SUBJECT:

Required maintenance for the Airframe Fuel Filter (P/N 350-600004).

APPLICABILITY :

Aircraft with the subject modification embodied in accordance with TCCA STC No. SH94-31 or any relevant foreign approvals.

	NAME AND SIGNATURE	DATE	COMPANY DEPARTMENT
PREPARED BY:	D. Kerr	3 Dec./09.	ECL ENGINEERING
PREPARED BY:			
CHECKED BY:	C. Timmins	3rd Dec 2009	ECL ENGINEERING
CHECKED BY:	M. Merritt	2009-12-04	ECL QUALITY ASSURANCE
APP'D / ACCEPTED (Civil A/W Authority)	AS PER ICA COMPLIANCE CHECK SHEET	14th December 200	TCCA
RELEASED BY:	R. Manson	15 Dec 09	ECL ENGINEERING

RECORD OF REVISIONS

Rev.	Pages at this Revision	Description, Reason Changed Pages	Prepared (name and date)	Checked (name and date)	App'd/Acc'd (Civil A/W Authority) (name and date)	Released (name and date)
0	1 through 11	Original Issue (Replaces MMS)	D. Kerr 29 July, 2004	C. Timmins 30 July 2004	N/A	R. Manson 4 Aug., 2004
1	1 through 13	Changes to pages 1 to 13. General, Troubleshooting, and placard locations revised as per TCCA request.	D. Kerr 8 September 2004	C. Timmins 8 September 2004	TCCA E. Cheung 8 September 2004	R. Manson 8 September 2004
2	1 through 20	Template revised. More detail added to Section 4, Inspection Schedule and Section 8, Removal and Replacement. revision to basic aircraft wiring diagram. Addition of new wiring diagram for aircraft with VEMD. Instrument panel layout with VEMD added. (Pages 3 to 20)	D. Kerr 8 May 2007	C. Timmins 8 May 2007	TCCA F. Eaves 8 May 2007	R. Manson 9 May 2007
3	1 through 20, A1 to A4	Template revised. Wiring diagram revised for a/c with VEMD. Section 4, Inspection Schedule and Maintenance Action revised, 500 flight hours to 600 flight hours. Weight and Balance chart revised. (Pages 3 to 5, 8 to 11, 13, 15 to 20)	See page 1.	See page 1.	See page 1.	See page 1.

NOTE: Revisions to this document will be distributed to operators of this equipment by the STC holder.

NOTE: Revised portions of affected pages are identified by a vertical black line in the margin adjacent to the change.

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CONTENTS

FIGURES

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TABLES

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1. GENERAL

A. The Airframe Fuel Filter is installed in the fuel line between the fuel tank and the engine and provides extra protection against fuel contaminants. The filter contains a bypass valve and a bypass delta pressure switch. An annunciator light in the cockpit is provided to warn the pilot that the filter is becoming blocked. Refer to Figure 1 for General Layout.

The Airframe Fuel Filter consists of the following main components:

