



EUROCOPTER CANADA LIMITED

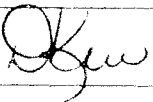
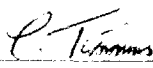

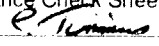

SUBJECT:

Required maintenance for the Airframe Fuel Filter (P/N 350-600024).

APPLICABILITY :

Aircraft with the subject modification embodied in accordance with TCCA STC. No. SH02-42 or any relevant foreign approvals.

THE INFORMATION CONTAINED IN THIS DOCUMENT SHALL BE TREATED AS THE PROPERTY OF EUROCOPTER CANADA LIMITED (ECL). THE RECIPIENT OF THIS DOCUMENT SHALL NOT DISCLOSE ANY INFORMATION CONTAINED HEREIN TO THIRD PARTIES WITHOUT THE WRITTEN PERMISSION OF ECL, AND SHALL NOT USE OR REPRODUCE THIS DOCUMENT IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ITS ORIGINALLY INTENDED PURPOSE, OR TO EVALUATE ITS CONTENTS.

	NAME AND SIGNATURE	DATE	COMPANY DEPARTMENT
PREPARED BY:	D. Kerr 	28 Mar. 08	ECL ENGINEERING
PREPARED BY:			
CHECKED BY:	C. Timmins 	28th March 2008	ECL ENGINEERING
CHECKED BY:	M. Merritt 	2008-03-28	ECL QUALITY ASSURANCE
APP'D / ACCEPTED (Civil A/W Authority)	(As per ICA Compliance Check Sheet) 	9 Apr '08	TCCA
RELEASED BY:	R. Manson 	10 Apr '08	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 12	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, and Troubleshooting 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 21 A1 - A4	Format revised, Section 4 and 8 and Weight and Balance chart expanded. (Pages 3 to 6, 8 to 10, 12 to 21)	D. Kerr 21 July 2006	C. Timmins 4 August 2006	TCCA Floyd Eaves 9 August 2006	R. Manson 9 August 2006
3	1 through 24 A1 - A4	Replaced "boost" pump reference with "fuel" pump in Sec. 4. Added placard to outboard side of Fuel Filter. Wiring diagrams updated for latest basic a/c configuration. (Pages 3 to 5, 8, 9, 11 to 18, 20 to 24)	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.

Transport Canada - Accepted



CONTENTS

SECTION	TITLE	PAGE
1	GENERAL	5
2	AIRWORTHINESS LIMITATIONS	7
3	CONTROL AND OPERATION	8
4	INSPECTION SCHEDULE AND MAINTENANCE ACTION	8
5	OVERHAUL REQUIREMENTS	14
6	TROUBLESHOOTING	14
7	SPECIAL TOOLING	17
8	REMOVAL AND REPLACEMENT	17
9	WEIGHT AND BALANCE	18
10	PLACARDS AND MARKINGS	19
APPENDIX A	PUROLATOR PRODUCTS COMPANY - Operating & Design Specifications (4 pages)	A1

FIGURES

FIGURE	TITLE	PAGE
1	General Layout	5
2	Airframe Fuel Filter Installation	12
3	Side view of Airframe Fuel Filter Installation	13
4	Wiring Diagram (Sheet 1 of 2)	15
5	Wiring Diagram (Sheet 2 of 2)	16
6	Placard on Fuel Filter Support Assembly	19
7	Placard on Fuel Filter	20
8	Placard in LH Baggage Compartment	21
9	Placards on Instrument Panel	22
10	Placards on alternative Instrument Panel	23
11	Identification Tags on hoses	24

Transport Canada - Accepted



TABLES

TABLE	TITLE	PAGE
1	Inspection Schedule and Maintenance Action Before the first flight of each day	8
2	Inspection Schedule and Maintenance Action Pre-Flight Check	8
3	Inspection Schedule and Maintenance Action Every 100 flight hrs or 12 months, whichever occurs first	9
4	Inspection Schedule and Maintenance Action Every 500 flight hrs or 24 months, whichever occurs first	10
5	Inspection Schedule and Maintenance Action Every 1000 flight hrs or 48 months, whichever occurs first	10
6	Troubleshooting Guide	14

Transport Canada - Accepted



1. GENERAL

A. Introduction

The Airframe Fuel Filter enables operation of the helicopter at low temperatures without the use of anti-ice additives in the fuel. The filter is designed to collect ice particles. The filter contains a bypass valve and a bypass delta pressure switch. An annunciator light in the cockpit is provided to warn the pilot of an impending bypass of the filter. Refer to Figure 1.

B. Description

The Airframe Fuel Filter consists of the following main components:

Fixed Provisions

- Fuel Filter Support Assembly
- Drain Sump Assembly
- Base
- Deck Doubler
- Drain Bracket

Detachable Provisions

- Fuel Filter
- Hoses

For instructions for initial installation, see IP-ECL-111.

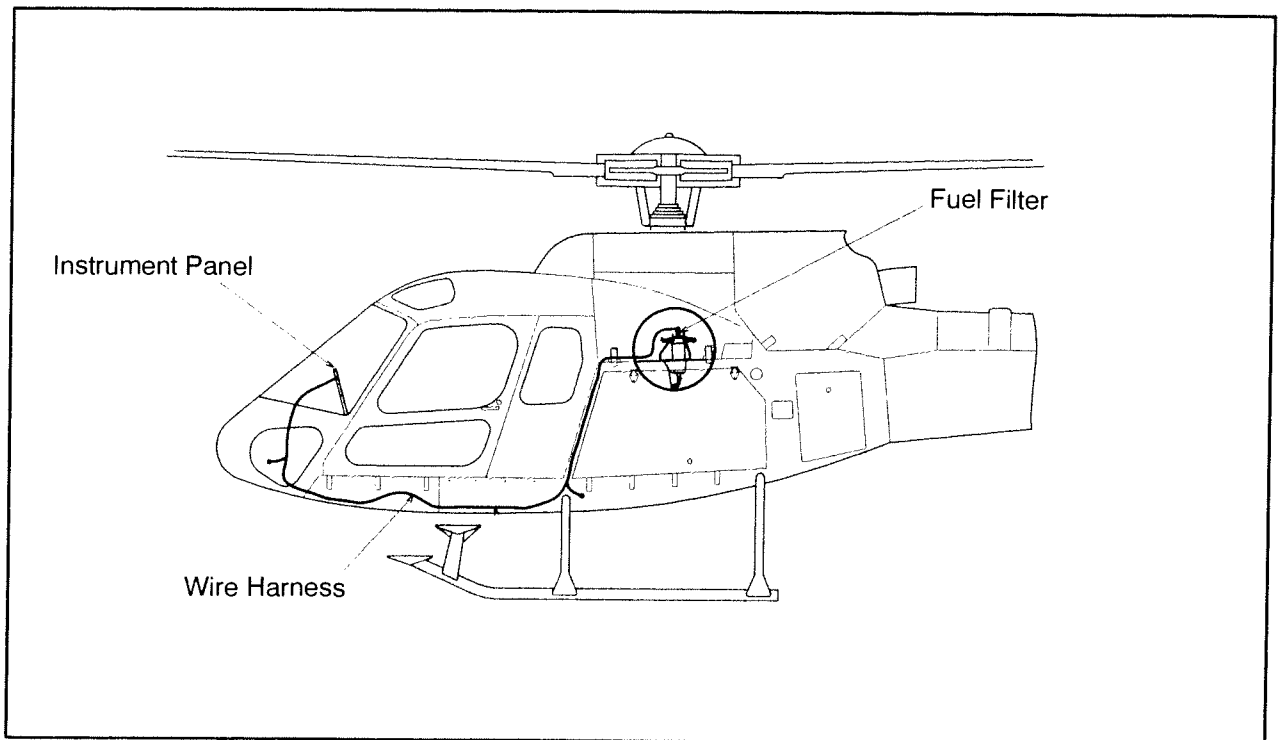


Figure 1 General Layout

Transport Canada - Accepted



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-111	Installation Procedures, Airframe Fuel Filter "Operating and Design Specifications", Purolator Products Company

