# SERVICE LETTER

**SUBJECT:** **VICKERS SERVICE LETTERS 29-920422-01 & 29-933322-01 AND SERVICE BULLETINS 920422-29-02, 920422-29-03, 933322-29-01, 920422-01-29 AND 933322-29-02 - ELECTRIC MOTOR-DRIVEN HYDRAULIC PUMP ASSEMBLY.**

All Operators:

Date: December 16/97

This Service Letter draws the attention of Operators to Vendor information which provides information on the above topics as follows:

APPENDIX A Vickers Service Letter SL-29-920422-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, Part Numbers. 920422 (PPEV3-008-EA3A) and 933340 (PPEV3-008-EA3C).

APPENDIX B Vickers Service Letter SL-29-933322-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, Part Number. 933322 (PPEV3-008-EA3B).

APPENDIX C Vickers Service Bulletin SB-920422-29-02, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, Part Numbers 920422 (PPEV3-008-EA3A) and 933340 (PPEV3-008-EA3C).

APPENDIX D Vickers SB-920422-29-03, Installation of a Locking Pin in the Adaptor Subassembly of the Electric Motor Driven Hydraulic Pump Assembly, Part Numbers 920422 (PPEV3-008-EA3A) and 933340 (PPEV3-008-EA3C).

APPENDIX E Vickers SB SB-933322-29-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, Part Number. 933322 (PPEV3-008-EA3B).

APPENDIX F Vickers Service Bulletin SB-933322-29-02, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, Part Number. 933322 (PPEV3-008-EA3B).

Pilatus recommends compliance with those vendor Service Bulletins whenever a problem with the Differential Pressure Indicator is encountered or at the next removal of the unit.

Operators requiring further information on this subject, please contact the address given below:

PILATUS AIRCRAFT LTD.
CUSTOMER SUPPORT MANAGER,
CH-6371 STANS,
SWITZERLAND.

Tel: + 41 41 619 6509
Fax: + 41 41 610 3351

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# Appendix A to Pilatus Service Letter No. 028

Vickers SL-29-920422-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, P/N 920422 (PPEV3-008-EA3A) and P/N 933340 (PPEV3-008-EA3C).

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# SERVICE LETTER

Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Ave, Bedhampton, Havant, Hants P09 3QN, England.

No: SL-29-920422-01

Date: July 24th 1997

Subject:

Electric Motor Driven Hydraulic Pump Package Assembly
Unwanted Operation Of The Differential Pressure Indicator (DPI)

Applicability:

| Part Number | Aircraft | Function |
|---|---|---|
| 920422 (PPEV3-008-EA3A)<br>933340 (PPEV3-008-EA3C) | Pilatus PC12 | Main Hydraulic System Pressure |

References:

1. Vickers Component Maintenance Manual 29-10-45.

2. Vickers Modification Proposal VS/M 216.

Background:

Unwanted operations of the DPI have occurred in service which give incorrect indications of a blocked filter.

Findings:

Investigation has shown that it is possible for the DPI to be put in one of four positions when it is installed in the adaptor subassembly. Thus the DPI sensing port in one hydraulic pump package assembly can be in a different position in relation to the adaptor inlet port in another. If the DPI sensing port is adjacent to the adaptor inlet port, the DPI will be more sensitive to high pressure spikes than if it is not.

Because it is thought that unwanted operation of the DPI can be caused by high pressure spikes, this Service Letter specifies the steps necessary to make the DPI less sensitive. To do this, the DPI sensing port must be positioned diametrically opposite ($180^{o}$) the adaptor inlet port. This will help prevent unwanted operations of the DPI.

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Actions and Recommendations:

If it is thought that an unwanted operation of the DPI has occurred, do the steps that follow:

NOTE: During the steps that follow, the numbers in brackets refer to the item numbers in Figure 1 of the Illustrated Parts List in the reference Component Maintenance Manual 29-10-45.

1. Disassembly.

   A. Make a temporary mark with a soft-tip pen to show the position of DPI (110) in relation to adaptor subassembly (140).

   B. Remove four screws (115) and washers (120) from the flange of DPI (110).

   C. Remove DPI (110) together with its spring from adaptor subassembly (140).

   D. Remove the spring, the magnet housing and the magnet from the body of the DPI.

2. Examination

   A. Remove all unwanted hydraulic fluid from the magnet housing recess in the body of the DPI.

   B. Refer to Figure 1 of this Service Letter. With the help of an additional light source, find the position of the DPI sensing port in the magnet housing recess. Record this position.

      NOTE: You cannot see the DPI sensing port on the external surface of the DPI because of the filter screen. You must look for it from inside the magnet housing recess.

   C. Refer to Figure 2 of this Service Letter. With the help of an additional light source, find the position of the adaptor inlet port. Record this position.

   D. With the help of the temporary mark you made in step 1.A, compare the position of the DPI sensing port with the position of the adaptor inlet port when the DPI was installed in the adaptor subassembly. If the position of the DPI sensing port is found not to be diametrically opposite (180°) the adaptor inlet port, assemble the DPI as specified in the steps that follow. If the position of the DPI sensing port is found to be diametrically opposite (180°) the adaptor inlet port, embody Modification No 1 as specified in Service Bulletin 920422-29-02.

