

International Aero Engines

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DATE ~~R~~ Mar.14/02

V2500 A1/A5/D5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 3 to Service Bulletin EV2500-72-0331

Document History

Service Bulletin Revision Status	Supplement Revision Status
Initial Issue Sep.3/99	
Revision 1 Nov.7/00	
Revision 2 Feb.15/02	

Bulletin Revision 3

Remove	Incorporate	Reason for change
All pages of the Service Bulletin	Pages 1 to 10 of the Service Bulletin	Correction: To put illustrations in correct sequence
All pages of Appendix 1	Pages 1 to 6 of Appendix 1	Correction: To put illustrations in correct sequence

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Transmittal - Page 1 of 2

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 3 are as follows:

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ENGINE – DIFFUSER AND COMBUSTION GROUP – PROVIDE NEW FUEL NOZZLE GUIDES

1. Planning Information

A. Effectivity

(1) Airbus A319

V2522-A5, V2524-A5, V2527M-A5 Engines Serial Nos. V10001 thru V10656

(2) Airbus A320

V2500-A1 Engines Serial Nos. V0001 thru V0361

V2527-A5, V2527E-A5 Engines Serial Nos. V10001 thru V10656

(3) Airbus A321

V2530-A5, V2533-A5 Engines Serial Nos. V10001 thru V10656

(4) For Boeing Longbeach Division MD-90

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

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Condition: Fuel Nozzle Guide burnback has been a major contributor to combustion chamber distress and limiting engine durability. The distress has caused premature engine removals and requires a reduced borescope inspection interval.

(2) Background: Guide burnback is being experienced during take-off and climb. Current hardware is insufficient to withstand the environment.

(3) Objective: Incorporate the redesigned Fuel Nozzle Guides in the Outer Burner Liner Assembly to improve life expectancy. The guide revisions include an increased fin configuration and a rounded hot-side surface.

(4) Substantiation: The redesigned Fuel Nozzle Guides successfully completed 320 hours of testing on a test engine.

(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

None.

D. Description

Install new Fuel Nozzle Guides.

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.

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

G. Manpower

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

Venue	Estimated Manhours
In Service	Not Applicable
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-70-0253 (Engine - Diffuser And Combustion Section - Provide New Inner And Outer Combustion Chambers With Increased Hardface Thickness and Relocated Cooling Holes).
2. IAE V2500 Service Bulletin V2500-ENG-72-0006 (Engine - Diffuser And Combustion Group And Stage 1 Turbine Nozzle Assembly - Thermal Barrier Coating For Combustor Liners).
3. IAE V2500 Service Bulletin V2500-ENG-72-0060 (Engine - Diffuser And Combustion Group And Stage 1 Turbine Nozzle Assembly - Introduce Thermal Barrier Coating On Inner And Outer Combustion Chamber Liners).
4. IAE V2500 Service Bulletin V2500-ENG-72-0116 (Engine - Diffuser And Combustion Group And Stage 1 Turbine Nozzle Assembly - Provide New Inner And Outer Combustion Chamber Assemblies With Generation II Liner Segments).
5. IAE V2500 Service Bulletin V2500-ENG-72-0159 (Engine - Diffuser And Combustion Section - Introduce New Inner And Outer Combustion Chamber Assemblies).
6. IAE V2500 Service Bulletin V2500-ENG-72-0315 (Engine - Diffuser And Combustion Group And Stage 1 Turbine Nozzle Assembly - Provide New Inner And Outer Combustion Chamber Liners With Addition Of PWA 281 Coating).
7. IAE V2500 Service Bulletin V2500-ENG-72-0330 (Engine - Diffuser And Combustion Group - Provide New Bulkhead Liner Segments).
8. V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, 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-V2500-7IB), Chapter/Section 72-42-61 add the new parts.
9. V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-42-61 Repair VRS3095.
- R 10. V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-42-61 Repair VRS3095.
11. The V2500 Standard Practices/Processes Manual (SPP-V2500-1IA), 70-09-00 Marking of Parts.
- R 12. ATA Locator - 72-40-00