D. Abbreviations and Definitions

ABBREVIATION	DEFINITION
A/F	Airframe
EC	Eurocopter (France)
ECL	Eurocopter Canada Limited
hrs	hours
LHS	Left-Hand Side
Max.	Maximum
No.	Number
P/N	Part Number
Qty.	Quantity
RHS	Right-Hand Side

E. Units of Measurement

ABBREVIATION / SYMBOL	UNIT OF MEASUREMENT
F	Fahrenheit
GPM	Gallons per Minute
in.lb	inch.pound
in	inch
kg	kilogram
lb	pound
m	meter
m kg	meter kilogram
PSI	Pounds per Square Inch
PSID	Pounds per Square Inch Differential
®	Registered Trademark
°	degree
±	plus or minus

Transport Canada - Accepted



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.

Transport Canada - Approved



3. CONTROL AND OPERATION

Control and operation of the aircraft remains unchanged.

4. INSPECTION SCHEDULE AND MAINTENANCE ACTION

For additional information on operation and maintenance, refer to the "Purolator" Operating and Design Specifications, Fuel Filter Assembly Part No.: 1743640-01, located in Appendix A.

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	<ul style="list-style-type: none"> - Turn on fuel pump and check Airframe Fuel Filter for: <ul style="list-style-type: none"> a. water in fuel b. air in fuel line c. leaks in the fuel filter and the drain valve 	<ul style="list-style-type: none"> a. Open drain valve, purge any water from the system. b. Hold drain valve open until all air is purged. c. No leaks with fuel pump on. Check valve seating, replace packing, item 8, in Figure 3 as necessary (P/N MS29513-012)
B	<ul style="list-style-type: none"> - Turn off fuel pump and check Airframe Fuel Filter for: <ul style="list-style-type: none"> a. debris in fuel drain, below the filter and/or on the transmission deck b. secure mounting and connection of filter and hoses c. condition of electrical connector and harness 	<ul style="list-style-type: none"> a. Remove and clean as necessary. b. Secure as required. c. Repair in accordance with AC43.13-1B Chapter 11, Section 1.

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	<ul style="list-style-type: none"> - Push A/F FUEL FILTER by-pass "Press to Test" caution light: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> a. If lamp fails to illuminate, refer to Chapter 6, Troubleshooting, in this document

Table 2 Inspection Schedule and Maintenance Action
Pre-Flight Check

Transport Canada - Accepted



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 doubler, item 1, and fuel filter support assembly, item 2, 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 hoses, item 12, and drain hose, item 13, in Figure 2 for: a. leaks b. cracking	a. If leaks are found, contact ECL for replacement parts. b. No cracking is allowed. If cracking is found, contact ECL for replacement parts.
C	- Check base, item 1, and drain bracket, item 5, in Figure 3 for: a. cracks or corrosion	a. No cracks or corrosion are allowed. If cracks or deformation are found, contact ECL for replacement parts.
D	- Check drain sump assembly, item 6, in Figure 3 for: a. cracks or deformation	a. No cracks or deformation are allowed. If cracks or deformation are found, contact ECL for replacement parts.
E	- Check placards and markings in Figures 6, 7, 8, 9, 10 and 11 (Section 10) for: a. legibility b. secure mounting	a. If placards and markings have become illegible, contact ECL for replacement parts. b. Secure, reattach placards as required.

Table 3 Inspection Schedule and Maintenance Action
Every 100 flight hrs or 12 months, whichever occurs first
(continued on following page)

Transport Canada - Accepted



4. INSPECTION SCHEDULE AND MAINTENANCE ACTION (continued)

4.1.4. Every 500 flight hrs or 24 months, whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
A	Perform Operational Test - Switch and Bypass Valve	Instructions given following Table 5

Table 4 Inspection Schedule and Maintenance Action
Every 500 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	Instructions given following Table 5

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

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



A/F FUEL
FILTER

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.

Transport Canada - Accepted



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

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 shut-off valve and place hose in a suitable container to collect fuel.
- e. Turn on fuel 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 pump and open fuel filter bowl drain until all air is purged.
- i. Reconnect outlet hose of optional fuel filter to inlet of shut-off valve.

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 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.

Transport Canada - Accepted



Legend (for Figure 2)

Item	Description
1.	Deck Doubler
2.	Fuel Filter Support Assembly
3.	Packing (P/N M83248/2-908)
4.	Elbow
5.	Hose End Cover </td
6.	Hose Clamp
7.	Nut
8.	Lockwire
9.	Reducer
10.	Screw
11.	Washer
12.	Hose
13.	Drain Hose
14.	Grease (Mobil No. 28 / Aeroshell 22)
15.	Tyrap
16.	Fuel Filter