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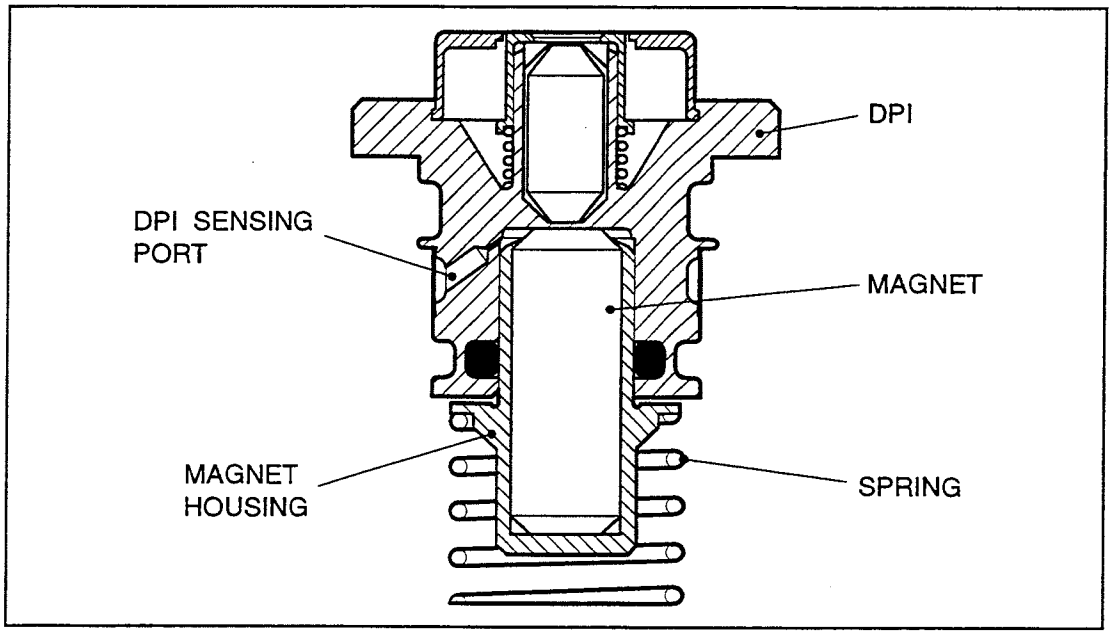
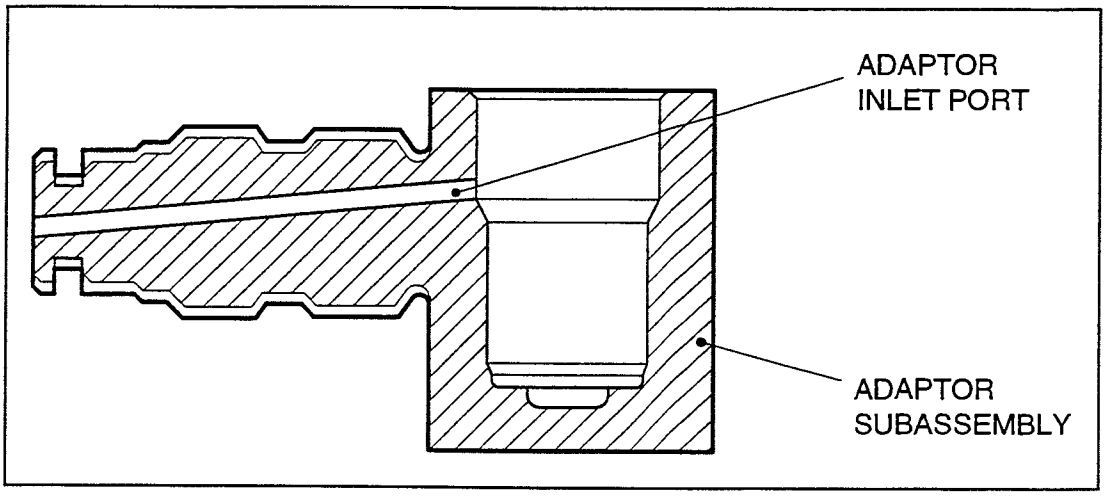



Find The Position Of The DPI Sensing Port
Figure 1




Find The Position Of The Adaptor Inlet Port
Figure 2

3. Assembly

NOTE: It is recomended that you replace packings (125 and 130) and back-up ring (135) before you install the DPI (110).

A. Install the magnet, the magnet housing and the spring on the body of the DPI.

B. Install DPI (110) together with its spring in adaptor subassembly (140). Make sure that the DPI is installed with its sensing port diametrically opposite (180°) the adaptor inlet port.

C. Install four screws (115) and washers (120) in the flange of DPI (110) and attach the DPI to adaptor subassembly (140).

D. Torque four screws (115) equally and symmetrically in a diagonally opposite sequence to between 1,81 and 2,26 Nm (16,0 and 20 lbf in).

E. Remove the temporary mark that you made in step 1.A.

NOTE: If the problem continues on a hydraulic pump package assembly after you have done the steps specified in this Service Letter, embody Modification No 1 as specified in Service Bulletin 920422-29-02.

Summary:

Because it is thought that unwanted operation of the DPI can be caused by high pressure spikes, this Service Letter specifies the steps that are necessary to make sure that the DPI sensing port is diametrically opposite (180°) the adaptor inlet port. This will help the DPI to be less sensitive to high pressure spikes. If the two ports are in this related position when the unit is disassembled, or if the problem continues after you have done the steps specified in this Service Letter, modify the unit as specified in Service Bulletin 920422-29-02.

# Appendix B to Pilatus Service Letter No. 028

Vickers SL-29-933322-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, P/N 933322 (PPEV3-008-EA3B).

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# SERVICE LETTER

Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Ave, Bedhampton, Havant, Hants P09 3QN, England.

No: SL-29-933322-01

Date: September 23rd 1997

Subject:

Electric Motor Driven Hydraulic Pump Package Assembly
Unwanted Operation Of The Differential Pressure Indicator (DPI)

Applicability:

| Part Number | Aircraft | Function |
|---|---|---|
| 933322 (PPEV3-008-EA3B) | Pilatus PC12 | Main Hydraulic System Pressure |

References:

1. Vickers Component Maintenance Manual 29-10-47.
2. Vickers Modification Proposal VS/M 216.

Background:

Unwanted operations of the DPI have occurred in service which give incorrect indications of a blocked filter.

Findings:

Investigation has shown that it is possible for the DPI to be put in one of four positions when it is installed in the adaptor subassembly. Thus the DPI sensing port in one hydraulic pump package assembly can be in a different position in relation to the adaptor inlet port in another. If the DPI sensing port is adjacent to the adaptor inlet port, the DPI will be more sensitive to high pressure spikes than if it is not.

Because it is thought that unwanted operation of the DPI can be caused by high pressure spikes, this Service Letter specifies the steps necessary to make the DPI less sensitive. To do this, the DPI sensing port must be positioned diametrically opposite ($180^{\circ}$) the adaptor inlet port. This will help prevent unwanted operations of the DPI.

Actions and Recommendations:

If it is thought that an unwanted operation of the DPI has occurred, do the steps that follow:

NOTE: During the steps that follow, the numbers in brackets refer to the item numbers in Figure 1 of the Illustrated Parts List in the reference Component Maintenance Manual 29-10-47.

