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V2500-A1/A5/D5 SERIES PROPULSION SYSTEM SERVICE BULLETIN

This document transmits the Initial Issue of IAE Service Bulletin
V2500-ENG-75-0110 and the Initial Issue of Goodrich Service Bulletins VSVA
1685-75-8407 and VSVA 2607-75-8407.

Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 7 of the IAE Service Bulletin V2500-ENG-75-0110.	Initial Issue.
	Goodrich Service Bulletins VSVA 1685-75-8407 and VSVA 2607-75-8407.	Initial Issue.

V2500-ENG-75-0110
Transmittal - Page 1 of 1

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AIR – VARIABLE STATOR VANE ACTUATOR (VSVA) – INTRODUCTION OF SEAL HOUSING WHICH
INCLUDES A CONSTANT PRESSURE VALVE (CPV) PISTON TRAVEL STOP

1. Planning Information

A. Effectivity

(1) Airbus A319

- (a) V2522-A5, V2524-A5, V2527M-A5 Engines prior to Serial No. V13132 (A5 Standard and A5 SelectOne™ Retrofit Standard).

V2522-A5, V2524-A5, V2527M-A5 Engines prior to Serial No. V15035 (A5 SelectOne™ Production Standard).

- (i) VSV Actuator, P/N 1685MK6, 1685MK7, 2607MK1 and 2607MK2.

(2) Airbus A320

- (a) ALL V2500-A1 Engines

- (i) VSV Actuator, P/N 1685MK4, 1685MK5, 1685MK6, 1685MK7, 2607MK1 and 2607MK2.

- (b) V2524-A5, V2527-A5, V2527E-A5 Engines prior to Serial No. V13132 (A5 Standard and A5 SelectOne™ Retrofit Standard).

V2524-A5, V2527-A5, V2527E-A5 Engines prior to Serial No. V15035 (A5 SelectOne™ Production Standard).

- (i) VSV Actuator, P/N 1685MK6, 1685MK7, 2607MK1 and 2607MK2.

(3) Airbus A321

- (a) V2530-A5, V2533-A5 Engines prior to Serial No. V13132 (A5 Standard and A5 SelectOne™ Retrofit Standard).

V2530-A5, V2533-A5 Engines prior to Serial No. V15035 (A5 SelectOne™ Production Standard).

- (i) VSV Actuator, P/N 2607MK2.

(4) Boeing MD-90

- (a) ALL V2525-D5, V2528-D5 Engines.

- (i) VSV Actuator, P/N 1685MK6, 1685MK7, 2607MK1 and 2607MK2.

B. Concurrent Requirements

None.

C. Reason**(1) Condition**

To introduce a modified Variable Stator Vane Actuator (VSVA) with a Constant Pressure Valve (CPV) travel stop.

(2) Background

A number of VSVA units have been returned due to mal-scheduling events. An engineering investigation into these returns confirmed a VSVA fault due to CPV wear.

(3) Objective

Introduction of this Service Bulletin is designed to improve reliability.

(4) Substantiation

The changes introduced by this Service Bulletin were the subject of satisfactory engineering analysis and testing. This Service Bulletin complies with the applicable engine certification basis.

(5) Effect of Bulletin on:**(a) Operation**

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Not affected.

(d) Repair Schemes

Not affected.

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

D. Description

The Function of the CPV is to maintain a constant pressure difference across the torque motor despite variations in the pressure difference across the VSVA. Wear at the base of the CPV piston can increase the rate of fuel leakage into the cavity at the base of the piston, the resultant pressure rise may cause the CPV to over travel in the closed direction. Once the spring compresses into its solid height, the CPV becomes latched in this position. In the latched position, the CPV stops regulating the pressure difference across the torque motor which can result in the VSVA mal-scheduling.

E. Compliance

Category Code 6

Accomplish when the sub-assembly is disassembled sufficiently to afford access to the affected spare parts.

F. Approval

The part number changes and/or part modification 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 Models listed.

G. Manpower

(1) In Service

Not affected.

(2) At Overhaul

Not affected.

H. Material Price and Availability

Modification kit is not required; part supplied as single line items.

I. Tooling – Price and Availability

Special tooling is not necessary.

J. Industry Support Information

Not applicable.

K. Weight and Balance**(1) Weight Change**

None.