L. Other Publications Affected

1. V2500 Engine Engine Manuals (E-V2500-1IA and E-V2500-3IA), Chapter/Section 72-42-61 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 each V2500-A1 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Insts-Disp
2A3441-01	1	*	.Outer Comb. Chamber Assy.	2A3439-01 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-001	1	*	.Outer Comb. Chamber Assy.	2A3439-001 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-002	1	*	.Outer Comb. Chamber Assy.	2A3439-002 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		



New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Insts-Disp
2A3441-003	1	*	.Outer Comb. Chamber Assy.	2A3439-003 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-004	1	*	.Outer Comb. Chamber Assy.	2A3439-004 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-005	1	*	.Outer Comb. Chamber Assy.	2A3439-005 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-006	1	*	.Outer Comb. Chamber Assy.	2A3439-006 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-007	1	*	.Outer Comb. Chamber Assy.	2A3439-007 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3441-008	1	*	.Outer Comb. Chamber Assy.	2A3439-008 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3340	20	*	..Guide, Fuel Nozzle	2A3350 (72-42-61-01-690)	(S1)(C)(D)

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For each V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5,



V2533-A5, V2525-D5, V2528-D5 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Insts-Disp
2A3442-01	1	*	.Outer Comb. Chamber Assy.	2A3440-01 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3341	20	*	..Guide, Fuel Nozzle	2A3325 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3442-001	1	*	.Outer Comb. Chamber Assy.	2A3440-001 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3341	20	*	..Guide, Fuel Nozzle	2A3325 (72-42-61-01-690)	(S1)(C)(D)
			OR		
2A3442-002	1	*	.Outer Comb. Chamber Assy.	2A3440-002 (72-42-61-01-501)	(S1)(1D)(A)(B)
2A3341	20	*	..Guide, Fuel Nozzle	2A3325 (72-42-61-01-690)	(S1)(C)(D)

D. Instructions/Disposition Code Statements:

- (S1) Old and New Parts are freely and fully interchangeable.
 (1D) You can obtain the new part by modification of the old part and identification to the new part number.
 (A) The new part is an assembly that will not be provided as a spare.
 (B) The old part is an assembly that will not be provided as a spare.
 (C) The new part is currently available.
 (D) The old part will no longer be supplied.

E. Tooling - Price and Availability

Special tools are not required to accomplish this Service Bulletin.

F. Reidentified Parts

Reidentified Parts	Data	
New PN	Keyword	Old PN
2A3441-01	Outer Comb. Chamber Assy.	2A3439-01
2A3441-001	Outer Comb. Chamber Assy.	2A3439-001
2A3441-002	Outer Comb. Chamber Assy.	2A3439-002



New PN	Keyword	Old PN
2A3441-003	Outer Comb. Chamber Assy.	2A3439-003
2A3441-004	Outer Comb. Chamber Assy.	2A3439-004
2A3441-005	Outer Comb. Chamber Assy.	2A3439-005
2A3441-006	Outer Comb. Chamber Assy.	2A3439-006
2A3441-007	Outer Comb. Chamber Assy.	2A3439-007
2A3441-008	Outer Comb. Chamber Assy.	2A3439-008
2A3442-01	Outer Comb. Chamber Assy.	2A3440-01
2A3442-001	Outer Comb. Chamber Assy.	2A3440-001
2A3442-002	Outer Comb. Chamber Assy.	2A3440-002

G. Other Material Information Data

Not Applicable.



3. Accomplishment Instructions

(1) For V2500-A1 Models

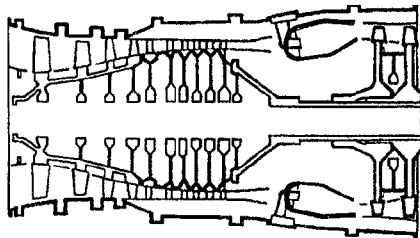
- (a) Install the 2A3340 Fuel Nozzle Guides (20 off) by the procedure specified in Reference (3) Chapter/Section 72-42-61 Repair, VRS3095.
- (b) Identify the Outer Combustion Chamber Assembly with the new part number given in the Reidentified Parts section.
 - (i) Use the procedure specified in Reference (5), Chapter/Section 70-09-00 Marking of Parts.
 - (ii) Mark the new part number adjacent to the old part number.