Fixed Provisions

- Fuel Filter Support Assembly
- Doubler

Detachable Provisions
- Fuel Filter
- Hoses

B. These Instructions for Continued Airworthiness are applicable to aircraft with the subject modification embodied.

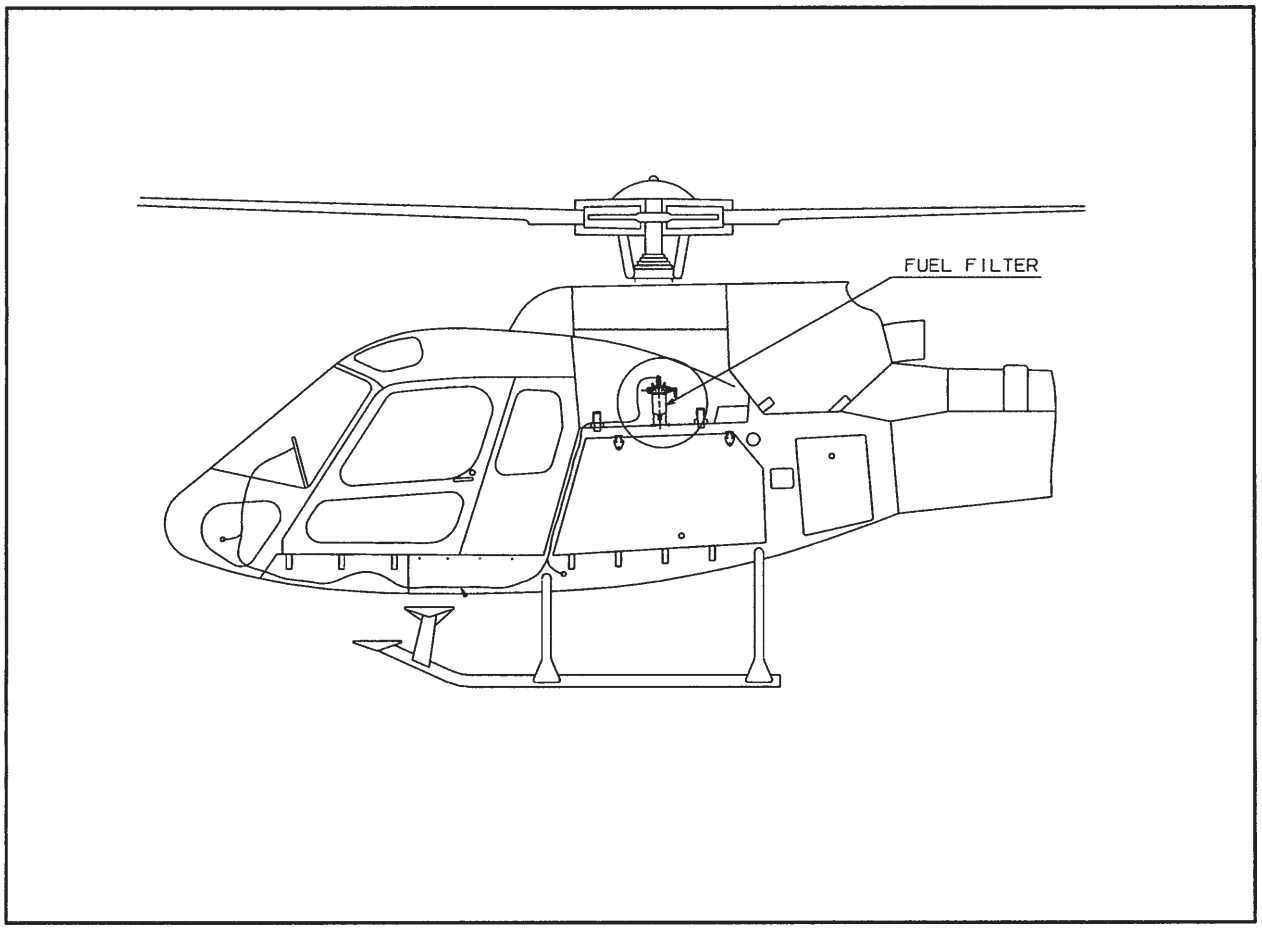

Figure 1 General Layout

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C. REFERENCES

DOCUMENT	DOCUMENT TITLE
AC-43.13 - 1B	Acceptable Methods, Techniques and Practices - Aircraft Inspection and Repair
MET	Maintenance Manual
MTC	Standard Practices Manual
IP-ECL-12	Installation Procedure, Airframe Fuel Filter
"Operating and Design Specifications", Purolator Products Company	

D. ABBREVIATIONS & DEFINITIONS

ABBREVIATION	DESCRIPTION
A/F	Airframe
EC	Eurocopter (France)
ECL	Eurocopter Canada Limited
P/N	Part Number
VEMD	Vehicle and Engine Multifunction Display

E. UNITS OF MEASUREMENT

ABBREVIATION / SYMBOL	UNIT OF MEASUREMENT
in	inch
kg	kilogram
lb	pound
m	meter
mm	millimeter

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2. AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

No airworthiness limitations associated with this installation.

3. CONTROL AND OPERATION

Control and operation of the aircraft remains unchanged.

4. INSPECTION SCHEDULE AND MAINTENANCE ACTION

NOTE: Use torque per EC, MTC, Volume 2, Chapter 20.02.05.404, unless otherwise specified.

4.1. INSPECTION SCHEDULE

4.1.1. Before the first flight of each day:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	- Check Airframe Fuel Filter for:	
	a. water in fuel	a. Turn on fuel boost pump and purge system until all water is expelled.
	b. air in fuel line	b. Turn on fuel boost pump and hold drain valve open until all air is purged.
	c. leaks in the fuel filter and the drain valve	c. No leaks with fuel pump on. Check valve seating, replace packing, item 6, in Figure 2 as necessary (P/N MS29513-012)
	d. debris in fuel drain, below the filter and/or on the transmission deck	d. Remove and clean as necessary.
	e. secure mounting and connection of filter and hoses	e. Secure as required.
	f. condition of electrical connector and harness	f. Repair in accordance with AC43.13-1B Chapter 11.

Table 1 Inspection Schedule and Maintenance Action
Before the first flight of each day

4.1.2. Pre-Flight Check:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	- Push A/F FUEL FILTER by-pass "Press to Test" caution light:	
	a. apply power to 4 Alpha Warning Panel (Master/Battery switch to ON) and push Press to Test A/F FUEL FILTER annunciator - lamp must illuminate.	a. If lamp fails to illuminate, refer to Chapter 6, Troubleshooting, in this document

Table 2 Inspection Schedule and Maintenance Action
Pre-Flight Check

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4. **INSPECTION SCHEDULE AND MAINTENANCE ACTION** (continued)

4.1.3. Every 100 flight hrs or 12 months (to coincide with the 100 hrs or 12 month helicopter inspection), whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	- Check filter support assembly, item 1, and doubler, item 21, in Figure 2 for:	
	a. cracks or corrosion	a. No cracks or corrosion are allowed. If cracks or deformation are found, contact ECL for replacement parts.
B	- Check drain hose, item 17, and hose, item 19, in Figure 2 for:	
	a. leaks	a. If leaks are found, contact ECL for replacement parts.
	b. cracking	b. No cracking is allowed. If cracking is found, contact ECL for replacement parts.
C	- Check placards and markings in Figures 5, 6, and 7 (Section 10) for:	
	a. legibility	a. If placards and markings have become illegible, contact ECL for replacement parts.
	b. secure mounting	b. Secure, reattach placards as required.

Table 3 Inspection Schedule and Maintenance Action
Every 100 flight hrs or 12 months, whichever occurs first

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4. **INSPECTION SCHEDULE AND MAINTENANCE ACTION** (continued)

4.1.4. Every 600 flight hrs or 24 months (to coincide with the 600 hrs or 24 months helicopter inspection), whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	Perform Operational Test - Switch and Bypass Valve	Refer to Section 4.1.6.

Table 4 Inspection Schedule and Maintenance Action
Every 600 flight hrs or 24 months, whichever occurs first

4.1.5. Every 1000 flight hrs or 48 months (to coincide with the 1000 hrs or 48 month helicopter inspection), whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	Replace Fuel Filter Element	Refer to Section 4.1.7.

Table 5 Inspection Schedule and Maintenance Action
Every 1000 flight hrs or 48 months, whichever occurs first

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4. **INSPECTION SCHEDULE AND MAINTENANCE ACTION** (continued)

NOTE: Should the A/F FUEL FILTER annunciator light illuminate, the fuel filter element must be replaced.