1. Disassembly.

   A. Make a temporary mark with a soft-tip pen to show the position of DPI (155) in relation to adaptor subassembly (185).

   B. Remove four screws (160) and washers (165) from the flange of DPI (155).

   C. Remove DPI (155) together with its spring from adaptor subassembly (185).

   D. Remove the spring, the magnet housing and the magnet from the body of the DPI.

2. Examination

   A. Remove all unwanted hydraulic fluid from the magnet housing recess in the body of the DPI.

   B. Refer to Figure 1 of this Service Letter. With the help of an additional light source, find the position of the DPI sensing port in the magnet housing recess. Record this position.

      NOTE: You cannot see the DPI sensing port on the external surface of the DPI because of the filter screen. You must look for it from inside the magnet housing recess.

   C. Refer to Figure 2 of this Service Letter. With the help of an additional light source, find the position of the adaptor inlet port. Record this position.

   D. With the help of the temporary mark you made in step 1.A, compare the position of the DPI sensing port with the position of the adaptor inlet port when the DPI was installed in the adaptor subassembly. If the position of the DPI sensing port is found not to be diametrically opposite (180°) the adaptor inlet port, assemble the DPI as specified in the steps that follow. If the position of the DPI sensing port is found to be diametrically opposite (180°) the adaptor inlet port, embody Modification No 1 as specified in Service Bulletin 933322-29-01.

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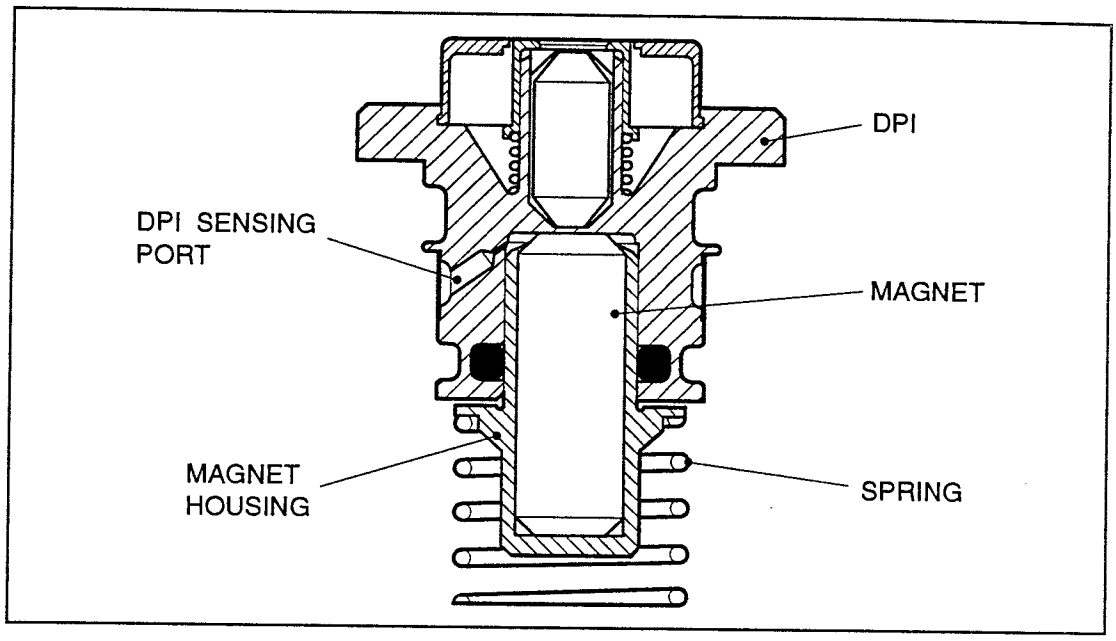
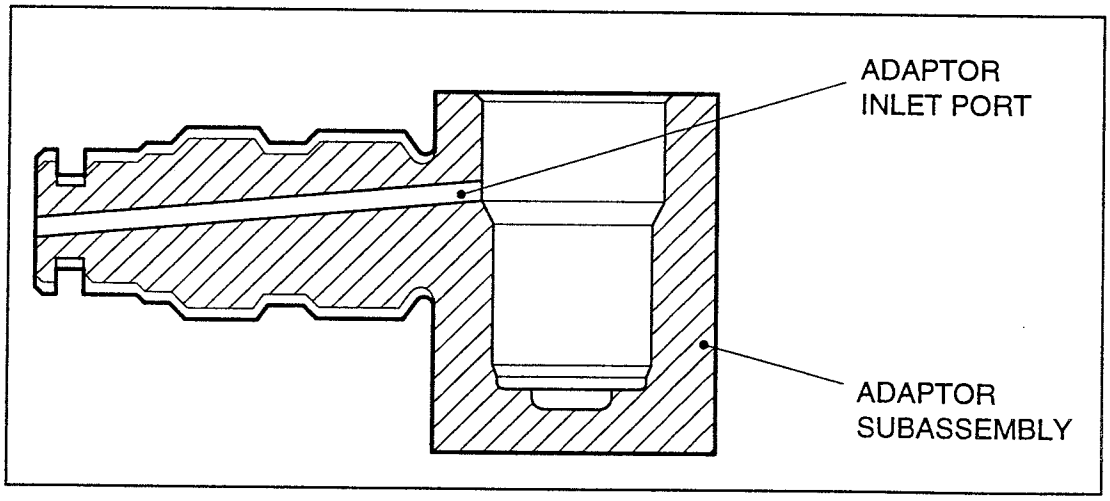



Find The Position Of The DPI Sensing Port
Figure 1




Find The Position Of The Adaptor Inlet Port
Figure 2

3. Assembly

NOTE: It is recomended that you replace packings (170 and 175) and back-up ring (180) before you install the DPI (155).

A. Install the magnet, the magnet housing and the spring on the body of the DPI.

B. Install DPI (155) together with its spring in adaptor subassembly (185). Make sure that the DPI is installed with its sensing port diametrically opposite (180°) the adaptor inlet port.

C. Install four screws (160) and washers (165) in the flange of DPI (155) and attach the DPI to adaptor subassembly (185).

D. Torque four screws (160) equally and symmetrically in a diagonally opposite sequence to between 1,81 and 2,26 Nm (16,0 and 20 lbf in).

E. Remove the temporary mark that you made in step 1.A.

NOTE: If the problem continues on a hydraulic pump package assembly after you have done the steps specified in this Service Letter, embody Modification No 1 as specified in Service Bulletin 933322-29-01.

