection and Repair Information

(I) The cleaning, inspection and repair requirements are the same for the old and new part. The applicable engine manuals will be revised.

L. Tooling - Price and Availability

Special tools are not required to accomplish this Service- Bulletin.

M. Reidentified Parts

Reidentified Parts Data

New PN	Keyword	Old PN
2A8600-006	Turbine Nozzle Group	2A8600
2A8600-007	Turbine Nozzle Group	2A8600-005
2A3896 *	.Support, HPT, 1st Stg, Assy of	2A2703
2A3896	.Support, HPT, 1st Stg, Assy of	2A3367
2A3895	. . Support	2A2704
2A4200-007	Rotor and Stator Assy, HPT Module	2A4200-002
2A4200-009	Rotor and Stator Assy, HPT Module	2A4200-001
2A4200-010	Rotor and Stator Assy, HPT Module	2A4200-003
2A4200-011	Rotor and Stator Assy, HPT Module	2A4200
2A4200-012	Rotor and Stator Assy, HPT Module	2A4200-005
2A7000-008	Rotor and Stator Assy, HPT Module	2A7000-001
2A7000-009	Rotor and Stator Assy, HPT Module	2A7000-002
2A7000-010	Rotor and Stator Assy, HPT Module	2A7000-003
2A7000-011	Rotor and Stator Assy, HPT Module	2A7000-004
2A7000-012	Rotor and Stator Assy, HPT Module	2A7000
2A7000-013	Rotor and Stator Assy, HPT Module	2A7000-005

New PN	Keyword	Old PN
2A7000-014	Rotor and Stator Assy, HPT Module	2A7000-006
2A7000-015	Rotor and Stator Assy, HPT Module	2A7000-007
2A8400-003	Rotor and Stator Assy, HPT Module	2A8400-002
2A8400-004	Rotor and Stator Assy, HPT Module	2A8400
2A9300-003	Rotor and Stator Assy, HPT Module	2A9300
2A9300-004	Rotor and Stator Assy, HPT Module	2A9300-002
2A3215-011	.Case and Vane Assy, Turbine	2A3215-001
2A3215-012	.Case and Vane Assy, Turbine	2A3215-002
2A3215-013	.Case and Vane Assy, Turbine	2A3215-003
2A3215-014	.Case and Vane Assy, Turbine	2A3215-004
2A3215-015	.Case and Vane Assy, Turbine	2A3215-005
2A3219-002	.Case and Vane Assy, Turbine	2A3219
2A3364-004	.Case and Vane Assy, Turbine	2A3364
2A3364-005	.Case and Vane Assy, Turbine	2A3364-001
2A3416-002	.Case and Vane Assy, Turbine	2A3416
2A3469-002	.Case and Vane Assy, Turbine	2A3469
2A3916	.Case and Vane Assy, Turbine	2A3475

* Incorporating V2500-ENG-72-0341 and V2500-ENG-72-0483.

N. Other Material Information Data

Not Applicable.

3. Accomplishment Instructions

R NOTE: Later approved parts are only those IAE Original Equipment Manufacturer
R (OEM) released later parts that are fully interchangeable with the part
R specified in this Service Bulletin (SB) or one way forward
R interchangeable with the part specified in this SB. Later approved parts
R must also meet the requirements of their issuing SB.

(1) Rework Instructions

R (a) If installed, do a modification of the 2A2703 Stage 1 HPT Vane Support Assembly (1 off) by incorporating V2500-ENG-72-0341.

R (b) If installed, do a modification of the 2A3367 Stage 1 HPT Vane Support
R Assembly (1 off). See Figure 2.

(i) Remove the 1st stage HPT Seal PN 2A3328. See Figure 1 and 2.

(ii) It is recommended that the Nut PN 743645 (40 off) be removed to avoid damage to the Nut during modification. See figure 2.

(iii) Enlarge hole 'F' 20 places in Stage 1 nonprocureable HPT Vane Support 2A2704. See Figure 2

R (c) Mark the new part numbers on all affected parts. See reference (18) Standard Practices/Process Manual 70-09-00. Use the Deep Electro Etch, Metal Stamping, or Vibration Peen method.

(i) Identify nonprocureable 1st Stage HPT Support Assembly old PN 2A2704 as PN 2A3895 after modification. See Figure 2.

(ii) Identify 1st Stage HPT Support Assembly old PN 2A2703 or PN 2A3367 as PN 2A3896 after modification. See Figure 2.

(iii) Identify the Turbine Nozzle Group old PN 2A8600 as PN 2A8600-006 after modification. See Figure 3.

(iv) Identify the Turbine Nozzle Group old PN 2A8600-005 as PN 2A8600-007 after modification. See Figure 3.