A partially blocked filter element will cause a differential pressure switch in the head assembly to close and the A/F FUEL FILTER annunciator to illuminate. If the filter element becomes fully blocked a differential pressure activated valve will permit fuel to bypass the filter.

4.1.6. Operational Test - Fuel Filter Switch and Bypass Valve

a. Observe FUEL SYSTEM General Instructions. Refer to MET 28-00-00.
b. Apply power to annunciator panel. Press differential pressure switch Test Button, on the top of the fuel filter, A/F FUEL FILTER annunciator must illuminate.
c. Replace filter element with clean dummy element.
d. Disconnect outlet hose of optional fuel filter from inlet of existing production valve and place hose in a suitable container to collect fuel.
e. Turn on fuel boost pump(s).
f. The A/F FUEL FILTER annunciator should illuminate, and fuel should freely flow from outlet hose of fuel filter into the container.
g. When test is successfully completed, remove dummy element and install filter element. Follow instructions given in Chapter 4, Replacement - Fuel Filter Element.
h. Operate fuel boost pump and open fuel filter bowl drain until all air is purged.
i. Reconnect outlet hose of optional fuel filter to inlet of existing production fuel line.

4.1.7. Replacement - Fuel Filter Element

a. Observe FUEL SYSTEM General Instructions. Refer to MET 28-00-00.
b. Drain fuel from filter bowl into a container.
c. Refer to Appendix "Operating Instructions" Purolator Products Company for Fuel Filter Element change.
d. Operate fuel boost pump and open fuel filter bowl drain until all air is purged.

NOTE: The Purolator Filter Assembly (Part No. 1743640-01) Replacement Element Kit is also available, Purolator Products Company Part No. 1743645.02. This kit consists of a Seal, an O-ring and an Element Assembly.

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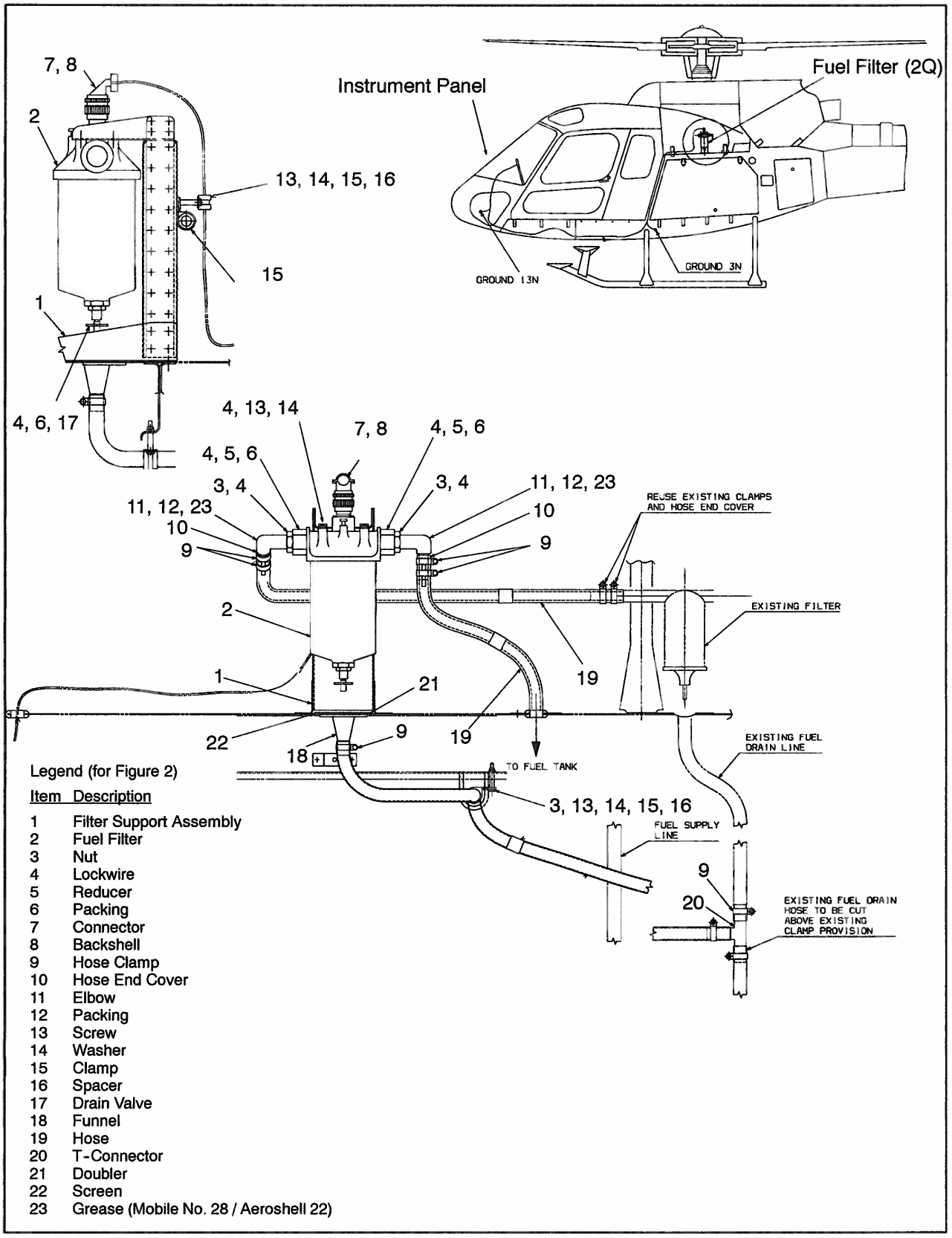

Legend (for Figure 2)

Item	Description
1	Filter Support Assembly
2	Fuel Filter
3	Nut
4	Lockwire
5	Reducer
6	Packing
7	Connector
8	Backshell
9	Hose Clamp
10	Hose End Cover
11	Elbow
12	Packing
13	Screw
14	Washer
15	Clamp
16	Spacer
17	Drain Valve
18	Funnel
19	Hose
20	T-Connector
21	Doubler
22	Screen
23	Grease (Mobile No. 28 / Aeroshell 22)

Figure 2 Airframe Fuel Filter Installation

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5. REPLACEMENT COMPONENTS AND REPAIR / OVERHAUL INFORMATION

No replacement components and repair/overhaul information required for this installation.

