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

RR-DERBY

V2500 International Aero Engines

400 MAIN STREET, MAIL STOP 121-10
EAST HARTFORD, CT 06108, USA.
TELEPHONE: 860 565 5515
FAX: 860 565 0600

P.O. BOX 31, DERBY
TELEGRAMS - 'ROYCAR' DERBY
TELEX - 37645
TELEPHONE - DERBY 242424

DATE: Jan.15/01

V2500-A1/A5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits the Initial Issue of Service Bulletin EV2500-79-0080

Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 6 of the Service Bulletin	Initial issue

V2500-ENG-79-0080

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin are as follows:

Page	Revision Number	Revision Date
Bulletin		
1		Jan.15/01
2		Jan.15/01
3		Jan.15/01
4		Jan.15/01
5		Jan.15/01
6		Jan.15/01

OIL - AIR COOLED OIL COOLER MODULATING VALVE - INTRODUCTION OF AN AIR MODULATING VALVE WITH REVISED ACTUATOR END CAP RETAINING WASHERS

1. Planning Information

A. Effectivity

(1) Airbus A319

V2522-A5, V2524-A5 Engines prior to Serial No. V10950.

(2) Airbus A319-133

V2527M-A5 Engines prior to Serial No. V10950.

(3) Airbus A320

(a) V2500-A1 Engines prior to serial No.V0362.

(b) V2527-A5, V2527E-A5 Engines prior to Serial No.V10950.

(4) Airbus A321

V2530-A5, V2533-A5 Engines prior to Serial No.V10950.

(5) ATA Locator 79-21-51

B. Concurrent Requirements

None

C. Reason

(1) Condition

The Air Cooled Oil Cooler (ACOC) mounted Air Modulating Valve (AMV) actuator may leak with accompanying end cap seal extrusion.

The problem has been attributed to the tolerance stack up of the bolt, washer, bore and end cap. This can allow a gap to develop between the under side of the bolt head and the end cap. Over torque tightening of the retaining bolts may be a contributory factor.

(2) Background

The Vendor has observed the problem on one unit during Production Acceptance Testing (PAT).

(3) Substantiation

The changes introduced by this Service Bulletin have been the subject of satisfactory IAE Engineering assessment and Vendor analysis.

(4) Objective

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

(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

(1) This Service Bulletin covers the fitment to engines of an AMV incorporating TRW Lucas Service Bulletin 1558-79-L1558-10.

(2) The changes introduced are:

A revised AMV with a stack up washer of increased thickness to increase the bolt/bore clearances and eliminate the possibility of a gap developing between the bolt and the end cap, under adverse tolerance conditions.

(3) Existing units may be reworked. Refer to Vendor Service Bulletin.

(4) Units incorporating the changes introduced by this Service Bulletin will be identified by endorsement of the modification plate with L1558-10.

E. Compliance

Category Code 6.

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

F. Approval

The part number changes and 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

(1) In service

Not affected

(2) At overhaul

Not affected

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

H. Material Price and Availability

Refer to TRW Aeronautical Systems Lucas Aerospace Service Bulletin 1558-79-L1558-10

I. Tooling Price and Availability

Special tools not required

J. Industry Support Information

None

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) Internal reference 99VI008

(2) Engine Manual, 72-00-32, Removal 04 and Installation 02

(3) Aircraft Maintenance Manual, 79-21-51, Removal/Installation

(4) TRW Lucas Aerospace Service Bulletin 1558-79-L1558-10

O. Other Publications Affected

(1) Illustrated Parts Catalogue,79-21-51, 1IA, 2IA, 2IB, 5IA, 5IB, 6IA, 6IB, 7IA and 7IB will be revised.

P. Interchangeability of Parts

Not affected.

2. Material Information

A. Kits associated with this Bulletin:

Modification kit TY1558-00sht7. Refer to Service Bulletin 1558-79-L1558-10

B. Parts to be reworked:

All Engines

79-21-51

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
01100	TY1558-52	1	Valve, air modulating - (VK0131)	-	TY1558-52	(A)(S1)

C. Instructions disposition codes:

(A) New standard of unit will be made available from August 2000.