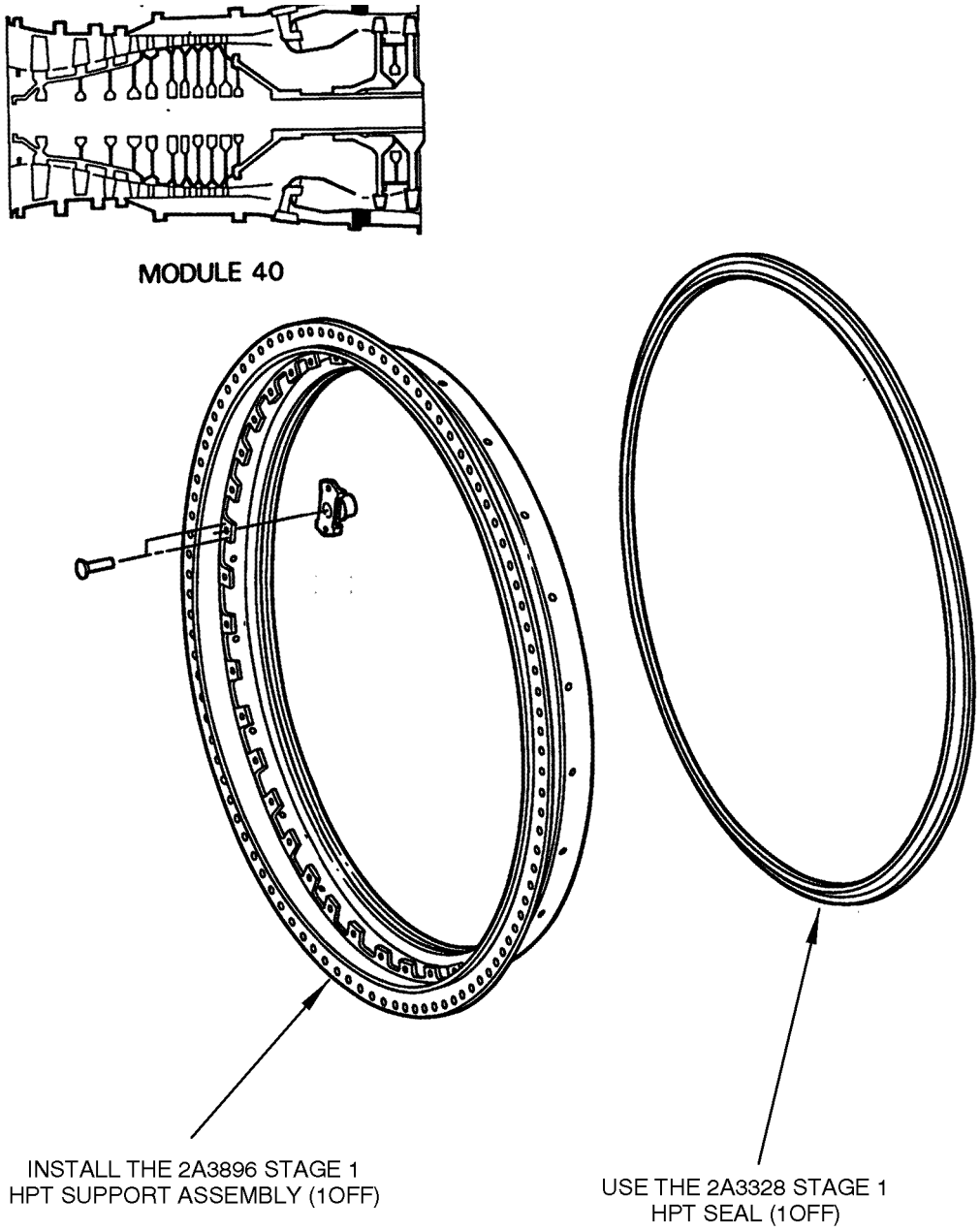
(2) Assembly Instructions

R (a) Assemble the engine per reference 16 or 17, using new Stage 1 HPT Duct
R Segments, PN 2A3886-01 or later approved parts, and 1st Stage HPT Vane
R Support Assembly, PN 2A3896 or later approved parts.

(b) Identify the applicable Rotor and Stator Assembly and Case and Vane Assembly after modification. See reidentification section for part numbers.

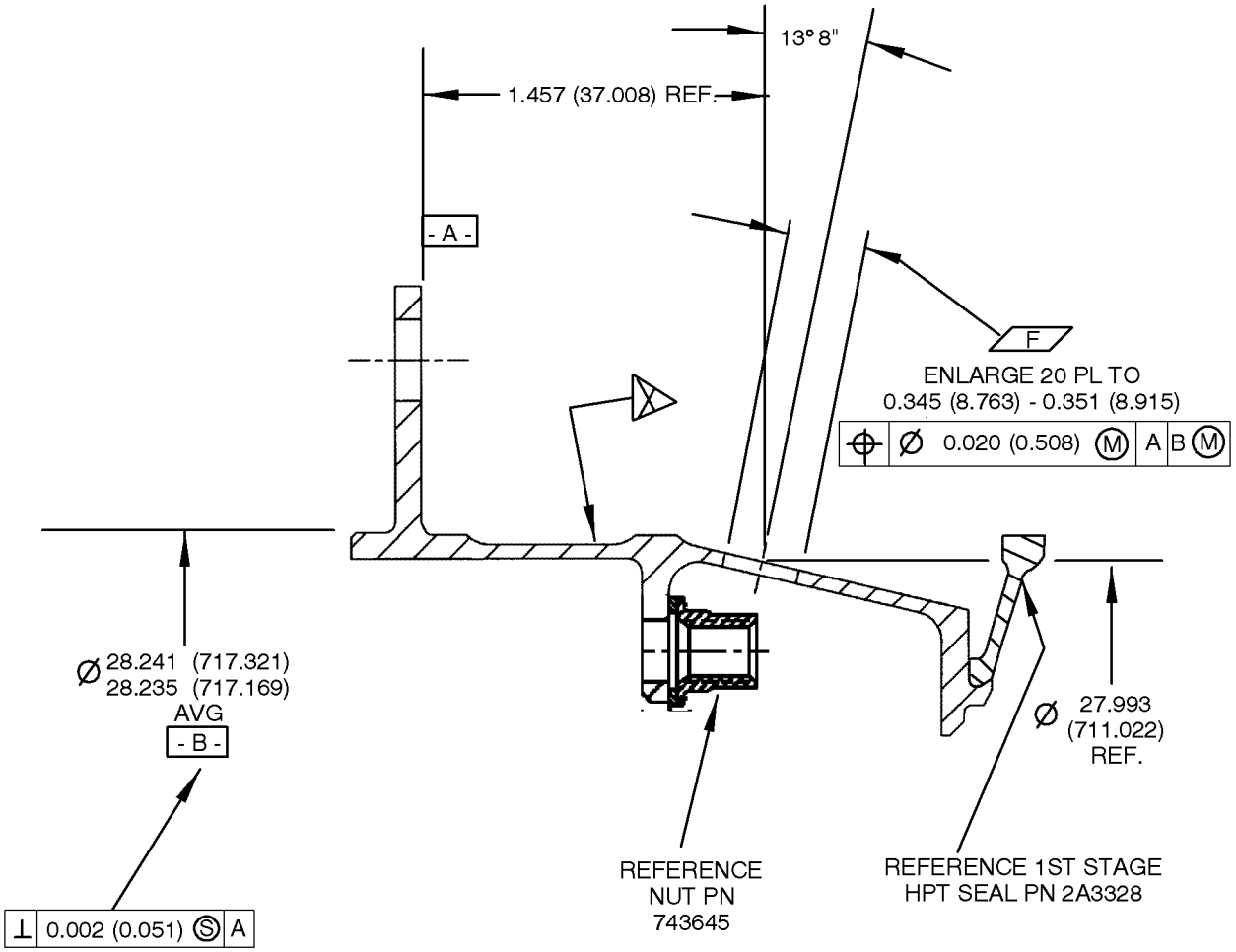
(3) Recording Instructions

(a) A record of accomplishment is required.