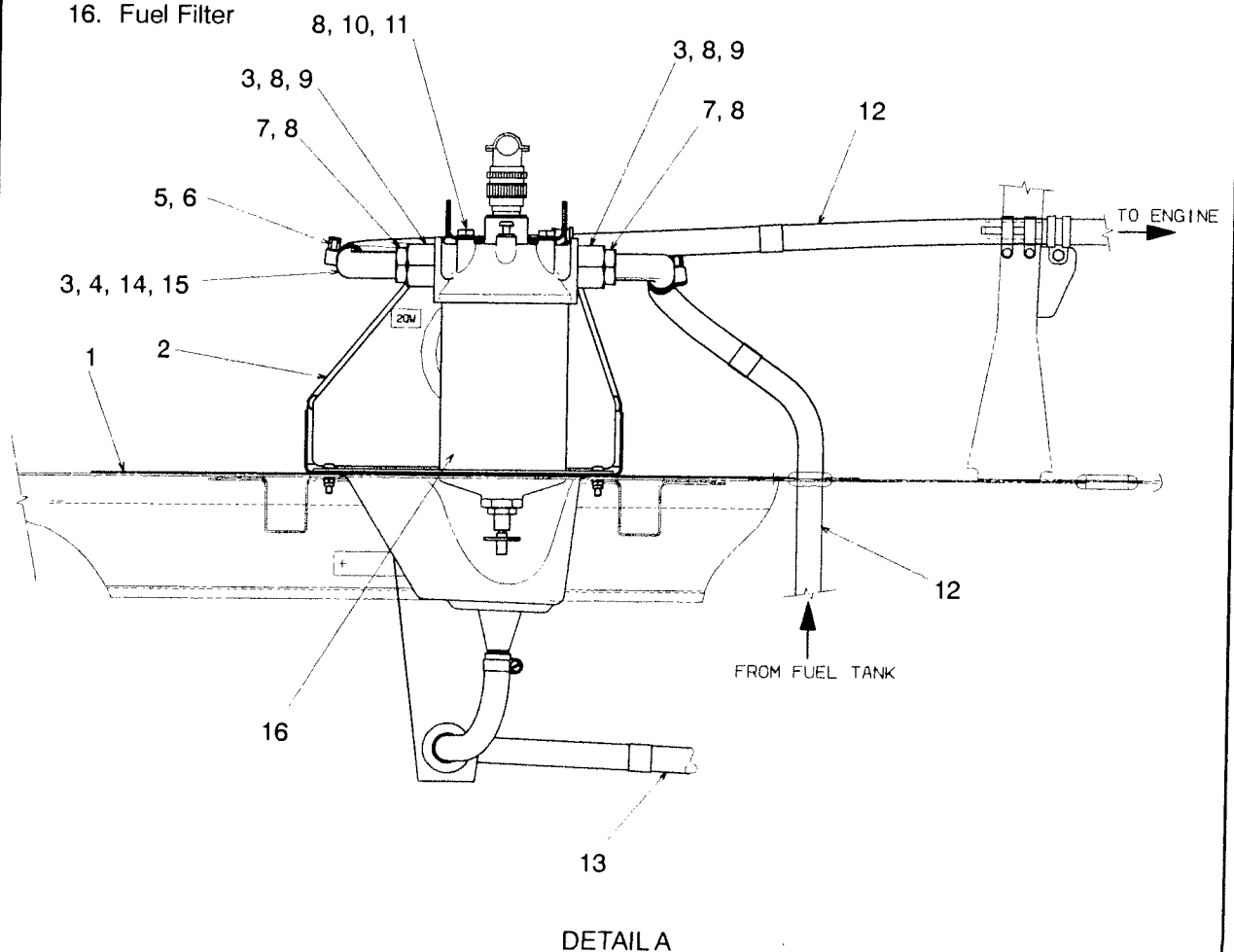
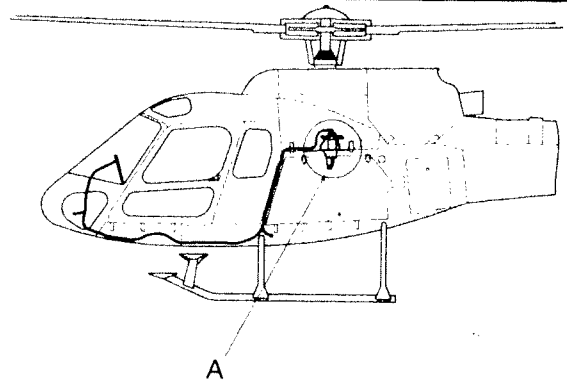


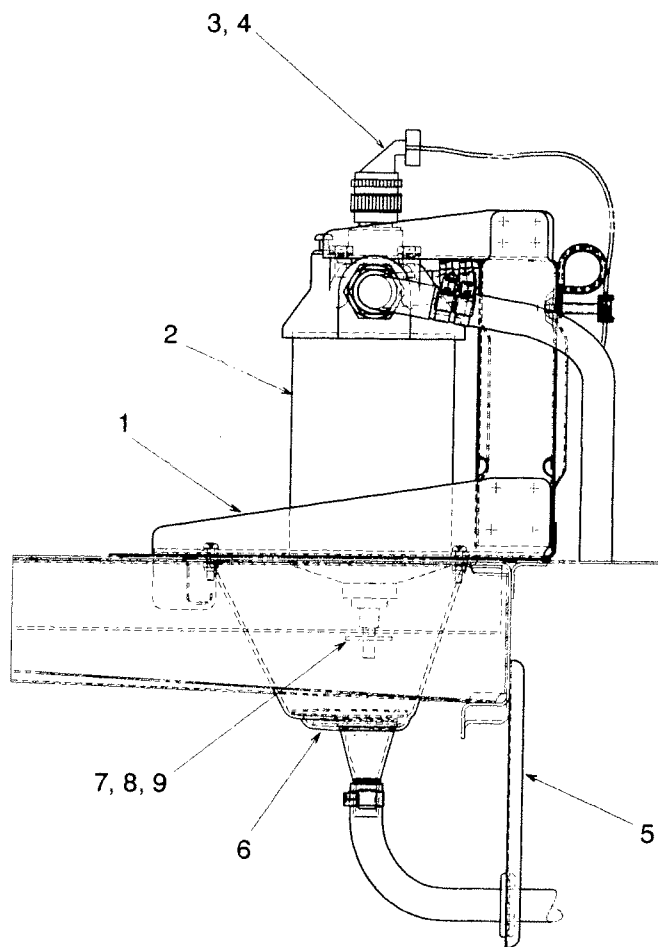
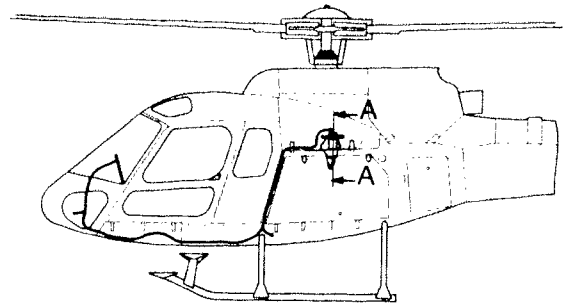
Figure 2 Airframe Fuel Filter Installation

Transport Canada - Accepted



Legend (for Figure 3)

Item	Description
1.	Base
2.	Fuel Filter
3.	Connector
4.	Backshell
5.	Drain Bracket
6.	Drain Sump Assembly
7.	Lockwire
8.	Packing
9.	Drain Valve



SECTION A - A

Figure 3 Side view of Airframe Fuel Filter Installation

Transport Canada - Accepted



5. OVERHAUL REQUIREMENTS

No overhaul requirements for this installation.

6. TROUBLESHOOTING

For electrical system troubleshooting, refer to Figures 4 and 5, Wiring Diagram.

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, Section 1.
		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, Section 1.

