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

Printed in Great Britain

This document transmits Revision 1 to Service Bulletin EV2500-75-0096 and Revision 1 to the Supplement

Document History

Service Bulletin Revision Status
Initial Issue Aug.10/06

Supplement Revision Status
Initial Issue Aug.10/06

Bulletin Revision 1

Remove
All pages of the
Summary

Incorporate

All pages of the
Service Bulletin

Pages 1 to 19 of the
Service Bulletin

Reason for change
To attach Revision 1 of
Parker Hannifin Service
Bulletin 5860017-75-220 and
to make some minor changes.
To attach Revision 1 of
Parker Hannifin Service
Bulletin 5860017-75-220 and
to make some minor changes.

Supplement Revision 1

Remove
All pages

Incorporate
Page 1

Reason for change
To attach Revision 1 of
Parker Hannifin Service
Bulletin 5860017-75-220 and
to make some minor changes.

V2500-ENG-75-0096

Transmittal - Page 1 of 2

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Customer Data 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 to the Bulletin and Revision 1 to the Supplement are as follows:

<u>Page</u>	<u>Revision Number</u>	<u>Revision Date</u>
Bulletin		
R 1	1	Apr.27/07
R 2	1	Apr.27/07
R 3	1	Apr.27/07
R 4	1	Apr.27/07
R 5	1	Apr.27/07
R 6	1	Apr.27/07
R 7	1	Apr.27/07
R 8	1	Apr.27/07
R 9	1	Apr.27/07
R 10	1	Apr.27/07
R 11	1	Apr.27/07
R 12	1	Apr.27/07
R 13	1	Apr.27/07
R 14	1	Apr.27/07
R 15	1	Apr.27/07
R 16	1	Apr.27/07
R 17	1	Apr.27/07
R 18	1	Apr.27/07
R 19	1	Apr.27/07
Supplement		
R 1	1	Apr.27/07

Printed in Great Britain

AIR – ACTIVE CLEARANCE CONTROL (ACC) ACTUATOR – INTRODUCTION OF AN ACC ACTUATOR WITH
A REVISED SERVO VALVE

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5, V2527M-A5 Engines prior to Serial Number V12356.

(2) Airbus A320

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

(b) V2527-A5, V2527E-A5 Engines prior to Serial Number V12356.

(3) Airbus A321

(a) V2530-A5, V2533-A5 Engines prior to Serial Number V12356.

(4) Boeing – Longbeach Division MD-90

(a) V2525-D5, V2528-D5 Engines prior to Serial Number V20286.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

Removal of the Active Clearance Control (ACC) actuator due to fuel leakage may occur.

The problem is attributed to fuel leaking past the Electro Hydraulic Servo Valve (EHSV) end cap seals due to the seals being insufficiently energised when fuel pressure is low.

(2) Evidence

The problem has been experienced on units in service.

(3) Objective

Incorporation of this Service Bulletin is designed to maintain unit reliability.



(4) Substantiation

The changes introduced by this Service Bulletin have been the subject of satisfactory engineering assessment, rig testing and in service use on similar units used on other manufacturers' engines.

(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 ACC actuator supplied by Parker Hannifin Corporation, incorporating design changes to prevent fuel leakage from the EHSV.

The changes introduced are:

- (a) A revised ACC actuator is introduced similar to the existing unit except for the introduction of a redesigned EHSV with the following changes incorporated:
- (i) A larger cross-section 'O' ring seal and a wider groove have been introduced to prevent fuel leakage past the sleeve.
 - (ii) A redesigned end cap has been introduced changing from a one piece item to a two piece design consisting of a screwed end cap, seal carrier and also incorporating larger seals and standard seal grooves.

(iii) A redesigned fuel filter has been introduced with 'O' ring seals, with the material changed from MIL-R-25988B to SAE AMS 7273C, and standard seal grooves.

(2) Existing ACC actuators may be reworked (Refer to Vendor Service Bulletins listed in paragraph 1.N. References).

(3) Units incorporating this Service Bulletin will be identified by a new type number.

E. Compliance

Category Code 6

Accomplish when the sub-assembly (i.e. 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/or part modification described in Section 2 and 3 of this Service Bulletin has been shown to comply with the applicable Federal Aviation Regulations and is FAA- APPROVED for the Engine Models listed.

G. Manpower

(1) In service

(a) To gain access - 20 Minutes.

(b) To remove and install the ACC actuator - 50 Minutes.

(c) To rework the ACC actuator - Refer to the attached Parker Hannifin Corporation Service Bulletins 5860017-75-220 and 5910479-75-221.

(d) To return the aircraft into a serviceable status - 20 Minutes.

(2) At overhaul

Not affected.

H. Material Price and Availability

For prices and availability of future spares refer to the attached Parker Hannifin Corporation Service Bulletins 5860017-75-220 and 5910479-75-221.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

Not applicable.

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

None.

(2) Moment Arm

None.

(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) Aircraft Maintenance Manual, 71-13-00 Opening/Closing and 75-24-52, Removal/Installation.

(2) V2500 A1/A5/D5 Engine Manual, 72-00-40, Removal/Installation.

(3) For V2500-A1 and V2500-A5 Engines:

R Parker Hannifin Corporation Service Bulletin 5860017-75-220 Revision 1
R dated 09/01/07.

Air, HPT/LPT Active Clearance Control Actuator (ACC Actuator).

(4) For V2500-D5 Engines:

R Parker Hannifin Corporation Service Bulletin 5910479-75-221 Initial Issue
R dated 10/08/06.

Air, HPT/LPT Active Clearance Control Actuator (ACC Actuator).

(5) Internal Reference No.

Engineering Change No. - EC04VI004.

(6) ATA Locator - 75-24-52.

0. Other Publications Affected

(1) For effect on Illustrated Parts Catalogue (IPC) refer to paragraph 2.
Material Information.

P. Interchangeability of Parts

Not affected.

2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts to be reworked:

None.

C. New production parts:

None.

D. Vendor units affected by this Service Bulletin:

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

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
For V2500-A1 Engines: 75-24-52						
01-100	5860017-144	1	Active Clearance Control (ACC) actuator	-	5860017-139	(A)(S1) (1D)
01-100	5860017-143	1	Active Clearance Control (ACC) actuator	-	5860017-138	(A)(S2) (1D)
01-100	5860017-142	1	Active Clearance Control (ACC) actuator	-	5860017-137	(A)(S3) (1D)
01-100	5860017-141	1	Active Clearance Control (ACC) actuator	-	5860017-136	(A)(S4) (1D)
01-100	5860017-140	1	Active Clearance Control (ACC) actuator	-	5860017-135	(A)(S5) (1D)

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
For V2500-A5 Engines: 75-24-52						
01-100	5860017- 144	1	Active Clearance Control (ACC) actuator	-	5860017- 139	(A)(S6) (1D)
For V2500-D5 Engines: 75-24-52						
01-100	5910479- 105	1	Active Clearance Control (ACC) actuator	-	5910479- 104	(A)(S7) (1D)

E. Instruction disposition codes:

(A) New standard of unit will be made available from March 2006.