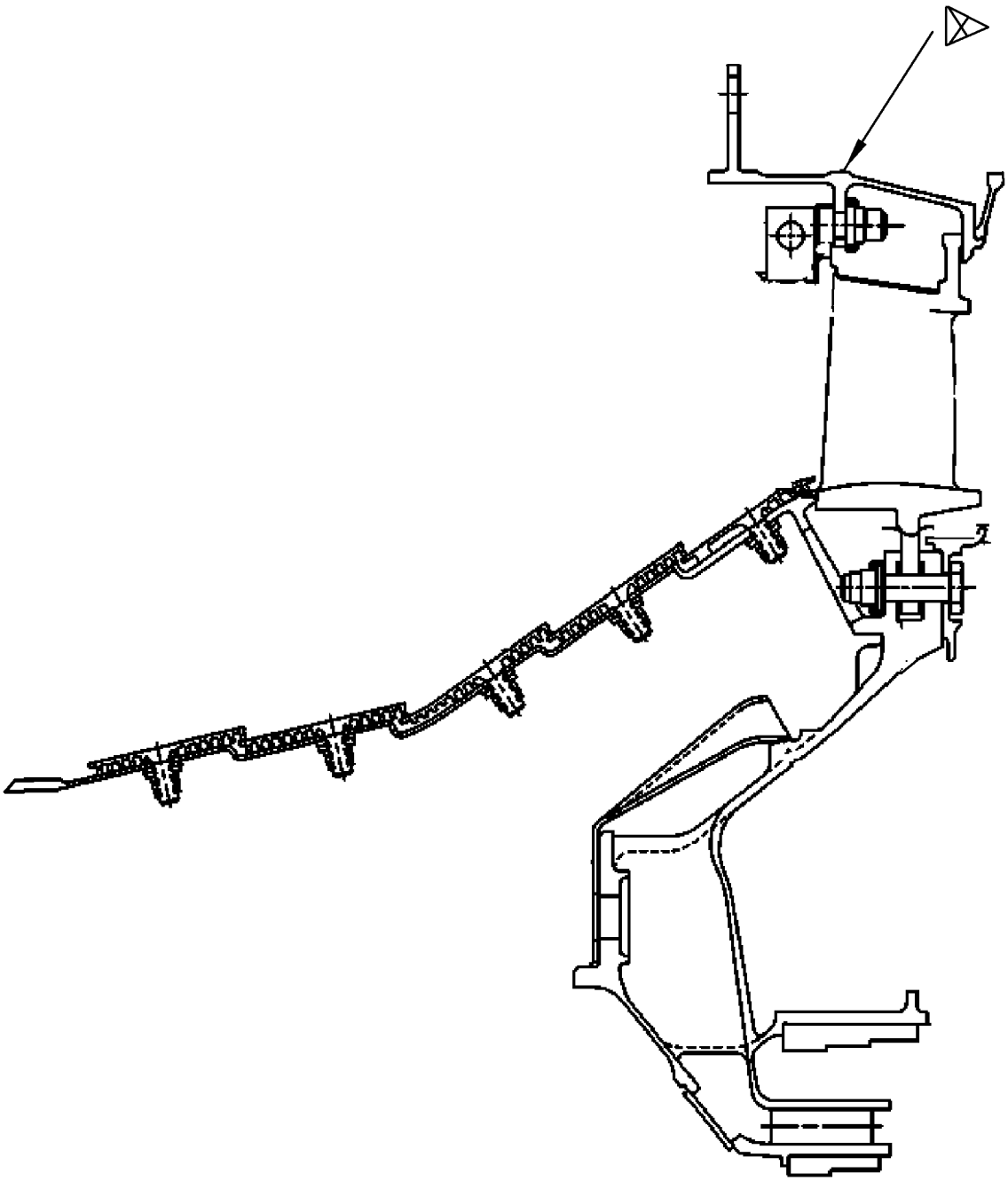
pw0b514139

LOCATION OF THE STAGE 1 HIGH PRESSURE TURBINE SUPPORT ASSEMBLY
Figure 1



pw0b514140

MODIFICATION OF PN 2A3367 STAGE 1 HIGH PRESSURE TURBINE VANE SUPPORT ASSEMBLY
Figure 2



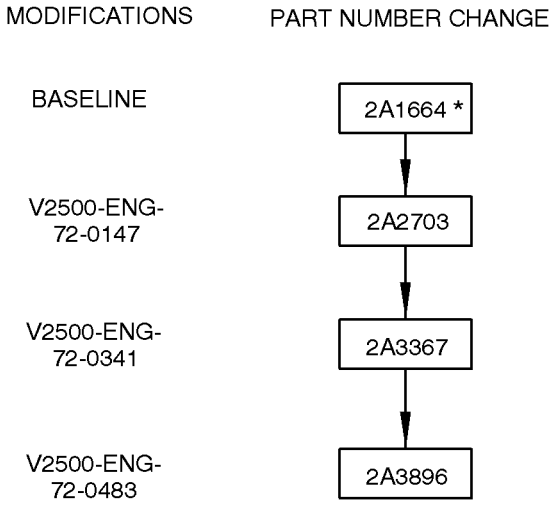
pw0b514141

MARK NEW PART NUMBER

MARKING LOCATION FOR TURBINE NOZZLE GROUP
Figure 3

APPENDIX 1

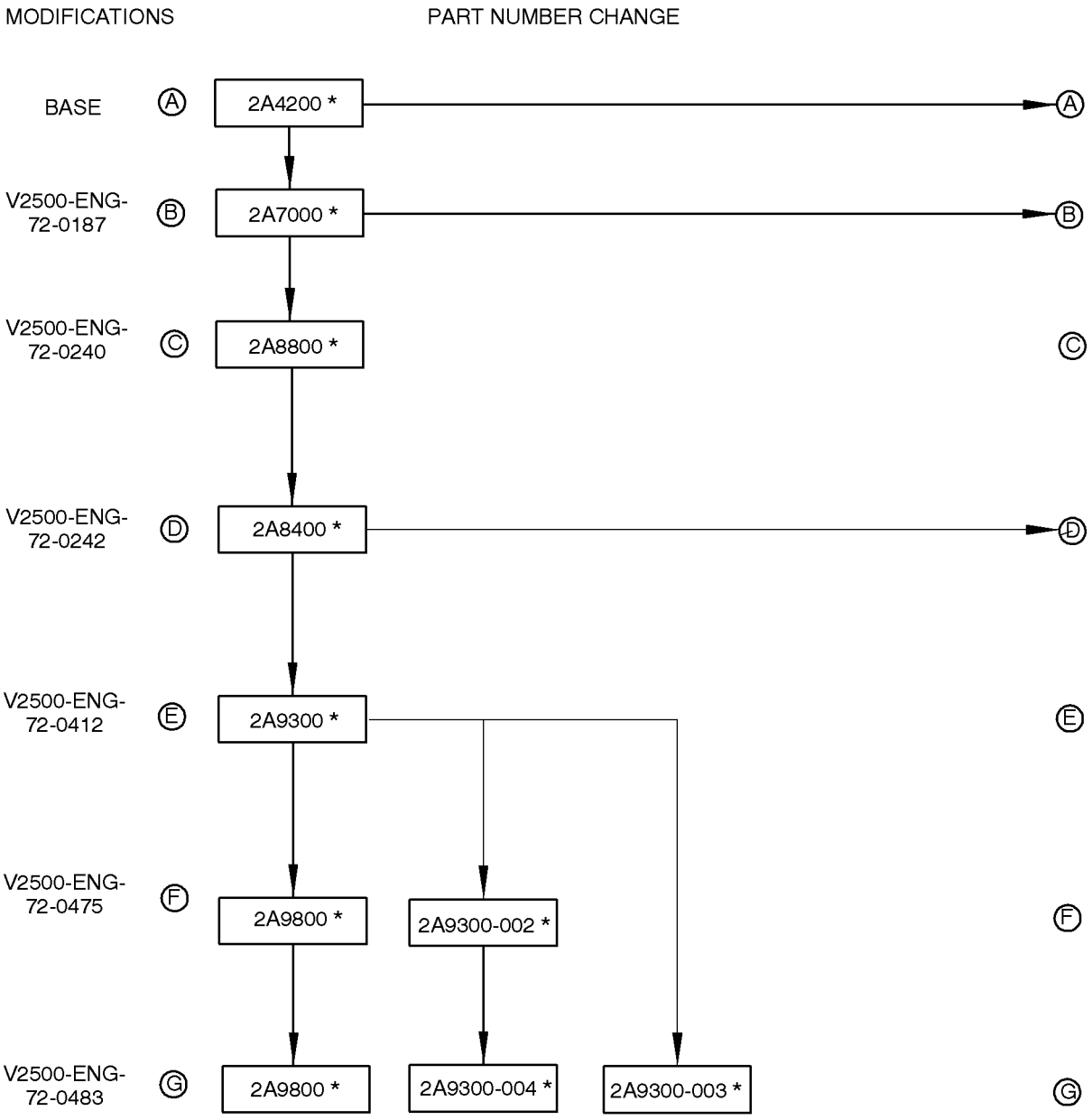
Parts Progression To Show the Changed Part in Relation to Other Parts