6. TROUBLESHOOTING

For electrical system troubleshooting, refer to Figure 3 Wiring Diagram (aircraft without VEMD) and Figure 4 Wiring Diagram (aircraft with VEMD).

No.	Trouble Symptom	Probable Cause	Corrective Action
1	A/F FUEL FILTER lamp does not illuminate during Daily Preflight Inspection	Bulb burnt out.	Replace bulb, P/N MS25237-327
2	A/F FUEL FILTER lamp does not illuminate during Operational Test	Break or short in annunciator circuit	Perform circuit continuity check and repair/replace wiring as applicable in accordance with AC43.13-1B, Chapter 11, Section1
		Fuel Filter Head Assembly defective	Replace Head Assembly, refer to the Purolator Documentation
3	A/F FUEL FILTER illuminates during operations.	Excessive contamination in fuel supply.	Check quality of fuel supply.
		Filter is blocked prematurely.	Replace filter element.
		Short in annunciator circuit.	Perform circuit continuity check and repair/replace wiring as applicable in accordance with AC43.13-1B, Chapter 11, Section1

Table 6 Troubleshooting Guide

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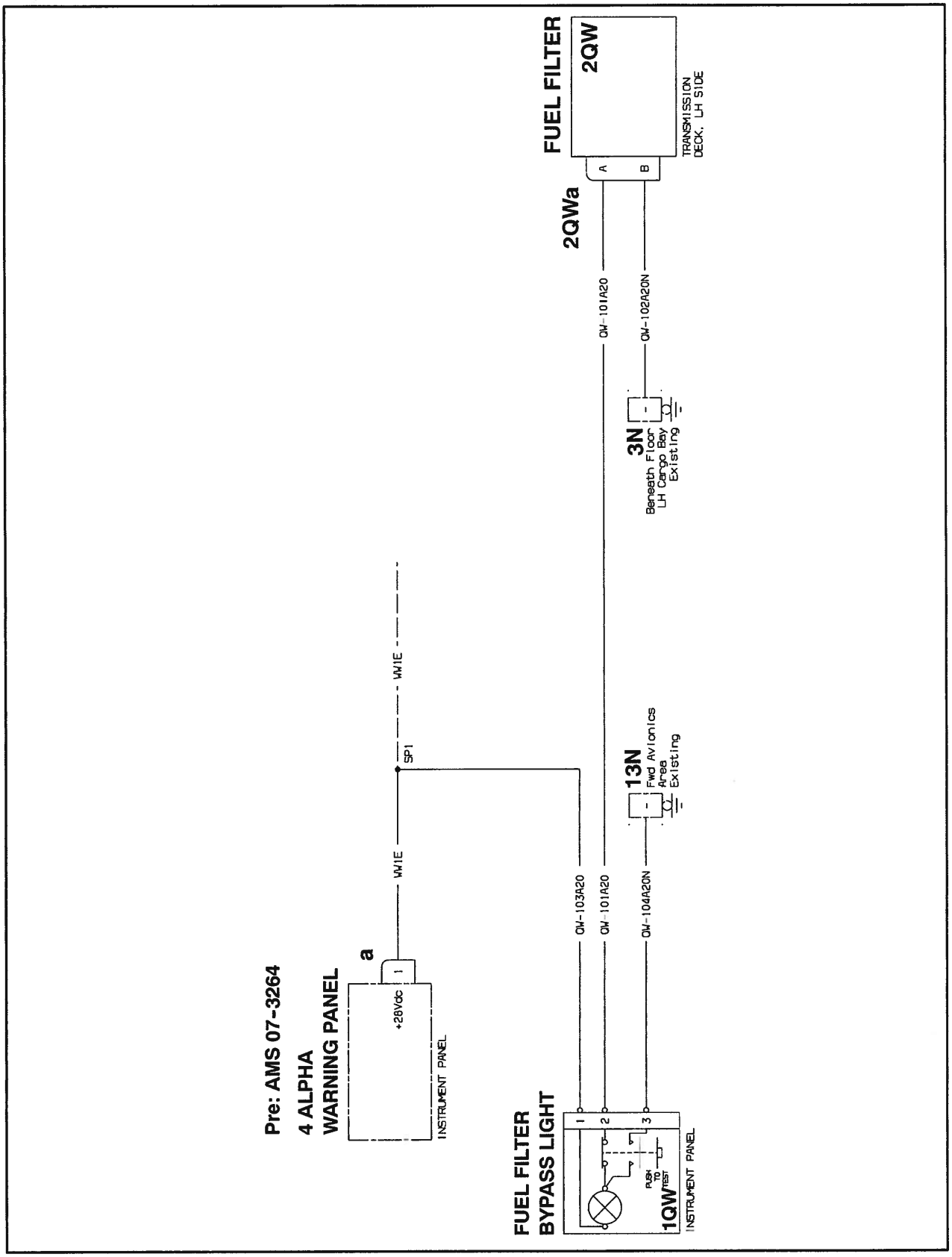

Figure 3 Wiring Diagram (aircraft without VEMD)