(S1) Old and new units are fully interchangeable.

(S2) Old and new units are fully interchangeable.

(S3) Old and new units are fully interchangeable.

(S4) Old and new units are fully interchangeable.

(S5) Old and new units are fully interchangeable.

(S6) Old and new units are fully interchangeable.

(S7) old and new units are fully interchangeable.

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

3. Accomplishment Instructions

A. Rework Instructions

- (1) For V2500-A1 and V2500-A5 Engines:

Refer to Parker Hannifin Corporation Service Bulletin 5860017-75-220.

- (2) For V2500-D5 Engines:

Refer to Parker Hannifin Corporation Service Bulletin 5910479-75-221.

B. Assembly Instructions

PART 1 – APPLICABLE FOR ENGINES 'IN SERVICE'

- (1) General

CAUTION: IN ORDER TO REDUCE THE POTENTIAL FOR MULTIPLE ENGINE IN-FLIGHT SHUT DOWN, POWER LOSS, OR OTHER ANOMALIES DUE TO MAINTENANCE ERROR, IAE RECOMMENDS THAT OPERATORS AVOID PERFORMING MAINTENANCE ON MULTIPLE ENGINES INSTALLED ON THE SAME AIRCRAFT AT THE SAME TIME. IF IT IS NOT POSSIBLE TO AVOID MAINTENANCE ON MORE THAN ONE ENGINE AT THE SAME TIME, IAE RECOMMENDS THAT ADDITIONAL CONTROLS BE APPLIED IN ORDER TO ENSURE THAT MAINTENANCE TASKS HAVE BEEN COMPLETED AS DEFINED. MAINTENANCE GUIDELINES SHOULD BE REVISED WHERE POSSIBLE, TO PROMOTE THIS RECOMMENDATION.

WARNING: DO NOT TOUCH THE ENGINE COMPONENTS FOR A SHORT TIME AFTER THE ENGINE IS SHUT DOWN. THE COMPONENTS STAY HOT AND CAN CAUSE INJURY.

- (a) Obey all the WARNINGS and CAUTIONS in the procedures that are referred to.

- (b) Consumable Materials

- (i) Refer to the related Manual tasks given in this instruction.

- (c) Tools and Equipment

- (i) Refer to the related Manual tasks given in this instruction.

- (2) Get access to the Active Clearance Control (ACC) actuator that is installed in the lower left front area of the core engine

- (a) Open the applicable fan cowl doors (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00 Opening/Closing).

- (3) Remove the ACC actuator (75-24-52, 01-100) from the engine (Refer to the Aircraft Maintenance Manual, Chapter 75-24-52 Removal/Installation)

- (a) For V2500-A1 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5860017-135, P/N 5860017-136, P/N 5860017-137, P/N 5860017-138 or P/N 5860017-139.

- (b) For V2500-A5 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5860017-139.

- (c) For V2500-D5 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5910479-104.

- (4) If scheduled, send the removed ACC actuator for rework to the address that follows:

- (a) For V2500-A1 and V2500-A5 Engines:

PARKER HANNIFIN CORPORATION

Customer Support Inc.

14300 Alton Parkway

Irvine, California 92618

USA

PHONE: (949) 833-3000

FAX: (949) 809-8390

REPAIR STATION NO.: AU4R063M

- (b) For V2500-D5 Engines:

PARKER HANNIFIN CORPORATION

Customer Support Inc.

16666 Von Karman Avenue

Irvine, California 92606-4917

USA

PHONE: (949) 833-3000

FAX: (949) 809-8390

- (5) Install the ACC actuator (75-24-52, 01-100) to the engine (Refer to the Aircraft Maintenance Manual, Chapter 75-24-52 Removal/Installation)

- (a) For V2500-A1 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5860017-140, P/N 5860017-141, P/N 5860017-142, P/N 5860017-143 or P/N 5860017-144.

NOTE: P/N 5860017-135 can only be replaced by P/N 5860017-140.

NOTE: P/N 5860017-136 can only be replaced by P/N 5860017-141.

NOTE: P/N 5860017-137 can only be replaced by P/N 5860017-142.

NOTE: P/N 5860017-138 can only be replaced by P/N 5860017-143.

NOTE: P/N 5860017-139 can only be replaced by P/N 5860017-144.

- (b) For V2500-A5 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5860017-144.

- (c) For V2500-D5 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5910479-105.

- (6) Close the access to the Active Clearance Control (ACC) actuator

- (a) Close the applicable fan cowl doors (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00 Opening/Closing).

PART 2 – APPLICABLE FOR ENGINES 'AT OVERHAUL'

(1) General

(a) Obey all the WARNINGS and CAUTIONS in the procedures that are referred to.

(b) Consumable Materials

(i) Refer to the related Manual tasks given in this instruction.

(c) Tools and Equipment

(i) Refer to the related Manual tasks given in this instruction.

(2) Get access to the Active Clearance Control (ACC) actuator that is installed in the lower left front area of the core engine

(3) Remove the ACC actuator (75-24-52, 01-100) from the engine (Refer to the Engine Manual, Chapter 72-00-40 Removal/Installation)

(a) For V2500-A1 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5860017-135, P/N 5860017-136, P/N 5860017-137, P/N 5860017-138 or P/N 5860017-139.

(b) For V2500-A5 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5860017-139.

(c) For V2500-D5 Engines:

Remove the old ACC actuator (75-24-52, 01-100), P/N 5910479-104.

(4) If scheduled, send the removed ACC actuator for rework to the address that follows:

(a) For V2500-A1 and V2500-A5 Engines:

PARKER HANNIFIN CORPORATION

Customer Support Inc.

14300 Alton Parkway

Irvine, California 92618

USA

PHONE: (949) 833-3000



FAX: (949) 809-8390

REPAIR STATION NO.: AU4R063M

(b) For V2500-D5 Engines:

PARKER HANNIFIN CORPORATION

Customer Support Inc.

16666 Von Karman Avenue

Irvine, California 92606-4917

USA

PHONE: (949) 833-3000

FAX: (949) 809-8390

- (5) Install the ACC actuator (75-24-52, 01-100) to the engine (Refer to the Engine Manual, Chapter 72-00-40 Removal/Installation)

(a) For V2500-A1 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5860017-140, P/N 5860017-141, P/N 5860017-142, P/N 5860017-143 or P/N 5860017-144.

