



AIR - HPT/LPT ACC VALVE ACTUATOR - INSTALLATION OF PIN RETAINER ON SERVO VALVE -
CATEGORY CODE 3 - MOD.ENG-75-0027

1. Planning Information

A. Effectivity

- (1) Aircraft: Airbus A320
- (2) Engine: V2500-A1 Engines which have 5W2085, 5W2164, 5W2186 or 5W2189 HPT/LPT ACC Valve Actuator Installed.

B. Reason

(1) Condition

The HPT/LPT ACC Valve Actuator equipped with ABEX servo valve has potential of fuel leakage.

(2) Background

The HPT/LPT AVV Valve Actuator is equipped with a servo valve manufactured by ABEX or BW/IP. Fuel leakage can potentially occur on a ABEX servo valve due to dropping out of the fuel filter plug retention pin and subsequent blowing off of the fuel filter. Pin retainer addition to the ABEX servo valve which eliminates risk of fuel leakage was planned.

(3) Objective

To ensure retention of the filter plug and pin on the servo valve of the HPT/LPT ACC Valve Actuator.

(4) Substantiation

The changes introduced by this Service Bulletin were analytically substantiated.

(5) Effects of Bulletin on the following shop functions:

Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information

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None

D. Description

The changes introduced by this Service Bulletin are as follows:

(a) Servo valve manufacturer of the all affected HPT/LPT ACC Valve Actuators must be recognized. Following are requirements sorted by the manufacturer of the servo valve. Reference (1), Parker Hannifin Service Bulletin No. 5860017-75-66, for detail information.

(i) For the HPT/LPT ACC Valve Actuator equipped with the ABEX servo valve.

Installation of the Pin Retainer on the servo valve and reidentification are necessary. A Modification Kit, Parker Hannifin part number 4KIT5860017-101, is required to accomplish this modification.

(ii) For the HPT/LPT ACC Valve Actuator equipped with the BW/IP servo valve

Common part number is used to the actuator regardless of the servo valve manufacture, therefore reidentification is necessary to identify unit with confirmed safety.

D. Approval

The part number changes and/or part modifications 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 Model listed.

E. Compliance

Category Code 3

Accomplish within 60 days after receipt of this Service Bulletin.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	TOTAL 1 hour 58 minutes
(a) To gain access	
(i) Install warning notices	5 minutes

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(ii) Open the fan cowls 7 minutes

(iii) Open the thrust
reverser 9 minutes

TOTAL 21 minutes

(b) To embody

(i) Rework the ACC valve
actuator Refer to Parker Hannifin Service Bulletin
No. 5860017-75-66

(c) To return engine to flyable status

(i) Close the thrust
reverser 12 minutes

(ii) Close the fan cowl .. 8 minutes

(iii) Remove the warning
notices 5 minutes

TOTAL 25 minutes

(2) At Overhaul

(a) To gain access Not applicable (Parts are accessible at
overhaul)

(b) To embody

(i) Rework the ACC valve
actuator Refer to Parker Hannifin Service Bulletin
No. 5860017-75-66

TOTAL 1 hour 12 minutes

G. Material Cost and Availability

(1) Modification Kit, Parker Hannifin Part Number 4KIP5860017-101, is
required. Refer to Reference (1), Parker Hannifin Service Bulletin No.
5860017-75-66.

(2) See "Material Information" section for prices and availability of future
spares.

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H. Tooling – Price and Availability

Special tools are not necessary.

I. Weight and Balance

- | | | | | | | |
|-----|---------------|----|----|----|----|--|
| (1) | Weight change | .. | .. | .. | .. | None |
| (2) | Moment arm | .. | .. | .. | .. | No effect |
| (3) | Datum | .. | .. | .. | .. | Engine front mount centerline
(Power Plant Station (PPS) 100) |

J. Electrical Load Data

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

K. References

- (1) Internal Reference No.

91VJ036

- (2) Other References

Parker Hannifin Service Bulletin No. 5860017-75-66.

Airbus Industrie A320 Aircraft Maintenance Manual; 71-13-00, Maintenance Practices and 78-32-00, Maintenance Practices.

IAE Service Bulletin; V2500-ENG-75-0008 and V2500-ENG-70-0113.

L. Other Publications Affected

- (1) Parker Hannifin Component Maintenance Manual, 75-24-52.
- (2) IAE V2500 Engine Illustrated Parts Catalog, 75-24-52.
- (3) IAE V2500 Powerplant Illustrated Parts Catalog, 75-24-52.