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

3. Accomplish Instructions

A. Rework Instructions

Refer to TRW Lucas Aerospace Service Bulletin 1558-79-L1558-10

B. Assembly Instructions

The revised air modulating valve introduced by this Service Bulletin is interchangeable. Remove and install in accordance with current overhaul procedures and maintenance practices (Engine Manual, 72-00-32, Removal 04 and Installation 02 and Aircraft Maintenance Manual, 79-21-51, Removal/Installation).

C. Recording Instructions

(1) A record of accomplishment is required. Refer to Vendor Service Bulletin.

Lucas Aerospace

SERVICE BULLETIN

1558-79-L1558-10

FLIGHT CONTROLS - AIR MODULATING VALVE TY1558 - THICKER WASHER ADDED

MODIFICATION L1558-10

1. Planning Information

A. Effectivity

Air Modulating Valve TY1558

B. Concurrent Requirements

None.

C. Reason

There is a small risk that the actuator end cap could lift and cause a fuel leak. This could be caused by one of the following:-
- The attaching bolts have been over tightened
- The attaching bolts are too long.

This Service Bulletin has been issued to check that the existing torque values of the bolts are correct and to replace the existing washers with thicker washers.
Accomplishment of this Service Bulletin will eliminate the potential damage to the actuator housing.

D. Description

To accomplish this Service Bulletin it is necessary to:

(1) Measure the torque required to release one of the bolts that attach the end cap to the valve actuator.

(2) Replace the existing washer with a thicker washer.

(3) Re-install the bolt, then torque to the correct value.

(4) Repeat steps (1) to (3) for the three remaining bolts.

E. Compliance

Recommended.

F. Approval

This Service Bulletin is approved under the authority of the Civil Aviation Authority (CAA) Approval No. DAI/1356/39.

G. Manpower

The manhour estimate given in this Service Bulletin does not include the time to prepare for the modification, non-productive elapsed time or administration.

0.5 Manhours.

H. Weight and Balance

No change.

I. Electrical Load Data

No Change.

J. Software Accomplishment Summary

None.

K. References

CMM 79-29-51

L. Other Publications Affected

Lucas Aerospace Component Maintenance Manual (CMM) 79-21-51.

M. Interchangeability or Intermixability of Parts

Not affected.

2. Material Information

A. Material - Price and Availability

Customers with equipment shown in the effectivity of this Service Bulletin should contact TRW Aeronautical Systems Lucas Aerospace to check the availability of the Free-of-Charge (F.O.C.) Modification Kit TY1558-00sht7. The address is:

TRW Aeronautical Systems Lucas Aerospace
Stratford Road,
Solihull,
West Midlands B90 4LA
U.K.

Phone: +44 (0)121 451 5999
Fax: +44 (0)121 451 5881

B. Industry Support Information

None.

C. List of Components

Modification Kit: TY1558-00sht7

ITEM	NEW PART No.	QTY	KEYWORD	OLD PART No.	INST DISP
20	SP156D	4	Washer	SP123D	

D. List of Materials - Operator Supplied

None.

E. Special Tools

None.

3. Accomplishment Instructions

A. General

WARNING: MAKE SURE THAT YOU OBEY ALL THE WARNINGS AND THE CAUTIONS INCLUDED IN THE COMPONENT MAINTENANCE MANUAL (CMM) 79-21-52.

(1) Preparation

(a) Get access to the End Cap on the Valve Actuator Assembly.

(2) Standard Practices

(a) Put all the disassembled parts into separate clean containers.

CAUTION: DO NOT RELEASE MORE THAN ONE BOLT AT ANY ONE TIME. THERE MUST ALWAYS BE AT LEAST THREE BOLTS ATTACHING THE END CAP TO THE VALVE ACTUATOR.

B. Modification

(1) Measure the torque of the bolt and install a new washer at position A (Refer to Fig 1).

(a) Use the torque wrench to measure the required torque needed to release the bolt.

(b) Check this result with the torque values listed in Table 1. Make sure the torque value is permitted and the unit is serviceable. If the unit is unserviceable, then return the unit to TRW Aeronautical Systems Lucas Aerospace.

(c) Remove and retain the bolt (10, Fig 2) from the Actuator End Cap.