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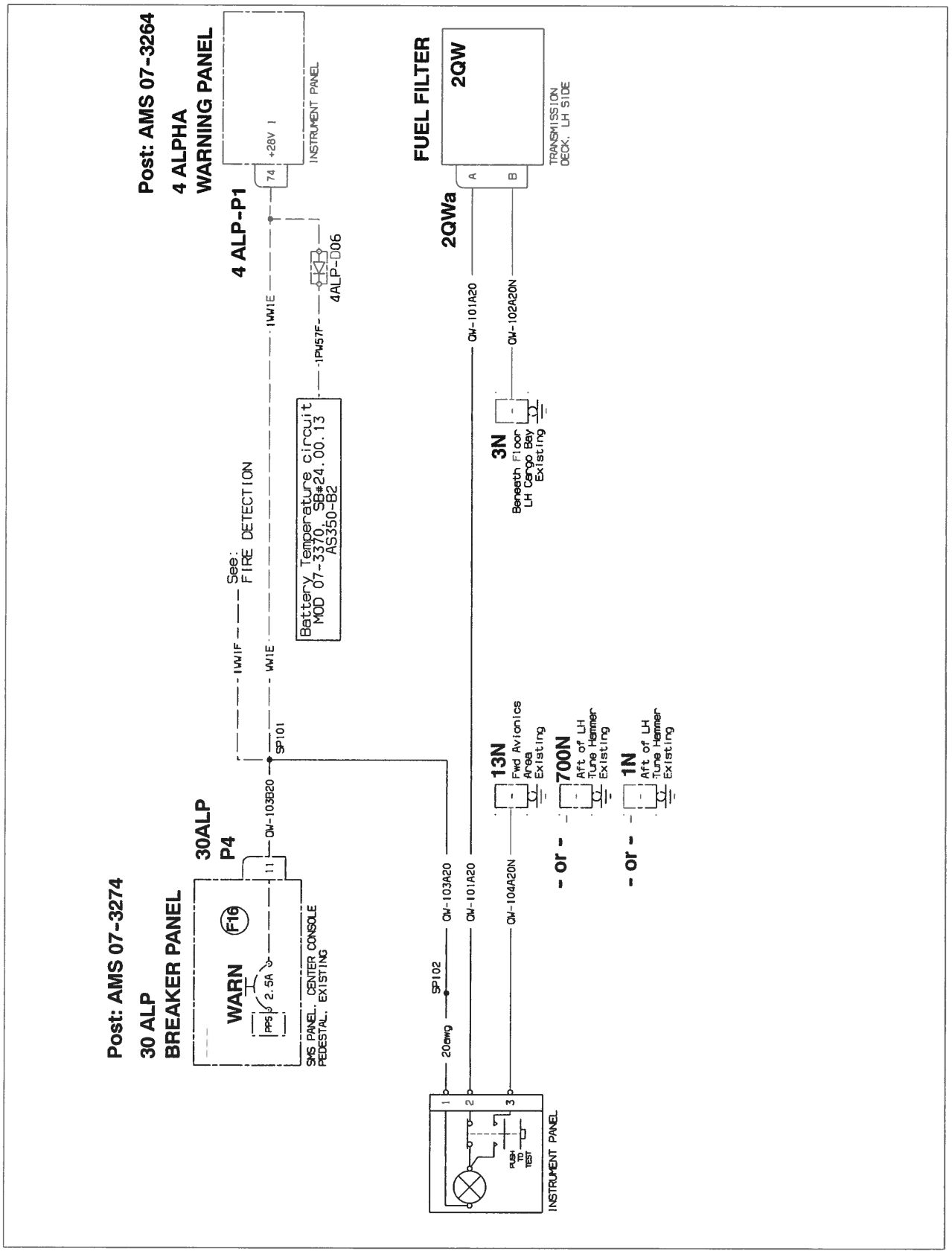

Figure 4 Wiring Diagram (aircraft with VEMD)

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7. SPECIAL TOOLING

No special test equipment or tools are required. Standard tools are adequate.

8. REMOVAL AND REPLACEMENT

Proceed as follows if the fuel filter needs to be removed.

PRELIMINARIES

- disconnect the external power unit and battery - (Removal/Installation refer to AS 350 Maintenance Manual Chapter 24.00.00.301)
- Observe FUEL SYSTEM General Instructions - (Refer to AS 350 Maintenance Manual Chapter 28-00-00)
- Open the left MGB and engine cowling

A. REMOVAL

1) FUEL FILTER (Refer to Figure 2)

a) Disconnect hose clamps (9, 4 places) from both sides of the fuel filter (2) and slide hose end covers (10) from elbows (11). Retain hose clamps (9).

b) Remove packing (12, 2 places) from elbows (11, 2 places) and discard.

c) Position hoses (19) out of working area.

d) Disconnect connector (7) and backshell (8) from fuel filter (2) and position wire out of working area.

e) Remove lockwire (4), screws (13, 3 places), and washers (14, 3 places) that secure the fuel filter (2) to top of filter support assembly (1).

f) Remove fuel filter (2). Retain screws (13) and washers (14) for reinstallation.

B. REPLACEMENT

NOTE Use torque per EC, MTC, Volume 2, Chapter 20.02.05.404, unless otherwise specified.

1) FUEL FILTER (Refer to Figure 2)

a) Position fuel filter (2) into filter support assembly (1) and secure using previously removed screws (13, 3 places), and washers (14, 3 places). Torque screws to required specifications and secure using lockwire (4).

b) Repack elbow (11, 1 place) on LHS of fuel filter (2) with new packing (6, 1 place). Reconnect hose (12) to elbow (4) and secure reusing hose clamps (6, 2 places).

c) Repack elbow (11, 1 place) on RHS of fuel filter (2) with new packing (6, 1 place). Reconnect hose (19) to elbow (11) and secure reusing hose clamps (9, 2 places).

NOTE Apply grease (23) to the nipple of elbows (11, 2 places) and to the inside diameter of the hoses (19, 2 places) before installation.

d) Verify that the installation of the Airframe Fuel Filter is correct and secure.

e) Install the Purolator Dummy Filter Test Element (P/N 1741185), as per this document, and using the Purolator Operating Instruction for the filter assembly contained in this document in Appendix A, check for the correct operation of the fuel filter bypass function.

f) Install the fuel filter element, and perform a leak check with boost pump(s) on.

