OIL FILLER AND VALVE

P/N PT08001A01 SERIES
(P&WC P/N 3039993)

NOTE: This oil filler and valve is used on aircraft equipped with Pratt & Whitney Canada Inc. PW118, 118A, 118B, 119B, 119C, 120, 120A, 121, 121A, 123, 123AF, 123B, 123C, 123D, 123E, 124B, 126, 126A, 127, 127D, 127F engines.

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

79-20-01

TITLE PAGE

ORIGINAL ISSUE: JAN 17/91

MAR 23/2007

RECORD OF REVISIONS

REV NO	REV DATE	DATE FILED	BY	REV NO	REV DATE	DATE FILED	BY
Orig	Jan 17/93						
1	July 30/93						
2	May 05/97						
3	Aug 21/98						
4	Nov 01/2000						
5	Jan 03/2007						
6	Mar 23/2007						

REVISION DESCRIPTION

REV. NO.	DATE	DESCRIPTION
Original	Jan 17/91	
1	July 30/93	- Unrecorded.
2	May 05/97	- Revised Engine Model listing in Title Page. - Entered Rev 2 in Record of Revisions Page. - Revised necessary page dates in the List of Effective Pages.
3	Aug 21/98	- Modified the Introduction section.
4	Nov 01/2000	- Added the McKechnie – PTMI logo header. - Entered Rev 4 in Record of Revisions Page. - Revised necessary page dates in the List of Effective Pages.
5	Jan 03/2007	- Changed the McKechnie – PTMI logo header to HEICO Aerospace. - Added Proprietary Statement to all pages. - Changed PTM International to HEICO Aerospace in all pages header. - Entered Rev 5 in Record of Revisions Page. - Added Revision Description Page. - Revised necessary page dates in the List of Effective Pages. - Changed Introduction section to read: a) “Jet Avion, a HEICO Aerospace company” instead of “PTM International”, b) “Jet Avion Corporation, A HEICO Aerospace Company, 3000 Taft Street, Hollywood, Florida 33021” instead of “PTM Internaional, Inc., 8855 N.W. 35th Lane, Miami, FL 33172”, and c) “JA --- Jet Avion Corporation” instead of “PTMI --- PTM International”. - Changed Testing section ¶ 1.A.(1) to read “JA” instead of “PTMI”. - Changed Illustrated Parts List section ¶ 1.B. to read “JA” instead of “PTMI”.
6	Mar 23/2007	- Entered Rev 6 in Record of Revisions Page.

		- Revised necessary page dates in the List of Effective Pages. - Renumbered Testing section ¶ 2.A.(1) through (9) to read. 2.A.(6) through (14). - Added Testing section ¶ 2.A.(1) through (5). - Added text "… at 120-150ºF …" to the first sentence of renumbered Testing section ¶ 2.A.(9). - Added text "… 30-35º from vertical …" to the second sentence of renumbered Testing section ¶ 2.A.(9). - Repositioned Testing section ¶ 2.B.(6) to be 2.B.(4). - Renumbered Testing section ¶ 2.B.(4) and 2.B.(5) to read. 2.A.(5) and 2.A.(6) respectively. - Added text "… at 100-150ºF …" to the first sentence of Testing section ¶ 2.B.(7).

RECORD OF TEMPORARY REVISIONS

REV NO	REV DATE	DATE FILED	BY	REV NO	REV DATE	DATE FILED	BY

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SERVICE BULLETIN LIST

SERVICE BULLETIN NO.	DATE INCORPORATED	REV INCORPORATED	SUBJECT
PT08001A01-79-P1			New part availability

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LIST OF EFFECTIVE PAGES

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TABLE OF CONTENTS

INTRODUCTION

This Component Maintenance Manual fully describes the oil filler and valve assembly and the applicable procedures for testing, disassembly, renewal and repair, and reassembly. The technical staff at Jet Avion Corporation, a HEICO Aerospace company, will be pleased to advise on any questions regarding maintenance of the unit.

Jet Avion Corporation
A HEICO Aerospace Company
3000 Taft Street
Hollywood, Florida 33021

1. General

The following abbreviations or symbols are used in this publication.