(d) Remove and discard the washer (20, Fig 2) from the Actuator End Cap.

(e) Install the new washer (20, Fig 2) on the Actuator End Cap.

(f) Re-install the bolt (10, Fig 2) into the Actuator End Cap.

(g) Torque tighten the bolt (10, Fig 2) between 2,82 and 3,39 Nm (24.96 and 30.00 lbf in).

(2) Measure the torque of the bolt and install a new washer at position B (Refer to Fig 1).

(a) Use the torque wrench to measure the required torque needed to release the bolt.

(b) Check this result with the torque values listed in Table 1. Make sure the torque value is permitted and the unit is serviceable. If the unit is unserviceable, then return the unit to TRW Aeronautical Systems Lucas Aerospace.

(c) Remove and retain the bolt (10, Fig 2) from the Actuator End Cap.

(d) Remove and discard the washer (20, Fig 2) from the Actuator End Cap.

(e) Install the new washer (20, Fig 2) on the Actuator End Cap.

(f) Re-install the bolt (10, Fig 2) into the Actuator End Cap.

(g) Torque tighten the bolt (10, Fig 2) between 2,82 and 3,39 Nm (24.96 and 30.00 lbf in).

(3) Measure the torque of the bolt and install a new washer at position C (Refer to Fig 1).

(a) Use the torque wrench to measure the required torque needed to release the bolt.

(b) Check this result with the torque values listed in Table 1. Make sure the torque value is permitted and the unit is serviceable. If the unit is unserviceable, then return the unit to TRW Aeronautical Systems Lucas Aerospace.

(c) Remove and retain the bolt (10, Fig 2) from the Actuator End Cap.

(d) Remove and discard the washer (20, Fig 2) from the Actuator End Cap.

(e) Install the new washer (20, Fig 2) on the Actuator End Cap.

(f) Re-install the bolt (10, Fig 2) into the Actuator End Cap.

(g) Torque tighten the bolt (10, Fig 2) between 2,82 and 3,39 Nm (24.96 and 30.00 lbf in).

(4) Measure the torque of the bolt and install a new washer at position D (Refer to Fig 1).

(a) Use the torque wrench to measure the required torque needed to release the bolt.

(b) Check this result with the torque values listed in Table 1. Make sure the torque value is permitted and the unit is serviceable. If the unit is unserviceable, then return the unit to TRW Aeronautical Systems Lucas Aerospace.

(c) Remove and retain the bolt (10, Fig 2) from the Actuator End Cap.

(d) Remove and discard the washer (20, Fig 2) from the Actuator End Cap.

(e) Install the new washer (20, Fig 2) on the Actuator End Cap.

(f) Re-install the bolt (10, Fig 2) into the Actuator End Cap.

(g) Torque tighten the bolt (10, Fig 2) between 2,82 and 3,39 Nm (24.96 and 30.00 lbf in).

(h) - If the unit is identified as part number TY1558-52 (B), re-identify the unit part number as TY1558-52 (C).

OR

- If the unit is not identified as part number TY1558-52 (B), mark the modification plate (IPL Figure 2 item 640) as "-10".

C. Documentation

(1) Write in the applicable records that you have done all the work given in this Service Bulletin.

Torque Value	Action to be taken
Upto: 3,62 Nm (32.04 lbf in)	This torque value is permitted. Continue with the accomplishment instructions in this Service Bulletin.
From: 3,62 to 6,21 Nm (32.04 to 54.96 lbf in)	Visually inspect the bottom of the bolt hole. Check it for signs of polished surfaces. - Signs of polishing. This unit is unserviceable, return the unit to TRW Aeronautical Systems Lucas Aerospace (Ref. NOTE 1). - No signs of polishing. Continue with the accomplishment instructions in this Service Bulletin.
Over: 6,21 Nm (54.96 lbf in)	This torque value is not permitted. This unit is unserviceable, return the unit to TRW Aeronautical Systems Lucas Aerospace (Ref. NOTE 1).