(2) For V2500-A5 and V2500-D5 Models

- (a) Install the 2A3341 Fuel Nozzle Guides (20 off) by the procedure specified in Reference (4), Chapter/Section 72-42-61 Repair, VRS3095.
- (b) Identify the Outer Combustion Chamber Case Assembly with the new part number given in the Reidentified Parts section.
 - (i) Use the procedure specified in Reference (5), Chapter/Section 70-09-00 Marking of Parts.
 - (ii) Mark the new part number adjacent to the old part number.

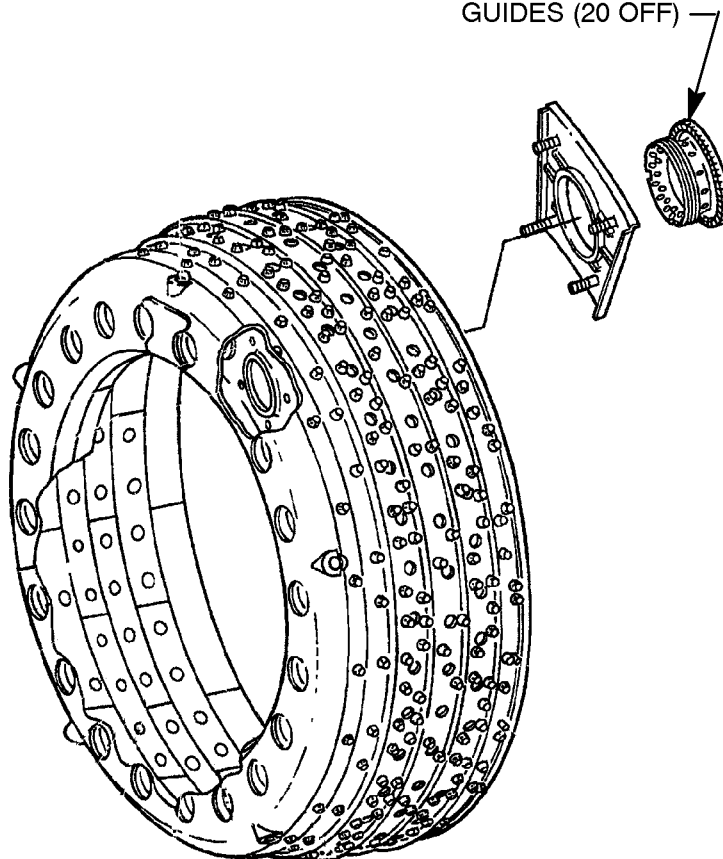
(3) Recording Instructions

- (a) A record of accomplishment is required.



MODULE 40

INSTALL THE 2A3340* OR
THE 2A3341** FUEL NOZZLE
GUIDES (20 OFF)



*FOR V2500-A1 ENGINES

**FOR ALL ENGINES EXCEPT V2500-A1

E8089

Location of the Combustion Chamber Liner Assembly Fuel Nozzle Guide
Figure 1

V2500-ENG-72-0331



International Aero Engines

SERVICE BULLETIN

APPENDIX 1

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

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Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



MODIFICATIONS

BASE LINE

THE COMBUSTION CHAMBER HOOD FOR 2A1385 DOES NOT HAVE THE NON-FUNCTIONAL RIBS (WHICH ARE CAST INTO THE HOOD FOR 2A1383)