Abbreviation or Symbol	Definition
psi	Pound per square inch
JA	Jet Avion Corporation
kPa	Kilo Pascal
mm	Millimeter
psig	Pound per square inch gage
kPag	Kilo Pascal gage
" or in.	inch
SPOP	Standard Process Operation Procedure (See Note below)
PWC P/N	Pratt & Whitney Canada Part Number
ID	Inside Diameter
OD	Outside Diameter
Fig	Figure
EFF	Effectivity
Assy	Assembly
AR	As Required
RF	Reference
NP	Not Procurable

NOTE: Refer to Pratt & Whitney Standard Practices Manual P/N 585005 available from Product Support Department, Pratt & Whitney Commercial Engines Business, East Hartford, CT 06108-0969 USA.

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DESCRIPTION AND OPERATION

1. Description

   A. The oil filler and valve prevents loss of engine oil when filler caps are improperly installed, are damaged, or are entirely missing. The unit is installed in the engine oil case in place of the current filler neck. No modifications of the engine are required; the unit is simply attached using the same fasteners that attached the filler neck. The original oil filler cap is inserted into the unit and locked in place in the usual manner. Identical provisions for capture of overflowed oil are provided.

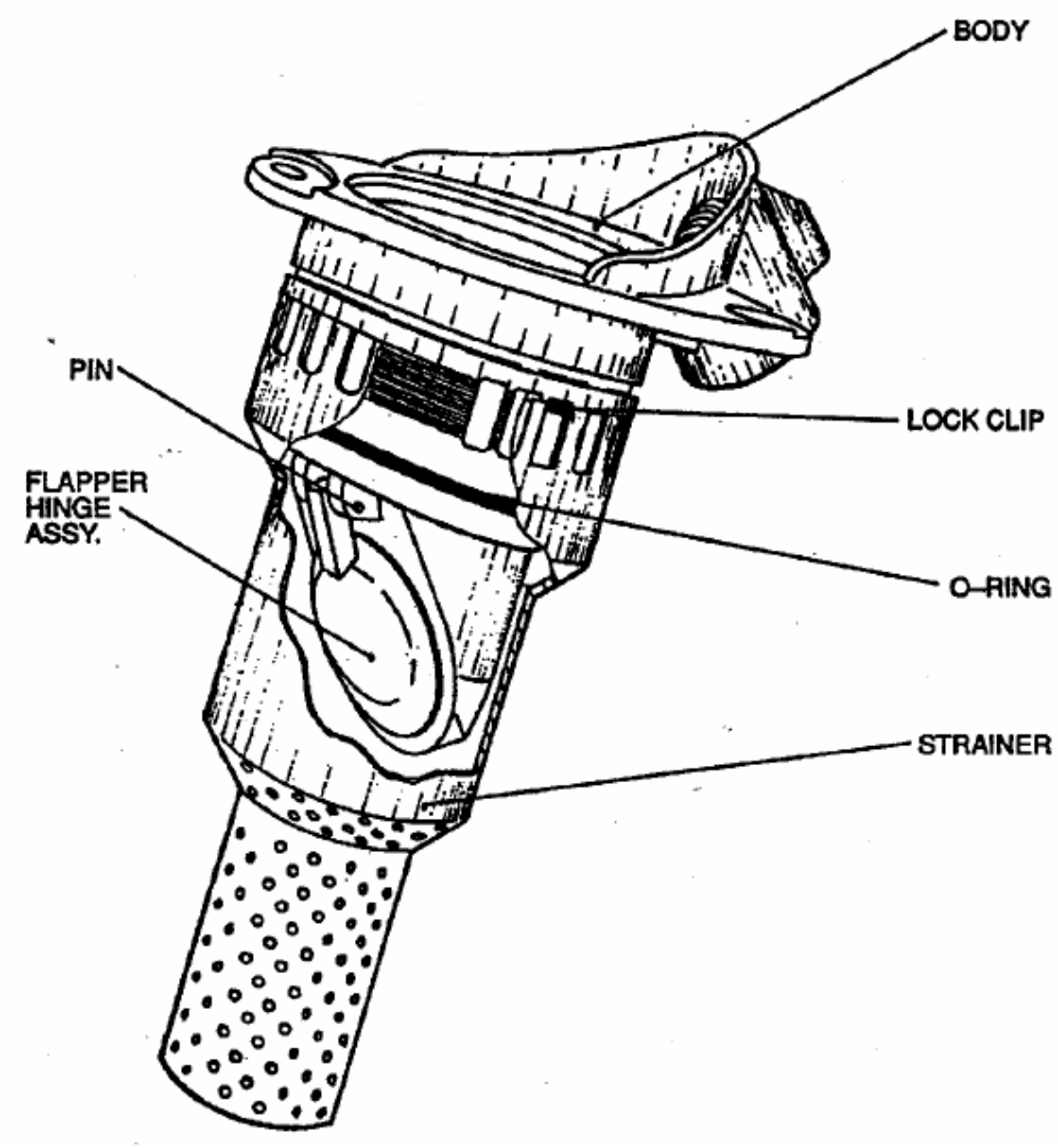
   B. The unit is designed as a check valve formed by a gravity-actuated hinged flapper that seals against a flat-faced Viton rubber gasket which surrounds the oil fill passage. The flapper pivots on a wear resistant pin and is retained in a clevis on the cast aluminum body by welds at both ends of the pin. The gasket has a T-shaped cross section and fits into a groove machined into the body with a matching T-shaped cross section