Table 6 Troubleshooting Guide

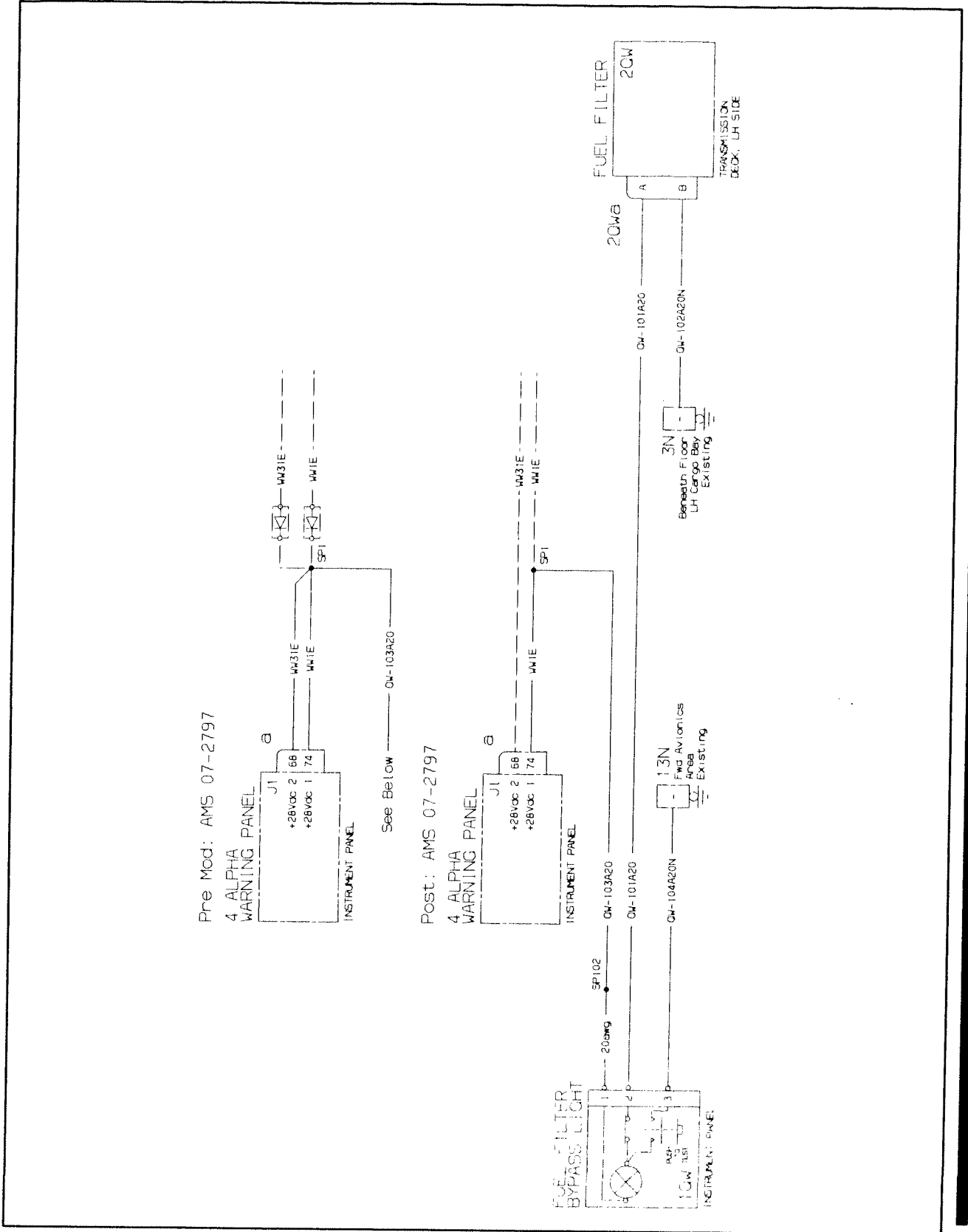


Figure 4 Wiring Diagram (Sheet 1 of 2)

Transport Canada Accepted

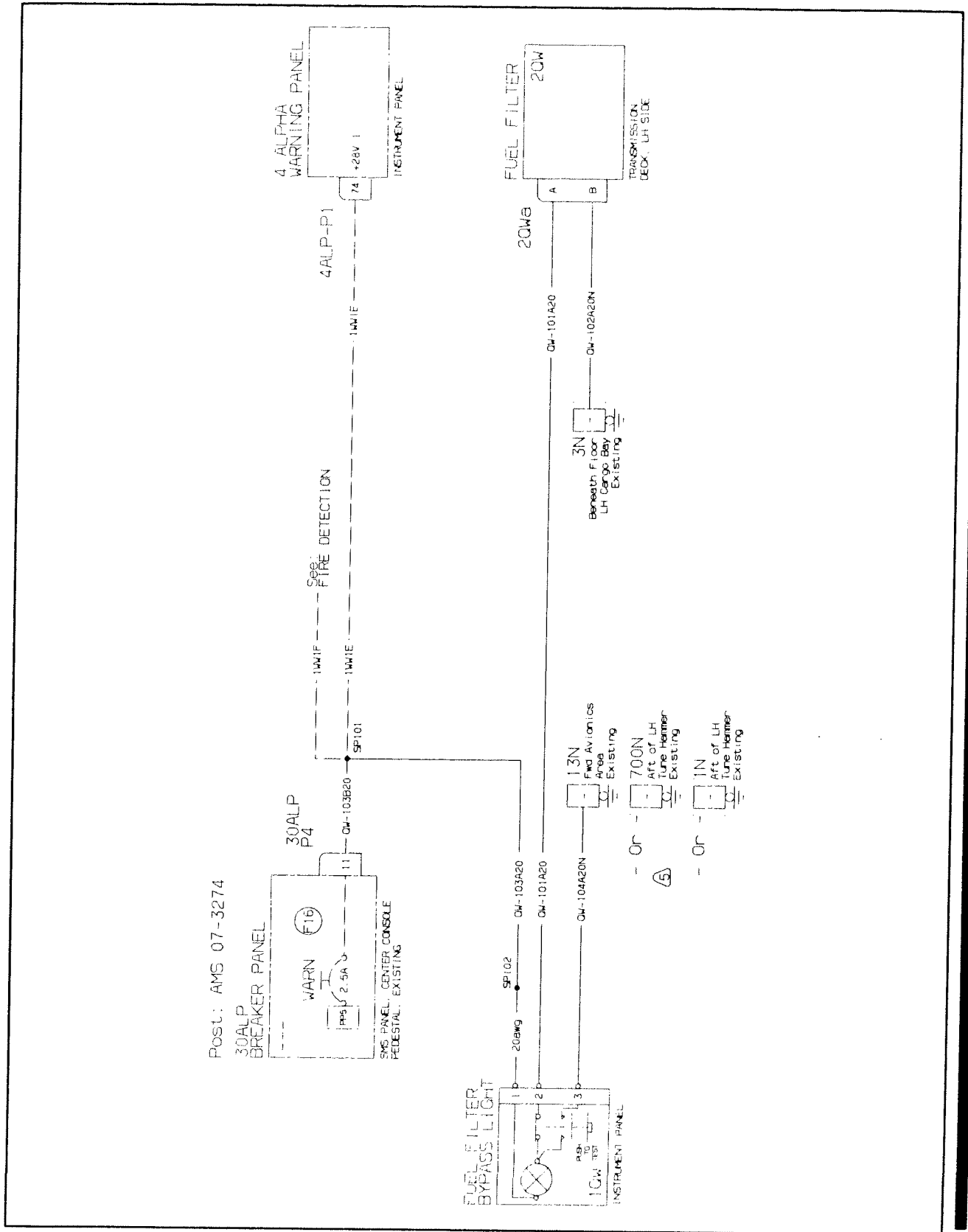


Figure 5 Wiring Diagram (Sheet 2 of 2)

Transport Canada Accepted



7. SPECIAL TOOLING

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

8. REMOVAL AND REPLACEMENT

Proceed as follows if fuel filter needs to be removed.

Preliminaries

- disconnect the battery
- Observe FUEL SYSTEM General Instructions. Refer to MET 28-00-00.
- open the engine and left MGB cowling (Removal / Installation refer to Maintenance Manual Chapter 53.51.00)

A. REMOVAL

1) Fuel Filter (Refer to Figures 2 and 3)

- a) Disconnect hose clamps (6, 4 places) from both sides of the fuel filter (16) and slide hose end covers (5) from elbows (4). Retain hose clamps (6). Refer to Figure 2.
- b) Remove packing (3, 2 places) from elbows (4, 2 places) and discard. Refer to Figure 2.
- c) Position hoses (12) out of working area. Refer to Figure 2.
- d) Disconnect connector (3) and backshell (4) from fuel filter (2) and position wire out of working area. Refer to Figure 3.
- e) Remove lockwire (8), screws (10, 3 places), and washers (11, 3 places) that secure the fuel filter (16) to top of fuel filter support assembly (2). Refer to Figure 2.
- f) Remove fuel filter (16). Retain screws (10) and washers (11) for reinstallation. Refer to Figure 2.