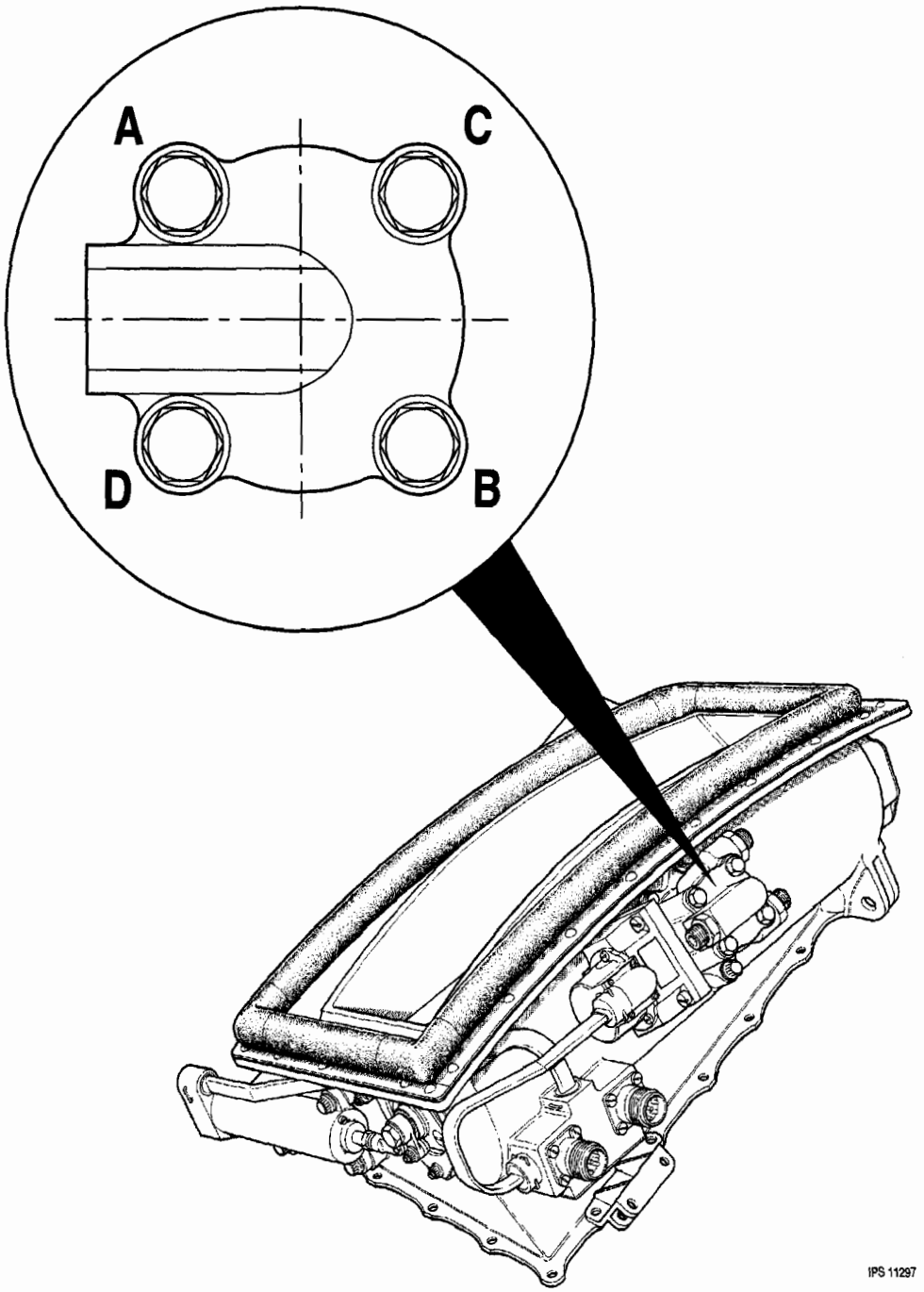
Torque Values
Table 1

NOTE: 1 Return all unserviceable units to:

TRW Aeronautical Systems
Lucas Aerospace
Stafford Road
Fordhouses
Wolverhampton
WV10 7EH
U.K.