   C. The unit utilizes an aluminum strainer that is threaded onto the body. Positive retention is provided by a lock clip that engages one of several slots in the rim of the strainer diameter. Both, the strainer and the body, are anodized to prevent galling of their respective threads during operation.

2. Operation

   A. Oil servicing of the engine is accomplished by removing the oil filler cap and adding oil as required. The flapper will open when oil is poured into the filler; however, it will normally remain closed by the action of gravity.

   B. In instances when the oil cap is damaged or missing, the oil system pressure retains the flapper against the gasket. This provides a positive seal in any flight attitude, even when the flapper is not subject to gravity-aided closure.



SECTIONAL VIEW OF OIL FILLER AND VALVE

FIGURE 1.

TESTING

1. Test Equipment and Materials

   A. Equipment

      (1) Pressure test vessel. JA tool No. 91PT070.
      (2) Pressure gage 0-30 psi (0-207 kPa).
      (3) Engine oil cap.
      (4) Pressure regulator.
      (5) Pressure hose / copper tubing with fittings.
      (6) O-ring. AS3209-132.

      NOTE: Equivalent equipment may be used.

   B. Materials

      (1) Turbine oil. MIL-I-7808 or MIL-L-23699. One quart (One Liter).

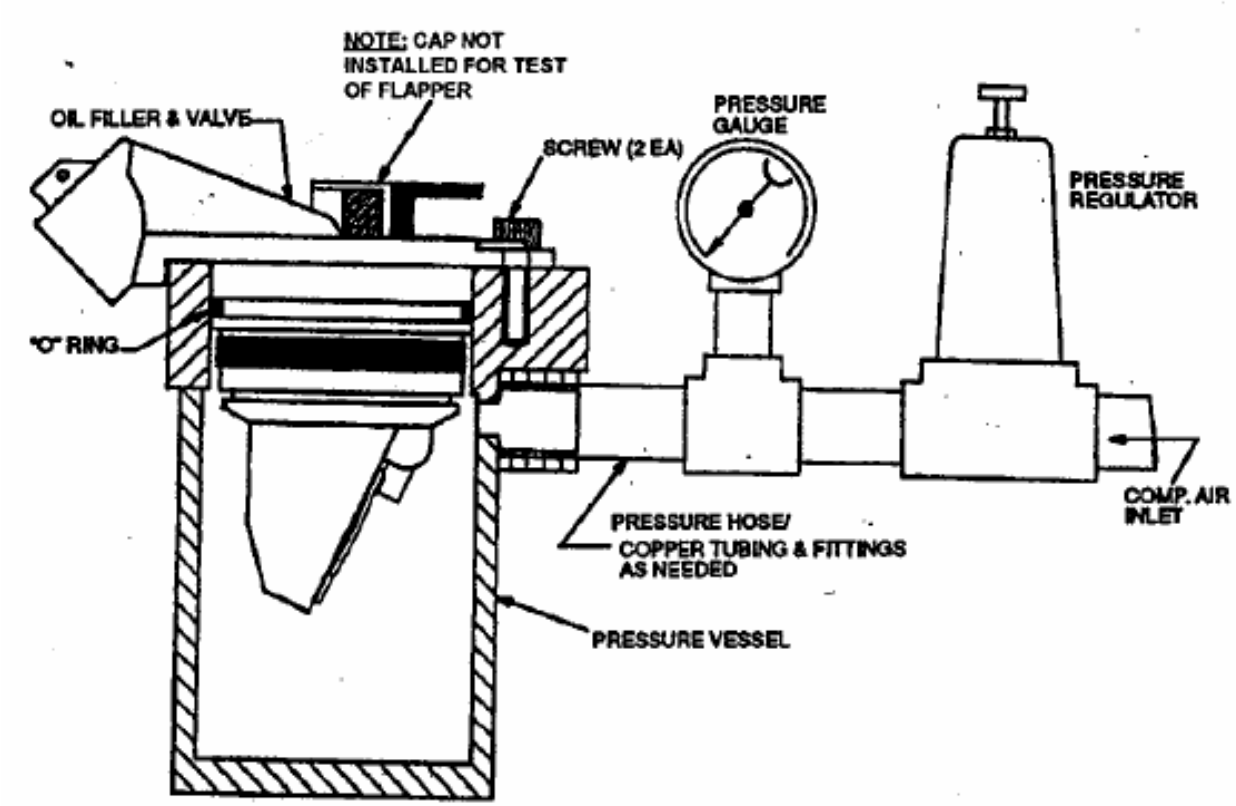
2. Test Procedure

   A. Flapper Leak Check **(cap not installed)**

      (1) Soak unit in oil at 300ºF for one hour minimum after installing gasket. Strainer not installed.
      (2) Remove oil from unit by dipping in solvent (Mineral Spirits). Drain dry.
      (3) Apply light coat of oil to gasket.