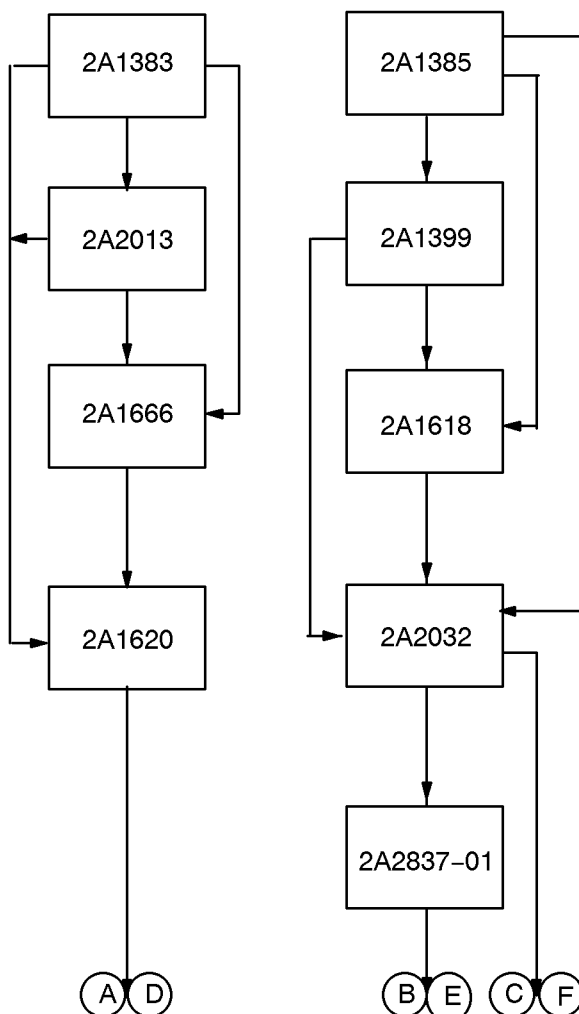
V2500-ENG-72-0006
ENGINE - DIFFUSER AND COMBUSTION GROUP AND STAGE 1 TURBINE NOZZLE ASSEMBLY - THERMAL BARRIER COATING FOR COMBUSTOR LINERS

V2500-ENG-72-0060
ENGINE - DIFFUSER AND COMBUSTION GROUP AND STAGE 1 TURBINE NOZZLE ASSEMBLY - INTRODUCE THERMAL BARRIER COATING ON INNER AND OUTER COMBUSTION CHAMBER LINERS

V2500-ENG-72-0116
ENGINE - DIFFUSER AND COMBUSTION GROUP AND STAGE 1 TURBINE NOZZLE ASSEMBLY - PROVIDE NEW INNER AND OUTER COMBUSTION CHAMBER ASSEMBLIES WITH GENERATION II LINER SEGMENTS

V2500-ENG-70-0253
INFORMATION - ENGINE - DIFFUSER AND COMBUSTION SECTION- PROVIDE NEW INNER AND OUTER COMBUSTION CHAMBERS WITH INCREASED HARD-FACE THICKNESS AND RELOCATED COOLING HOLES

PART NUMBER CHANGE



A, B, C CONTINUED ON SHEET 2

D, E, F CONTINUED ON SHEET 3

E8090A
PWH

Family Tree - Outer Combustion Chamber Assembly (V2500-A1 Only) Ref. Catalog
Sequence No. 72-42-61. Fig.1 Item 501
Figure 2 (Sheet 1)

V2500-ENG-72-0331

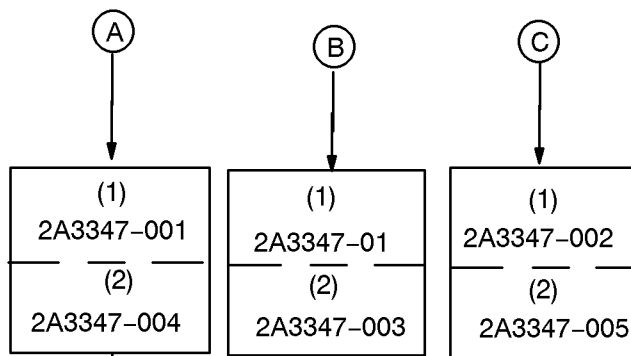
Appendix 1 - Page 2



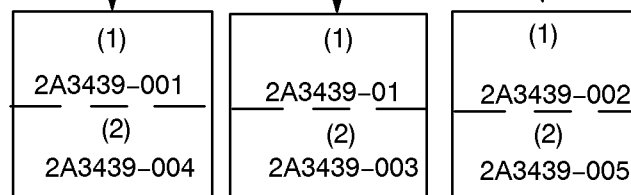
CONTINUED FROM SHEET 1

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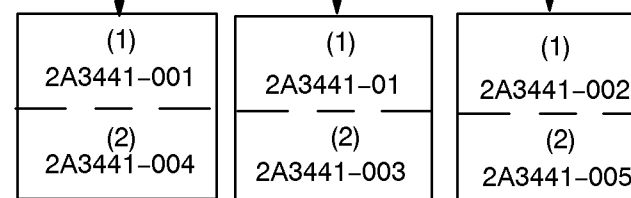
V2500-ENG-70-0315
ENGINE – DIFFUSER AND COMBUSTION
GROUP AND STAGE 1 TURBINE NOZZLE
ASSEMBLY – PROVIDE NEW INNER AND
OUTER COMBUSTION CHAMBER LINERS
WITH ADDITION OF PWA 281 COATING
NOTE: ROW 5 REPLACEMENT IS
OPTIONAL