2. Accomplishment Instructions

A. Prerequisite Instructions

- (1) Open the Fan Cowls by the approved procedure in Reference (2), Chapter/Section 71-13-00, Maintenance Practices.
- (2) Open the Thrust Reverser Halves by the approved procedure in Reference (2), Chapter/Section 78-32-00, Maintenance Practices

B. Rework Instructions

- (1) Do a modification of the 5W2085, 5W2164, 5W2186 and 5W2189 HPT/LPT ACC Valve Actuator and reidentify as 5W2258, 5W2259, 5W2260 or 5W2261 by the approved procedure in Reference (1), Parker Hannifin Service Bulletin.

C. Postrequisite Instructions

- (1) Close the Thrust Reverser Halves by the approved procedure in Reference (2), Chapter/section 78-32-00, Maintenance Practices.
- (2) Close the Fan Cowls by the approved procedure in Reference (2), Chapter/Section 71-13-00, Maintenance Practices.

D. Recording Instructions

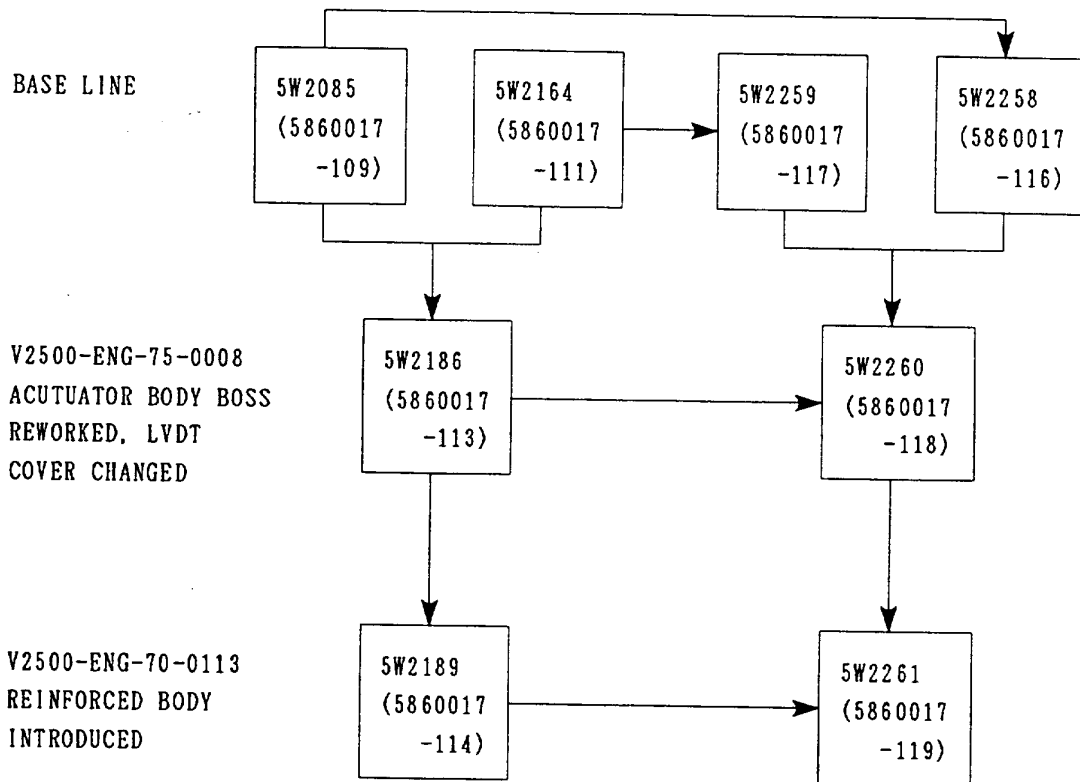
- (1) A record of accomplishment is necessary.

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Printed in Great Britain

MODIFICATIONS

PART NUMBER CHANGE



V2500-ENG-75-0027
PIN RETAINER ADDED
TO ABEX SERVO
VALVE

:ACC ACTUATOR WHICH IS ACCOMPLISHED THIS MODIFICATION, IS
TO BE RE-IDENTIFIED FROM LEFT HAND PART NUMBER FLOW CLUSTER
TO RIGHT HAND PART NUMBER FLOW CLUSTER.
PART NUMBERS IN RIGHT HAND PART NUMBER FLOW CLUSTER SHOW
ACC ACUTUATORS WHICH ARE ACCOMPLISHED THIS MODIFICATION.