      (4) Check flapper to gasket sealing contact in a darkened room by shining a flashlight parallel to the gasket/flapper interface.
      (5) Check for adequate clearance between retention pin and hinge groove by inserting a 0.010” shim between flapper and gasket.
      (6) Install AS3209-132 O-ring on unit.
      Installation of strainer is optional.
      (7) Coat gasket and O-ring with oil.

(8) Assemble unit into Tool No. 91PT070 pressure vessel of test rig without oil cap installed using two 10-32 x ½ socket cap machine screws with washers.

WARNING: DO NOT LOOK DIRECTLY INTO THE FLAPPER WHILE APPLYING PRESSURE. CAUTION SHOULD BE USED DURING APPLICATION OF AIR PRESSURE TO AVOID EXPOSURE TO POSSIBLE OIL SPRAY.



TEST SET UP

FIGURE 2.

(9) Add oil at 120-150ºF through filler neck to level at least 1/4" (6.35 mm) above top of flapper. Tilt unit 30-35º from vertical to close flapper. Gradually apply 5 to 10 psig (34.5 to 68.9 kPag) air pressure to hold flapper closed.

(10) Remove any oil from above flapper using syringe and/or absorbent material.

(11) Lower pressure to 2.5 psig (17.24 kPag).

(12) Inspect for oil leaks through flapper.
Limit is 1.0 cc per minute.

(13) Reduce pressure to zero.

(14) Open flapper using suitable device such as a 1/8" (3.175 mm) diameter 6-inch (152.4 mm) long rod and validate that the oil level covers the flapper.

NOTE: Delete the following steps A.(10), A.(11), B.(1) and B.(2) if the oil cap leak check of paragraph B. below will proceed in conjunction with the flapper leak check.

(15) Remove unit from pressure vessel.

(16) Remove AS3209-132 O-ring.

B. Oil Cap Leak Check

(1) Install AS3209-132 O-ring on unit. Installation of strainer is optional.

(2) Coat O-ring with oil.