* DO NOT USE IN MODEL V2533-A5

pw0b514142b

FAMILY TREE - FIRST STAGE HPT SUPPORT ASSEMBLY REF. CATALOG SEQUENCE NO. 72-44-10
FIGURE 01 ITEM 010
Chart 1

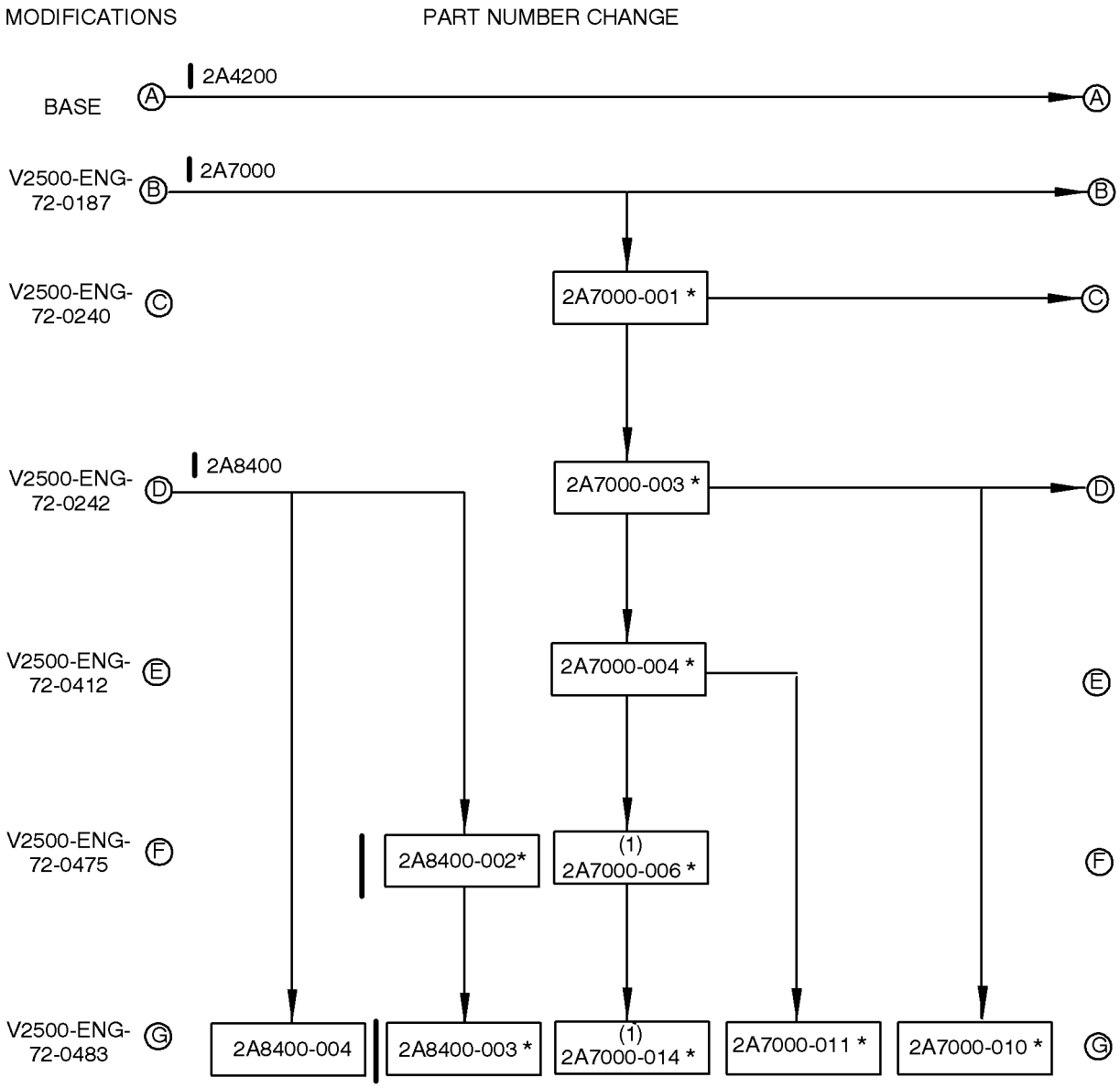


* REFER TO CHART 4 FOR 1ST STAGE TURBINE ROTOR, HUB, PLUG, AND BLADE CONFIGURATIONS NOT TO BE USED IN MODEL V2533-A5 ENGINES.

pw0b514143c

R FAMILY TREE - ROTOR AND STATOR ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-00 FIGURE 01 ITEM 001

R Chart 2 (Sheet 1 of 5)



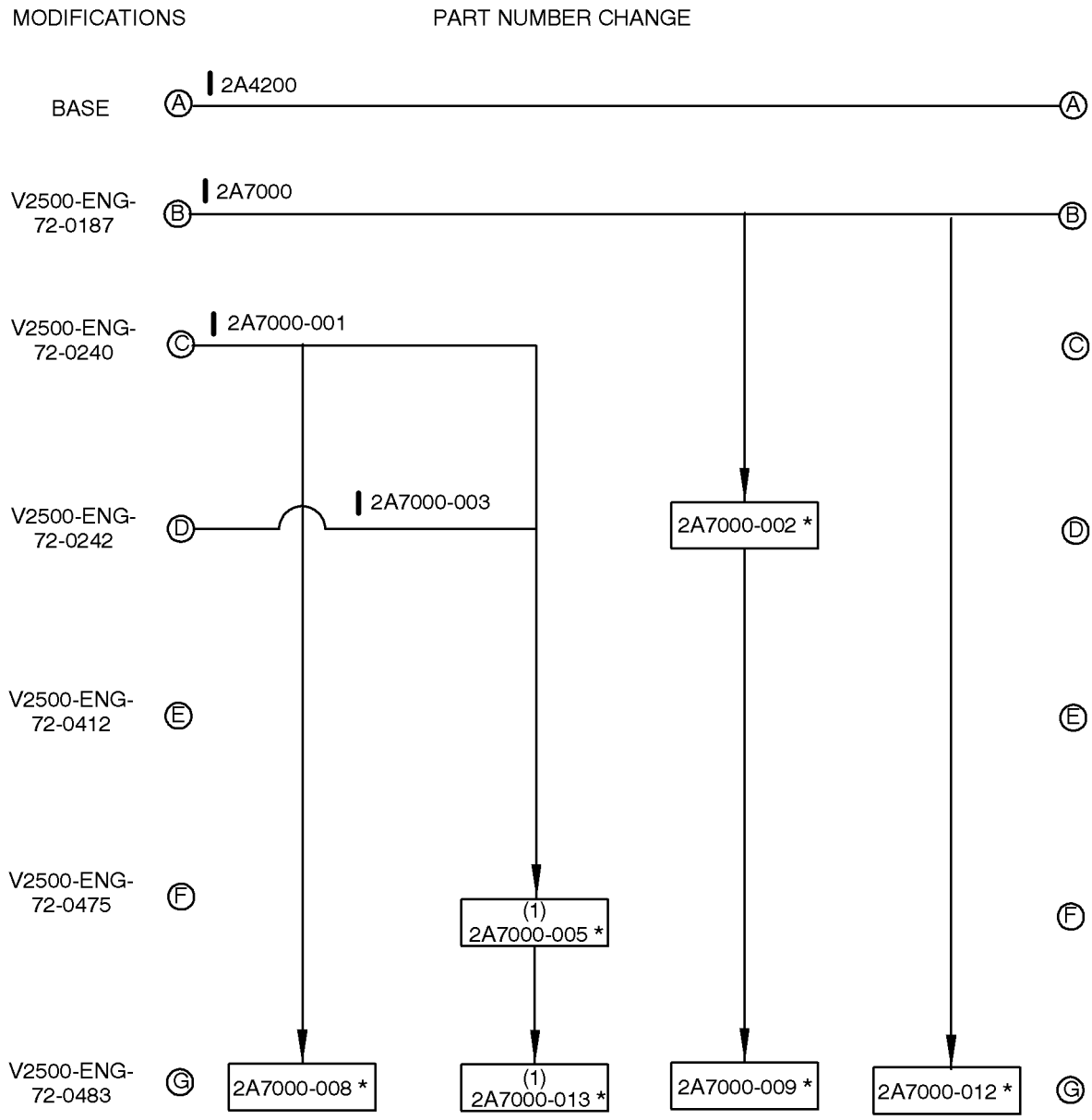
(1) DO NOT USE IN MODEL V2533-A5 IF ASSEMBLY CONTAINS ANY CASE AND VANE ASSEMBLY NUMBER 2A3215-001, -002, -003, -004, -005, -011, -012, -013, -014, OR -015.