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Family Tree - HP/LP Turbine ACC Valve Actuator Ref. Catalog Sequence No. 75-24-52, Fig
01, Item 100
Fig.1

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3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

NEW PART NO. (ATA NO.)	QTY	EST'D UNIT PRICE (\$)	KEYWORD	OLD PART NO. (IPC NO.)	INSTRUCTIONS DISPOSITION
4KIT5860017	1		Kit, Modification ACC		
-101			Actuator		

NOTE: The modification Kit is supplied by Parker Hannifin Corporation.
For the availability and detail of the Kit and applicable HPT/LPT
ACC Valve Actuator refer to Parker Hannifin Service Bulletin
No. 5860017-75-66.

B. Parts affected by this Bulletin:

NEW PART NO. (ATA NO.)	QTY	EST'D UNIT PRICE (\$)	KEYWORD	OLD PART NO. (IPC NO.)	INSTRUCTIONS DISPOSITION
5W2258	1		Actuator, Valve HPT/LPT	5W2085	(1D)
(75-24-52)			ACC	(01-100)	
5W2259	1		Actuator, Valve HPT/LPT	5W2164	(1D)
(75-24-52)			ACC	(01-100)	
5W2260	1		Actuator, Valve HPT/LPT	5W2186	(1D)
(75-24-52)			ACC	(01-100)	
5W2261	1		Actuator, Valve HPT/LPT	5W2189	(1D)(A)
(75-24-52)			ACC	(01-100)	

C. Instruction/Disposition Code Statements:

(1D) A modification can be done to the Old part and it can then be
reidentified as the New part number.

(A) New part will be available for sale.

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E. Consumables Required to Incorporate this Bulletin:

CoMat 01-007	Ethyl alcohol (Denatured)
CoMat 02-176	Lockwire
CoMat 10-077	Lubricant (Engine oil)

NOTE: The estimated 1992 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.



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AIR - V2500 - HP/LP ACC ACTUATOR, PART NUMBER 5860017-109, -111, -113 AND -114.
INCORPORATION OF PIN RETAINER CLIP ON SERVO VALVE.

1. PLANNING INFORMATION

A. Effectivity

This service bulletin is applicable to the HP/LP ACC Actuator (hereafter referred to as the Actuator), Part Number 5860017-109, -111, -113 and -114, as used on IAE V2500 engines.

B. Reason

- (1) To ensure retention of the filter plug and retention pin in servo valve, Part Number 5863057-101 (manufactured by Abex Aerospace, Vendor Number 75250). If the retention pin is dislodged, the fuel plug can be ejected from the servo valve body resulting in fuel leakage to the engine system.

CAUTION: THIS PROBLEM MAY CAUSE A FUEL SPILL. OPERATORS ARE ADVISED TO ACCOMPLISH THIS SERVICE BULLETIN AS NOTED IN PARAGRAPH 1.D. BELOW.

- (2) A one-time (non-flight) occurrence (on a similar component) has resulted in the filter plug dislodging which produced fuel leakage. The cause has been determined to be improper pin retention and assembly of the electrohydraulic servo valve. Parker Hannifin Corporation has undergone design and assembly changes in order to eliminate the problem.

C. Description

This service bulletin describes an on-wing option as well as an in-shop method, for installing a stainless steel clip in order to improve the retention of the servo filter plug retaining pin, and reidentification of the Actuator.

D. Compliance

Operators are advised to accomplish this service bulletin within 60 calendar days from receipt of this mandatory service bulletin. The Safety element implementation complies with Hard Time Limits categorization of the ATA Implementation Guideline Manual (IGM 1) of April 1976.

E. Approval

The procedures specified in this service bulletin have been shown to comply with the applicable Federal Aviation Regulations (FARS) and are FAA approved for the Actuator listed.

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F. Manpower

*NOTE: If the visual inspection is performed on the aircraft, refer to Figure 3 (After View) in this service bulletin.

- (1) Manpower estimates described herein are based on work performed after the Actuator has been removed from the engine and exclude the time required to reinstall the Actuator on the engine.
- (2) The time required is based on one individual performing all the tasks listed.

