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V2500-A1/A5/D5 PROPULSION SYSTEM SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin EV2500-73-0073

Document History

Service Bulletin Revision Status
Initial Issue Oct.29/02

Supplement Revision Status

Bulletin Revision 1

Remove
Pages 1 to 10 of the
Service Bulletin

Incorporate
Pages 1 to 11 of the
Service Bulletin

Reason for change
Corrections to Section 2.
Material Information

V2500-ENG-73-0073

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 1 are as follows:

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R	2	1	Feb.12/04
R	3	1	Feb.12/04
R	4	1	Feb.12/04
R	5	1	Feb.12/04
R	6	1	Feb.12/04
R	7	1	Feb.12/04
R	8	1	Feb.12/04
R	9	1	Feb.12/04
R	10	1	Feb.12/04
R	11	1	Feb.12/04

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ENGINE FUEL AND CONTROL – ENGINE ALTERNATOR (STATOR) – INTRODUCTION OF AN INTEGRAL COOLING SHROUD

1. Planning Information

A. Effectivity

(1) Airbus A319

V2522-A5, V2524-A5, V2527M-A5 Engines prior to Serial Number V11420

(2) Airbus A320

V2500-A1 Engines prior to Serial Number V0362

V2527-A5, V2527E-A5 Engines prior to Serial Number V11420

(3) Airbus A321

V2530-A5, V2533-A5 Engines prior to Serial Number V11420

(4) Boeing – Longbeach Division MD-90

V2525-D5, V2528-D5 Engines prior to Serial Number V20286

B. Concurrent Requirements

None.

C. Reason

(1) Condition

Overheating of the Engine Dedicated Alternator (EDA) stator may occur. The problem is attributed to improper installation of the adjustable clamp on the unit cooling shroud. This can cause partial or complete blockage of the unit cooling air supply resulting in overheating of the EDA windings.

(2) Background

The problem has been observed on units in service.

(3) Objective

Incorporation of the changes introduced by this Service Bulletin (Modification) is designed to maintain unit reliability.



(4) Substantiation

The changes introduced by this Service Bulletin have been the subject of satisfactory engineering assessment supported by successful vendor rig testing, a 150 hour development engine endurance test and full mock-up trials on all engine models.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Not affected.

(d) Repair Schemes

Affected.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

D. Description

(1) This Service Bulletin covers the fitment to engines of an EDA supplied by Unison Industries incorporating design changes to prevent overheating of the unit's windings caused by misalignment of the unit's cooling shroud.

(2) A revised EDA is introduced similar to the existing unit except for the following changes:

(a) The existing adjustable clamp cooling shroud has been deleted.

(b) A new integral cooling shroud has been introduced.

(c) The airflow exit ports have been moved from the flange to the side of the unit.

(3) Existing units may be reworked. Refer to Unison Industries Service Bulletin 430153-73-1

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(4) Units incorporating this Service Bulletin (Modification) will be identified by a new type number (see 2.A. Material Information).

E. Compliance

Category Code 7

Accomplish when supply of superseded parts has been depleted.

F. 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 models listed.

G. Manpower

In service

Not affected.

At overhaul

Not affected.

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

H. Material Price and Availability

Modification kit not required; parts supplied as single line items.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

None.

K. Weight and Balance

(1) Weight Change

Minus 0.7 lb. (0,32 kg.)

(2) Moment Arm

34.0in. (864,0 mm. rearwards of datum



(3) Datum

Engine Front Mount Centreline (Power Plant Station – PPS 100).

L. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

M. Software Accomplishment Summary

Not applicable.

N. References

(1) Unison Industries Service Bulletin 430153-73-1.

(2) Airbus aircraft modification No. 21820/P7791.

(3) Internal reference number 00VI004.

(4) ATA Locator 73-22-38.

O. Other Publications Affected

(1) Illustrated Parts Catalogue (IPC) S-V2500-1IA, 2IA, 2IB, 5IA, 5IB, 6IA, 6IB, 7IA and 7IB, Chapter/Section 73-22-38 will be revised.

(2) Engine Manual, 72-00-60 Config-01, Removal-02 and -05, and Installation-03 and -05 (A1).

(3) Engine Manual, 72-00-60 Config-02, Removal-05, and Installation-03 and -05 (A5).

(4) Engine Manual, 72-00-60, Removal-05, and Installation-05 (D5).

(5) Aircraft Maintenance Manual, 1IA, 73-22-38 Config-01 and Config-02, Removal/Installation.