(3) Insert device to prevent flapper closure. (Suggest 1/16” (1.6 mm) diameter piece of wire positioned to hold flapper open while not interfering with cap).

(4) Assemble unit into Tool No. 91PT070 pressure test rig.

(5) Coat oil cap O-ring with oil.

(6) Install oil cap in oil filler unit.

(7) Immerse vessel in water bath at 100-150ºF. Assure water totally covers the oil filler unit.

WARNING: DO NOT STAND ABOVE OR IN FRONT OF THE CAP OF THE UNIT BEING TESTED. AN IMPROPERLY INSTALLED CAP COULD BE EJECTED UNDER PESSURE.

(8) Apply air pressure of 22 psig (151.7 kPas).

(9) Inspect for leaks, indicated by bubbles. Hold for a minute. No leaks permitted.

(10) Reduce pressure to zero.

(11) Remove pressure vessel from water bath.

(12) Remove cap.

(13) Remove flapper disabling device.

(14) Remove unit from pressure vessel.

(15) Remove AS3209-132 O-ring.

DISASSEMBLY

1. General

   A. The procedure to totally disassemble the unit is described below. Disassembly should only be conducted to the level necessary to correct test or check discrepancies or to comply with the user's component maintenance program.

   A. Refer to the IPL for item numbers quoted in the following instructions.

2. Disassembly Procedure

   A. Disengage strainer lock clip (10) by prying out from locking slot in strainer (20).

   B. Remove strainer (20) by screwing off of body (70) (strainer is threaded to body with normal right-hand threads).

   C. Remove and discard locking clip (10).

   D. Remove and discard O-ring (30).

      CAUTION: BE CAREFUL NOT TO DAMAGE RETENTION GROOVE IN REMOVING GASKET.

   E. Remove the gasket (40) by carefully prying out of its retention groove using a pointed tool. Discard removed gasket.

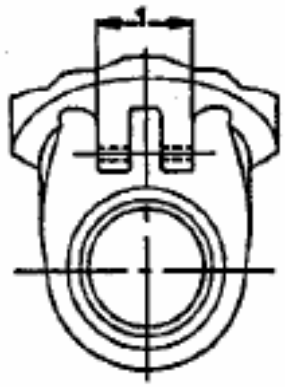
   F. Flapper, hinge assembly (60) removal.

      CAUTION: WHEN REMOVING RETENTION WELDS, REMOVE MINIMUM MATERIAL. DO NOT REDUCE CLEVIS THICKNESS BELOW LIMIT SHOWN IN FIGURE 3.

3. Equipment

   A. Carbide Burr.

   B. Punch 1/16” (1.6 mm).



1 - CLEVIS WIDTH .580 INCH (14.732 mm) MINIMUM

BODY CLEVIS REPAIR LIMITS

FIGURE 3.

1. Grind away pin retention welds on both sides of body (70) clevis using carbide burr or equivalent to expose end of pin.

2. Drift out and discard pin (50) using 1/16' (1.6 mm) diameter punch.

3. Remove flapper, hinge assembly (60).

CLEANING

1. General

   WARNING: ADEQUATE VENTILATION AND PROTECTION SHALL BE PROVIDED FOR PERSONNEL EXPOSED TO VAPORS AND FUMES RESULTING FROM CLEANING OPERATIONS USING HYDROCARBON SOLVENTS OR OTHER CLEANING AGENTS. PRECAUTION SHALL BE EXERCISED WHENEVER NECESSARY TO PREVENT FIRE OR EXPLOSION HAZARDS PRODUCED BY FLAMMABLE FLUIDS.

2. Cleaning Agents

   Stoddard Solvent mineral spirits. Federal specification P-D-680 or equivalent.

3. Cleaning Procedure

   NOTE: The unit may be cleaned in the assembled condition or disassembled.

   Thoroughly clean all components in Stoddard Solvent mineral spirits.

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CHECK

1. Check Procedure

   A. Visually check the body and strainer for surface corrosion and damage. Slight surface corrosion and external damage may be treated as detailed in Repair No. 1.