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9. WEIGHT AND BALANCE

A. Removed Items

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lbs	m	in	kg m	lb in
(not applicable)	0.00	0.0	0.00	0.0	0.00	0.0
Total	0.00	0.0	0.00	0.0	0.00	0.0

B. Added Items

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lbs	m	in	kg m	lb in
Air Frame Fuel Filter	0.97	2.1	3.46	136.3	3.37	286.2
Fuel Filter Support Assembly	0.39	0.9	3.46	136.3	1.36	122.7
Hardware and Harness	1.00	2.2	3.46	136.3	3.46	299.9
Total	2.37	5.2	3.46	136.3	8.19	708.8

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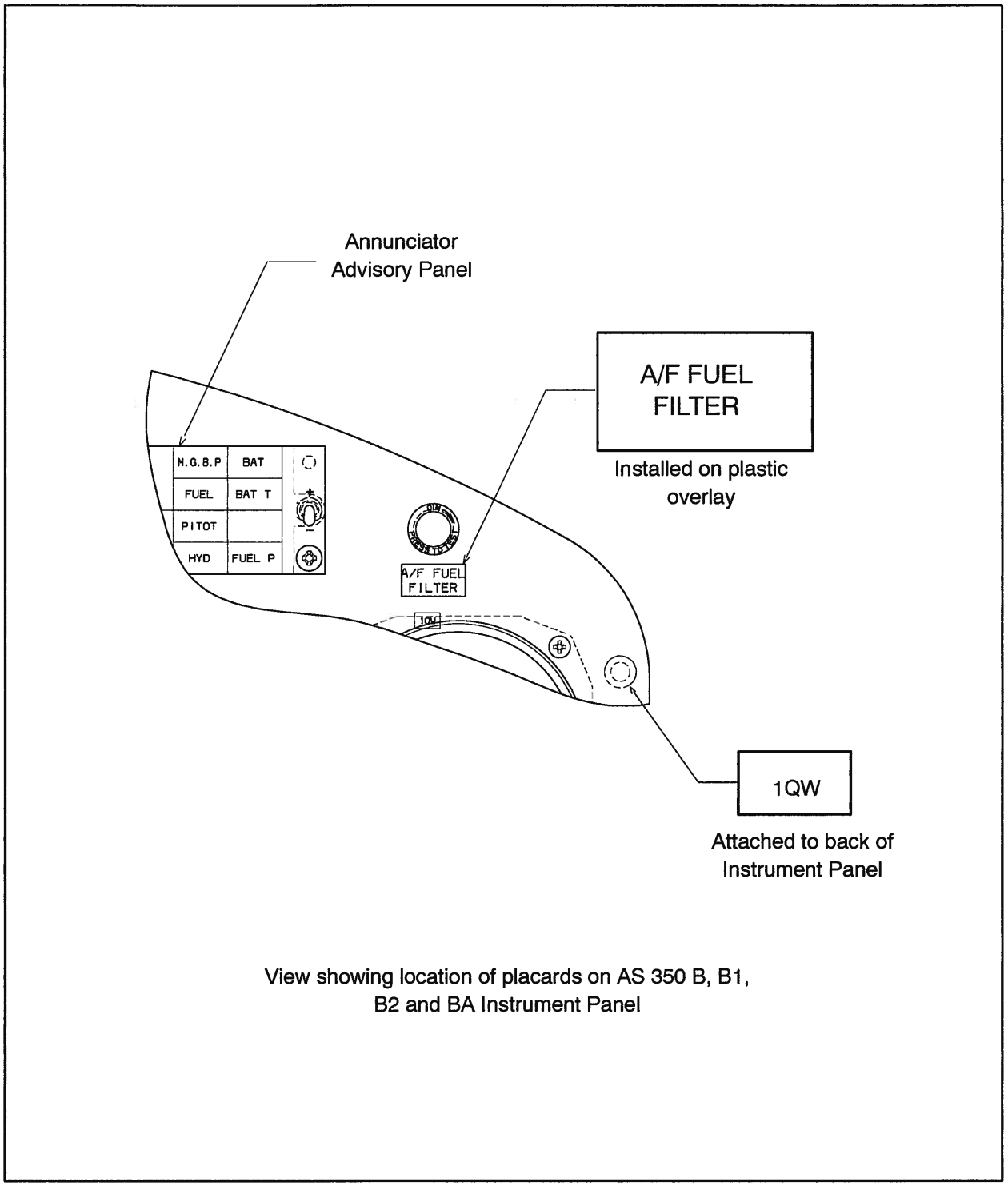
10. **PLACARDS AND MARKINGS**