(6) Aircraft Maintenance Manual, 3IA, 73-21-38, Removal/Installation.

P. Interchangeability of Parts

Not affected.

**2. Material Information****A. Prices and availability:**

For prices and availability of parts refer to Unison Industries Service Bulletin 430153-73-1.

B. Vendor units affected by this bulletin:

Applicability: - For each V2500 engine to incorporate this bulletin

The type of equipment affected by this Service Bulletin (Modification) is listed below for information only:

R All Engines

R 73-22-38

R	FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
---	--------------------	--------------------	-----	------------	-----	--------------------	---------------

R	01090	-	1	.Shroud, Alternator (V83311)	-	430116	(B)
---	-------	---	---	---------------------------------	---	--------	-----

R A1 and A5 Models

73-22-38

R	FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
R	01100	430201	1	.Generator, Stator - Alternator (V83311)	-	430153	(A)(S1)
R	01100	430201-1	1	.Generator, Stator - Alternator (V83311)	-	430153	(S1)(1D) (2D)

D5 models

73-22-38

R	FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
R	01100	430202	1	Generator, Stator - Alternator (V83311)	-	430153	(A)(S1)
R	01100	430202-1	1	Generator, Stator - Alternator (V83311)	-	430153	(S1)(1D) (2D)



C. Instructions disposition codes:

(A) New standard of unit will be made available from January 2002.

R (B) Old part becomes redundant upon embodiment of this modification.

(S1) Old and new units are freely and fully interchangeable.

(1D) Old standard of unit may be reworked.

(2D) Old standard of unit to be returned to vendor for reworking.

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3. Accomplishment Instructions

A. Rework Instructions

Refer to Vendor Service Bulletin, Unison Industries 430153-73-1.