   B. Fluorescent penetrant inspect per SPOP 62.

   C. Examine gasket (if not removed at disassembly) for cuts or scores. Replace damaged gasket.

   D. Examine flapper sealing face for scores and scratch damage. Replace damaged flappers as detailed in Repair No. 2.

   E. Check flapper to gasket sealing contact in a darkened room by shining a flash light parallel to the gasket/flapper interface. Replace distorted flappers as detailed in Repair No. 2.

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REPAIR

1. Repair No. 1 – Repair of Minor Surface Corrosion or Wear

   A. Materials

      (1) Anodize touch up solution.

   B. Repair Procedure

      (1) Polish out slight external damage with a smooth hone or grade 400 or finer emery cloth.

      (2) Treat areas where anodize has been removed with anodize touch up per SPOP 42.

2. Repair No. 2 – Replacement of Flapper

   A. Materials

      (1) AMS 4190 weld wire.

      (2) Anodize touch up solution.

   B. Repair Procedure

      (1) Remove flapper as noted in Disassembly.

      (2) Remove gasket as noted in Disassembly and discard

         NOTE: Gasket must be removed, regardless of its condition. If it is not removed, it will be damaged by the welding heat.

      (3) Install new flapper as noted in Assembly.

      (4) Install new gasket as noted in Assembly.

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ASSEMBLY (INCLUDING STORAGE)

1. Special Tools, Equipment, and Material

Item No.	Description	Remarks
1	Oil MIL-I-7808 or MIL-L-23699	For lubricating gasket and O-ring before installation.
2	Test rig	For testing unit.
3	Oil Cap PWC P/N 3006084	For testing unit.
4	O-ring AS3209-132	For testing unit.

2. General

   A. Refer to the IPL for the item numbers quoted in the following assembly procedure.

3. Assembly Procedure

   A. Installing new flapper.

      (1) Remove anodize from the areas on the outside faces of the clevis where the pin retention weld will be made. Use 400 grit emery cloth or equivalent.

      (2) Position flapper, hinge assembly (60) in clevis to align hinge hole with clevis holes.

      (3) Insert pin (50) through clevis and flapper, hinge assembly (60). Position pin to be equally recessed in clevis holes at both ends.

      (4) Apply approximate 1/16” (1.6 mm) weld bead at both ends of hinge pin hole on clevis outside faces. Use gas tungsten arc welding using AMS 4190 weld filler.

      (5) Dress any excess weld that protrudes beyond clevis surface that forms the outside diameter.

      (6) Touch up anodize weld bead area per SPOP 42.

B. Installing Gasket.

(1) Coat gasket (40) and body retention groove with oil.

(2) Align gasket (40) over retention groove.

(3) Press ID of gasket (40) into groove by hand. Avoid force in circumferential direction.

(4) Press OD of gasket (40) into groove by progressively pressing around OD with a suitable tool such as a small screw driver modified to remove sharp corners at its tip.

(5) Check fit of flapper beam to gasket in a darkened room by shining a light parallel to the plane of the gasket face. Correct any gap by "wringing" gasket face against a flat smooth surface.

C. Installing Strainer.

(1) Coat O-ring (30) with oil.

(2) Install O-ring (30).

(3) Screw strainer (20) on to body (70) firmly hand tighten.

(4) Note which of the three body locking slots aligns with a strainer locking slot.

(5) Remove strainer (20).

(6) Insert new lock clip (10) in selected body locking slot with shorter leg of clip against body.

(7) Screw strainer (20) onto body (70) firmly hand tight.

(8) Bend locking clip (10) into strainer locking slot.

(9) Assure locking clip does not protrude beyond strainer outside diameter by directing flat faced punch at clip bend radius.

4. Storage After Assembly

   A. Enclose the unit in a polyethylene bag and place in a suitable cardboard box.

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. The following table lists the special tools and equipment required for complete maintenance of the unit.

   NOTE: Equivalent substitutes may be used for listed items.