B. REPLACEMENT

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

1) Fuel Filter (Refer to Figures 2 and 3)

- a) Position fuel filter (16) into fuel filter support assembly (2) and secure using previously removed screws (10, 3 places), and washers (11, 3 places). Torque screws to required specifications and secure using lockwire (8). Refer to Figure 2.
- b) Repack elbow (4, 1 place) on LHS of fuel filter (16) with new packing (3, 1 place). Reconnect hose (12) to elbow (4) and secure reusing hose clamps (6, 2 places).
- c) Repack elbow (4, 1 place) on RHS of fuel filter (16) with new packing (3, 1 place). Reconnect hose (12) to elbow (4) and secure reusing hose clamps (6, 2 places).

NOTE Apply grease (14) to the nipple of elbows (4, 2 places) and to the inside diameter of the hoses (12, 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 on runup.

Transport Canada - Accepted



9. WEIGHT AND BALANCE DATA

A. Removed Items

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lbs	m	in	kg m	lb in
Floor Cut-out	0.09	0.2	3.50	137.7	0.31	27.54
Total	-0.09	-0.2	3.50	137.7	-0.31	-27.54

B. Added Items

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lbs	m	in	kg m	lb in
Airframe Fuel Filter	3.44	7.6	3.50	137.7	12.04	1046.5
Total	3.44	7.6	3.50	137.7	12.04	1046.5