<u>TASK</u>	<u>MAN HOURS</u>
(a) Visual inspection for suspect Abex servo valve per Figure 1.	0.25
<u>NOTE 1</u> : If an Abex servo valve is located, visually check and ensure that the pin is intact per Figure 2 and Figure 3 (Before View). If the filter plug retention pin is missing, return the Actuator to Parker Hannifin Corporation per paragraph 1.G.(4) in this service bulletin. Accomplishment of this service bulletin will be completed by Parker.	
<u>NOTE 2</u> : If a BW/IP servo valve is located, the pin retainer clip installation is <u>NOT</u> necessary. Proceed to paragraph 2.E. and reidentify the Actuator accordingly.	
(b) Removal of lockwire and opening of insulation blanket.	0.10
(c) Removal of Abex servo valve screw and washer per Figure 4.	0.25
(d) Installation of pin retainer clip and screw on Abex servo valve per Figure 4.	0.25
(e) Visual inspection for proper installation of pin retainer clip over retention pin per Figure 3 (After View).*	0.25
(f) Reidentification of the Actuator per paragraph 2.E.	0.25
(g) Reinstallation of insulation blanket and lockwire.	<u>0.10</u>
TOTAL	1.45

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G. Material - Cost and Availability

- (1) A parts kit, Part Number 4KIT5860017-101, is required for the accomplishment of this service bulletin.

NOTE: Refer to the Family Tree Chart, paragraph 1.M. in this service bulletin for aid in determining the part number change.

- (2) The contents of the kit are fully described in Section 3 of this service bulletin.
- (3) The kit, Part Number 4KIT5860017-101, shall be provided at no cost to operators, effective immediately after issuance of this service bulletin. The kit may be ordered from:

Customer Support Commercial
PARKER BERTEA AEROSPACE
PARKER HANNIFIN CORPORATION
16666 Von Karman Avenue
Irvine, California 92714 USA

Phone: (714) 660-8311
FAX: (714) 660-8390
Telex: 678304

- (4) For those operators who wish to have this service bulletin accomplished by Parker Hannifin Corporation, please forward the Actuator to:

Customer Support Commercial
PARKER BERTEA AEROSPACE
PARKER HANNIFIN CORPORATION
16666 Von Karman Avenue
Irvine, California 92714 USA

- (a) This service bulletin shall be implemented at no cost to operators with a turnaround time of 30 days after receipt of the Actuator, effective immediately after issuance of this service bulletin.
- (b) The no charge conditions of this service bulletin shall be effective for 12 months from the date of issuance of this bulletin.

H. Tooling - Price and Availability

Not applicable.

I. Weight and Balance

None.

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J. Electrical Load Data

Not affected.

K. References

Parker Hannifin Component Maintenance Manual (CMM) 75-24-52 dated 1 November 1988.

L. Other Publications Affected

This service bulletin information will be incorporated into Parker Hannifin Corporation Component Maintenance Manual 75-24-52 during the next scheduled revision to the manual.

M. Family Tree Chart

	ACTUATOR	IAE P/N	WITH PIN RETAINER	IAE P/N
Base Configuration	5860017-109	5W2085	5860017-116	5W2258
New LVDT Cover and Spring Retainer	5860017-111	5W2164	5860017-117	5W2259
Rework of LVDT Cover and New Body Assy	5860017-113	5W2186	5860017-118	5W2260
New Body Assy and LVDT Arm Replacement	5860017-114	5W2189	5860017-119	5W2261

2. ACCOMPLISHMENT INSTRUCTIONS

A. Determine if the servo valve, Part Number 5863057-101 is manufactured by Abex or BW/IP. (See Figure 1 and the servo valve nameplate.)

- (1) If the 5863057-101 servo valve was manufactured by BW/IP, this service bulletin has been accomplished. Operators shall proceed to paragraph 2.E. and reidentify the Actuator accordingly.
- (2) If the 5863057-101 servo valve was manufactured by Abex Aerospace (Vendor Number 75250), operators shall perform an additional check for the servo valve filter plug retention pin and ensure that it is intact per Figure 2. If the filter plug retention pin is missing, operators shall return the Actuator to Parker for accomplishment per paragraph 1.G.(4). If the filter plug retention pin is NOT missing, proceed to the next paragraph.