Tool Item No.	Tool Part No.	Description	Remarks
1	91PT071	Pressure Vessel	For leak testing unit.
2	AS3209-132	Pressure Vessel O-ring	For installation on unit during pressure testing.
3	Pratt & Whitney Canada 3006084	Oil cap	For leak testing unit.
4	AS3209-222	Oil cap O-ring	

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ILLUSTRATED PARTS LIST

INTRODUCTION

1. Purpose

   This section provides illustrations and parts breakdown of all parts of the assembly(ies) shown on the title page which can be disassembled, repaired or replaced and reassembled.

2. Explanation and Usage of Section

   A. FIG. ITEM (Figure and Item Number) Column. Item numbers may be prefixed by a hyphen, be suffixed by a letter, or be a combination of both (-10, 10A, -10B). The hyphen prefix indicates that a part is not illustrated in the exploded view. The letter suffix is a variant that indicates an item is similar to the item preceding it.

   B. PART NUMBER Column. This column lists JA, vendor, and government standard part numbers. A series of letters in the column indicate nonprocurable subassemblies not having a part number. The last part listed in a series of similar parts is the most recent part.

   C. AIRLINE PART NUMBER Column. This column is left blank for airline use.

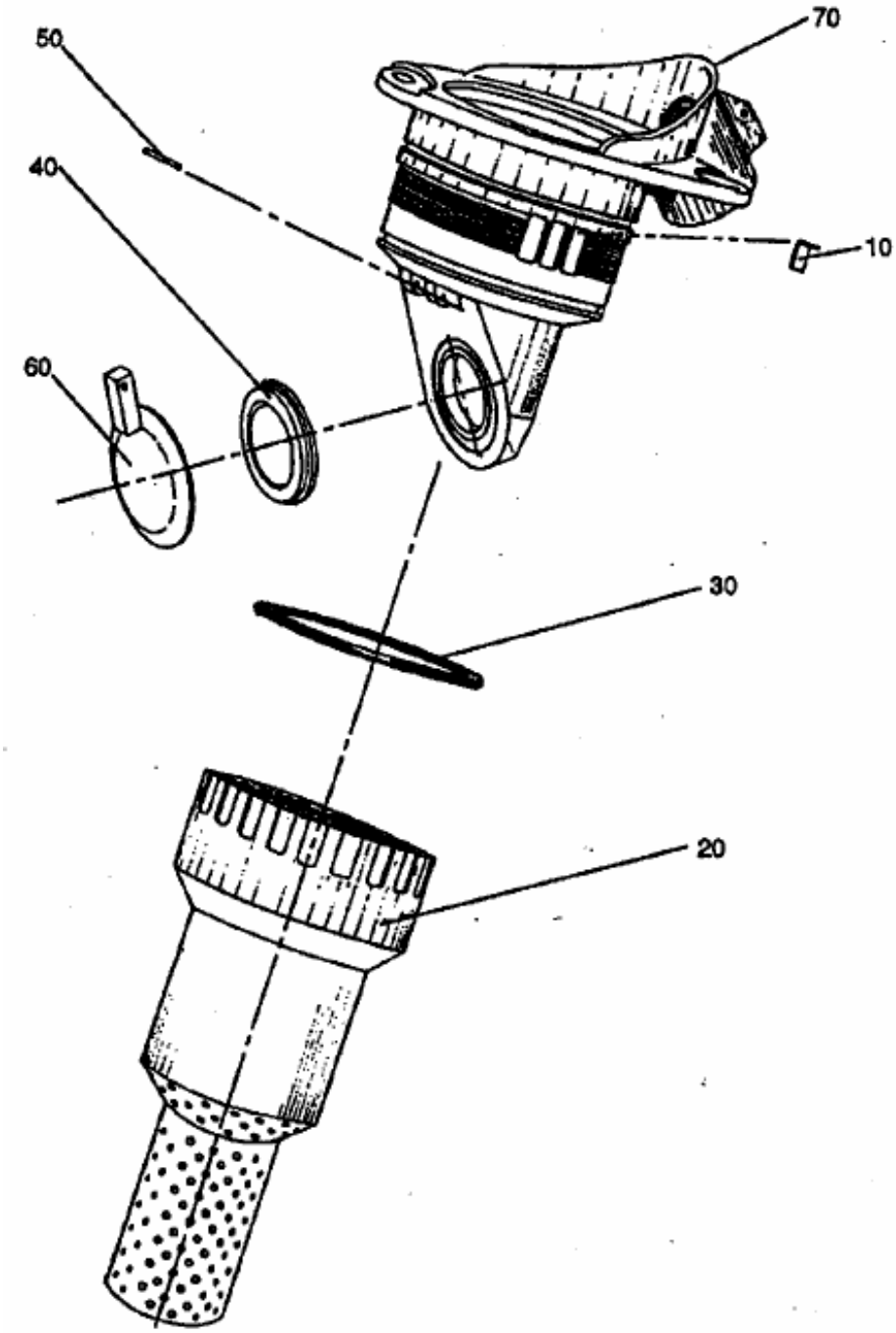
   D. NOMENCLATURE Column. This column identifies items by the manufacturer's drawing nomenclature. Additional modifiers and/or dimensions may also be included. The vendor codes (five numbers or letters preceded by an uppercase V) or a service bulletin number (prefixed by the uppercase letters SB) are also included, where applicable in this column.