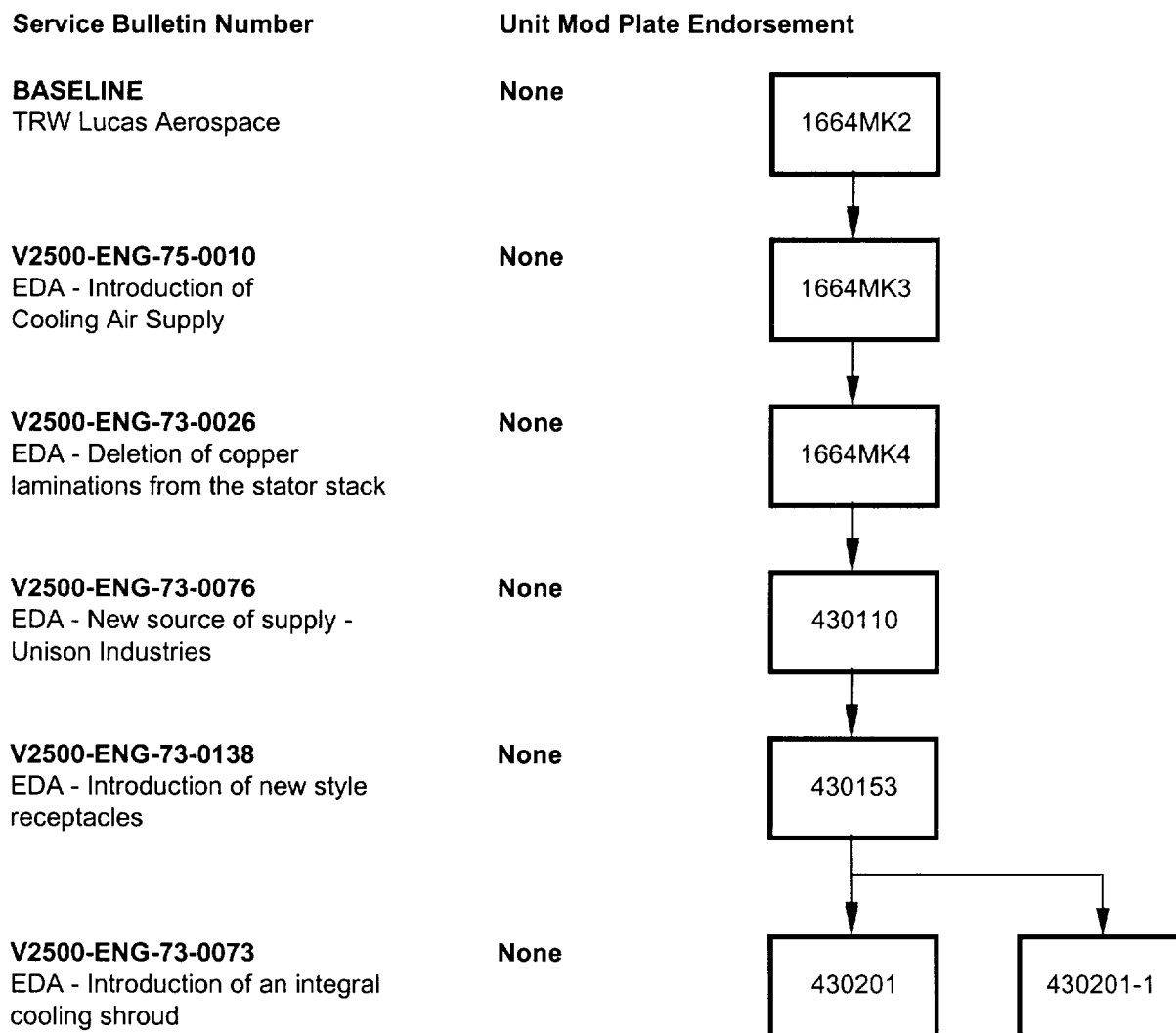
B. Assembly Instructions

The revised EDA introduced by this Service Bulletin is freely and fully interchangeable with the existing. Remove and install in accordance with current overhaul procedures and maintenance practices (Engine Manual, 72-00-60, Removal/Installation. Aircraft Maintenance Manual, 1IA, 73-22-38, Removal/Installation. Aircraft Maintenance Manual, 3IA, 73-21-38, Removal/Installation.).

C. Recording Instructions

A record of accomplishment is necessary. Refer to vendor Service Bulletin, Unison Industries 430153-73-1.

V2500-A1 EDA Family Tree *



* This family tree is not intended to represent the combination of modifications fitted to units in service

Ided0004363

Family Tree
Fig.1

**V2500-A5 (EXCEPT V2533) EDA Family Tree ***

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Service Bulletin Number**Unit Mod Plate Endorsement****BASELINE**