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- B. Unless otherwise noted, refer to Parker Hannifin Corporation Component Maintenance Manual (CMM) 75-24-52 IPL Figure 1 for item numbers used in these instructions.
- C. Installation of pin retainer clip, Part Number 5913319-101, on Abex servo valve:
- (1) Refer to the DISASSEMBLY section of CMM 75-24-52, remove lockwire and open the insulation blanket (5) to access the servo valve.
 - (2) Remove one screw (110) and one washer (115) from the Abex servo valve per Figure 3 in this service bulletin. Discard washer.
 - (3) Install the pin retainer clip, Part Number 5913319-101, as noted in Figure 3 and as follows:
 - (a) Starting from the bottom side first, position pin retainer clip, Part Number 5913319-101, on inner right corner of Abex servo valve (105).
 - (b) Slide fit the pin retainer clip, Part Number 5913319-101, over the top side corner and into position with the screw hole.

NOTE: The spring tension of the pin retainer will allow it to stay in place and permit a secure fit on the Abex servo valve.

- D. Reinstall screw (110) and torque 20 to 24 in.lb (2.3 to 2.6 Nm). Perform a visual inspection per Figure 3 (After View) in this service bulletin, using a dental mirror (or equivalent) and a pen light.

NOTE: IAE recommends that the Actuator be manually held when applying torque to prevent damage to the mounting brackets.

E. Reidentification.

- (1) Operators completing the accomplishment of this service bulletin in the field shall reidentify the Actuator to the applicable part number as follows:
 - (a) All 5860017-109 Actuators shall be reidentified with the following:

P/N 5860017-	116	REV	L
P/L 5861017-	112	REV	N
ACD NO	424JM	BLD STD	44
IAE P/N	5W2258		

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(b) All 5860017-111 Actuators shall be reidentified with the following:

P/N	5860017-	117	REV	L
P/L	5861017-	105	REV	F
ACD NO	424JM	BLD	STD	45
IAE P/N	5W2259			

(c) For -109 and -111 configurations:

- 1) Operators shall clean the stenciled nameplate on the LVDT cover. Part Number 5883820-101, with de-natured alcohol or equivalent.
- 2) Position and install the new nameplate, Part Number 5903194-101, over the existing nameplate on the LVDT cover. Part Number 5883820-101, per Figure 4 in this service bulletin.

(d) All 5860017-113 Actuators shall be reidentified with the following:

P/N	5860017-	118	REV	L
P/L	5861017-	106	REV	F
ACD NO	424JM	BLD	STD	46
IAE P/N	5W2260			

(e) All 5860017-114 Actuators shall be reidentified with the following:

P/N	5860017-	119	REV	L
P/L	5861017-	107	REV	F
ACD NO	424JM	BLD	STD	47
IAE P/N	5W2261			

(f) For -113 and -114 configurations:

- 1) Operators shall peel away the old nameplate and clean the area on LVDT cover. Part Number 5883820-103, with de-natured alcohol or equivalent.
- 2) Position and install the new nameplate, Part Number 5903194-101, in the same location on the LVDT cover. Part Number 5883820-103, per Figure 4 in this service bulletin.

(2) All actuators returned to Parker Hannifin Corporation for accomplishment of this service bulletin shall be reidentified as noted in paragraph 2.E. with all applicable information transcribed.