Transport Canada - Accepted



10. PLACARDS AND MARKINGS

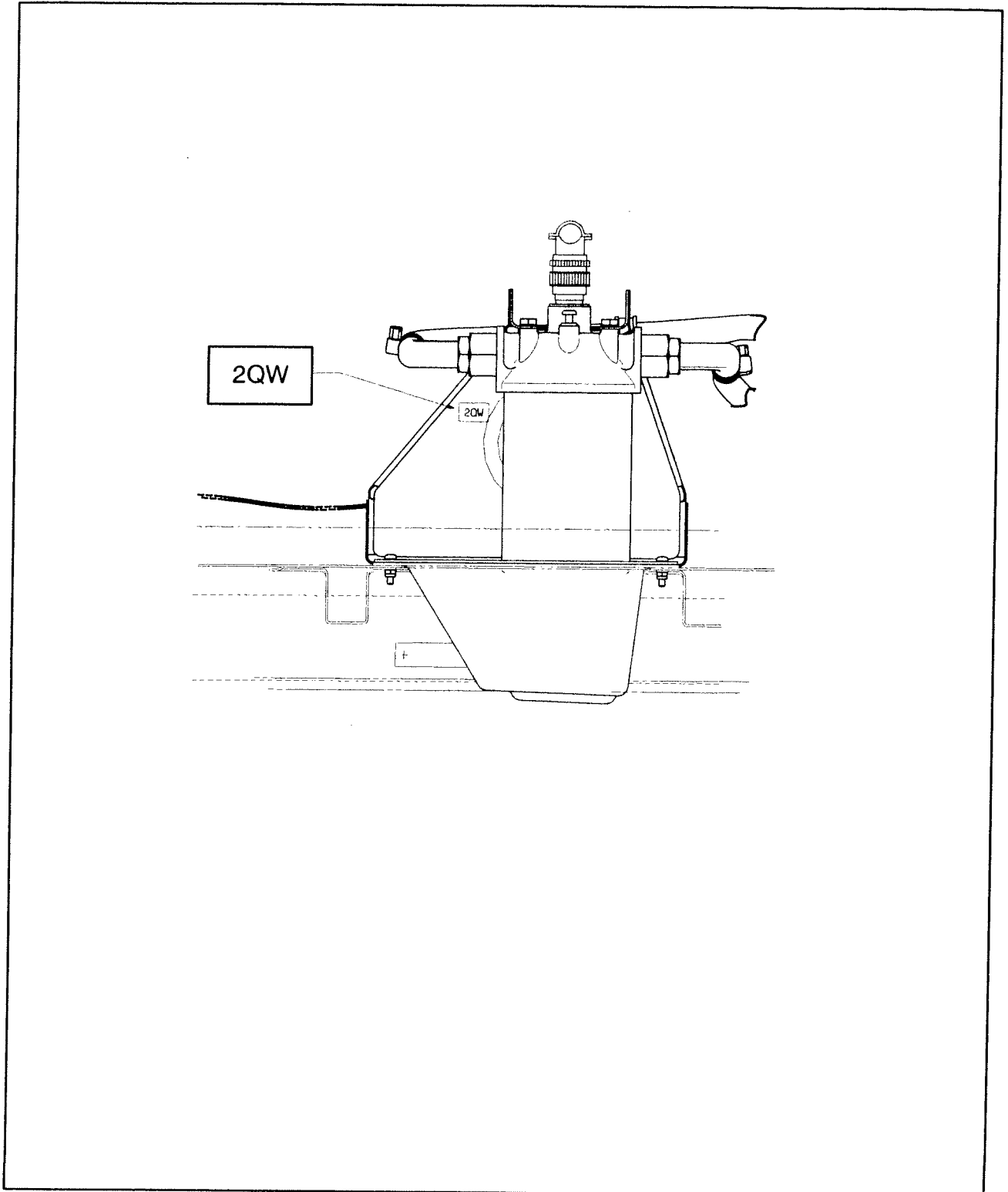


Figure 6 Identification Label on Fuel Filter Support Assembly

Transport Canada - Accepted



10. PLACARDS AND MARKINGS

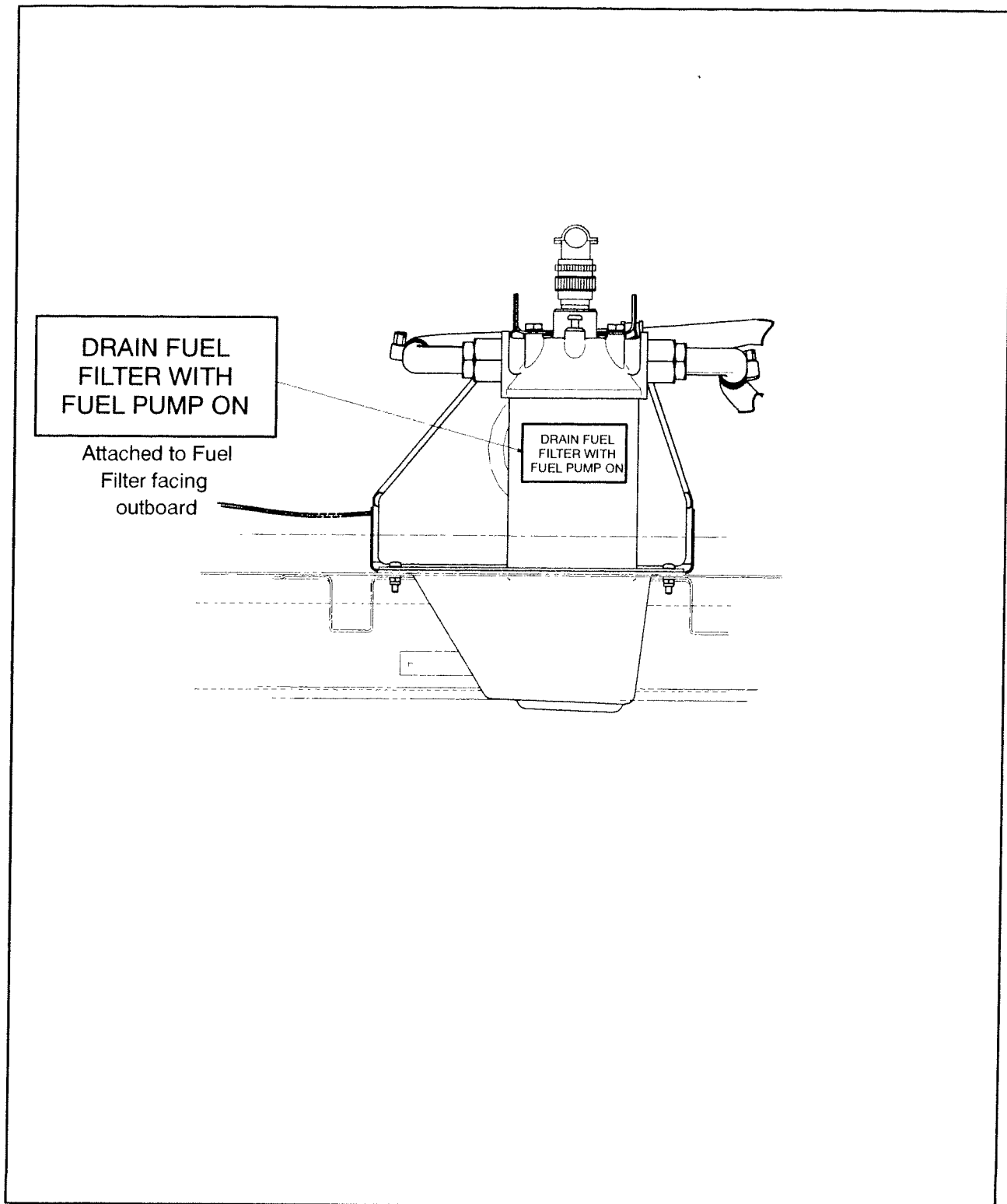


Figure 7 Placard on Fuel Filter

Transport Canada - Accepted



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

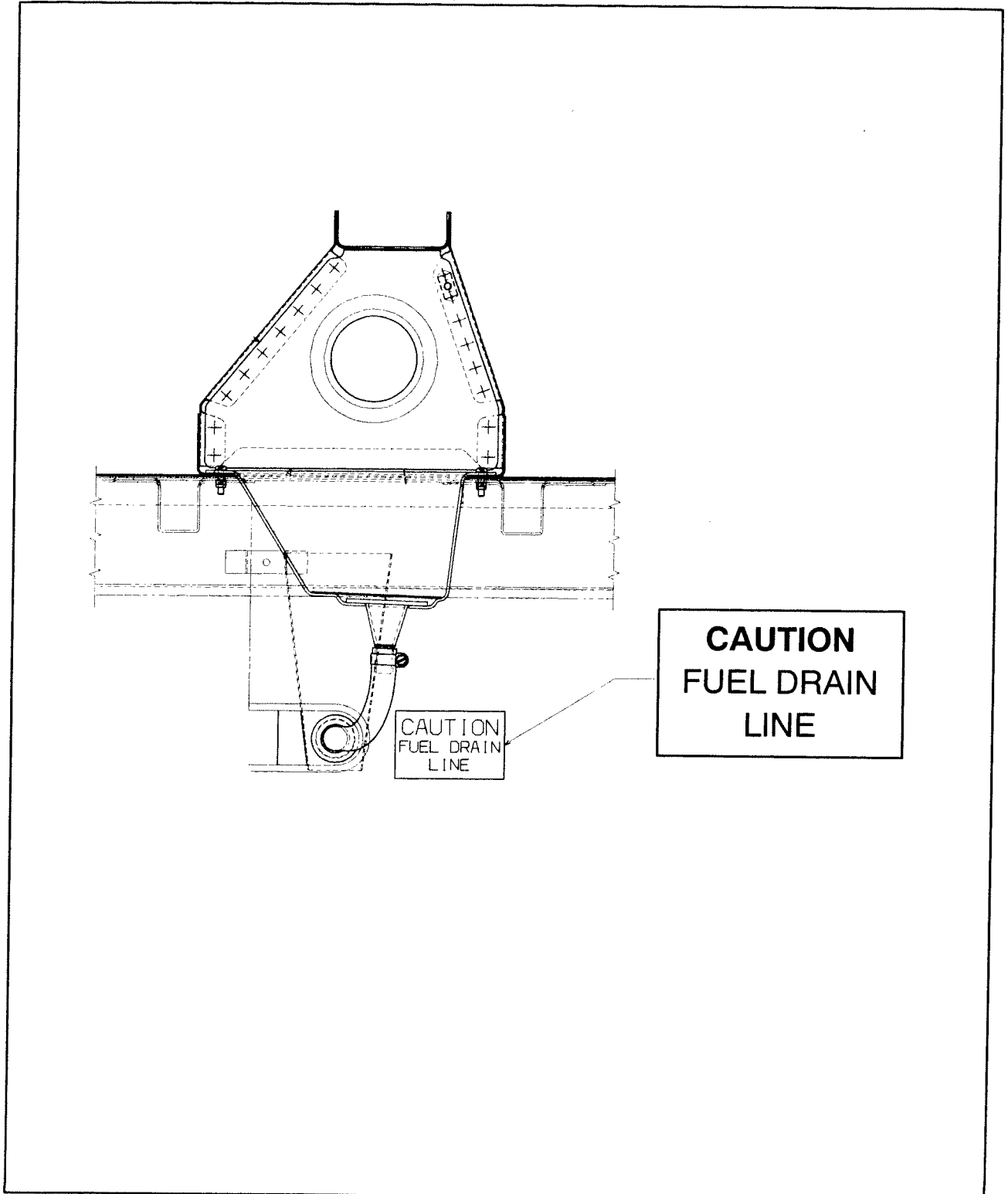