Summary:

Because it is thought that unwanted operation of the DPI can be caused by high pressure spikes, this Service Letter specifies the steps that are necessary to make sure that the DPI sensing port is diametrically opposite (180°) the adaptor inlet port. This will help the DPI to be less sensitive to high pressure spikes. If the two ports are in this related position when the unit is disassembled, or if the problem continues after you have done the steps specified in this Service Letter, modify the unit as specified in Service Bulletin 933322-29-01.

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# Appendix C to Pilatus Service Letter No. 028

Vickers SB-920422-29-02, Change of Differential Indicator and Filter By-Pass Valve of the Electric Motor Driven Hydraulic Pump Assembly, P/N 920422 (PPEV3-008-EA3A) and P/N 933340 (PPEV3-008-EA3C).

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# SERVICE BULLETIN

Vickers Systems Division, Aeroquip-Vickers Ltd, Bedhampton, Havant, Hants PO9 3QN, England

**Electric Motor Driven Hydraulic Pump Package Assembly**
**Change Of Differential Pressure Indicator (DPI) And Filter By-Pass Valve**

## 1. Planning Information

### A. Effectivity:

| Part Number | Aircraft | Function |
|---|---|---|
| 920422 (PPEV3-008-EA3A)<br>933340 (PPEV3-008-EA3C) | Pilatus PC12 | Main Hydraulic System Pressure |

### B. Concurrent Requirements:

None.

### C. Reason:

Unwanted operations of the DPI have occurred in service which give incorrect indications of a blocked filter. It is thought that this can be caused by high pressure spikes and mechanical shocks.

### D. Description:

This Service Bulletin is a product improvement. It replaces the DPI together with the related filter by-pass valve. Internal changes to the new DPI make it less sensitive to high pressure spikes and mechanical shocks.

Because it is also necessary for the DPI sensing port to be diametrically opposite ($180^{o}$) the inlet port of the adaptor subassembly, the new DPI has a location hole in its flange. Because the hole is related to the position ot the DPI sensing port, it helps you install the DPI in the correct position in relation to the adaptor subassembly.

**E. Compliance:**

It is recommended that the change specified in this Service Bulletin is done if it is thought that an unwanted operation of the DPI has occurred on a hydraulic pump package assembly that does not include this change, and:

(1) The position of the DPI sensing port is found to be diametrically opposite ($180^{0}$) the adaptor inlet port (refer to Vickers Systems Service Letter SL-29-920422-01).

(2) Unwanted operations of the DPI continue to occur after you have done the steps specified in Vickers Systems Service Letter SL-29-920422-01.

**F. Approval:**

This Service Bulletin has been reviewed by the appropriate governmental authority and the repairs and modifications herein comply with the applicable Aviation Regulations and are CAA APPROVED for installation on the Pilatus PC12.

**G. Manpower:**

Approximately one manhour will be necessary to do the change specified in this Service Bulletin.

**H. Weight and Balance:**

None

**I. Electrical Load Data:**

Not changed.

**J. Software Accomplishment Summary:**

None.

**K. References:**

(1) Vickers Systems Component Maintenance Manual 29-10-45.

(2) Vickers Modification Proposal VS/M 216.

**L. Other Publications Affected:**

None.

**M. Interchangeability or Intermixability of Parts:**

None.

## 2. Material Information

**A. Material-Price and Availability:**

The materials necessary to do the change specified in this Service Bulletin are shown in Paragraph 2.C, Table 1. They are supplied in Modification Kit, Part Number 268955, priced £861:75 at April 1997 to March 1998 economic conditions. You can get information on the availability of the Modification Kit from Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Avenue, Bedhampton, Havant, Hants PO9 3QN, England.

**B. Industry Support Information:**

None.

**C. Material Necessary for Each Component:**

**TABLE 1**

| New Part Number | Keyword | Old Part Number | Qty | Unit Price | Disposition Instructions |
|---|---|---|---|---|---|
| - | Ring, Back-Up | MS28774-015 | 1 | N/A | Renew |
| - | Packing | M83248-1-014 | 1 | N/A | Renew |
| - | Packing | M83248-1-015 | 1 | N/A | Renew |
| QA07881 | Indicator, Differential Pressure | QA07316 | 1 | N/A | Replace |
| M098007 | Valve, Filter By-Pass | M060061 | 1 | N/A | Replace |

**D. Material Necessary for Each Spare:**

None.

**E. Reidentified Parts:**

None.

**F. Tooling-Price and Availability:**

Not applicable.

## 3. Accomplishment Instructions

NOTE: During the steps that follow, the numbers in brackets refer to the item numbers in Figure 1 of the Illustrated Parts List in the reference Component Maintenance Manual 29-10-45.

**A. Disassembly:**

(1) Remove four screws (115) and washers (120) from the flange of DPI (110).

(2) Remove DPI (110) together with its spring from adaptor subassembly (140). Discard the DPI together with its spring.

(3) Cut, remove and discard the locking wire from filter by-pass valve (170).

(4) Remove filter by-pass valve (170) from valve plate subassembly (265). Discard the filter by-pass valve.

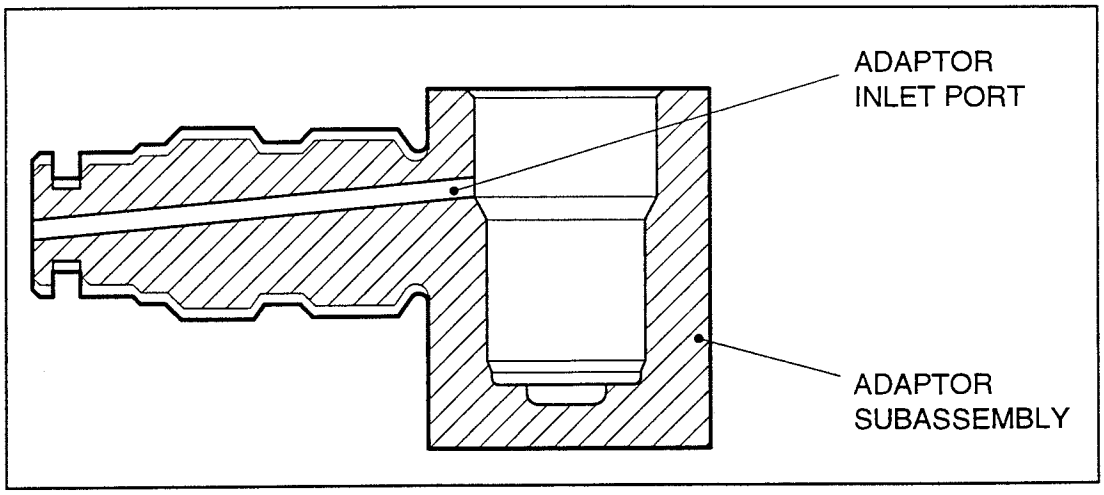
(5) Refer to Figure 1 of this Service Bulletin. With the help of an additional light source, find the position of the adaptor inlet port in adaptor subassembly (140). Make a mark with a soft-tip pen on the side of the adaptor subassembly to record this position.