(2) Moment Arm

No effect.

(3) Datum

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

L. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

M. Software Accomplishment Summary

Not applicable.

N. References

- (1)** Airbus A319/A320/A321 Aircraft Maintenance Manual, Chapter 75-32-41
Removal/Installation of VSVA.
- (2)** Boeing MD 90 Aircraft Maintenance Manual, Chapter 75-31-01
Removal/Installation of VSVA.
- (3)** IAE V2500-A1/A5/D5 Engine Manual (E-V2500-1IA, E-V2500-3IA),
Chapter/Section 72-00-40, Removal/Installation of VSVA.
- (4)** Goodrich Service Bulletins 1685-75-8407 and 2607-75-8407 dated Oct.24/08.
- (5)** Airbus Aircraft Modification No. 39890/P11404.
- (6)** Internal Reference No.:
Engineering Change No. 08VI003.
- (7)** ATA Locator - 75-32-41.

O. Other Publications Affected

None.

P. Interchangeability of Parts

Not affected.

2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts to be reworked

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
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75-32-41

A1 Models

01-100	1685MK4 or 1685MK5 or 1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	1	.Actuator - Variable Stator- Vane		1685MK4 or 1685MK5 or 1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	(A)
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A5 Models

01-100	1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	1	.Actuator - Variable Stator- Vane		1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	(A)
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D5 Models

01-100	1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	1	.Actuator - Variable Stator- Vane		1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	(A)
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C. Instructions disposition codes:

(A) Part number not changed with this modification.

3. Accomplishment Instructions

A. Rework Instructions

Refer to the attached Goodrich Service Bulletins VSVA 1685-75-8407 and VSVA 2607-75-8407.

B. Assembly Instructions

- (1) For the correct Removal/Installation procedures of the VSVA, refer to one of the manuals that follow:
 - (a) A319/320/321 Aircraft Maintenance Manual, Chapter/Section 75-32-41, Removal/Installation.
 - (b) MD90 Aircraft Maintenance Manual, Chapter/Section 75-33-41, Removal/Installation.
 - (c) IAE V2500-A1/A5/D5 Engine Manual, Chapter/Section 72-00-40, Removal/Installation.
- (2) For further information, refer to the attached Goodrich Service Bulletins VSVA 1685-75-8407 and VSVA 2607-75-8407.

C. Recording Instructions

- (1) A record of accomplishment is required.



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SERVICE BULLETIN TRANSMITTAL

VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 1685

ATA REF 75-32-41

THIS PAGE TRANSMITS THE INITIAL ISSUE OF SERVICE BULLETIN 1685-75-8407

Please note the Company name has changed from TRW Aeronautical Systems - Lucas Aerospace to Goodrich Engine Control Systems.

Reason for issue

To introduce a seal housing (P/N 77157010) which includes a constant pressure valve piston travel stop.

Action

Keep this SB with the Component Maintenance Manual. Put in this SB Transmittal page and the SB pages 1 thru 4 dated Oct 24/08.

APPROVED FOR GOODRICH ENGINE CONTROL SYSTEMS

Signed: 

Date: Oct 24/08

Oct 24/08
301279

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VSVA 1685-75-8407

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Page 1 of 2

Goodrich Engine Control Systems

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Oct 24/08

TRANSMITTAL

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VSVA 1685-75-8407

Page 2 of 2

Goodrich Engine Control Systems

SERVICE BULLETIN

SERVICE BULLETIN NUMBER VSVA 1685-75-8407

ENGINE COMPRESSOR CONTROL - VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 1685

INTRODUCTION OF SEAL HOUSING (P/N 77157010), WHICH INCLUDES
A CONSTANT PRESSURE VALVE (CPV) PISTON TRAVEL STOP

1. Planning Information

A. Effectivity

VSVA 1685 Mk4, Mk5, Mk6 and Mk7.

B. Concurrent Requirements

Not applicable.

C. Reason

(1) Problem

A number of VSVA 2607 units have been rejected from service due to incorrect VSVA scheduling events during engine operation.

(2) Cause

Engineering investigations on the rejected VSVA 2607 units, showed a number of high service life units to have VSVA scheduling problems during test. It was found that due to wear, the CPV piston had moved farther than was necessary and thus 'latched' in a position where it was not possible for the CPV to keep a constant pressure drop across the torque motor.