Figure 8 Placard in LH Cargo Compartment

Transport Canada - Accepted



10. PLACARDS AND MARKINGS (continued)

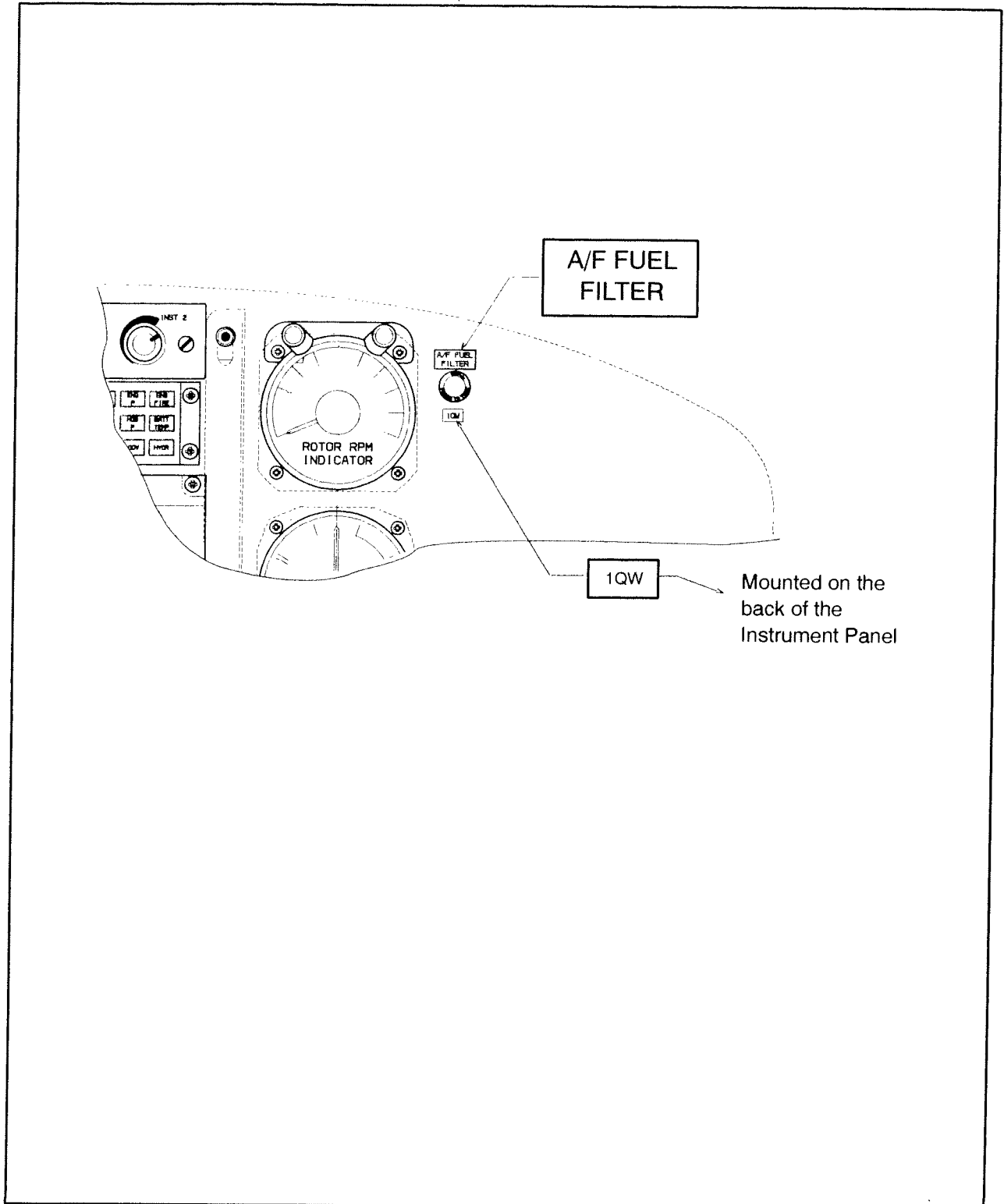


Figure 9 Placard and Identification Label on Instrument Panel



Transport Canada - Accepted



10. PLACARDS AND MARKINGS (continued)

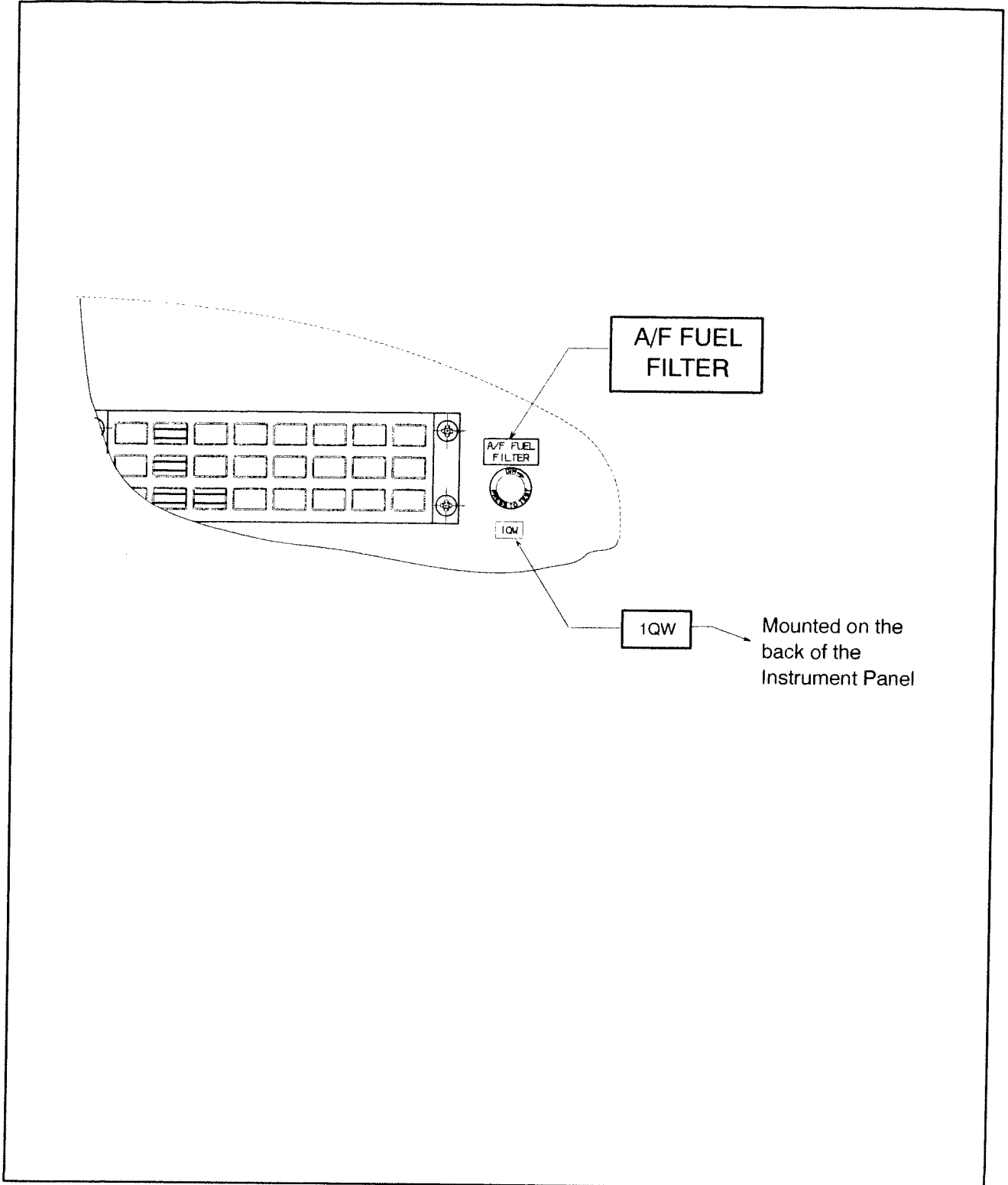


Figure 10 Placard and Identification Label on alternative Instrument Panel