**B. Assembly:**

(1) Install a new filter by-pass valve, Part Number M098007, in valve plate subassembly (265).

(2) Torque the new filter by-pass valve to between 27,12 and 32,54 Nm (240,0 and 288,0 lbf in).

(3) Lock the new filter by-pass valve to compensator bushing (255) with locking wire MS20995C32 as specified in Specification MS33540.




Find The Position Of The Adaptor Inlet Port
Figure 1

(4) Refer to the reference Component Maintenance Manual 29-10-45. Install new packings (Part Number M83248-1-014 and M83248-1-015) and back-up ring (Part Number MS28774-015) in the related packing grooves of the new DPI, Part Number QA07881, in the positions shown.

(5) Install the new DPI, Part Number QA07881, together with its spring in adaptor subassembly (140). Make sure that the location hole in the flange of the new DPI is diametrically opposite (180°) the mark that you made on the adaptor subassembly in step 3.A(5) .

(6) Install four screws (115) and washers (120) in the flange of the new DPI and attach the DPI to adaptor subassembly (140).

(7) Torque four screws (115) equally and symmetrically in a diagonally opposite sequence to between 1,81 and 2,26 Nm (16,0 and 20 lbf in).

(8) Remove the temporary mark that you made on the adaptor subassembly in step 3.A(5).

**C. Identification of Units That Include This Change:**

Make a mark through the Mod Record Number 1 on the unit modification plate to identify units that include the change specified in this Service Bulletin.

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# Appendix D to Pilatus Service Letter No. 028

Vickers SB-920422-29-03, Installation of a Locking Pin in the Adaptor Subassembly of the Electric Motor Driven Hydraulic Pump Assembly, P/N 920422 (PPEV3-008-EA3A) and P/N 933340 (PPEV3-008-EA3C).

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# SERVICE BULLETIN

Vickers Systems Division, Aeroquip-Vickers Ltd, Bedhampton, Havant, Hants PO9 3QN, England

**Electric Motor Driven Hydraulic Pump Package Assembly**
**Install A Locating Pin In The Adaptor Subassembly**

## 1. Planning Information

### A. Effectivity:

| Part Number | Aircraft | Function |
|---|---|---|
| 920422 (PPEV3-008-EA3A)<br>933340 (PPEV3-008-EA3C) | Pilatus PC12 | Main Hydraulic System Pressure |

### B. Concurrent Requirements:

Modification No 1 as specified in Vickers Systems Service Bulletin 920422-29-02 .

### C. Reason:

It is possible for the differential pressure indicator (DPI) to be put in one of four positions when it is installed in the adaptor subassembly. Thus the DPI sensing port in one hydraulic pump package assembly can be in a different position in relation to the adaptor inlet port in another.

To help prevent unwanted operation of the DPI, it is necessary for the DPI sensing port to be diametrically opposite (180°) the inlet port of the adaptor subassembly. Because of this, Vickers Systems Service Bulletin 920422-29-02 replaced the DPI with one that included a location hole in the flange (Mod 1). This hole is related to the position of the DPI sensing port, and thus helps you install the DPI in the correct position in relation to the adaptor subassembly.

### D. Description:

This Service Bulletin is a product improvement which installs a locating pin in the adaptor subassembly. The locating pin will engage the location hole in the flange of the DPI installed by Vickers Systems Service Bulletin 920422-29-02 (Mod 1). Thus the DPI will always be installed in the correct position in relation to the adaptor subassembly.

**E. Compliance:**

It is recommended that the change specified in this Service Bulletin is done during the next repair or overhaul of the hydraulic pump package assembly if it includes Modification No 1.

**F. Approval:**

This Service Bulletin has been reviewed by the appropriate governmental authority and the repairs and modifications herein comply with the applicable Aviation Regulations and are CAA APPROVED for installation on the Pilatus PC12.

**G. Manpower:**

Approximately 1,50 manhours more (with the time necessary to let the Alocrom dry) will be necessary if the change specified in this Service Bulletin is done during repair or overhaul of the hydraulic pump package assembly.

**H. Weight and Balance:**

None

**I. Electrical Load Data:**

Not changed.

**J. Software Accomplishment Summary:**

None.

**K. References:**

(1) Vickers Systems Component Maintenance Manual 29-10-45.

(2) Vickers Modification Proposal VS/M 216.

**L. Other Publications Affected:**

None.

**M. Interchangeability or Intermixability of Parts:**

None.

## 2. Material Information

**A. Material-Price and Availability:**

The materials necessary to do the change specified in this Service Bulletin are shown in Paragraph 2.C, Table 1. The price shows April 1997 to March 1998 economic conditions. You can get information on the availability of the materials from Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Avenue, Bedhampton, Havant, Hants PO9 3QN, England.

**B. Industry Support Information:**

None.

**C. Material Necessary for Each Component:**

**TABLE 1**

| New Part Number | Keyword | Old Part Number | Qty | Unit Price | Disposition Instructions |
|---|---|---|---|---|---|
| 215723 | Pin | - | 1 | £3.33 | Add |

**D. Material Necessary for Each Spare:**

None.

**E. Reidentified Parts:**

(1) The part number of the adaptor subassembly changes from 520847 to 933371 as a result of the change made in this Service Bulletin.

(2) The part number of the adaptor changes from 520843 to 933370 as a result of the change made in this Service Bulletin.

**F. Tooling-Price and Availability:**

Not applicable.