View showing location of placards on AS 350 B, B1,
B2 and BA Instrument Panel

Figure 5 Identification labels on Instrument Panel

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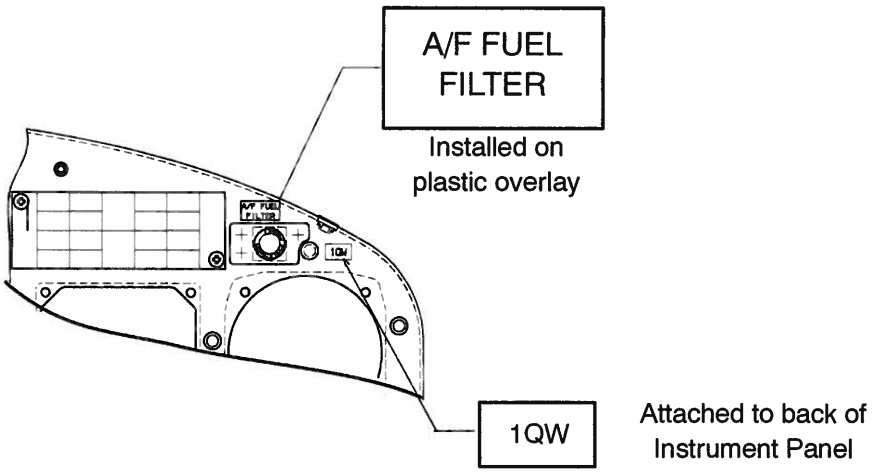
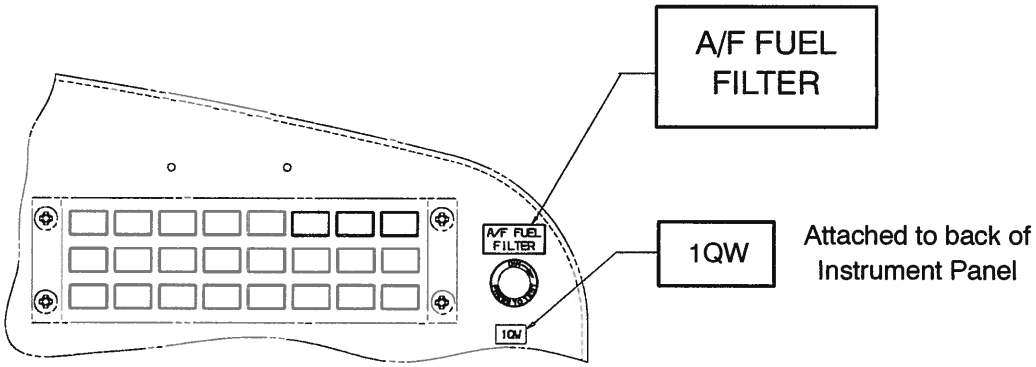


View showing alternative location of placards on AS 350 B2
(aircraft without VEMD) Instrument Panel



View showing location of placards on AS 350 B2
(aircraft with VEMD) Instrument Panel

Figure 6 Identification labels on Instrument Panel

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10. **PLACARDS AND MARKINGS** (continued)