* REFER TO CHART 4 FOR 1ST STAGE TURBINE ROTOR, HUB, PLUG, AND BLADE CONFIGURATIONS NOT TO BE USED IN MODEL V2533-A5 ENGINES.

pw0b514144c

R FAMILY TREE - ROTOR AND STATOR ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-00 FIGURE 01 ITEM 001

R Chart 2 (Sheet 2 of 5)



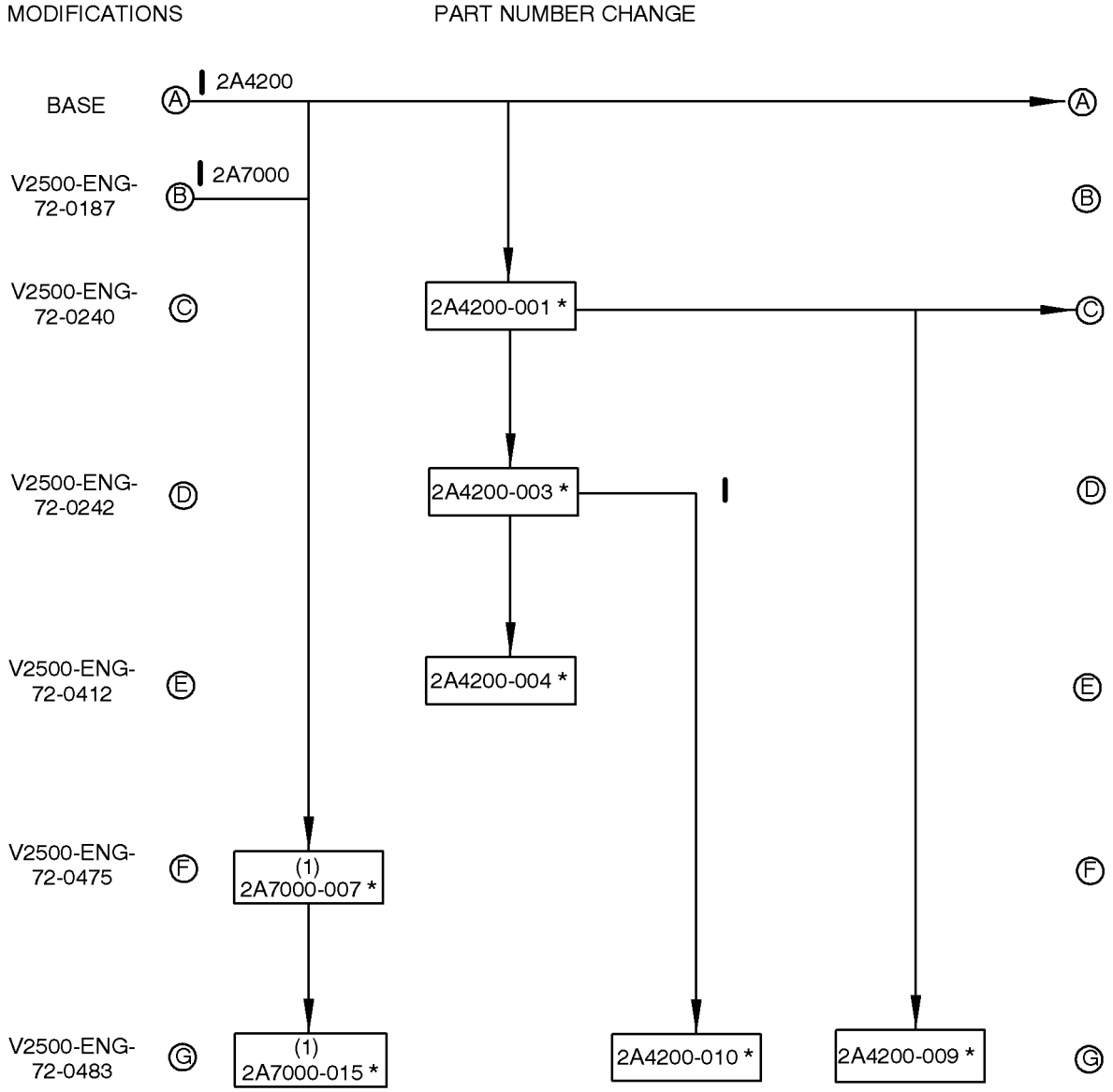
(1) DO NOT USE IN MODEL V2533-A5 IF ASSEMBLY CONTAINS ANY CASE ASSEMBL NUMBER 2A3215-001, -002, -003, -004, -005, -011, -012, -013, O14, OR -015

* REFER TO CHART 4 FOR 1ST STAGE TURBINE ROTOR, HUB, PLUG, AND BLADE CONFIGURATIONS NOT TO BE USED IN MODEL V2533-A5 ENGINES.

pw0b514145c

R FAMILY TREE - ROTOR AND STATOR ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-00 FIGURE 01 ITEM 001

R Chart 2 (Sheet 3 of 5)



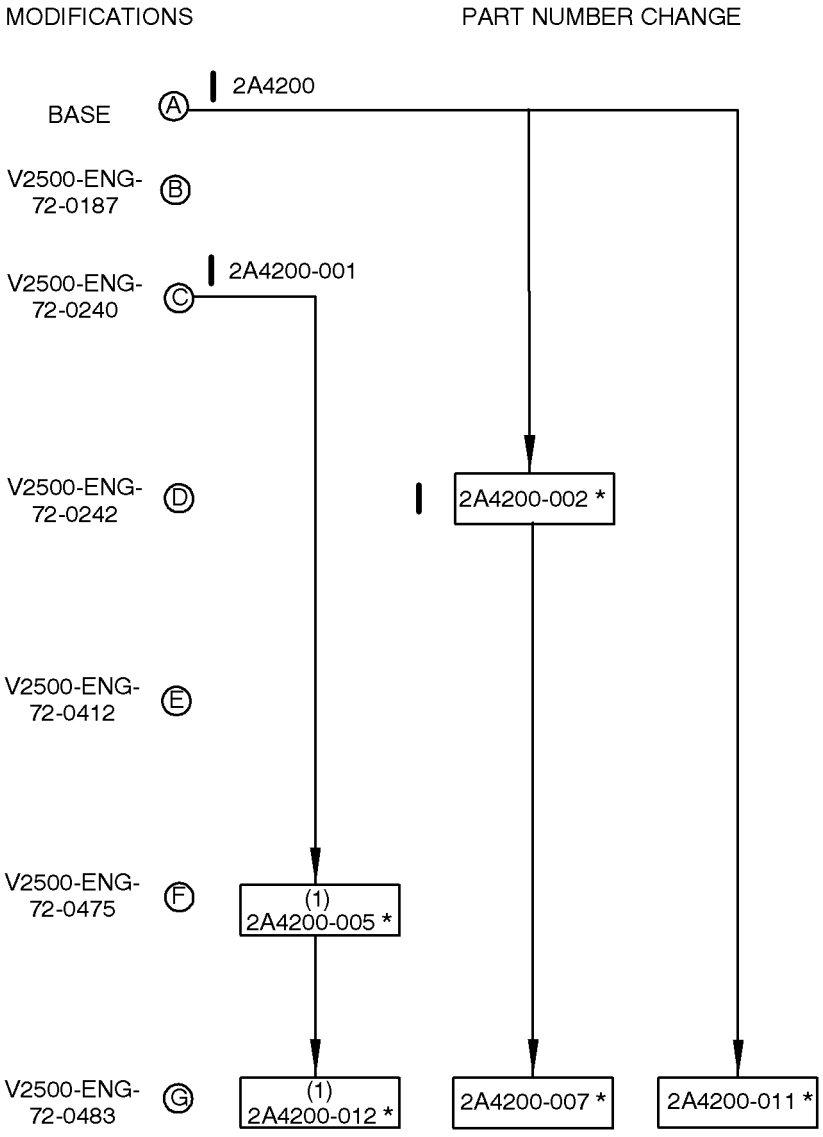
(1) DO NOT USE IN V2533-A5 IF ASSEMBLY CONTAINS ANY CASE AND VANE ASSEMBLY NUMBER 2A3215-001, -002, -003, -004, -005, -011, -012, -013, -014, OR -015.