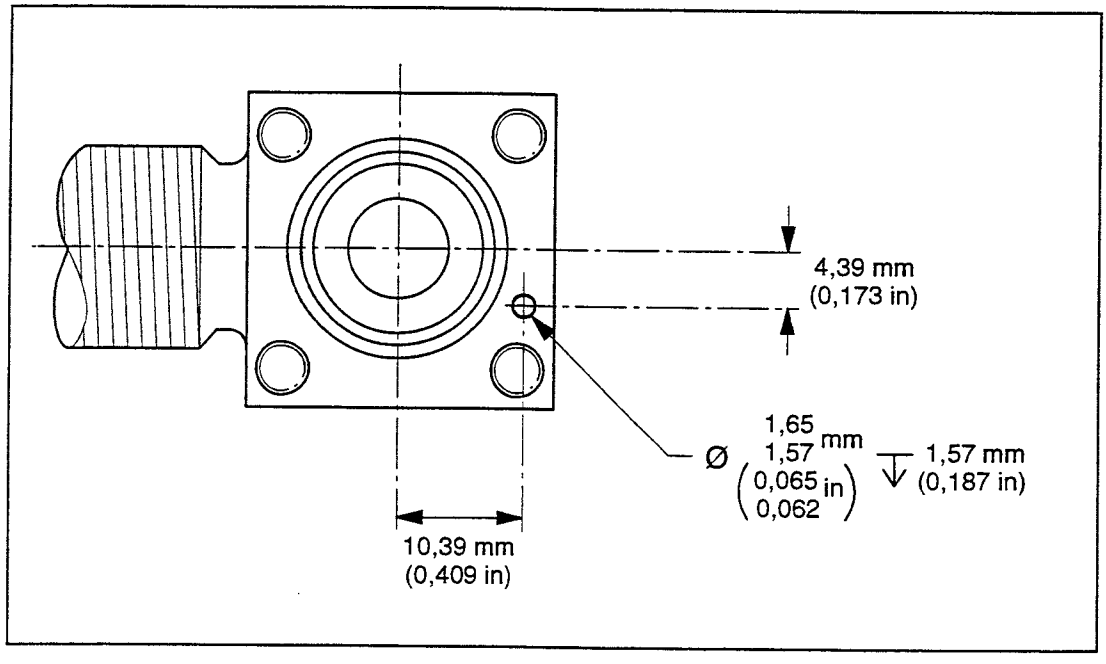
## 3. Accomplishment Instructions

**A. Disassembly:**

Disassemble the hydraulic pump package assembly as specified in the reference Component Maintenance Manual 29-10-45 and remove adaptor subassembly, Part Number 520847.

**B. Modification:**

(1) Refer to Figure 1 of this Service Bulletin. Make a hole in the top face of the adaptor subassembly with a 1,65/1,57 mm (0,065/0,062) drill to a depth of 1,57 mm (0,187 in) in the position shown.




Position of the Locating Pin Hole
Figure 1

(2) Deburr the hole. Remove all unwanted material from the hole and the adaptor subassembly.

(3) Apply Alocrom 1200, or equivalent, to the hole as specified in the reference Component Maintenance Manual 29-10-45.

(4) Install pin, Part Number 215723, in the related hole in the top face of the adaptor subassembly. Push the pin fully in the hole.

**C. Assembly:**

Assemble the hydraulic pump package assembly as specified in the reference Component Maintenance Manual 29-10-45 and install adaptor subassembly, Part Number 933371. When you install the DPI, make sure that the locating pin in the adaptor subassembly engages the location hole in the flange of the DPI.

**C. Identification of Units That Include This Change:**

Make a mark through the Mod Record Number 2 on the unit modification plate to identify units that include the change specified in this Service Bulletin.

# Appendix E to Pilatus Service Letter No. 028

Vickers SB-933322-29-01, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, P/N 933322 (PPEV3-008-EA3B).

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# SERVICE BULLETIN

Vickers Systems Division, Aeroquip-Vickers Ltd, Bedhampton, Havant, Hants PO9 3QN, England

**Electric Motor Driven Hydraulic Pump Package Assembly**
**Change Of Differential Pressure Indicator (DPI) And Filter By-Pass Valve**

## 1. Planning Information

### A. Effectivity:

| Part Number | Aircraft | Function |
|---|---|---|
| 933322 (PPEV3-008-EA3B) | Pilatus PC12 | Main Hydraulic System Pressure |

### B. Concurrent Requirements:

None.

### C. Reason:

Unwanted operations of the DPI have occurred in service which give incorrect indications of a blocked filter. It is thought that this can be caused by high pressure spikes and mechanical shocks.

### D. Description:

This Service Bulletin is a product improvement. It replaces the DPI together with the related filter by-pass valve. Internal changes to the new DPI make it less sensitive to high pressure spikes and mechanical shocks.

Because it is also necessary for the DPI sensing port to be diametrically opposite ($180^{o}$) the inlet port of the adaptor subassembly, the new DPI has a location hole in its flange. Because the hole is related to the position ot the DPI sensing port, it helps you install the DPI in the correct position in relation to the adaptor subassembly.

**E. Compliance:**

It is recommended that the change specified in this Service Bulletin is done if it is thought that an unwanted operation of the DPI has occurred on a hydraulic pump package assembly that does not include this change, and:

(1) The position of the DPI sensing port is found to be diametrically opposite ($180^{0}$) the adaptor inlet port (refer to Vickers Systems Service Letter SL-29-933322-01).

(2) Unwanted operations of the DPI continue to occur after you have done the steps specified in Vickers Systems Service Letter SL-29-933322-01.

**F. Approval:**

This Service Bulletin has been reviewed by the appropriate governmental authority and the repairs and modifications herein comply with the applicable Aviation Regulations and are CAA APPROVED for installation on the Pilatus PC12.

**G. Manpower:**

Approximately one manhour will be necessary to do the change specified in this Service Bulletin.

**H. Weight and Balance:**

None

**I. Electrical Load Data:**

Not changed.

**J. Software Accomplishment Summary:**

None.

**K. References:**

(1) Vickers Systems Component Maintenance Manual 29-10-47.

(2) Vickers Modification Proposal VS/M 216.

**L. Other Publications Affected:**

None.

**M. Interchangeability or Intermixability of Parts:**

None.

## 2. Material Information

**A. Material-Price and Availability:**

The materials necessary to do the change specified in this Service Bulletin are shown in Paragraph 2.C, Table 1. They are supplied in Modification Kit, Part Number 268955, priced £861:75 at April 1997 to March 1998 economic conditions. You can get information on the availability of the Modification Kit from Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Avenue, Bedhampton, Havant, Hants PO9 3QN, England.