V2500-ENG-72-0330
ENGINE – DIFFUSER AND COMBUS-
TION GROUP – PROVIDE NEW BULK-
HEAD LINER SEGMENTS



V2500-ENG-72-0331
ENGINE – DIFFUSER AND COMBUS-
TION GROUP – PROVIDE NEW FUEL
NOZZLE GUIDES



(1) ROW 5 IS REPLACED

(2) ROW 5 IS NOT REPLACED

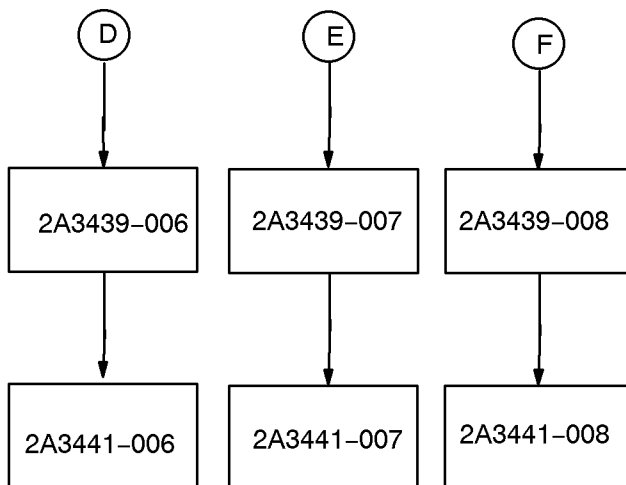
E8091A
PWH

Family Tree – Outer Combustion Chamber Assembly (V2500-A1 Only) Ref. Catalog
Sequence No. 72-42-61. Fig.1 Item 501
Figure 2 (Sheet 2)

CONTINUED FROM SHEET 2

MODIFICATIONS

V2500-ENG-72-0330
ENGINE - DIFFUSER AND COMBUS-
TION GROUP - PROVIDE NEW BULK-
HEAD
LINER SEGMENTS



R V2500-ENG-72-0331
ENGINE - DIFFUSER AND COMBUSTION
GROUP - PROVIDE NEW FUEL
NOZZLE GUIDES

E8321
PWH

R Family Tree - Outer Combustion Chamber Assembly (V2500-A1 Only) Ref. Catalog
R Sequence No. 72-42-61. Fig.1 Item 501
Figure 2 (Sheet 3)

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Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