* REFER TO CHART 4 FOR 1ST STAGE TURBINE ROTOR, HUB, PLUG, AND BLADE CONFIGURATIONS NOT TO BE USED IN MODEL V2533-A5 ENGINES.

pw0b515817a

R FAMILY TREE - ROTOR AND STATOR ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-00 FIGURE 01 ITEM 001

R Chart 2 (Sheet 4 of 5)



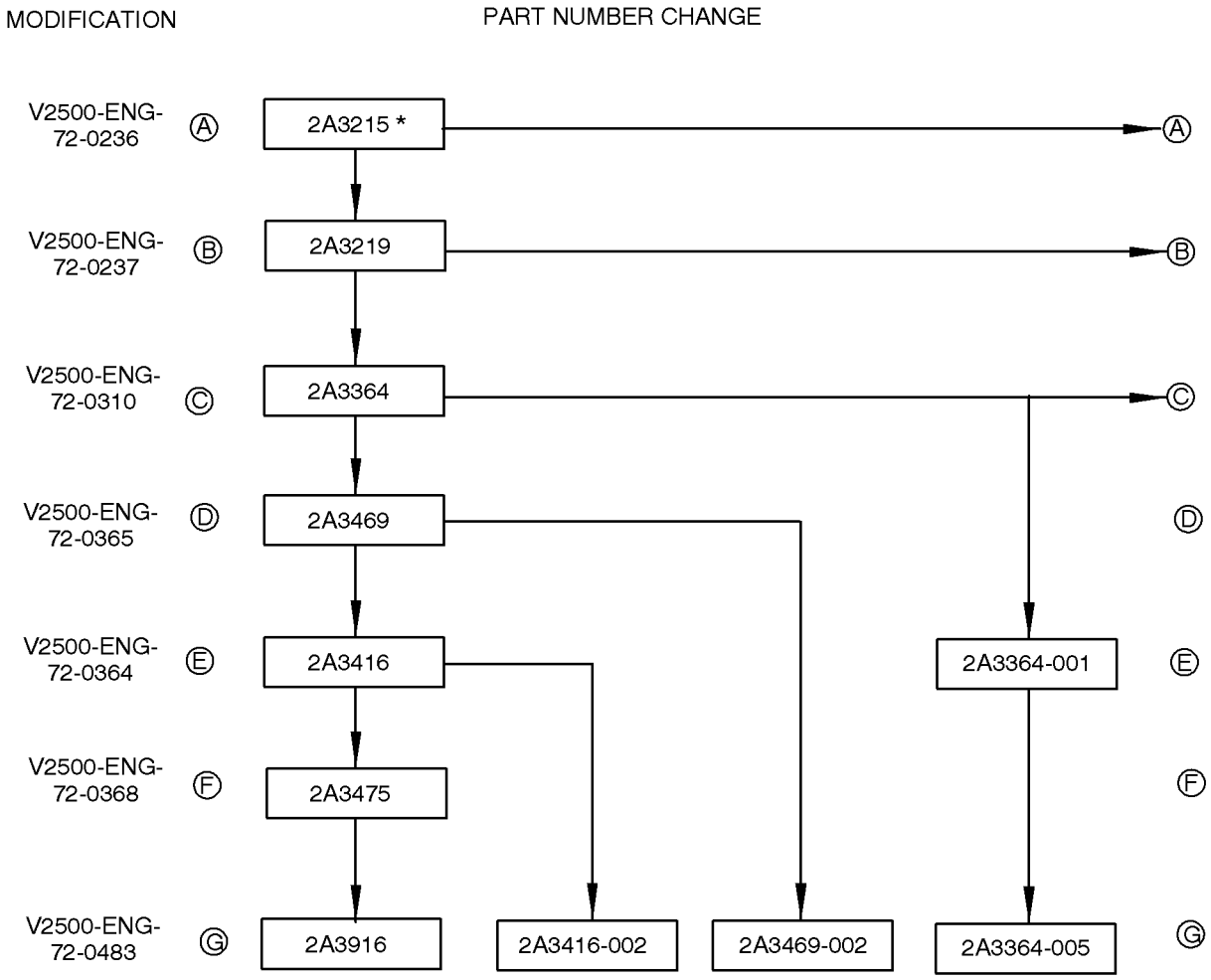
(1) DO NOT USE IN MODEL V2533-A5 IF ASSEMBLY CONTAINS ANY CASE AND VANE ASSEMBLY NUMBER 2A3215-001, -002, -003, -004, -005, -011, -012, -013, -014, OR -015.

* REFER TO CHART 4 FOR 1ST STAGE TURBINE ROTOR, HUB, PLUG, AND BLADE CONFIGURATIONS NOT TO BE USED IN MODEL V2533-A5 ENGINES.

pw0b515818a

FAMILY TREE - ROTOR AND STATOR ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-00 FIGURE 01 ITEM 001