**B. Industry Support Information:**

None.

**C. Material Necessary for Each Component:**

**TABLE 1**

| New Part Number | Keyword | Old Part Number | Qty | Unit Price | Disposition Instructions |
|---|---|---|---|---|---|
| - | Ring, Back-Up | MS28774-015 | 1 | N/A | Renew |
| - | Packing | M83248-1-014 | 1 | N/A | Renew |
| - | Packing | M83248-1-015 | 1 | N/A | Renew |
| QA07881 | Indicator, Differential Pressure | QA07316 | 1 | N/A | Replace |
| M098007 | Valve, Filter By-Pass | M060061 | 1 | N/A | Replace |

**D. Material Necessary for Each Spare:**

None.

**E. Reidentified Parts:**

None.

**F. Tooling-Price and Availability:**

Not applicable.

## 3. Accomplishment Instructions

NOTE: During the steps that follow, the numbers in brackets refer to the item numbers in Figure 1 of the Illustrated Parts List in the reference Component Maintenance Manual 29-10-47.

**A. Disassembly:**

(1) Remove four screws (160) and washers (165) from the flange of DPI (155).

(2) Remove DPI (155) together with its spring from adaptor subassembly (185). Discard the DPI together with its spring.

(3) Cut, remove and discard the locking wire from filter by-pass valve (215).

(4) Remove filter by-pass valve (215) from valve plate subassembly (310). Discard the filter by-pass valve.

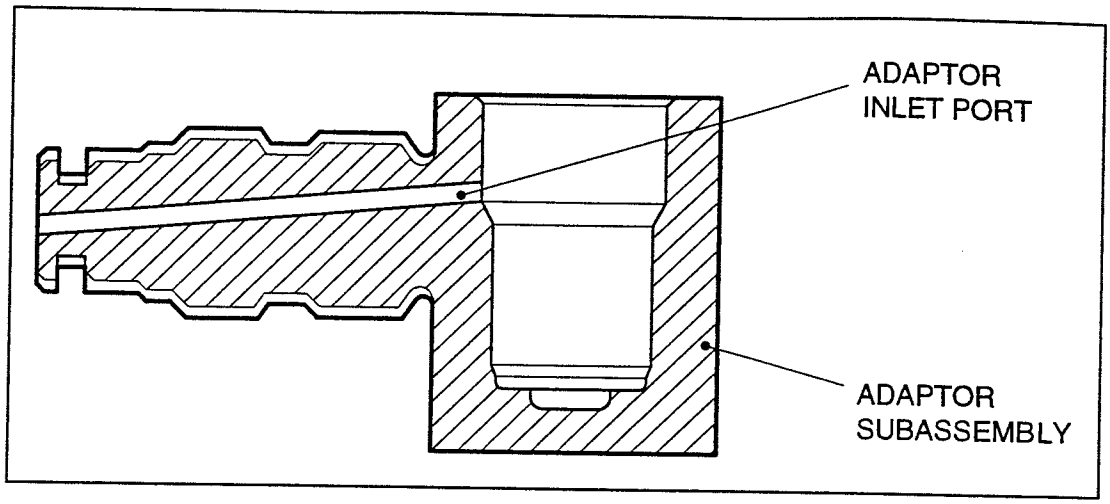
(5) Refer to Figure 1 of this Service Bulletin. With the help of an additional light source, find the position of the adaptor inlet port in adaptor subassembly (185). Make a mark with a soft tip pen on the side of the adaptor subassembly to record this position.

**B. Assembly:**

(1) Install a new filter by-pass valve, Part Number M098007, in valve plate subassembly (310).

(2) Torque the new filter by-pass valve to between 27,12 and 32,54 Nm (240,0 and 288,0 lbf in).

(3) Lock the new filter by-pass valve to compensator bushing (300) with locking wire MS20995C32 as specified in Specification MS33540.




Find The Position Of The Adaptor Inlet Port
Figure 1

(4) Refer to the reference Component Maintenance Manual 29-10-47. Install new packings (Part Number M83248-1-014 and M83248-1-015) and back-up ring (Part Number MS28774-015) in the related packing grooves of the new DPI, Part Number QA07881, in the positions shown.

(5) Install the new DPI, Part Number QA07881, together with its spring in adaptor subassembly (185). Make sure that the location hole in the flange of the new DPI is diametrically opposite (180°) the mark that you made on the adaptor subassembly in step 3.A(5) .

(6) Install four screws (160) and washers (165) in the flange of the new DPI and attach the DPI to adaptor subassembly (185).

(7) Torque four screws (160) equally and symmetrically in a diagonally opposite sequence to between 1,81 and 2,26 Nm (16 and 20 lbf in).

(8) Remove the temporary mark that you made on the adaptor subassembly in step 3.A(5).

**C. Identification of Units That Include This Change:**

Make a mark through the Mod Record Number 1 on the unit modification plate to identify units that contain the change specified in this Service Bulletin.

# Appendix F to Pilatus Service Letter No. 028

Vickers SL-933322-29-02, Unwanted Operation of the Differential Pressure Indicator of the Electric Motor Driven Hydraulic Pump Assembly, P/N 933322 (PPEV3-008-EA3B).

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VICKERS

# SERVICE BULLETIN

Vickers Systems Division, Aeroquip-Vickers Ltd, Bedhampton, Havant, Hants PO9 3QN, England

**Electric Motor Driven Hydraulic Pump Package Assembly**
**Install A Locating Pin In The Adaptor Subassembly**

## 1. Planning Information

### A. Effectivity:

| Part Number | Aircraft | Function |
|---|---|---|
| 933322 (PPEV3-008-EA3B) | Pilatus PC12 | Main Hydraulic System Pressure |

### B. Concurrent Requirements:

Modification No 1 as specified in Vickers Systems Service Bulletin 933322-29-01.

### C. Reason:

It is possible for the differential pressure indicator (DPI) to be put in one of four positions when it is installed in the adaptor subassembly. Thus the DPI sensing port in one hydraulic pump package assembly can be in a different position in relation to the adaptor inlet port in another.