NOTE: P/N 5860017-135 can only be replaced by P/N 5860017-140.

NOTE: P/N 5860017-136 can only be replaced by P/N 5860017-141.

NOTE: P/N 5860017-137 can only be replaced by P/N 5860017-142.

NOTE: P/N 5860017-138 can only be replaced by P/N 5860017-143.

NOTE: P/N 5860017-139 can only be replaced by P/N 5860017-144.

(b) For V2500-A5 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5860017-144.

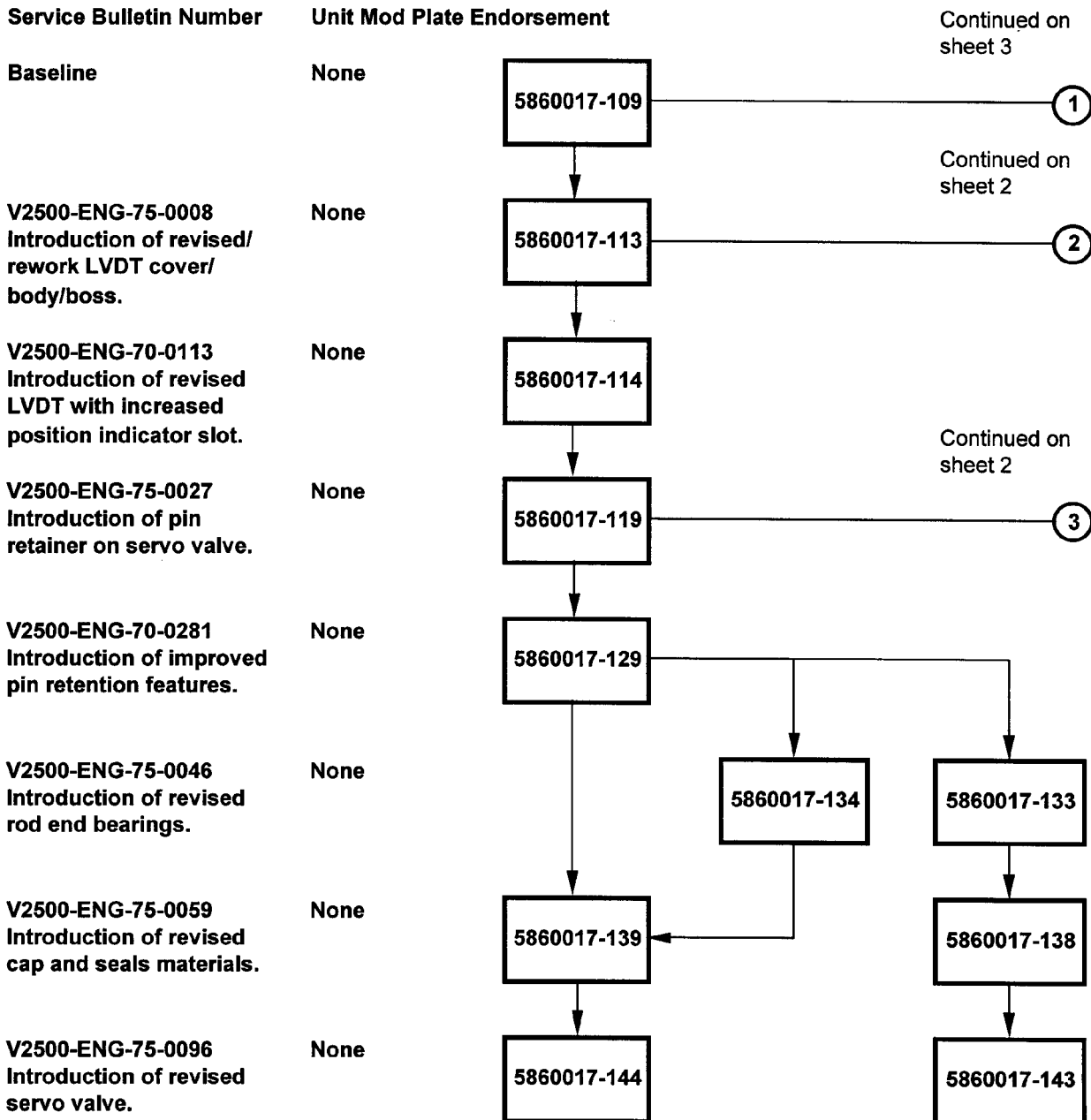
(c) For V2500-D5 Engines:

Install the new or reworked ACC actuator (75-24-52, 01-100), P/N 5910479-105.

C. Recording Instructions

- (1) A record of accomplishment is necessary.
- (2) Refer to Parker Hannifin Corporation Service Bulletins 5860017-75-220 and 5910479-75-221.

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V2500-A1 ACC Actuator Family Tree*


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V2500-A1 ACC Actuator Family Tree
Fig.1 (Sheet 1 of 3)

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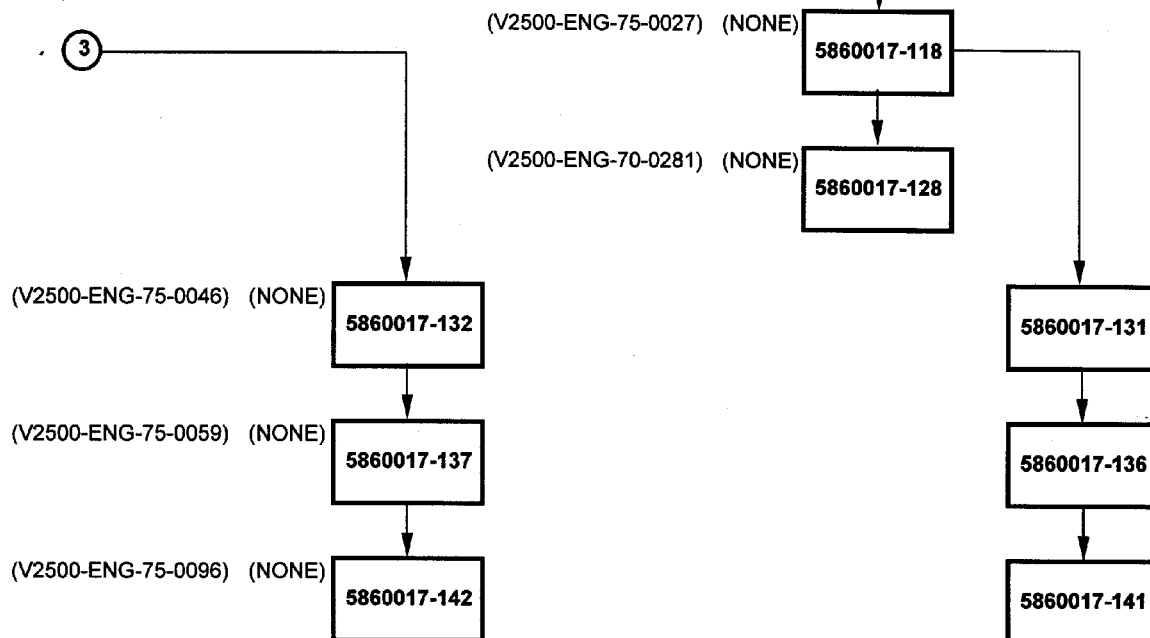
V2500-A1 ACC Actuator Family Tree* (continued)