TRW Lucas Aerospace

None

V2500-ENG-73-0076EDA - New source of supply -
Unison Industries

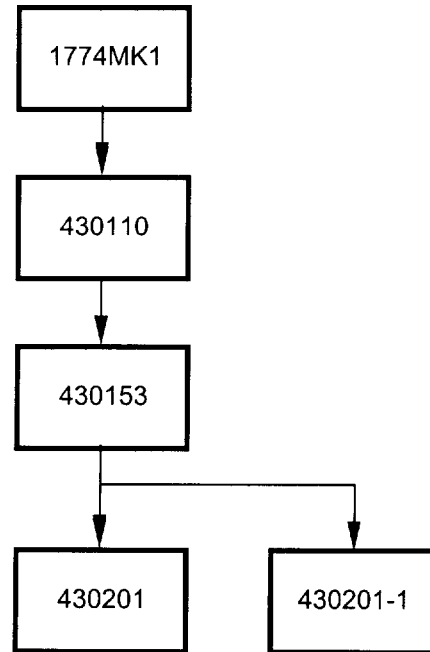
None

V2500-ENG-73-0138EDA - Introduction of new style
receptacles

None

V2500-ENG-73-0073EDA - Introduction of an integral
cooling shroud

None

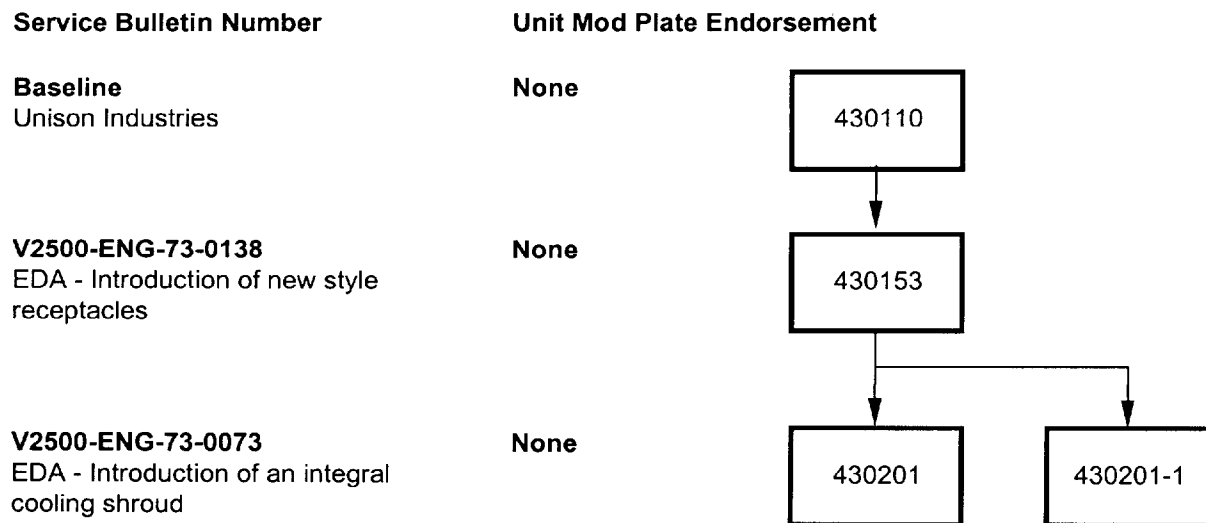


* This family tree is not intended to represent the combination of modifications fitted to units in service

1dec0004364

Family Tree
Fig.2

V2533-A5 EDA Family Tree *



* This family tree is not intended to represent the combination of modifications fitted to units in service

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ded0004365

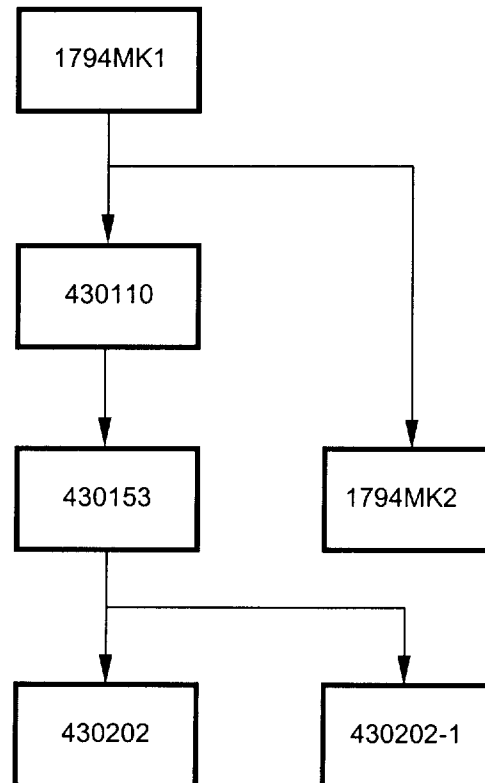
Family Tree
Fig.3

**V2500-D5 EDA Family Tree ***

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Service Bulletin Number**Unit Mod Plate Endorsement****Baseline**

TRW Lucas Aerospace

None**V2500-ENG-73-0070**EDA - New source of supply -
Unison Industries**None****V2500-ENG-73-0096**EDA - Introduction of new style
receptacles**None****V2500-ENG-73-0073**EDA - Introduction of an integral
cooling shroud**None**

* This family tree is not intended to represent the combination of modifications fitted to units in service

dec00004366

Family Tree
Fig.4

UNISON

SERVICE BULLETIN

JP00830

POWERPLANT - ENGINE DEDICATED ALTERNATOR (EDA) - MODIFICATION OF 430110 AND 430153 STATORS TO ACCOMMODATE AN INTEGRAL AIR SHROUD OR REPLACE WITH A NEW STATOR THAT INCORPORATES AN INTEGRAL AIR SHROUD

1. SUMMARY

This Service Bulletin incorporates a new or modified Engine Dedicated Alternator (EDA) Stator to accommodate a new Integral Shroud. This new product improvement incorporates an integral air shroud as part of the stator in order to eliminate the potential for improper air shroud installation in the field. Field returns to date indicate a high number of premature failures, due to insufficient cooling air caused by misaligned air shrouds or by overtightening of the air shroud.

2. PLANNING INFORMATION:

A. Effectivity

SB V2500-ENG-73-0138 (-A1/-A5 engines) and SB V2500-ENG-73-0096 (-D5 engines) upgrades Stator PN 430110 to Stator PN 430153 which uses an attached air shroud PN 430116. PNs 430110 and 430153 are no longer in production and have been replaced by PNs 430201 and 430202. PNs 430110 and 430153 can be modified to PNs 430201-1 and 430202-1.

B. Reason

- (1) Problem: To incorporate an integral air shroud as part of the stator in order to eliminate the potential for improper air shroud installation in the field.
- (2) Cause: Field returns to date indicate a high number of premature failures, due to insufficient cooling air caused by misaligned or overtightened air shrouds.
- (3) Solution: Modify current PN 430110/430153 Stators with an integral shroud, as PN 430201-1 (-A1/-A5 engines) and 430202-1 (-D5 engines) or replace with a new Stator PN 430201 (-A1/-A5 engines) and 430202 (-D5 engines). The previously mentioned units are the same electrically, the difference is in the position of the air inlet on the integral shroud.