MODIFICATIONS

PART NUMBER CHANGE

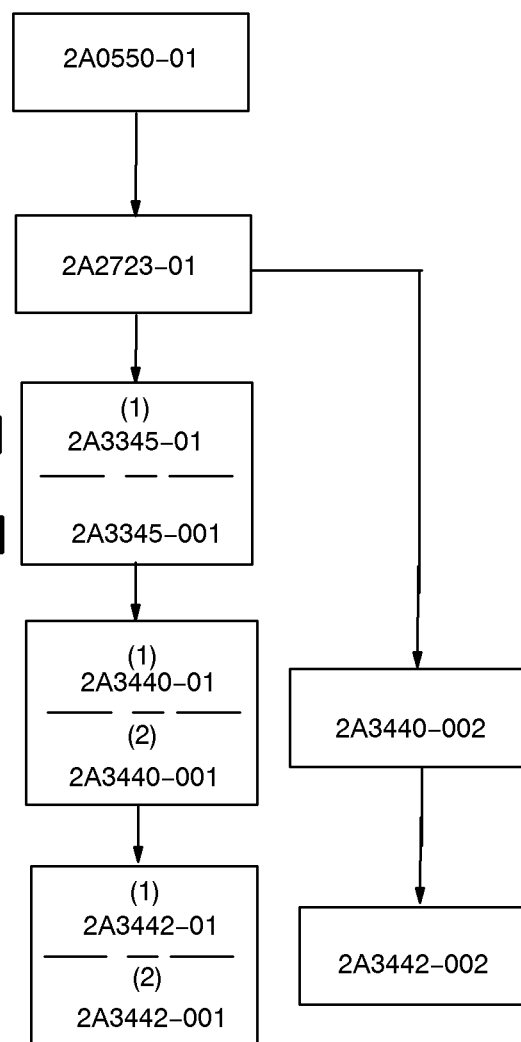
BASE LINE

V2500-ENG-72-0159
ENGINE - DIFFUSER AND COMBUSTION
SECTION - INTRODUCE NEW INNER
AND OUTER COMBUSTION CHAMBER
ASSEMBLIES

V2500-ENG-72-0315
ENGINE - DIFFUSER AND COMBUSTION
GROUP AND STAGE 1 TURBINE NOZZLE
ASSEMBLY - PROVIDE NEW INNER
AND OUTER COMBUSTION CHAMBER
LINERS WITH ADDITION OF PWA 281
COATING

V2500-ENG-72-0330
ENGINE - DIFFUSER AND COMBUSTION
GROUP - PROVIDE NEW BULKHEAD LIN-
ER SEGMENTS

V2500-ENG-72-0331
ENGINE - DIFFUSER AND COMBUSTION
GROUP - PROVIDE NEW FUEL NOZZLE
GUIDES



E8092B
PWH

(1) ROW 5 IS REPLACED

(2) ROW 5 IS NOT REPLACED

Family Tree - Outer Combustion Chamber Assembly (All Except V2500-A1) Ref. Catalog
Sequence No. 72-42-61. Fig.1 Item 501

Figure 3



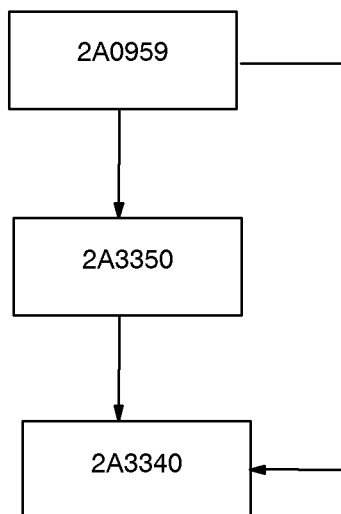
MODIFICATIONS

BASE LINE

V2500-ENG-72-0315
ENGINE - DIFFUSER AND COMBUSTION
GROUP AND STAGE 1 TURBINE NOZZLE
ASSEMBLY - PROVIDE NEW INNER AND
OUTER COMBUSTION CHAMBER LINERS
WITH ADDITION OF PWA 281 COATING

V2500-ENG-72-0331
ENGINE - DIFFUSER AND COMBUSTION
GROUP - PROVIDE NEW FUEL NOZZLE
GUIDES

PART NUMBER CHANGE (V2500-A1)



R

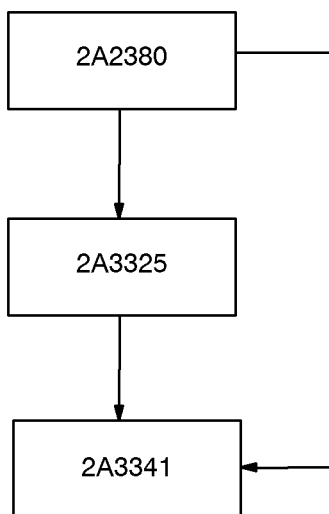
MODIFICATIONS

BASE LINE

V2500-ENG-72-0315
ENGINE - DIFFUSER AND COMBUSTION
GROUP AND STAGE 1 TURBINE NOZZLE
ASSEMBLY - PROVIDE NEW INNER AND
OUTER COMBUSTION CHAMBER LINERS
WITH ADDITION OF PWA 281 COATING

V2500-ENG-72-0331
ENGINE - DIFFUSER AND COMBUSTION
GROUP - PROVIDE NEW FUEL NOZZLE
GUIDES

PART NUMBER CHANGE
(ALL EXCEPT V2500-A1)



E8093A
PWH

R

Family Tree - Outer Combustion Chamber Fuel Nozzle Guide Ref. Catalog Sequence No.
72-42-61. Fig.1 Item 690

R

Figure 4

V2500-ENG-72-0331

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