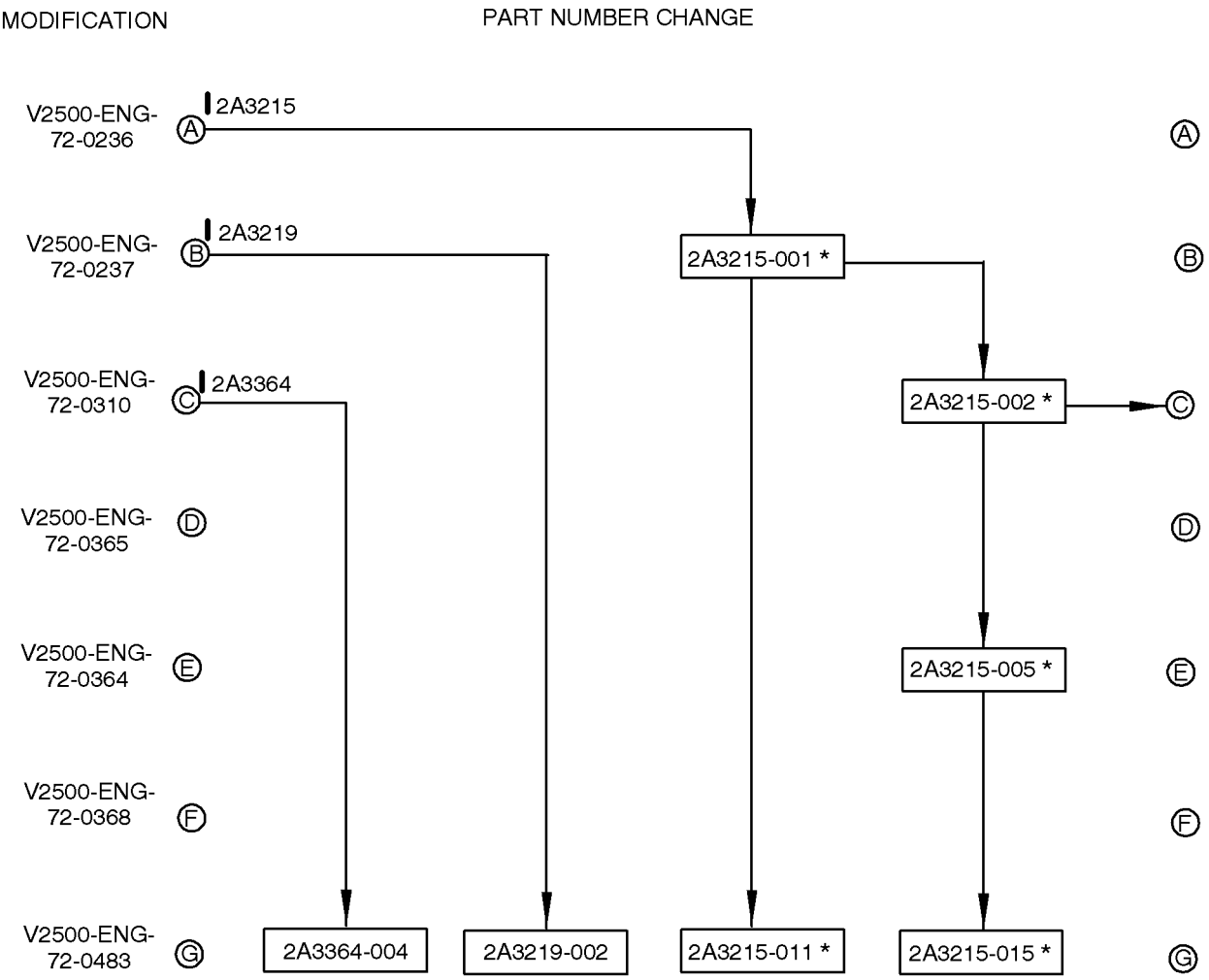
Chart 2 (Sheet 5 of 5)



* DO NOT USE IN MODEL V2533-A5 IF CASE AND VANE ASSEMBLY CONTAINS ANY 2ND STAGE VANE CLUSTERS 2A2272, 2A2372, 2A3372, OR 2A3432.

pw0b514148b

FAMILY TREE - CASE AND VANE ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-20 FIGURE 01 ITEM 005
Chart 3 (Sheet 1 of 3)

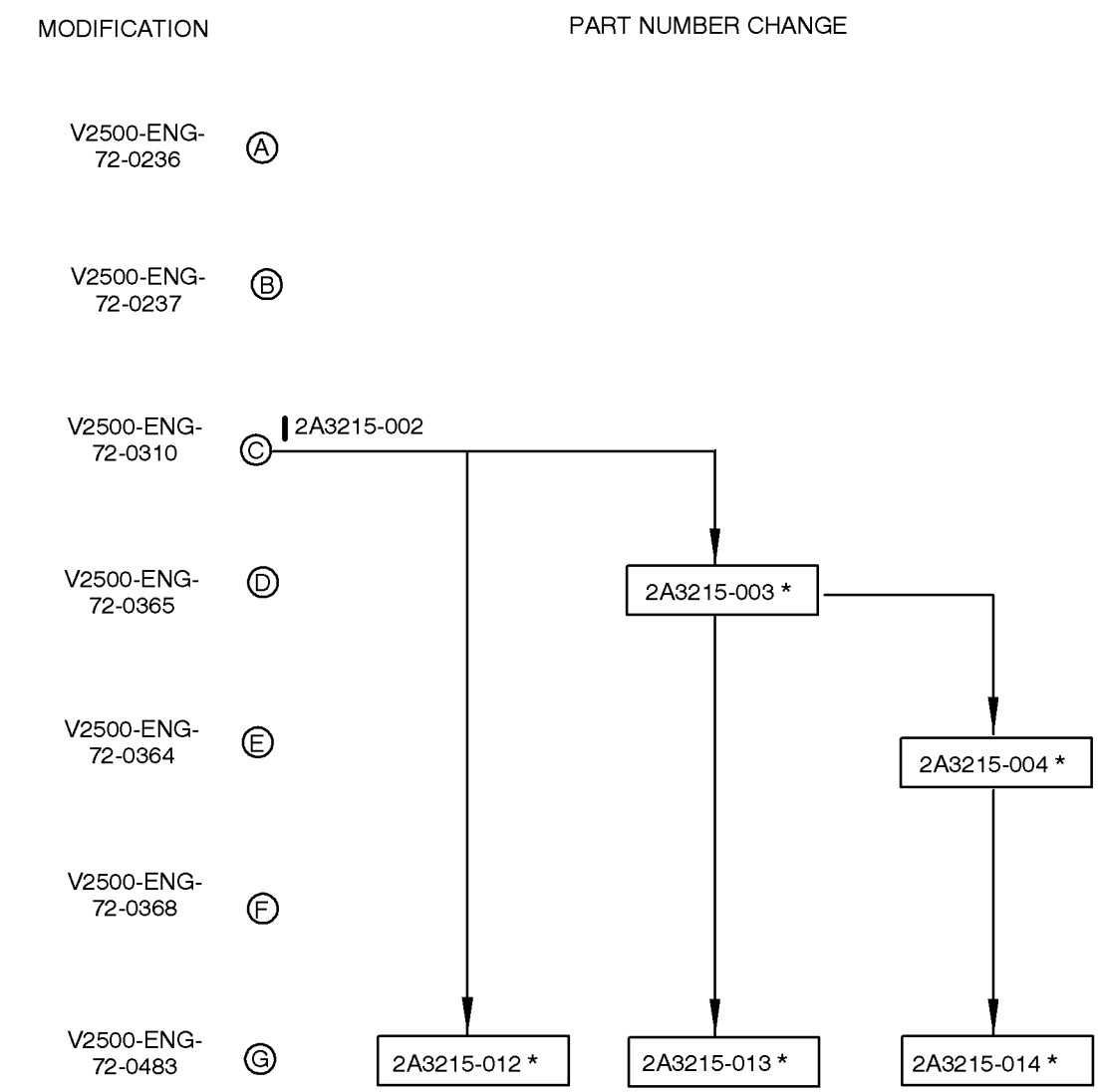


* DO NOT USE IN MODEL V2533-A5 IF CASE AND VANE ASSEMBLY CONTAINS ANY 2ND STAGE VANE CLUSTERS 2A2272, 2A2372, 2A3372, OR 2A3432.

pw0b514149c

R FAMILY TREE - CASE AND VANE ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-20 FIGURE 01 ITEM 005