C. Description

This Service Bulletin incorporates a new or modified EDA stator to eliminate misaligned or overtightened air shrouds.

D. Compliance

Category 7. Compliance with this service bulletin can be done when the superseded parts supply is fully used.

E. Approval

These part numbers changes and/or part changes specified in the Materials Information sections of this Service Bulletin agree with the applicable Federal Aviation Regulations and are FAA Approved for the engine model(s) given.

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F. Manpower

No additional man-hours are required to do this Service Bulletin. Factory level repair only or new part replacement.

G. Weight and Balance

- (1) Weight Change:
Minus 0.7 lb. (0.32 Kg.)
- (2) Moment Arm:
34.0 in. (864.0 mm) rearwards of datum

H. Electrical Load Data

Not affected

I. References

Unison Component Maintenance Manual (CMM) ATA 73-28-05
IAE Service Bulletin V2500-ENG-73-0073
IAE Service Bulletin V2500-ENG-73-0138 (-A1/-A5 engines)
IAE Service Bulletin V2500-ENG-73-0096 (-D5 engine)

J. Other Publications Affected

ATA 73-28-05

K. Interchangeability/Intermixability

SB V2500-ENG-73-0138 (-A1/-A5 engines) and SB V2500-ENG-73-0096 (-D5 engines) upgrades Stator PN 430110 to Stator PN 430153. IAE Service Bulletin V2500-ENG-73-0073 upgrades Stator PN 430153 to PNs 430201-1 (-A1/-A5 engines) or 430202-1 (-D5 engines) and introduces new product PNs 430201 (-A1/-A5 engines) and 430202 (-D5 engines).

V2500 Stator PN Cross Reference

PN	Application	Upgrade PN	New PN
Dowty 1664 MK4	A1	Exchange only	430201
Dowty 1774 MK1	A5	Exchange only	430201
Dowty 1794 MK1/MK2	D5	Exchange only	430202
Unison 430110	A1/A5	430201-1	430201
Unison 430110	D5	430202-1	430202
Unison 430153	A1/A5	430201-1	430201
Unison 430153	D5	430202-1	430202
Unison 430201	A1/A5	N/A	N/A
Unison 430201-1	A1/A5	N/A	N/A
Unison 430202	D5	N/A	N/A
Unison 430202-1	D5	N/A	N/A

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3. MATERIAL INFORMATION

A. Material - Price and Availability

Material – Cost and Availability

This modification to be performed by factory level repair only – send all units to Unison Industries, Inc., 5345 State Highway 12, Norwich, NY 13815. Attention: Roberta Halbert, Customer Service Representative, phone (607)-335-5159, fax (607)-335-5440, email at rhalbert@unisonindustries.com.

B. Material Necessary For Each Component

<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>	<u>2002 Unit Price</u>	<u>Special Inst./Disp.</u>	<u>LeadTime (Days)</u>
430201	Stator	430110/430153	1	*	New	90
430202	Stator	430110/430153	1	*	New	90
430201-1	Stator	430110/430153	1	*	Modification	15
430202-1	Stator	430110/430153	1	*	Modification	15

To facilitate accomplishing this Service Bulletin, Unison offers factory modified stators which incorporate this and all previous Service Bulletins. By utilizing the Unison Service Center for all maintenance needs, operators are also assured that all subsequent product improvements will be automatically incorporated upon Engineering Change release.

* Contact Unison Industries for a price quote.

C. Reidentification of Parts

<u>Unison Part Number</u>	<u>IAE Part Number</u>	<u>Engine Models</u>
430110 Stator	L500103	-A1/-A5/-D5
430153 Stator	L500301	-A1/-A5/-D5
430201*	L500302	-A1/-A5
430202*	L500303	-D5
430201-1 **	—	-A1/-A5
430202-1 **	—	-D5

* Production New Units.

** Overhaul Modification of existing field units.

Note: Either PN 430110 or PN 430153 can be modified to PN 430201-1 or PN 430202-1, depending on the engine model. Likewise, either PN 430201 or PN 430202 can replace PN 430110 or PN 430153, depending on the engine model.

4. ACCOMPLISHMENT INSTRUCTIONS

Return 430110 and 430153 stators to Unison Industries for modification.

430153-73-1