Continued from
sheet 1

②

Continued from
sheet 1

③

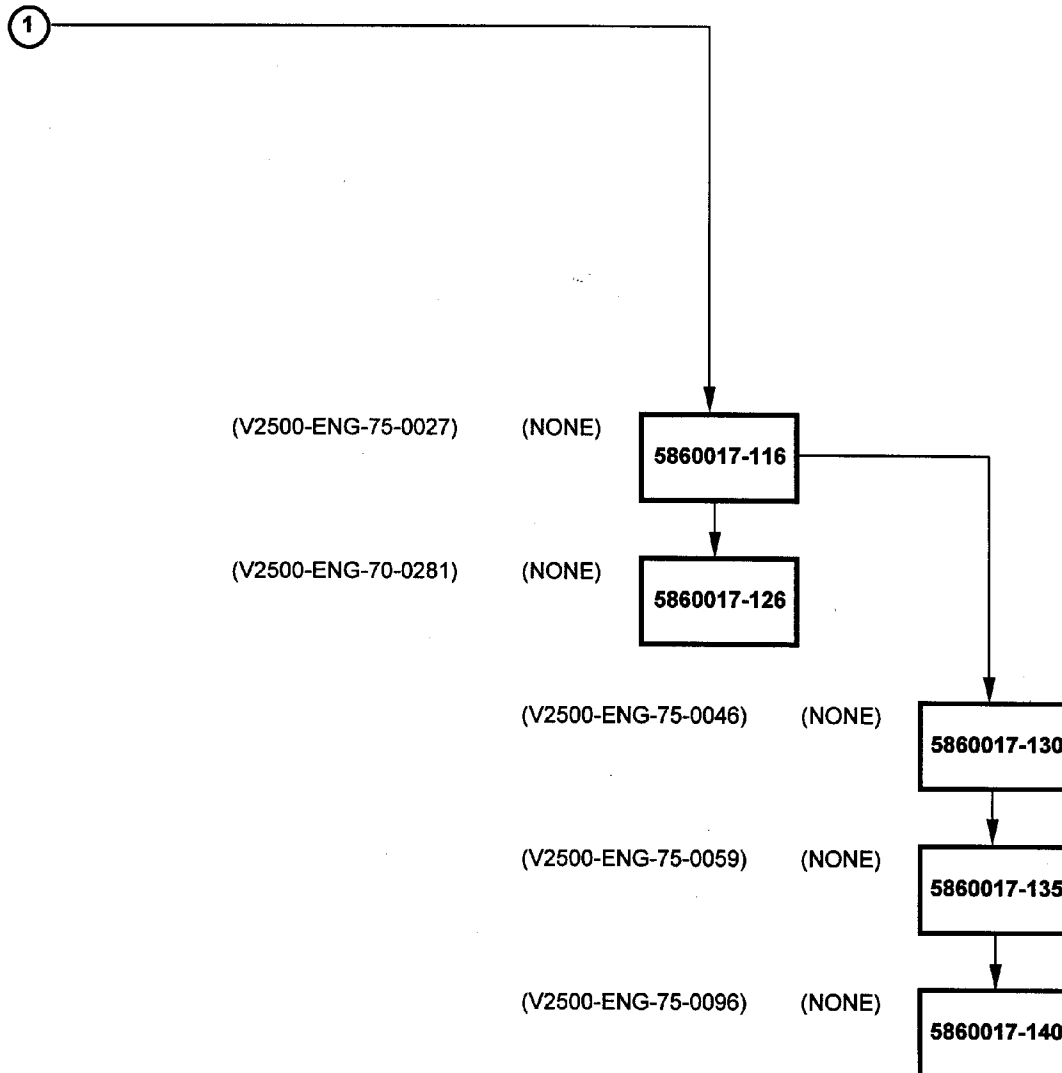


* This family tree is not intended to represent the combination of modifications fitted to units in service.

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V2500-A1 ACC Actuator Family Tree
Fig.1 (Sheet 2 of 3)

V2500-A1 ACC Actuator Family Tree* (continued)