   E. EFF CODE column. Reference letters (A, B, C, etc.) are assigned in the EFF CODE column to each configuration of the top assembly. The reference letter of the applicable top assembly is also shown in the EFF CODE column for each detail part and subassembly except that no reference letter is shown for detail parts and subassemblies used on all top assemblies.

F. UNITS PER ASSEMBLY column. This column shows the total number of units required per assembly, per subassembly, and per subassembly as applicable. For bulk items, the letters AR indicate "as required". The letters RF indicate the item is listed for reference purposes.

VENDOR CODES

Vendor Code	Vendor Name and Address
76850	Pratt & Whitney Canada 1000, Marie-Victorin Longueuil, Quebec Canada J4G1A1



OIL FILLER AND VALVE

FIGURE 1 - IPL

	FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF CODE	UNIT PER ASSY
R	1			Oil Filler and Valve		
R	-1	PT08001A01		Oil Filler and Valve	A	RF
R	-1	PT08001A01 Rev M		Oil Filler and Valve	B	RF
	10	PT08001-12		Lock Clip		1
R	20	PT08001-6		Strainer	A	1
R	20	PT08001-6-M		Strainer	B	1
	30	MS9388-030		O-ring		1
	40	PT08001-7		Gasket		1
	50	PT08001-10		Pin		1
	60	PT08001-8		Flapper, Hinge Assy.		1
R	70	PT08001-5		Body	A	1
R	70	PT08001-5-M		Body	B	1

PTM
international, inc.

SPARE PARTS SERVICE BULLETIN

No. PT08001A01-79-P1

1. Subject: Oil Filler and Valve.

2. Effectivity: PTMI P/N PT08001A01, PWC P/N 3038838.

   Note: This oil filler is approved for use on aircraft equipped with Pratt & Whitney Canada Inc., Engine Models PW 118, 118A, 119B, 120, 120A, 121, 123, 124B, and 126A.

3. Description: New oil filler and valve with revised interface to avoid possible interference during installation.

4. Reason: Interference was found during some installations. Tolerance overlapped at interface between outside diameter of part and diameter of installation port. Adjusted diameters of body and strainer interface.

5. Approval: Issued under FAA/DER approval.

6. Compliance: Code 9: For record purposes only. This Service Bulletin has no effect on units currently in service.

7. References: None.

8. Other Publications Affected: Component Maintenance Manual 79-20-01, Oil Filler and Valve.
   Pratt & Whitney Canada Inc., Illustrated Parts Catalogue

9. Interchangeability: New parts may replace old parts P/N 3034624, 3034634, 30346441, 3037334, 3034934, 30349241 and 3039724.

10. Accomplishment Instructions: The old part cannot be modified by the operator to obtain the new configuration.

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SPARE PARTS SERVICE BULLETIN

No. PT08001A01-79-P1

11. Material Information:

New Part Number	Quantity	Key Word	Old Part Number	Disposition of Old Part
PT08001A01 Rev. K (PWC P/N 3039993A)	1	Filler	PT08001A01	See Notes 1 & 2

Note: 1. Old part will no longer be supplied.
2. New part is currently available.