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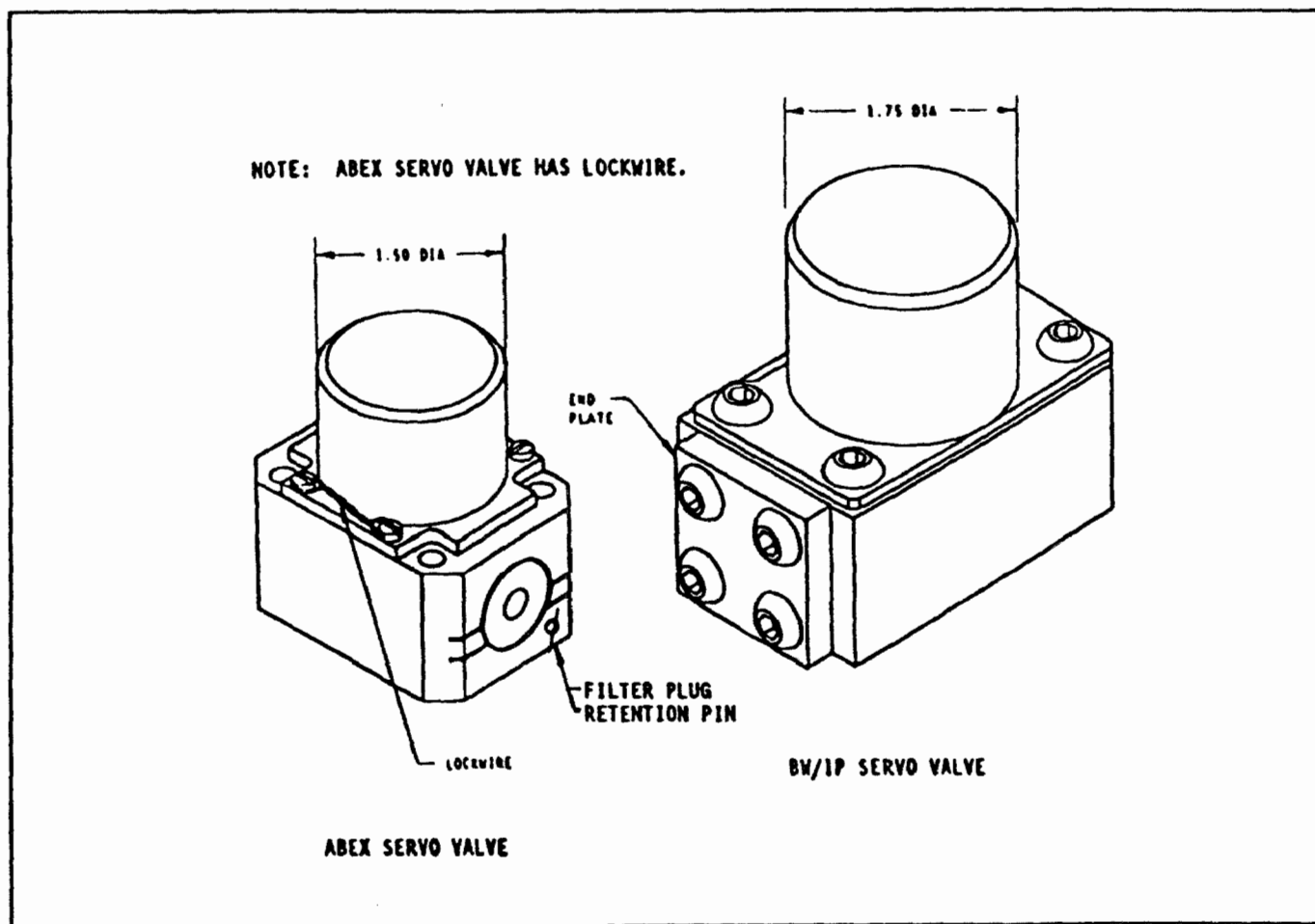
3. MATERIAL INFORMATION

- A. A kit, Part Number 4KIT5860017-101, is required for the accomplishment of this service bulletin. The kit is for one Actuator and is comprised of the following:

<u>NEW P/N</u>	<u>QTY</u>	<u>KEY WORD</u>	<u>OLD P/N</u>	<u>DISPOSITION</u>
5913319-101	1	Pin Retainer	None	None
5903194-101	1	Nameplate	None or Same	Scrap

- B. See paragraph 1.G. for delivery information.

- C. The no charge provisions referenced in this service bulletin shall be valid for 12 months from date of issuance. Subsequent to that date, please refer to the Airline Spare Parts Catalog or request a quotation from Parker Hannifin Corporation, Customer Support Operations.