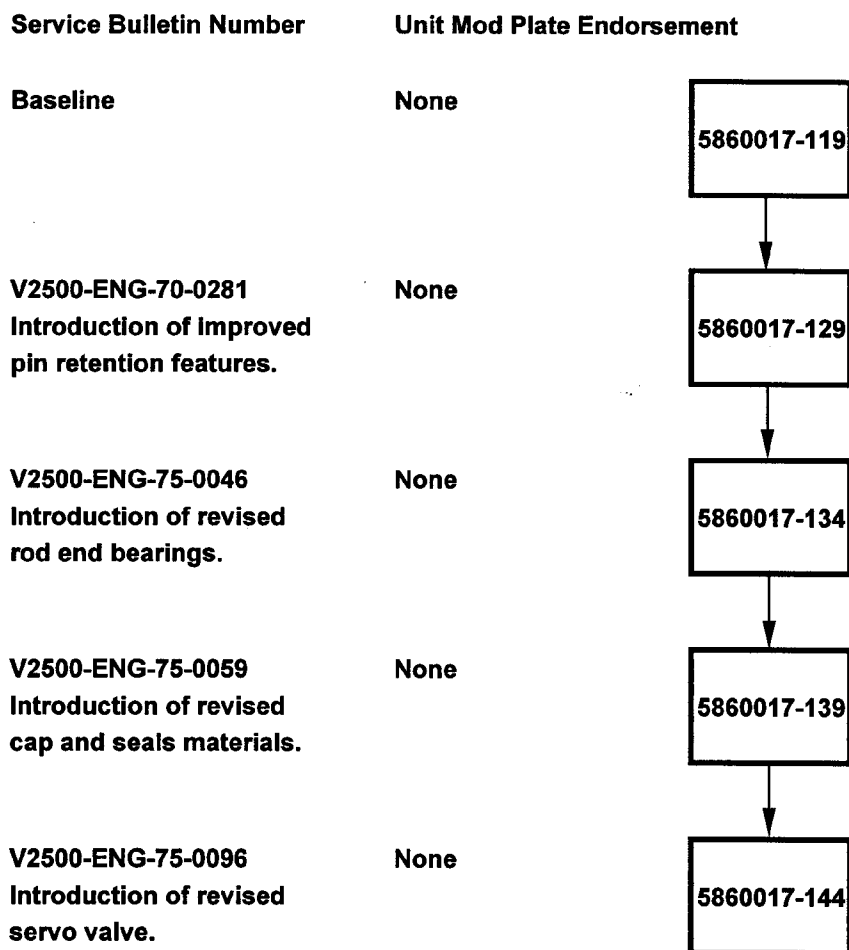
Continued from
sheet 1


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

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V2500-A1 ACC Actuator Family Tree
Fig.1 (Sheet 3 of 3)

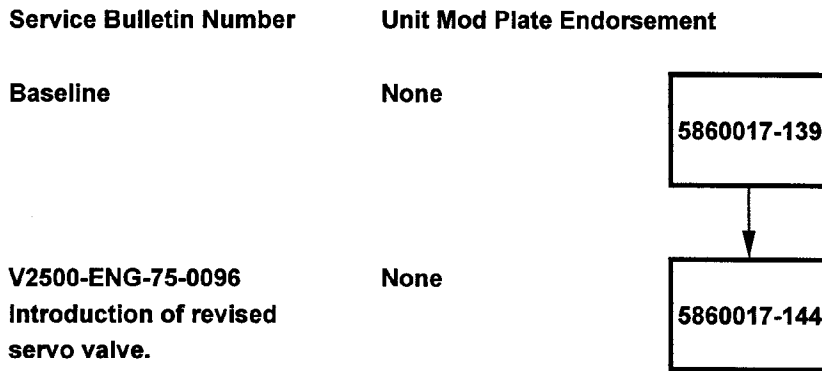
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V2500-A5 (except V2533) ACC Actuator Family Tree*


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

V2500-A5 (except V2533-A5) ACC Actuator Family Tree
Fig.2

ded0006129

V2533-A5 Only ACC Actuator Family Tree*


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

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ded0006130

V2533-A5 Only ACC Actuator Family Tree
Fig.3

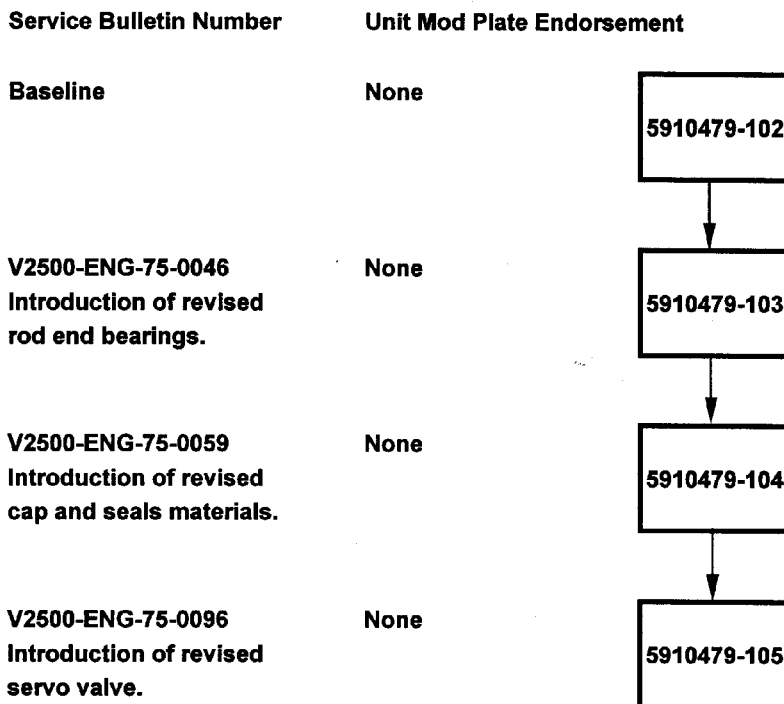
V2500-ENG-75-0096

Aug.10/06
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Page 18

V2500-D5 ACC Actuator Family Tree*



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

V2500-D5 ACC Actuator Family Tree
Fig.4

ded0006131

AIR – ACTIVE CLEARANCE CONTROL (ACC) ACTUATOR – INTRODUCTION OF AN ACC ACTUATOR WITH
A REVISED SERVO VALVE

SUPPLEMENT – PRICES AND AVAILABILITY

The prices (if 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 catalogue for current prices.

1. Modification Kit:

Not applicable.

2. Parts required:

For prices and availability of future spares see Parker Hannifin Corporation Service Bulletins 5860017-75-220 and 5910479-75-221.



Customer Support Inc.

SERVICE BULLETIN

AIR	HPT/LPT ACTIVE CLEARANCE CONTROL ACTUATOR (ACC ACTUATOR)	UPGRADE TO 5860017-140 THRU 5860017-144 BY INCORPORATING AN IMPROVED ELECTRO HYDRAULIC SERVO VALVE (EHSV).
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REVISION TRANSMITTAL SHEET

This page transmits Revision 1 for Service Bulletin 5860017-75-220.

SUMMARY:

Page 4 of 6	Paragraph 2. C. (1) and (2)	Adds new steps (1) and (2) and rennumbers step (1) to (3)
Page 5 of 6	Paragraph 3. A. (4) (b)	Updates entire step (b)
Page 6 of 6	Figure 1	Adds P/L to Figure 1

REVISION HISTORY:

Initial Issue	August 10, 2006
Rev No. 1	January 9, 2007

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 1 of 1

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SERVICE BULLETIN

AIR	HPT/LPT ACTIVE CLEARANCE CONTROL ACTUATOR (ACC ACTUATOR)	UPGRADE TO 5860017-140 THRU 5860017-144 BY INCORPORATING AN IMPROVED ELECTRO HYDRAULIC SERVO VALVE (EHSV).
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1. PLANNING INFORMATION

A. Effectivity

This service bulletin is applicable to all prior configurations (5860017-139 and previous) of the Parker Active Clearance Control Actuator herein after referred to as the ACC actuator used on the Airbus A319, A320, and A321 aircraft equipped with the V2500 A1 and A5 series engines.

B. Concurrent Requirements

Not applicable.