(3) Solution

A new seal housing (P/N 77157010) has been introduced, which includes a travel stop that prevents movement of the CPV piston to a 'latched' position.

D. Description

This Service Bulletin gives details of the procedure to replace the seal housing (P/N 1655-1081) installed to a VSVA 1685 Mk4, Mk5, Mk6 and Mk7 unit, with the new seal housing (P/N 77157010), at an approved maintenance facility.

Oct 24/08

VSVA 1685-75-8407

Page 1

Goodrich Engine Control Systems
SERVICE BULLETIN

E. Compliance

Category Code 6

Accomplish when the subassembly (ie. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

F. Approval

Service Bulletin No VSVA 1685-75-8407 was technically approved by IAE on Oct 22/08. The procedures described in this bulletin have been shown to comply with the appropriate Federal Aviation Regulations and are FAA approved for those unit types listed in this bulletin.

G. Manpower

(1) In Service

Not applicable

(2) In Repair

Not applicable

H. Weight and Balance

No change.

I. Electrical Load Data

Not applicable.

J. Software Accomplishment Summary

Not applicable.

K. References

Goodrich Component Maintenance Manual (CMM) 75-32-41.

L. Other Publications Affected

None.

M. Interchangeability or Intermixability of Parts

Not applicable.

Oct 24/08

VSVA 1685-75-8407

Page 2

Goodrich Engine Control Systems

SERVICE BULLETIN

2. Material Information

A. Material - Price and Availability

NOTE: If necessary, use the equivalent alternatives for the items given in the table below:

<u>P/N</u>	<u>Description</u>	<u>Availability</u>	<u>List Price</u>
77157010	Housing, Seal	TBA	TBA

B. Industry Support Information.

The cost to accomplish this Service Bulletin will be charged to the operator.

C. Material Necessary for Each Unit

NOTE: If necessary, use the equivalent alternatives for the items given in the table below

<u>New P/N</u>	<u>Description</u>	<u>Old P/N</u>	<u>Qty</u>	<u>Instruction</u>
77157010	Housing, Seal	1655-1081	1	1

Instruction Notes:

1 Replace with new part

D. Reidentified Parts

Not applicable.

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions.

A. Procedure (Ref. Goodrich Component Maintenance Manual (CMM) 75-32-41)

- (1) Disassemble the VSVA unit sufficiently to remove and discard the seal housing (P/N 1655-1081), Ref. DISASSEMBLY section.
- (2) Install a new seal housing (P/N 77157010) to the VSVA unit, Ref. ASSEMBLY section.
- (3) Assemble the VSVA unit fully, Ref. ASSEMBLY section.
- (4) Test the VSVA unit, Ref. TESTING AND TROUBLE SHOOTING section.

Oct 24/08

VSVA 1685-75-8407

Page 3

Goodrich Engine Control Systems

SERVICE BULLETIN

B. Recording Action

- (1) Remove the identification plate (P/N 215-408, 215-4012 or 215-4030), Ref. DISASSEMBLY section.
- (2) Use the applicable procedure to make sure modification number CP8407 is shown on the identification plate (P/N 215-408, 215-4012 or 215-4030).
- (3) Install the identification plate (P/N 215-408, 215-4012 or 215-4030), Ref. ASSEMBLY section.

Oct 24/08

VSVA 1685-75-8407

Page 4



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SERVICE BULLETIN TRANSMITTAL

VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 2607

ATA REF 75-32-61

THIS PAGE TRANSMITS THE INITIAL ISSUE OF SERVICE BULLETIN 2607-75-8407

Please note the Company name has changed from TRW Aeronautical Systems - Lucas Aerospace to Goodrich Engine Control Systems.

Reason for issue

To introduce a seal housing (P/N 77157010) which includes a constant pressure valve piston travel stop.

Action

Keep this SB with the Component Maintenance Manual. Put in this SB Transmittal page and the SB pages 1 thru 4 dated Oct 24/08.

APPROVED FOR GOODRICH ENGINE CONTROL SYSTEMS

Signed: A handwritten signature in black ink, appearing to read "S. Deim", is written over a horizontal line.