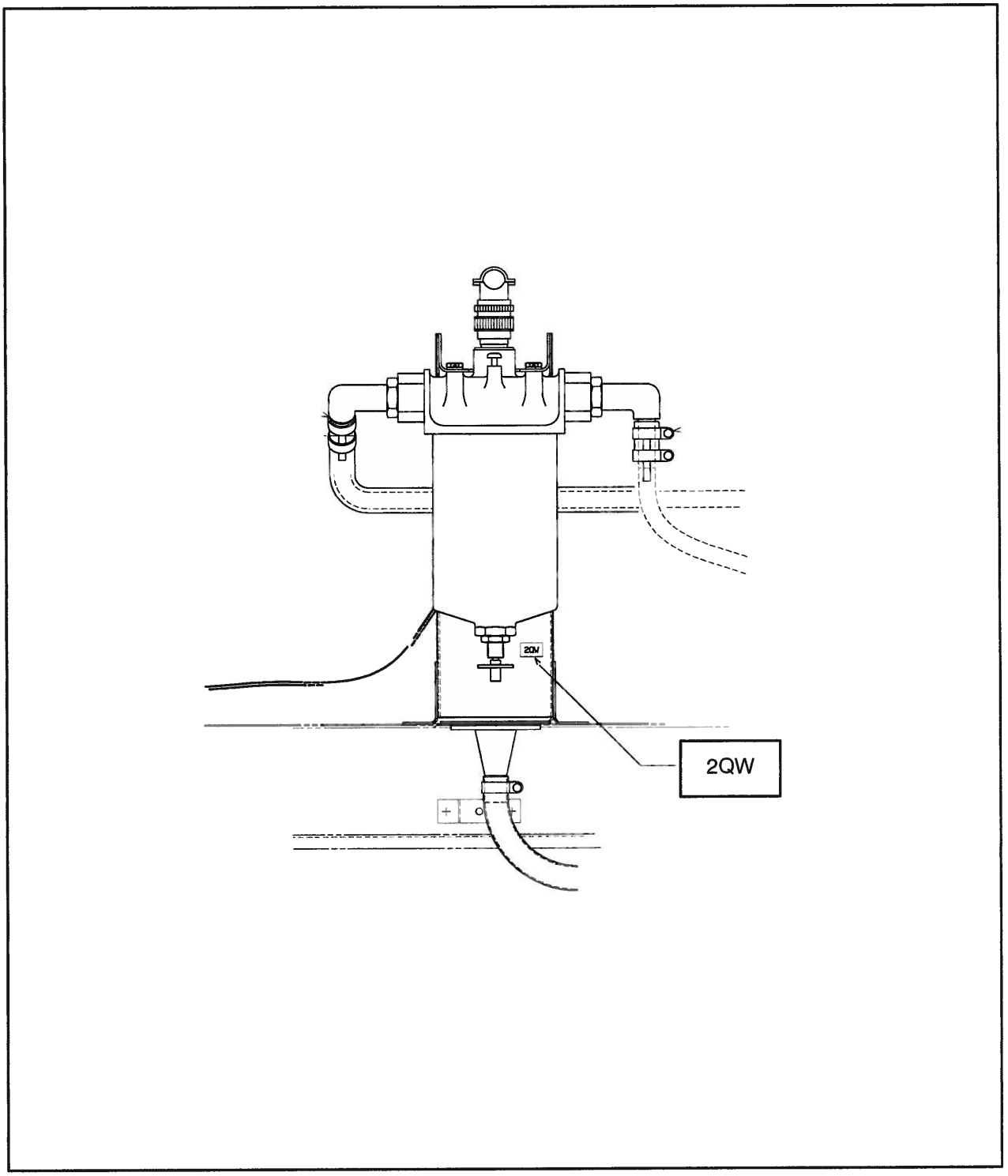

Figure 7 Identification label for the Fuel Filter Support Assembly

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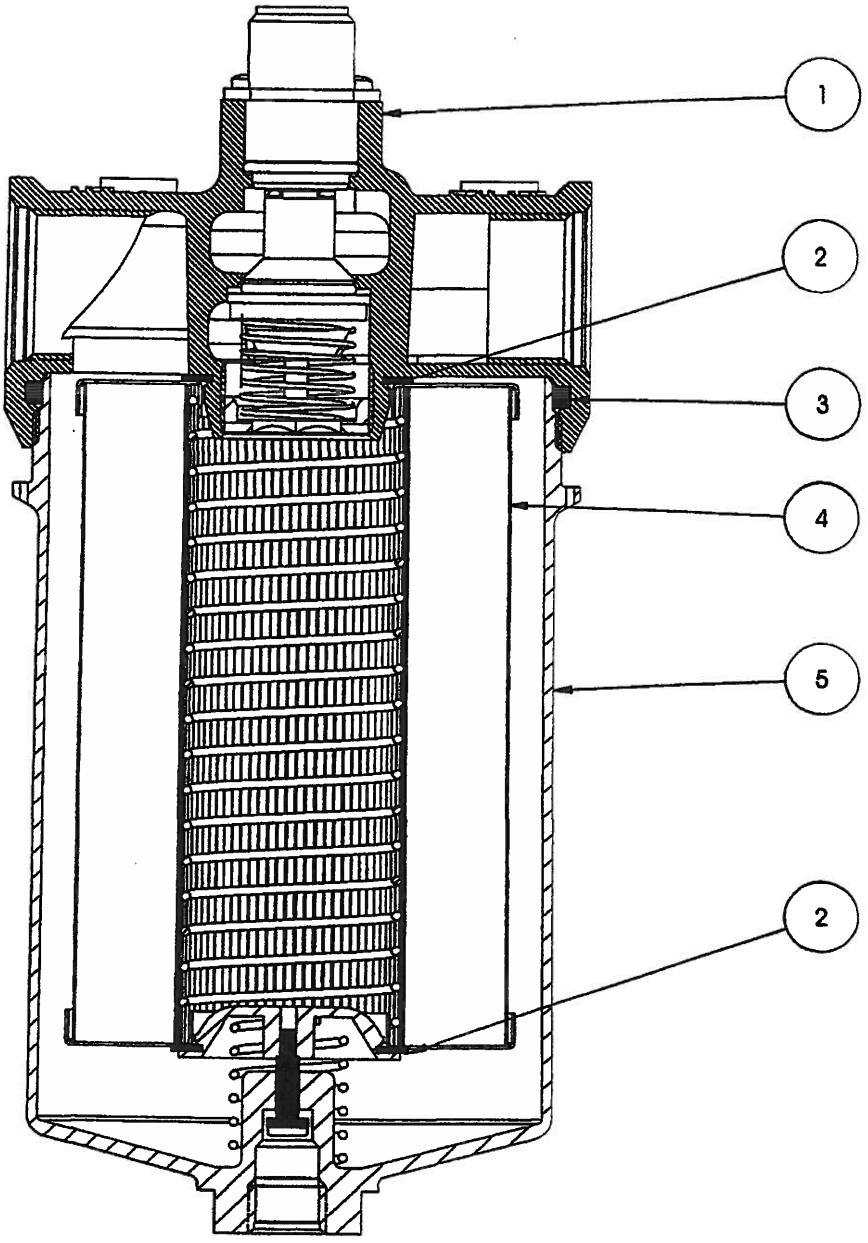
Purolator
Products Company

Operating & Design Specifications
Fuel Filter Assembly
Part No.: 1743640-01

Purolator Facet Inc.
8439 Triad Drive, Greensboro, NC 27409-9621
Phone: (336) 668-4444, Fax (336) 668-4452

Purolator Fuel Filter Assembly
Part No. 1743640-01



Replacement Parts for Filter Assembly Part No. 1743640-01

Item No.	Qty. Req.	Part No.	Description:
1.	1	1744990-01	Head Assembly
2.	2	1743629-01	Seal
3.	1	034921-01	O-Ring
4.	1	1743645-01	Element Assembly
5.	1	1745011	Bowl Assembly

NOTE: **Purolator replacement element kit part no. 1743645-02 consists of items 2, 3 & 4**

Operating Instructions:

Preflight Inspection Procedure Change:

1. Follow aircraft manufacturers recommended preflight instructions.

Scheduled Maintenance:

1. Fuel Filter Element Change:

   A. Replace element at the intervals specified by the aircraft manufacturer.

   B. Remove lockwire and unscrew filter bowl.

   C. Remove used element.

   D. Remove O-Ring and flat seals from filter head and inside of bottom of filter bowl.

   E. Install new seals P/N: 1743629-01 on the nipple of the filter head and retainer in the filter bowl.

   F. Install new filter element p/n: 1743645-01.

   G. Install new O-Ring P/N: 034921-01 in the filter head.

   H. Re-install filter bowl and torque to 130±20 inch pounds.

   I. Secure filter head to filter bowl with lockwire.

Purolator Fuel Filter Assembly
Part Number 1743640-01

Design Specifications:

1. Filtration Rating: 10 Micometres Nominal
2. Fluid: Mil-T 5624 Gr. JP-4, JP-5, ASTM-D-1655 Type A, A1or B.
3. Temperature Range: -65°F to +160°F.
4. Bypass valve cracking Pressure: 3.75 PSID.
5. Microdelta® Differential Pressure Switch actuates at 0.875 PSID
7. Pressures:

Operating:	60 PSI
Proof:	90 PSI
Burst:	180 PSI

8. Rated Flow: 0.5 GPM
9. Weight: 1.75 lbs. Max.