C. Reason

This service bulletin is issued to introduce part number 5860017-140 thru 5860017-144 as a design improvement to reduce external leakage at the electro hydraulic servo valve (EHSV) by incorporating an improved EHSV, P/N 5863057-102.

The improved EHSV incorporates increased o-ring squeezes, a modified 2-piece end cap to improve O-ring performance and a filter design that more positively prevents contamination bypass.

D. Description

- (1) This service bulletin provides instructions to modify, test, and re-identify the Active Clearance Control Actuator.
- (2) Modification consists of replacing the EHSV, 5863057-101, with EHSV, 5863057-102.
- (3) Modified units will be upgraded to the 5860017-140 thru 5860017-144 configurations.

E. Compliance – Code 6

Do this Service Bulletin when the ACC Actuator is disassembled and access is available to the necessary part. Do all affected spare ACC Actuators.

F. Approval

- (1) The part number modifications described in this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-Approved for the ACC Actuator.
- (2) This Service Bulletin was approved by IAE Technical Services on July 28, 2006.

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 1 of 6

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SERVICE BULLETIN

G. Manpower

This modification may be accomplished, by a crew of one (1), in the following approximate man-hours.

NOTE: This service bulletin assumes the ACC Actuator has been removed from the aircraft.

WORK PHASES	MAN-HOURS
Disassemble the ACC Actuator per CMM 75-24-52.	1.0
Assemble the ACC Actuator per CMM 75-24-52.	2.0
Test the ACC Actuator per CMM 75-24-52.	2.0
Total Man-Hours	5.0

H. Weight and Balance

None.

I. Electrical Load Data

Not affected.

J. Software Accomplishment Summary

Not applicable.

K. References

Parker Hannifin, Component Maintenance Manual (CMM), 75-24-52.

L. Other Publications Affected

The information in this service bulletin will be incorporated into Parker Hannifin Corporation CMM 75-24-52 during the next scheduled revision.

M. Interchangeability or Intermixability of Parts

- (1) The ACC Actuator, 5860017-140 through 5860017-144, is interchangeable with all previous configurations of part number 5860017.
- (2) The EHSV, 5863057-102, is interchangeable with previous configuration, part number 5863057-101.

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 2 of 6

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SERVICE BULLETIN

2. MATERIAL INFORMATION

A. Material Price and Availability

- (1) For operators requiring Parker Hannifin Corporation to upgrade one ACC Actuator to a 5860017-140 thru 5860017-144, forward the ACC Actuator to the address listed below:
- (2) This option is available March 01, 2006 at a cost of \$6,497.00, with a delivery time of 30 days from receipt of unit and purchase order. This price only includes the items listed in paragraph 2.C.

PARKER HANNIFIN CORPORATION	PHONE:	(949) 833-3000
Customer Support Inc.	FAX:	(949) 809-8390
14300 Alton Parkway	REPAIR STATION NO.:	AU4R063M
Irvine, California 92618		
USA		

- (3) Parts Kit, P/N 6KIT5860017, is available for operators who wish to upgrade the ACC Actuator, to a 5860017-140 thru 5860017-144. Order parts kit from the address listed above:
- (4) The initial price for the Parts Kit, P/N 6KIT5860017, is \$15,316.00, and will be available March 01, 2006, with a delivery time of 60 days from receipt of purchase order. Upon return of the removed servo, P/N 5863057-101, to Parker at the noted address, the customer will be credited \$9,216.00 resulting in a \$6,100.00 effective kit price (advance shipping the servo for exchange is not required).

For upgrading to the 5860017-140 thru 5860017-144:

The parts listed in paragraph 2.C. will be supplied when the EHSV is sent for exchange. For procurement of parts, submit a purchase order that references this service bulletin number and send the EHSV to the address listed above in paragraph 2.A.(1). Parker Hannifin Corporation will provide exchange units within 60 days from the receipt of the EHSV.

B. Industry Support Information

- (1) Operators are requested to contact their respective Parker Hannifin Customer Service Administrator to schedule implementation of this service bulletin.
- (2) The prices and provisions contained in this service bulletin are valid for 24 months from the initial issue date of this service bulletin. After that date, request a quotation from Parker Hannifin Corporation, Customer Support.

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 3 of 6

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SERVICE BULLETIN

C. Material Necessary for Each Component

- (1) Parts Kit, 6KIT5860017, is required to upgrade one ACC Actuator, P/N 5860017-136 through -139 to a -140 through -144 configurations.
- (2) 5863141-103 LVDT Cover is used when converting one ACC Actuator, P/N 5860017-135 to a -140 configuration. LVDT Cover takes place of the 5903194-101 Nameplate.

Parts Kit, P/N 6KIT5860017

NEW P/N	IPL/ITEM	KEYWORD	OLD P/N	QTY	DISPOSITION
5863057-102		EHSV	5863057-101	1	RETURN TO PARKER HANNIFIN
M25988/1-010		PACKING	SAME	4	SCRAP
5903194-101		NAMEPLATE	SAME	1	SCRAP

- (3) The following materials and/or equipment must be procured from operator's stock or sources indicated:

NOTE: Equivalent substitutes may be used for items listed below.

NOMENCLATURE	PART NO./TYPE	SOURCE
Isopropyl Alcohol	Federal Specification, TT-I-735	Commercially Available

D. Material Necessary for Each Spare

Not applicable.

E. Re-identified Parts

After the ACCOMPLISHMENT INSTRUCTIONS in Paragraph 3 are complete, the ACC Actuator will be identified as 5860017-140 thru 144 respectively.

F. Tooling - Price and Availability

All tooling required is listed in Parker Hannifin, Component Maintenance Manual, 75-24-52.

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220

Page 4 of 6

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SERVICE BULLETIN

3. ACCOMPLISHMENT INSTRUCTIONS

- A. Modify the ACC Actuator by replacing the EHSV and re-identifying the ACC Actuator according to these instructions:
- (1) Remove the affected EHSV, 5863057-101, in accordance with CMM ATA 75-24-52, DISASSEMBLY section.
 - (2) Install replacement EHSV, 5863057-102, and four new packings, M25988/1-010, in accordance with CMM ATA 75-24-52, ASSEMBLY section.
 - (3) Perform functional testing of the ACC Actuator in accordance with CMM ATA 75-24-52, TESTING AND FAULT ISOLATION section.
 - (4) Re-identify the ACC Actuator in accordance with CMM ATA 75-24-52, and these instructions.
 - (a) Remove the old nameplate, 5903194-101, and clean the area with Isopropyl Alcohol, TT-I-735.
 - (b) Impression stamp or vibro peen the new part number (P/N) and parts list (P/L) dash numbers in the applicable spaces on the new nameplate. Transfer serial number and assembly date from old nameplate to new nameplate. All other spaces will remain blank on the new nameplate. An IAE part number does not exist for these new configurations.
 - (c) Remove the backing from the new nameplate and install in the same location.