To help prevent unwanted operation of the DPI, it is necessary for the DPI sensing port to be diametrically opposite ($180^{o}$) the inlet port of the adaptor subassembly. Because of this, Vickers Systems Service Bulletin 933322-29-01 replaced the DPI with one that included a location hole in the flange (Mod 1). This hole is related to the position of the DPI sensing port, and thus helps you install the DPI in the correct position in relation to the adaptor subassembly.

### D. Description:

This Service Bulletin is a product improvement which installs a locating pin in the adaptor subassembly. The locating pin will engage the location hole in the flange of the DPI installed by Vickers Systems Service Bulletin 933322-29-01 (Mod 1). Thus the DPI will always be installed in the correct position in relation to the adaptor subassembly.

**E. Compliance:**

It is recommended that the change specified in this Service Bulletin is done during the next repair or overhaul of the hydraulic pump package assembly if it includes Modification No 1.

**F. Approval:**

This Service Bulletin has been reviewed by the appropriate governmental authority and the repairs and modifications herein comply with the applicable Aviation Regulations and are CAA APPROVED for installation on the Pilatus PC12.

**G. Manpower:**

Approximately 1,50 manhours more (with the time necessary to let the Alocrom dry) will be necessary if the change specified in this Service Bulletin is done during repair or overhaul of the hydraulic pump package assembly.

**H. Weight and Balance:**

None

**I. Electrical Load Data:**

Not changed.

**J. Software Accomplishment Summary:**

None.

**K. References:**

(1) Vickers Systems Component Maintenance Manual 29-10-47.

(2) Vickers Modification Proposal VS/M 216.

**L. Other Publications Affected:**

None.

**M. Interchangeability or Intermixability of Parts:**

None.

## 2. Material Information

**A. Material-Price and Availability:**

The materials necessary to do the change specified in this Service Bulletin are shown in Paragraph 2.C, Table 1. The price shows April 1997 to March 1998 economic conditions. You can get information on the availability of the materials from Vickers Systems Division, Aeroquip-Vickers Ltd, Larchwood Avenue, Bedhampton, Havant, Hants PO9 3QN, England.

**B. Industry Support Information:**

None.

**C. Material Necessary for Each Component:**

**TABLE 1**

| New Part Number | Keyword | Old Part Number | Qty | Unit Price | Disposition Instructions |
|---|---|---|---|---|---|
| 215723 | Pin | - | 1 | £3:33 | Add |

**D. Material Necessary for Each Spare:**

None.

**E. Reidentified Parts:**

(1) The part number of the adaptor subassembly changes from 520847 to 933371 as a result of the change made in this Service Bulletin.

(2) The part number of the adaptor changes from 520843 to 933370 as a result of the change made in this Service Bulletin.

**F. Tooling-Price and Availability:**

Not applicable.

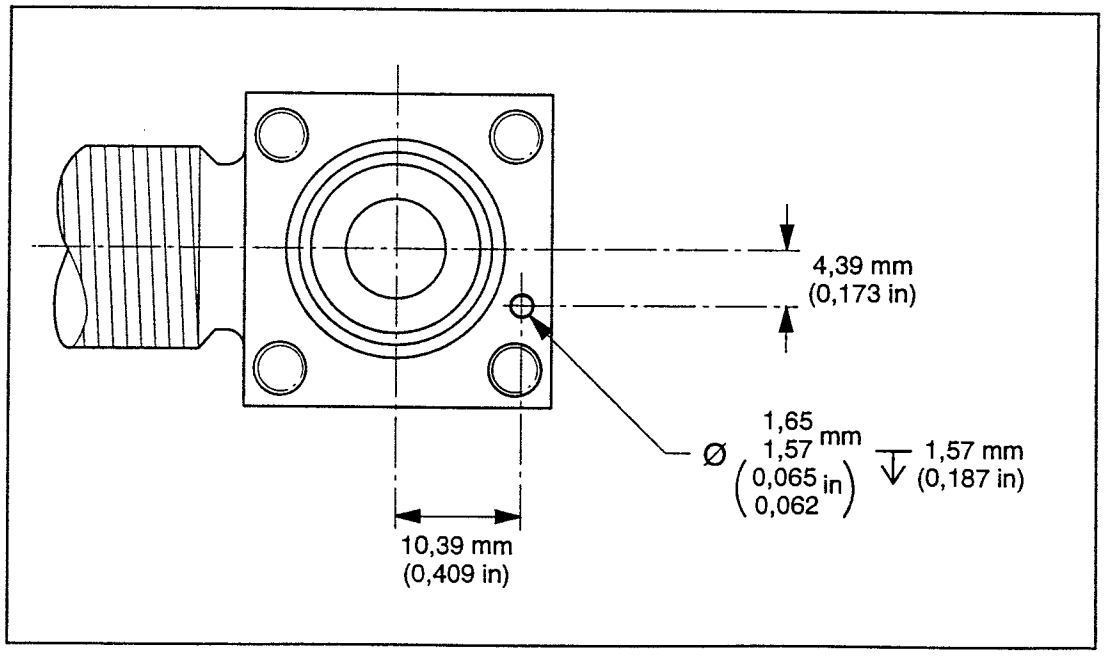
## 3. Accomplishment Instructions

**A. Disassembly:**

Disassemble the hydraulic pump package assembly as specified in the reference Component Maintenance Manual 29-10-47 and remove adaptor subassembly, Part Number 520847.

**B. Modification:**

(1) Refer to Figure 1 of this Service Bulletin. Make a hole in the top face of the adaptor subassembly with a 1,65/1,57 mm (0,065/0,062 in) drill to a depth of 1,57 mm (0,187 in) in the position shown.




Position of the Locating Pin Hole
Figure 1

(2) Deburr the hole. Remove all unwanted material from the hole and the adaptor subassembly.

(3) Apply Alocrom 1200, or equivalent, to the hole as specified in the reference Component Maintenance Manual 29-10-47.

(4) Install pin, Part Number 215723, in the related hole in the top face of the adaptor subassembly. Push the pin fully in the hole.

**C. Assembly:**

Assemble the hydraulic pump package assembly as specified in the reference Component Maintenance Manual 29-10-47 and install adaptor subassembly, Part Number 933371. When you install the DPI, make sure that the locating pin in the adaptor subassembly engages the location hole in the flange of the DPI.

**D. Identification of Units That Include This Change:**

Make a mark through the Mod Record Number 2 on the unit modification plate to identify units that include the change specified in this Service Bulletin.