Transport Canada - Accepted



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

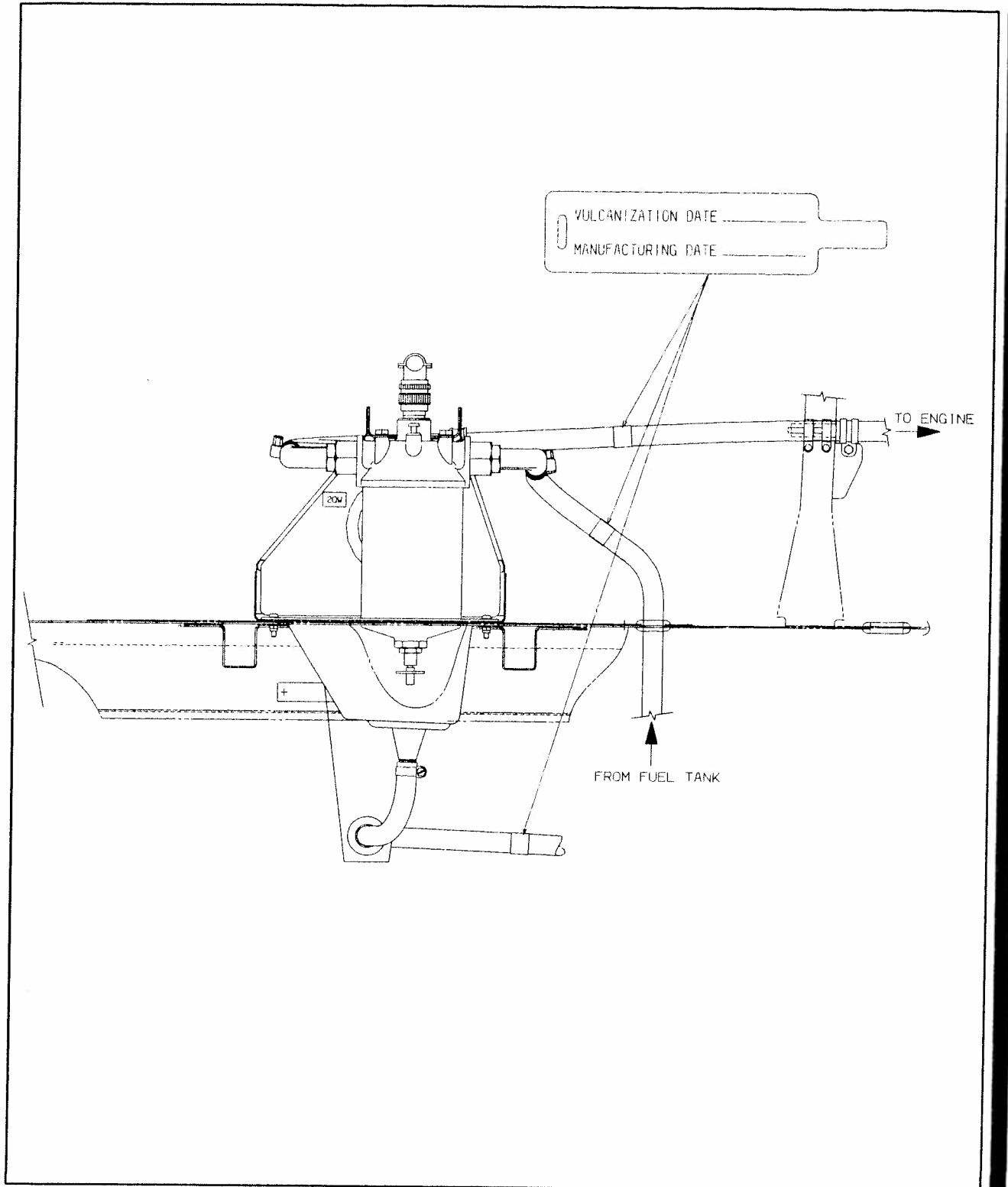


Figure 11 Identification Tags on hoses

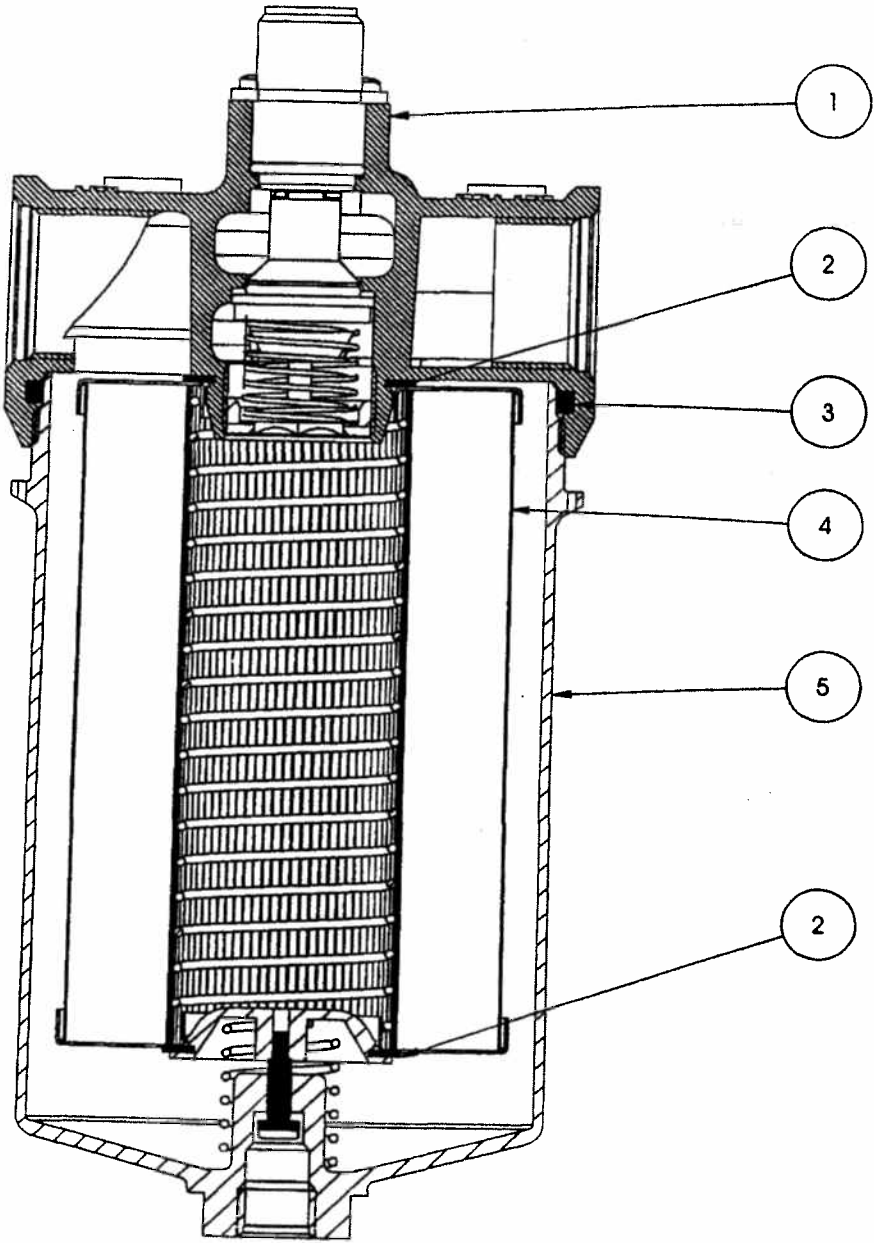
Transport Canada - Accepted



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 Micrometres Nominal
2. Fluid: Mil-T 5624 Gr. JP-4, JP-5, ASTM-D-1655 Type A, A1 or 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.