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DATE: Feb. 9/09

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

This document transmits the Initial Issue of IAE Service Bulletin V2500-ENG-75-0111 and the Initial Issue of Goodrich Service Bulletins VSVA 1685-75-8406 and VSVA 2607-75-8406.

Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 7 of the IAE Service Bulletin V2500-ENG-75-0111	Initial Issue.
	Goodrich Service Bulletins VSVA 1685-75-8406 and VSVA 2607-75-8406.	Initial Issue.

International Aero Engines

SERVICE BULLETIN

AIR - VARIABLE STATOR VANE ACTUATOR (VSVA) - CHANGE TO SERVO VALVE PORT FILTERS

Printed in Great Britain

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 new servo valve port filter with a nominal filtration of 50 microns.

(2) Background

A number of Variable Stator Vane Actuator (VSVA) events have happened, mainly during Pass-Off-Testing, where the VSVA lost positional control of its piston at low cyclic lives.

(3) Objective

Introduction of this Service Bulletin is designed to improve the 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

A root cause investigation into the events has identified in-built contamination as the most probable cause, on evidence available to date. Findings have identified the VSVA body as the most likely source of this contamination. Contamination entering the servo valve impedes its functionality and the flow of fuel to either side of the actuator piston. The critical feature of the servo valve is the nozzle/flapper gap and this has a nominal value of 50 microns. The filtration rating of the servo valve port filters will change from 80 micron glass bead absolute to 50 micron glass bead absolute.

E. Compliance

Category Code 8

Accomplish based upon experience with the prior configuration.

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 1685-75-8406 and 2607-75-8406 dated Oct.24/08.

(5) Airbus Aircraft Modification No. 39890/P11399.

(6) Internal Reference No.:

Engineering Change No. 08VI004

(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
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)
A5 Models						
01-100	1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	1	.Actuator - Variable Stator-Vane		1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	(A)
D5 Models						
01-100	1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	1	.Actuator - Variable Stator-Vane		1685MK6 or 1685MK7 or 2607MK1 or 2607MK2	(A)

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 1685-75-8406 and VSVA 2607-75-8406.

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 1685-75-8406 and VSVA 2607-75-8406.

C. Recording Instructions

(1) A record of accomplishment is required.

GOODRICH ENGINE CONTROL SYSTEMS
SHAFTMOOR LANE
HALL GREEN
BIRMINGHAM B28 8SW
ENGLAND
TELEPHONE: 44 121 707 7111
FAX: 44 121 707 8826

SERVICE BULLETIN TRANSMITTAL

VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 1685

ATA REF 75-32-41

THIS PAGE TRANSMITS THE INITIAL ISSUE OF SERVICE BULLETIN 1685-75-8406

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

Reason for issue

To introduce a torque motor (P/N 77879540) with 50 micron absolute filters.

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

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SERVICE BULLETIN

SERVICE BULLETIN NUMBER VSVA 1685-75-8406

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

INTRODUCTION OF TORQUE MOTOR (P/N 77879540) WITH 50 MICRON ABSOLUTE FILTERS

1. Planning Information

A. Effectivity

VSVA 1685 Mk4, Mk5, Mk6 and Mk7**.**

B. Concurrent Requirements

Not applicable.

C. Reason

(1) Problem

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

(2) Cause

Investigation has shown that if particles of debris are present in the torque motor, it is possible that they can move into the nozzle flapper gap, thus the VSVA will not be in control of the servo valve piston.

(3) Solution

To decrease the risk of particle contamination, torque motor (P/N 77879540) has been introduced, which includes new servo flow port filters. The new servo flow port filters have a filtration rating of 50 micron glass bead absolute, to replace the filters installed before, rated at 80 micron glass bead absolute.

D. Description

This Service Bulletin gives details of the procedure to replace the torque motor installed to a VSVA 1685 Mk4, Mk5, Mk6 and Mk7 unit, with the new torque motor (P/N 77879540), at an approved maintenance facility.

E. Compliance

Category Code 8

Accomplish based upon experience with the prior configuration.

F. Approval

Service Bulletin No VSVA 1685-75-8406 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.