Date: Oct 24/08

Oct 24/08
301281

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VSVA 2607-75-8407

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Page 1 of 2

Goodrich Engine Control Systems

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Oct 24/08

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VSVA 2607-75-8407

Page 2 of 2

Goodrich Engine Control Systems

SERVICE BULLETIN

SERVICE BULLETIN NUMBER VSVA 2607-75-8407

ENGINE COMPRESSOR CONTROL - VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 2607

INTRODUCTION OF SEAL HOUSING (P/N 77157010), WHICH INCLUDES
A CONSTANT PRESSURE VALVE (CPV) PISTON TRAVEL STOP

1. Planning Information

A. Effectivity

VSVA 2607 Mk1 and Mk2.

B. Concurrent Requirements

Not applicable.

C. Reason

(1) Problem

A number of VSVA 2607 units have been rejected from service due to incorrect VSVA scheduling events during engine operation.

(2) Cause

Engineering investigations on the rejected VSVA 2607 units, showed a number of high service life units to have VSVA scheduling problems during test. It was found that due to wear, the CPV piston had moved farther than was necessary and thus 'latched' in a position where it was not possible for the CPV to keep a constant pressure drop across the torque motor.

(3) Solution

A new seal housing (P/N 77157010) has been introduced, which includes a travel stop that prevents movement of the CPV piston to a 'latched' position.

D. Description

This Service Bulletin gives details of the procedure to replace the seal housing (P/N 1655-1081) installed to a VSVA 2607 Mk1 and Mk2 unit, with the new seal housing (P/N 77157010), at an approved maintenance facility.

Goodrich Engine Control Systems
SERVICE BULLETIN

E. Compliance

Category Code 6

Accomplish when the subassembly (ie. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

F. Approval

Service Bulletin No VSVA 2607-75-8407 was technically approved by IAE on Oct 22/08. The procedures described in this bulletin have been shown to comply with the appropriate Federal Aviation Regulations and are FAA approved for those unit types listed in this bulletin.

G. Manpower

(1) In Service

Not applicable

(2) In Repair

Not applicable

H. Weight and Balance

No change.

I. Electrical Load Data

Not applicable.

J. Software Accomplishment Summary

Not applicable.

K. References

Goodrich Component Maintenance Manual (CMM) 75-32-61.

L. Other Publications Affected

None.

M. Interchangeability or Intermixability of Parts

Not applicable.

Oct 24/08

VSVA 2607-75-8407

Page 2

Goodrich Engine Control Systems

SERVICE BULLETIN

2. Material Information

A. Material - Price and Availability

NOTE: If necessary, use the equivalent alternatives for the items given in the table below:

<u>P/N</u>	<u>Description</u>	<u>Availability</u>	<u>List Price</u>
77157010	Housing, Seal	TBA	TBA

B. Industry Support Information.

The cost to accomplish this Service Bulletin will be charged to the operator.

C. Material Necessary for Each Unit

NOTE: If necessary, use the equivalent alternatives for the items given in the table below

<u>New P/N</u>	<u>Description</u>	<u>Old P/N</u>	<u>Qty</u>	<u>Instruction</u>
77157010	Housing, Seal	1655-1081	1	1

Instruction Notes:

1 Replace with new part

D. Reidentified Parts

Not applicable.

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions.

A. Procedure (Ref. Goodrich Component Maintenance Manual (CMM) 75-32-61)

- (1) Disassemble the VSVA unit sufficiently to remove and discard the seal housing (P/N 1655-1081), Ref. DISASSEMBLY section.
- (2) Install a new seal housing (P/N 77157010) to the VSVA unit, Ref. ASSEMBLY section.
- (3) Assemble the VSVA unit fully, Ref. ASSEMBLY section.
- (4) Test the VSVA unit, Ref. TESTING AND TROUBLE SHOOTING section.

Oct 24/08

VSVA 2607-75-8407

Page 3

Goodrich Engine Control Systems
SERVICE BULLETIN

B. Recording Action

- (1) Remove the identification plate (P/N 215-4012 or 215-4030), Ref. DISASSEMBLY section.
- (2) Use the applicable procedure to make sure modification number CP8407 is shown on the identification plate (P/N 215-4012 or 215-4030).
- (3) Install the identification plate (P/N 215-4012 or 215-4030), Ref. ASSEMBLY section.

Oct 24/08

VSVA 2607-75-8407
Page 4