FLIGHT CONTROLS - AIR MODULATING VALVE TY1558 - THICKER WASHER ADDED

MODIFICATION L1558-10



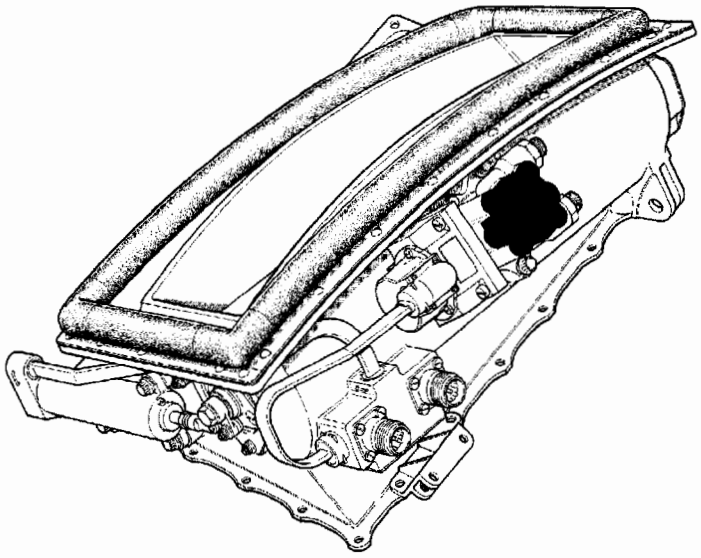
Sequence to Remove Bolts
Figure 1

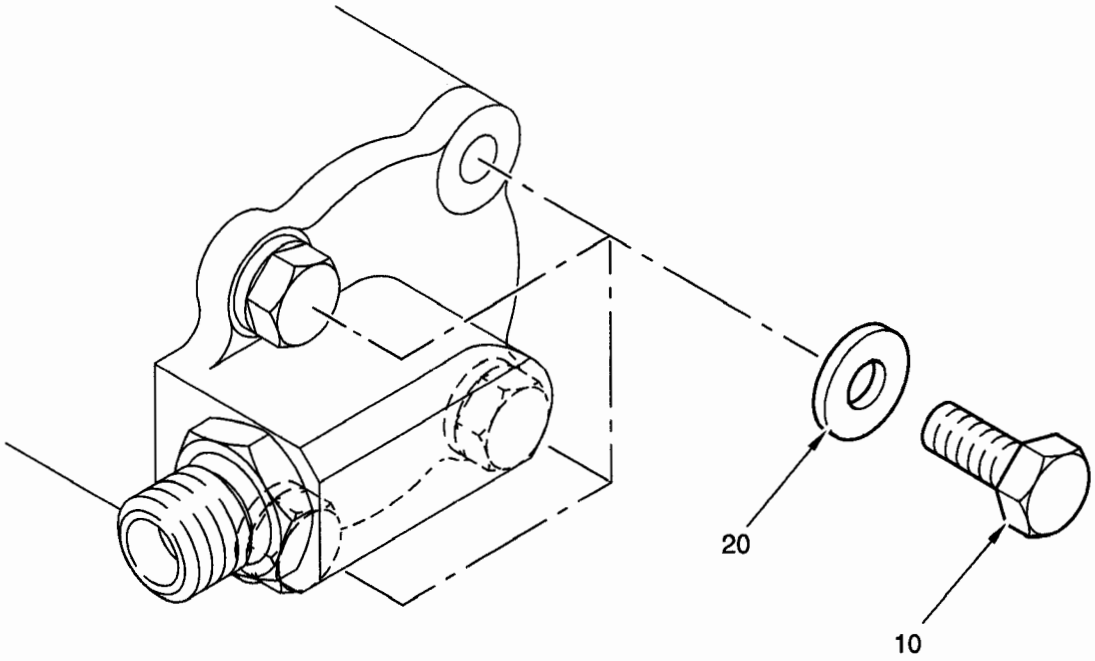
SERVICE BULLETIN

1558-79-L1558-10

FLIGHT CONTROLS - AIR MODULATING VALVE TY1558 - THICKER WASHER ADDED

MODIFICATION L1558-10





Attaching Bolt and Washer
Figure 2

SERVICE BULLETIN

1558-79-L1558-10

FLIGHT CONTROLS - AIR MODULATING VALVE TY1558 - THICKER WASHER ADDED

MODIFICATION L1558-10

APPROVED FOR LUCAS AEROSPACE

Chief Product Support Engineer

Product Integrity Engineering Manager