R Chart 3 (Sheet 2 of 3)



* DO NOT USE IN MODEL V2533-A5 IF CASE AND VANE ASSEMBLY CONTAINS ANY 2ND STAGE VANE CLUSTERS 2A2272, 2A2372, 2A3372, OR 2A3432.

pw0b515956a

R FAMILY TREE - CASE AND VANE ASSEMBLY REF. CATALOG SEQUENCE NO. 72-45-20 FIGURE 01 ITEM 005

R Chart 3 (Sheet 3 of 3)

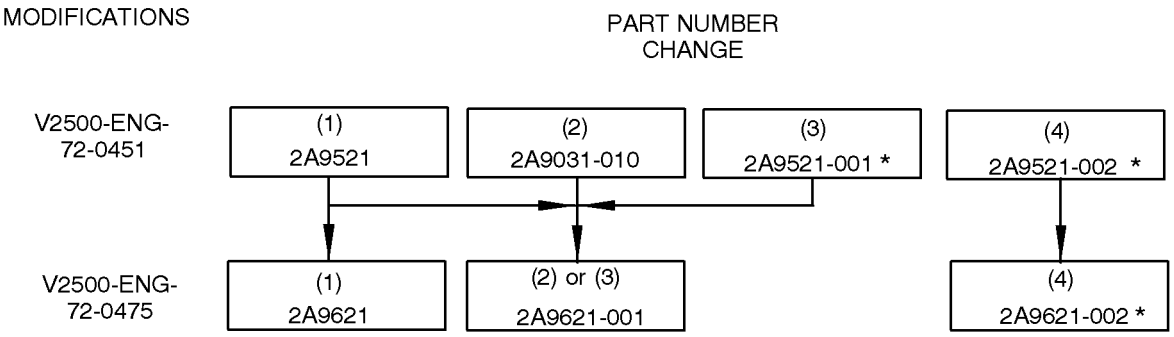


CHART 4 LEGEND

ROTOR	HUB P/N	PLUG P/N	BLADE P/N PRE SB 72-0475	BLADE P/N POST SB 72-0475
(1)	2A5001	2A3847	2A9201	2A9321
(2)	2A2801 or 2A5001	2A3847	LIST A	2A9321
(3)	2A2801 or 2A5001	2A3847	LIST A & B	2A9321
(4)	*2A2201	2A3182	LIST A & B	2A9321

* DO NOT USE IN MODEL V2533-A5

BLADE LIST A ALL MODELS	BLADE LIST B NON 33K MODELS
2A9201	2A8701-002
2A9101	2A8721-001
2A9001	2A8521-004
2A8521-005	2A8521-002
2A8521-003	2A8521-004
	2A8321-003
	2A8321-002

ANY MIXTURE OF BLADES
WITHIN LIST A OR B MAY BE PRESENT

pw0b516013

REFERENCE ONLY - FAMILY TREE - TURBINE ROTOR ASSEMBLY, STAGE 1. REF. CATALOG SEQUENCE NO. 72-45-10 FIG.01 ITEM 010
Chart 4

Added Data

Number values shown in parentheses adjacent to U.S. values are International System of units (SI) equivalents.

To calculate part life, include the hours and/or cycles since the part was made. Use the total hours or cycles to calculate life limits that are the result of part modification, a part used in an engine with different thrust, or for some other reason.

Internal Reference Information

	Revision No.	Reference Document	Origination
		EC 08VA058	
R	3	EC 01VC042-01	BB/TR
R	4	EC 13VC056	BB/AT

SERVICE BULLETIN

ENGINE - NEW FIRST STAGE DUCT SEGMENTS AND HPT VANE SUPPORT

Supplement

V2500 All

1. Modification Kit

There is no kit provided to do this Service Bulletin.

2. Material Cost

A. The estimated price of new material is $110,359.60 to do this Service Bulletin when the part modification procedure is used.

B. The estimated price of new material to do this Service Bulletin using new replacement parts is $155,194.60.

3. New Production Parts

New Production Part Number	Description	Unit Price US Dollars
2A3896	Support, HPT, 1stg Assy Of	42,430.00
2A3328	Seal, HPT, 1st Stage	2405.00
2A3886-01	Duct Segment, 1stg Assy Of	2854.00
2A3888	Cover, HPT Duct Segment	50.20

U.S. Department
of Transportation
Federal Aviation Administration

Engine and Propeller Directorate

Engine Certification Office
12 New England Executive Park
Burlington, MA 01803
(781) 238-7140, Fax: (781) 238-7199

AUG 19 2013

Mr. Karl Yeager
IAE Flight Safety, Certification and Airworthiness
400 Main Street
East Hartford, CT 06108

Dear Mr. Yaeger:

Subject: IAE global Alternative Method of Compliance
(AMOC) to Airworthiness Directive (AD) 2011-25-08

The Federal Aviation Administration (FAA) Engine Certification Office (ECO) received your letter dated June 6, 2013, requesting a global AMOC to AD 2011-25-08, paragraph F and paragraph G, for the International Aero Engines (IAE) V2500 series engines. Paragraph F of AD 2011-25-08 requires periodic borescope inspections using IAE service bulletin (SB) V2500-ENG-72-580 revision 3. Paragraph G of AD 2011-25-08 requires specific parts be installed per SB V2500-ENG-72-0542 revision 1, or SB V2500-ENG-72-0483 revision 3 as mandatory terminating action.

IAE AMOC proposal would use SB V2500-ENG-72-0580 revision 4, for compliance with paragraph F instead of SB V2500-ENG-72-0580 revision 3. The AMOC proposal would also use SB V2500-ENG-72-0483 revision 4, SB V2500-ENG-72-0562 initial release or SB V2500-ENG-72-0562 revision 1 to comply with paragraph G instead of SB V2500-ENG-72-0483 revision 3.

The ECO reviewed the supporting data for your request and determined that the substitutions and revisions to the service information are equivalent to the original references in the AD. Therefore, the FAA approves your Global AMOC to paragraph F and paragraph G of AD 2011-25-08 to use SB V2500-ENG-72-0580 revision 4, for compliance with paragraph F instead of SB V2500-ENG-72-0580 revision 3 and to use SB V2500-ENG-72-0483 revision 4, SB V2500-ENG-72-0562 initial release or SB V2500-ENG-72-0562 revision 1 to comply with paragraph G instead of SB V2500-ENG-72-0483 revision 3.

We have determined that this AMOC is of general applicability to the IAE V2500 series engine type designs, and therefore this letter is issued to IAE with the understanding that it may subsequently be distributed to operators. Operators may then use this letter, along with evidence of compliance with the terms of this letter, to document compliance to AD 2011-25-08.

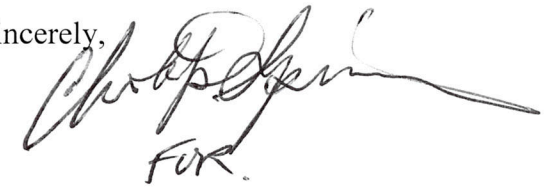
This FAA AMOC is transferable with the engine(s) to another owner or operator.

Before using this AMOC, operators must notify their appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

All provisions of FAA AD 2011-25-08 that are not specifically referenced above remain fully applicable and must be complied with accordingly.

If you have any questions or need additional information, please contact Martin Adler at 781-238-7157, fax 781-238-7199, or via electronic mail at martin.adler@faa.gov.

Sincerely,



Thomas Boudreau
Manager, Engine Certification Office