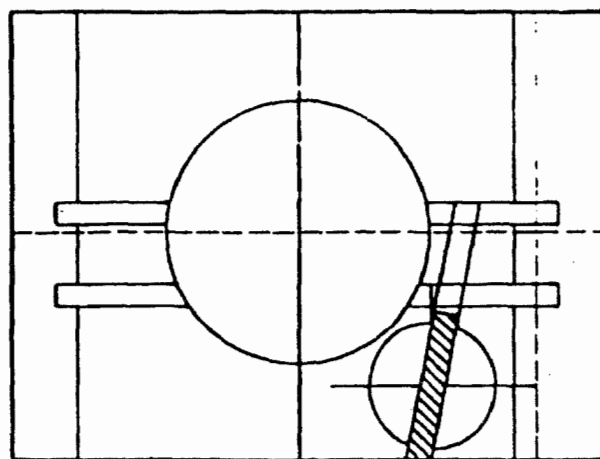
Abex and BW/IP Servo Valves
Figure 1

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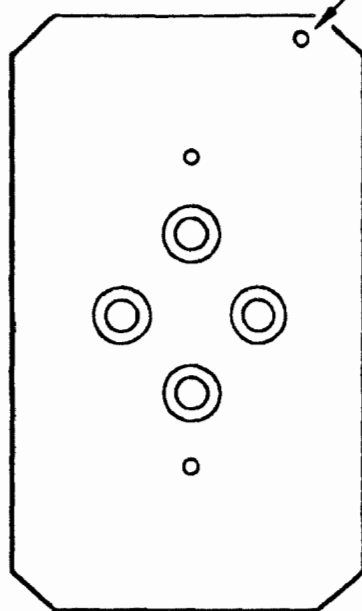
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FILTER PLUG
RETENTION PIN



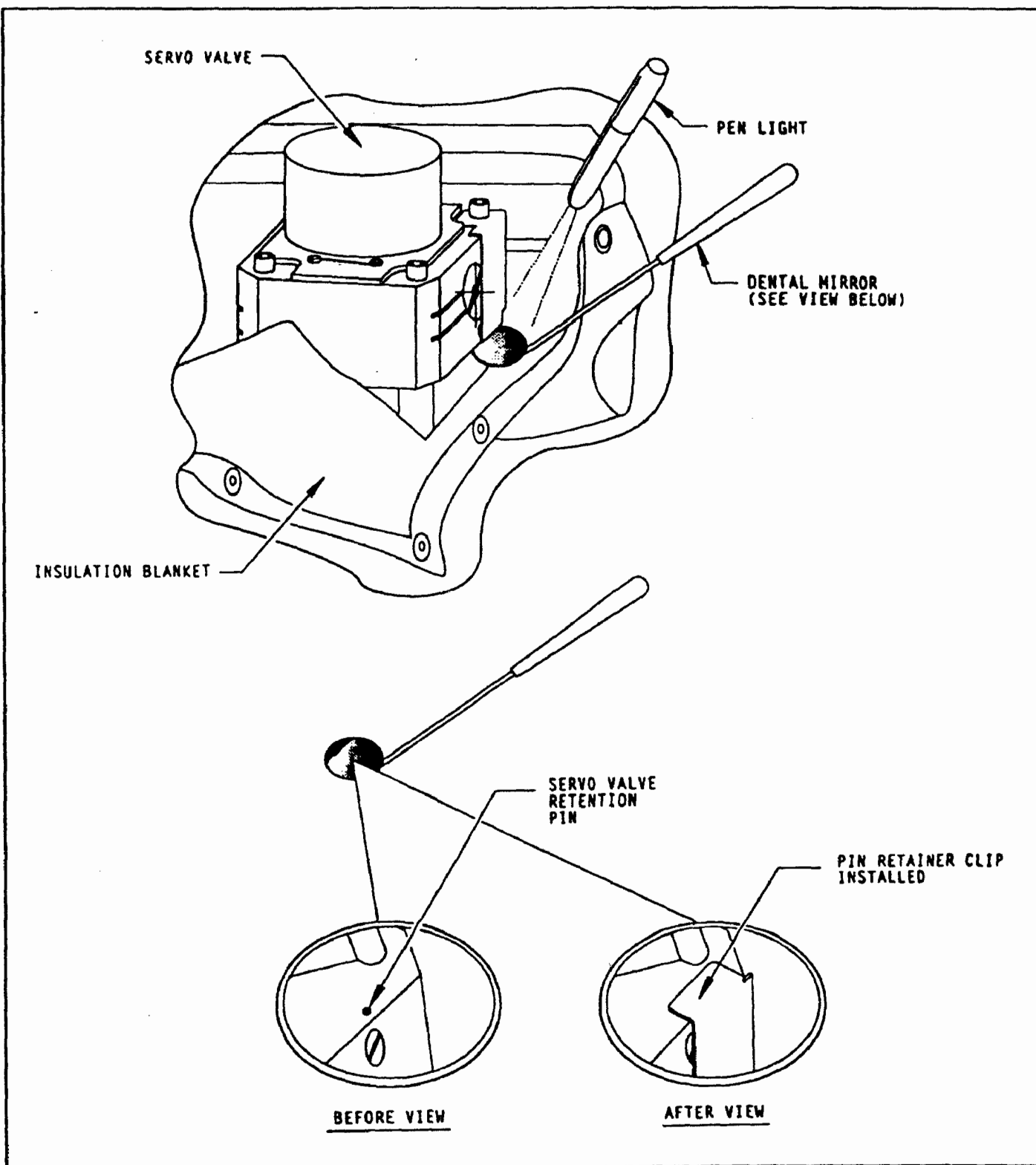
Filter Plug Retention Pin Location
Figure 2