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 5 of 6

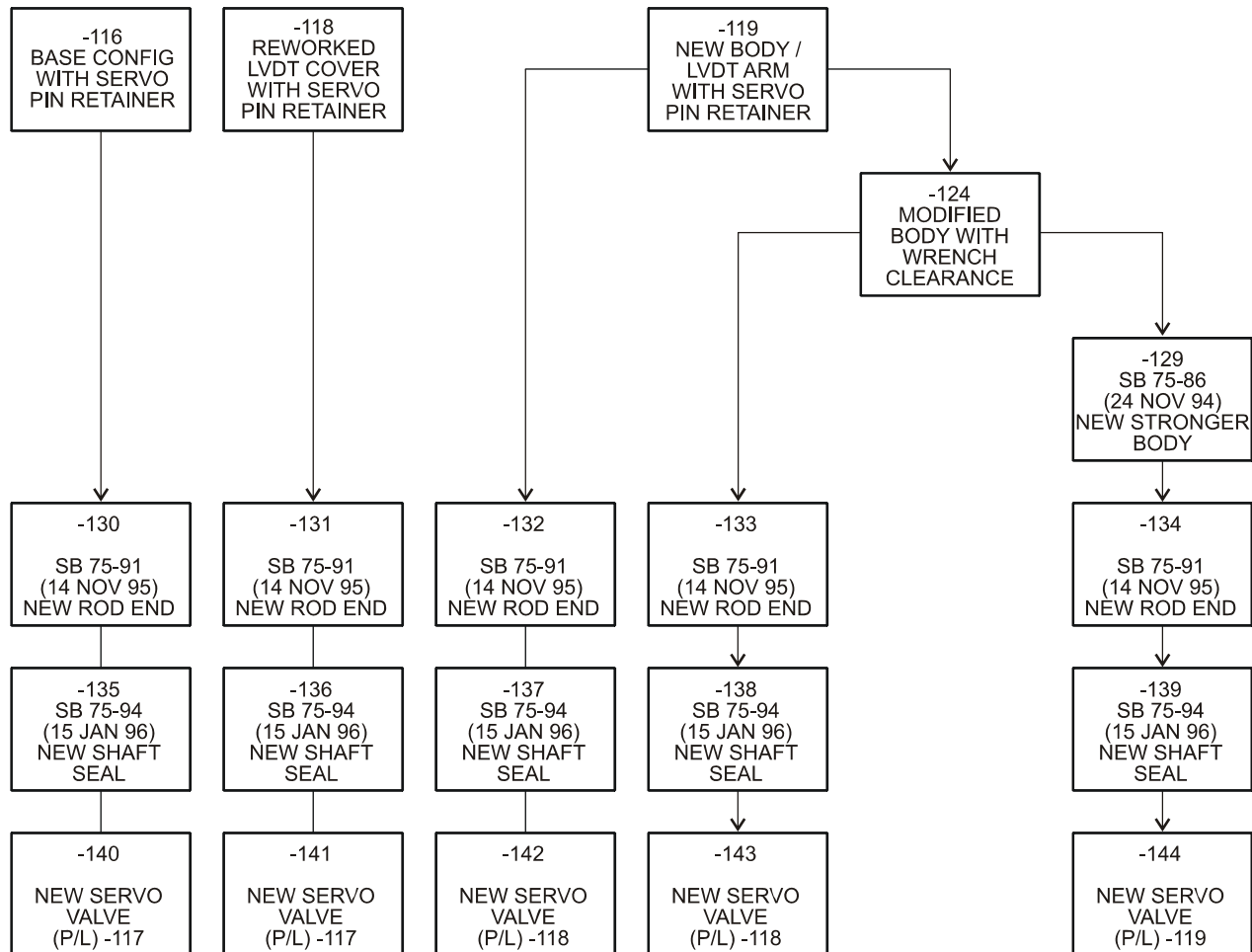
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SERVICE BULLETIN

4. APPENDIX



NOTE: THIS FAMILY TREE INCLUDES ONLY THE ACTIVE CONFIGURATIONS OF BASIC PART NUMBER 5860017 THAT CAN BE UPGRADED WITH THE NEW SERVO. CONFIGURATIONS NOT LISTED MUST INCORPORATE THE APPROPRIATE IMPROVEMENTS THAT CONFORM TO THE CONFIGURATIONS SHOWN.

SB5860017-75-220FIGA

5860017 Family Tree
Figure 1

Initial Issue: August 10, 2006
Revision 1: January 9, 2007

5860017-75-220
Page 6 of 6

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SERVICE BULLETIN

AIR	HPT/LPT ACTIVE CLEARANCE CONTROL ACTUATOR (ACC ACTUATOR)	UPGRADE TO A 5910479-105 BY INCORPORATING AN IMPROVED ELECTRO HYDRAULIC SERVO VALVE (EHSV).
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1. PLANNING INFORMATION

A. Effectivity

This service bulletin is applicable to Parker Active Clearance Control Actuator, 5910479-102, -103, and -104, hereinafter referred to as the ACC actuator used on the MD-90 aircraft equipped with the V2500 (D5) series engines.

B. Concurrent Requirements

Service Bulletin, 5910479-75-92, which installs a new rod end and Service Bulletin, 5910479-75-95, which installs a new shaft seal, must be accomplished prior to or in conjunction with this service bulletin.

C. Reason

This service bulletin is issued to introduce part number 5910479-105 as a design improvement to reduce external leakage at the electro hydraulic servo valve (EHSV) by incorporating an improved EHSV, P/N 5863057-102.

D. Description

- (1) This service bulletin provides instructions to modify, test, and re-identify the Active Clearance Control Actuator.
- (2) Modification consists of replacing the EHSV, 5863057-101, with EHSV, 5863057-102.
- (3) Modified units will be upgraded to the 5910479-105 configuration.

E. Compliance – Code 6

Do this Service Bulletin when the ACC Actuator is disassembled and access is available to the necessary part. Do all affected spare ACC Actuators.

F. Approval

- (1) The part number modifications described in this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-Approved for the ACC Actuator.
- (2) This Service Bulletin was approved by IAE Technical Services on July 28, 2006.

Initial Issue: August 10, 2006

5910479-75-221

Page 1 of 5

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Customer Support Inc.

SERVICE BULLETIN

G. Manpower

This modification may be accomplished, by a crew of one (1), in the following approximate man-hours.