2. Material Information

A. Material - Price and Availability

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

P/N	Description	Availability	List Price
77879540	Motor, Torque	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

New P/N	Description	Old P/N	Qty	Instruction
77879540	Motor, Torque	1655-4009	1	1
77879540	Motor, Torque	1685-4016	1	1
77879540	Motor, Torque	2607-9000	1	1
77879540	Motor, Torque	1685-4016	1	1
77879540	Motor, Torque	2607-9001	1	1
77879540	Motor, Torque	2607-9002	1	1

Instruction Notes:

1 Replace with torque motor (P/N 77879540) and if applicable, send the old part to the address shown in Para. 3.A.(1).

D. Reidentified Parts

Not applicable.

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions.

A. General

(1) If the torque motor removed in Para. 3.B.(1) is suitable for an applicable re-work, send it to one of the addresses that follow, for the attention of the Repair Co-ordinator:

Moog Controls Ltd
Ashchurch
Tewkesbury
Gloucestershire
GL20 8NA
UK

Moog Inc
Aircraft Group
East Aurora
New York 1405-0018
U.S.A.

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

(1) Disassemble the VSVA unit sufficiently to remove and discard the torque motor (3-210), Ref. DISASSEMBLY section.

(2) Install a torque motor (P/N 77879540) 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.

C. 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 CP8406 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.

GOODRICH ENGINE CONTROL SYSTEMS
SHAFTMOOR LANE
HALL GREEN
BIRMINGHAM B28 8SW
ENGLAND
TELEPHONE: 44 121 707 7111
FAX: 44 121 707 8826

SERVICE BULLETIN TRANSMITTAL

VARIABLE STATOR VANE ACTUATOR, TYPE: VSVA 2607

ATA REF 75-32-61

THIS PAGE TRANSMITS THE INITIAL ISSUE OF SERVICE BULLETIN 2607-75-8406

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

Reason for issue

To introduce a torque motor (P/N 77879540) with 50 micron absolute filters.

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

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SERVICE BULLETIN

SERVICE BULLETIN NUMBER VSVA 2607-75-8406

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

INTRODUCTION OF TORQUE MOTOR (P/N 77879540) WITH 50 MICRON ABSOLUTE FILTERS

1. Planning Information

A. Effectivity

VSVA 2607 Mk1 and Mk2**.**

B. Concurrent Requirements

Not applicable.

C. Reason

(1) Problem

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

(2) Cause

Investigation has shown that if particles of debris are present in the torque motor, it is possible that they can move into the nozzle flapper gap, thus the VSVA will not be in control of the servo valve piston.

(3) Solution

To decrease the risk of particle contamination, torque motor (P/N 77879540) has been introduced, which includes new servo flow port filters. The new servo flow port filters have a filtration rating of 50 micron glass bead absolute, to replace the filters installed before, rated at 80 micron glass bead absolute.

D. Description

This Service Bulletin gives details of the procedure to replace the torque motor installed to a VSVA 2607 Mk1 and Mk2 unit, with the new torque motor (P/N 77879540), at an approved maintenance facility.

E. Compliance

Category Code 8

Accomplish based upon experience with the prior configuration.

F. Approval

Service Bulletin No VSVA 2607-75-8406 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.

2. Material Information

A. Material - Price and Availability

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

P/N	Description	Availability	List Price
77879540	Motor, Torque	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

New P/N	Description	Old P/N	Qty	Instruction
77879540	Motor, Torque	1685-4016	1	1
77879540	Motor, Torque	1685-4045	1	1
77879540	Motor, Torque	2607-9001	1	1
77879540	Motor, Torque	2607-9002	1	1

Instruction Notes:

1 Replace with torque motor (P/N 77879540) and if applicable, send the old part to the address shown in Para. 3.A.(1).

D. Reidentified Parts

Not applicable.

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions.

A. General

(1) If the torque motor removed in Para. 3.B.(1) is suitable for an applicable re-work, send it to one of the addresses that follow, for the attention of the Repair Co-ordinator:

Moog Controls Ltd
Ashchurch
Tewkesbury
Gloucestershire
GL20 8NA
UK

Moog Inc
Aircraft Group
East Aurora
New York 1405-0018
U.S.A.

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

(1) Disassemble the VSVA unit sufficiently to remove and discard the torque motor (3-220), Ref. DISASSEMBLY section.

(2) Install a torque motor (P/N 77879540) 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.

C. 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 CP8406 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.