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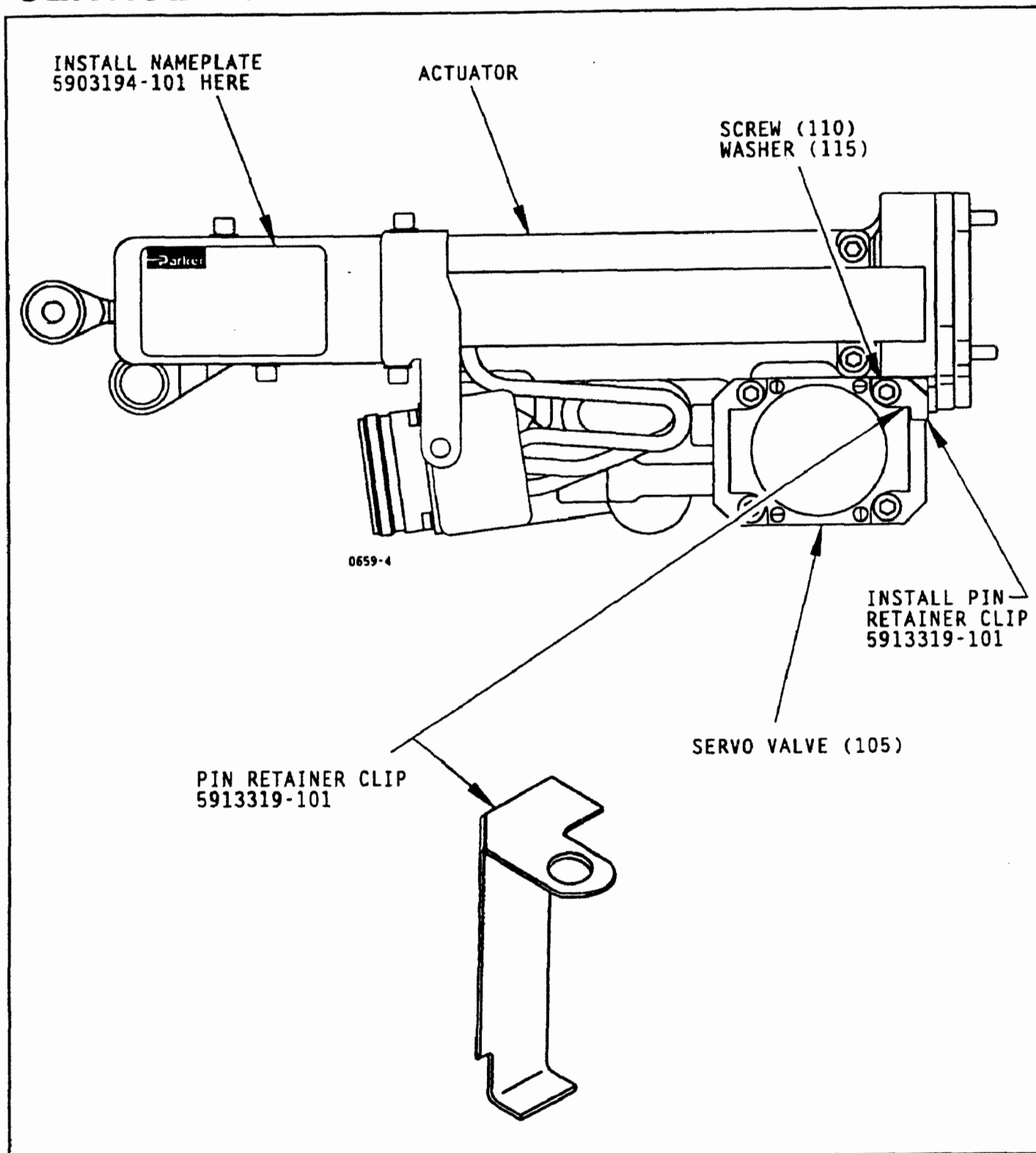
Before and After Visual Inspection
Figure 3

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Pin Retainer Clip Location on Abex Servo Valve
Figure 4

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