NOTE: This service bulletin assumes the ACC Actuator has been removed from the aircraft.

WORK PHASES	MAN-HOURS
Disassemble the ACC Actuator per CMM 75-24-72.	1.0
Assemble the ACC Actuator per CMM 75-24-72.	2.0
Test the ACC Actuator per CMM 75-24-72.	2.0
Total Man-Hours	5.0

H. Weight and Balance

None.

I. Electrical Load Data

Not affected.

J. Software Accomplishment Summary

Not applicable.

K. References

Parker Hannifin, Component Maintenance Manual (CMM), 75-24-72.

L. Other Publications Affected

The information in this service bulletin will be incorporated into Parker Hannifin Corporation CMM 75-24-72 during the next scheduled revision.

M. Interchangeability or Intermixability of Parts

The actuator, 5910479-105, is interchangeable with all previous configurations of P/N 5910479.
The EHSV, 5863057-102, is interchangeable with previous configuration P/N 5863057-101.

Initial Issue: August 10, 2006

5910479-75-221

Page 2 of 5

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SERVICE BULLETIN

2. MATERIAL INFORMATION

A. Material Price and Availability

- (1) For operators requiring Parker Hannifin Corporation to upgrade one ACC Actuator, 5910479-102, -103, or -104, to a 5910479-105 configuration, forward the ACC Actuator to the address listed below:
- (2) This option is available at a cost of \$6,497.00, with a delivery time of 30 days from receipt of unit and purchase order.

PARKER HANNIFIN CORPORATION Customer Support Inc. 16666 Von Karman Avenue Irvine, California 92606-4917 USA	PHONE: (949) 833-3000 FAX: (949) 809-8390
---	--

- (3) Parts Kit, KIT5910479, is available for operators who wish to upgrade the ACC Actuator 5910479-102, -103, or -104, to a 5910479-105 configuration. Order one parts kit per assembly from the address listed above:
- (4) Parts Kit, KIT5910479, is available at a cost of \$15,316.00, and will be available March 01, 2006, with a delivery time of 60 days from receipt of purchase order. Upon return of the removed servo, P/N 5863057-101, to Parker at the noted address, the customer will be credited \$9,216.00 resulting in a \$6,100.00 effective parts price (advance shipping the servo for exchange is not required). See Paragraph 2.C. for detailed breakdown parts
- (5) For upgrading to the 5910479-105 configuration:
 - (a) The parts are listed in paragraph 2.C and will be supplied when the EHSV is sent for exchange.
 - (b) For upgrading to the 5910479-105 configuration, submit a purchase order that references this service bulletin number and send the EHSV to the address listed above in paragraph 2.A.(1).
 - (c) Parker Hannifin Corporation will provide exchange units within 30 days from the receipt of the EHSV.

B. Industry Support Information

- (1) Operators are requested to contact their respective Parker Hannifin Customer Service Administrator to schedule implementation of this service bulletin.
- (2) The prices and provisions contained in this service bulletin are valid until 24 months from the initial issue date of this service bulletin. After that date, request a quotation from Parker Hannifin Corporation, Customer Support.

Initial Issue: August 10, 2006

5910479-75-221

Page 3 of 5

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SERVICE BULLETIN

C. Material Necessary for Each Component

- (1) Parts Kit, KIT5910479, is required to upgrade one ACC Actuator 5910479-102, -103, or -104, to a 5910479-105 configuration:

Parts Kit, KIT5910479, Table 1

NEW P/N	KEYWORD	OLD P/N	QTY	DISPOSITION
5863057-102	EHSV	5863057-101	1	RETURN TO PARKER HANNIFIN
M25988/1-010	PACKING	SAME	4	SCRAP
5913509-101	NAMEPLATE	SAME	1	SCRAP

- (2) The following materials and/or equipment must be procured from operator's stock or sources indicated:

Materials, Table 2

NOTE: Equivalent substitutes may be used for items listed below.

NOMENCLATURE	PART NO./TYPE	SOURCE
Isopropyl Alcohol	Federal Specification, TT-I-735	Commercially Available

D. Material Necessary for Each Spare

Not applicable.

E. Re-identified Parts

After the ACCOMPLISHMENT INSTRUCTIONS in Paragraph 3 are complete, the ACC Actuator, 5910479-102, -103, or -104 configuration, will be identified as a 5910479-105 configuration.

F. Tooling - Price and Availability

All tooling required is listed in Parker Hannifin, Component Maintenance Manual, 75-24-72.

Initial Issue: August 10, 2006

5910479-75-221

Page 4 of 5

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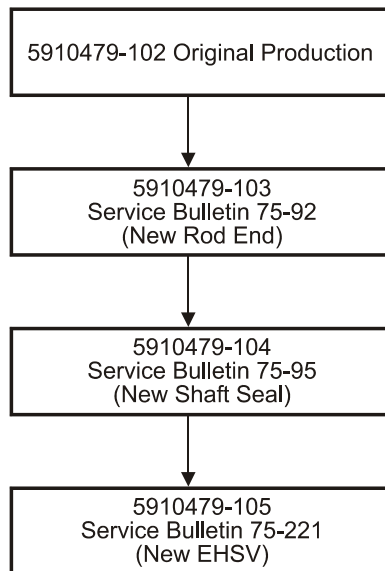
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SERVICE BULLETIN

3. ACCOMPLISHMENT INSTRUCTIONS

- A. Modify the ACC Actuator by replacing the EHSV and re-identifying the ACC Actuator according to these instructions:
- (1) Remove the affected EHSV, 5863057-101, in accordance with CMM ATA 75-24-72, DISASSEMBLY section.
 - (2) Install replacement EHSV, 5863057-102, and four new packings, M25988/1-010, in accordance with CMM ATA 75-24-72, ASSEMBLY section.
 - (3) Perform functional testing of the ACC Actuator in accordance with CMM ATA 75-24-72, TESTING AND FAULT ISOLATION section.
 - (4) Re-identify the ACC Actuator in accordance with CMM ATA 75-24-72, and these instructions.
 - (a) Remove the old nameplate, 5913509-101, and clean the area with Isopropyl Alcohol, TT-I-735.
 - (b) Impression stamp or vibro peen the new configuration number, 5910479-105, onto the new nameplate, 5913509-101. Copy the old serial number and assembly date from the old nameplate onto the new nameplate.
 - (c) Remove the backing from the new nameplate and install in the same location.

4. APPENDIX



SB5910479-75-221FIGA

Family Tree for Part Number 5910479 Configurations, Figure 1

Initial Issue: August 10, 2006

5910479-75-221

Page 5 of 5

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