

# AIRWOLF FILTER CORP.

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TO THE MECHANIC:

This P/N AFC-K015 remote mount oil filter kit incorporates our generic STC approved for all P&W powered aircraft up to 450 hp. The STC paperwork provided with this kit utilizes the new approved model list (AML) system recently instituted by the FAA. Although you may notice your particular aircraft is not specifically listed under this new classification, it is still approved.

Upon installing this filter kit, you will need to fill out and file a 337 form for this installation referencing the P/N AFC-K015 kit and the STC# SA0128NY. If your particular aircraft is not listed on the AML, you will also need a field approval by your local FSDO for this installation. This is necessary because the FAA only updates this list on a quarterly basis, and until your aircraft is listed, a field approval is required. If you are unsure whether or not you need a field approval, please call us directly.

With this paperwork, your local FSDO inspector has all the approved engineering data necessary to issue a field approval . This inspector is not an engineer and typically all he is doing is seeing if you installed it I/A/W the installation instructions and usually to make sure it doesn't leak. That's it.

If your local FSDO inspector has any questions or concerns on this STC, he is to call the <u>Aircraft Certification</u> <u>Office</u> which will clarify the details. They are very familiar with our filter kits and can address any concerns your FSDO. inspector may have on your particular installation.

FAA - New York Aircraft Certification Office (ACO) Engine and Propeller Division 1600 Stewart Ave Suite 510 Westbury NY 11590 (516) 228-7332 / (516) 794-5531 Fax

If your aircraft required a field approval, we must have a copy in order to update the (AML) list on our STC. Please send us a copy in addition to the one you will file with your local FSDO We will then forward our copy to the Aircraft Certification Office for them to update the (AML) list on our STC.

### DATA PERTINENT TO ALL INSTALLATIONS

Prior to installing the filter kit on the aircraft, weigh the filter kit, add the weight of the hoses, and subtract the oil screen or oil filter adapter removed from the engine, and determine the net weight being added to the aircraft for determining the weight and balance of the aircraft later. Once the filter kit is installed on the aircraft, if you choose to purchase the hoses from Airwolf, we will supply you with the Teflon Hoses specified in this STC. At the time of the order we will need the flare to flare length of the hoses, and hose ends needed on each hose ie: Straight to Straight, Straight to 90°, Straight to 45°, etc. allowing for engine torque and vibration per AC43.13.

Thank you for your help.

Airwolf Filter Corp.



Applicability:		ey R985 powered Aircraft having firewalls I A527 galvanized steel or equivalent.	First Release 09/01/99 Revised 10/01/00
		Parts List No. AFC-K015-PL	
01.	AN4H-4A	Bolts, Drilled Head	(4)
02.	AN960-416	Flat Washers	(16)
03.	OFB-15	Oil Filter Base	(1)
04.	AN844-16D	Hose Elbow, 45°,	(2)
05.	AN840-16D	Hose Fitting, Straight,	(2)
06.	AN842-16D	Hose Elbow, 90°,	(2)
07.	OFS-10	Oil Filter Stud	(1!
08.	AFC-600	Oil Filter, Long, or Equivalent [Champion CH48109]	(1)
09.	QS100M52H	Hose Clamp, 3-1/4"	(1)
10.	MIL6000-3/4-2	Dampener	(1)
11.	MS20365-428A	Locknuts	(6)
12.	AN4-5A	Bolts	(6)
13.	DBL-10	Doubler Plate	(1)
14.	OFM-11	Oil Filter Mount Plate, Vertical	(1)
15.	56707	Loctite® 567 PST Teflon Thread Sealant	(1)
16.	MIL6000-1	Mil6000 Hose, 1" I.D.	(2)
17.	AE0000	Firesleeving	. ,
17.	QS100M16H	Hose Clamp, 1"	(4)
18.	AFC-K015-II	Installation Instructions	(1)
19.	AFC-K015-MI	Instructions for Continued Airworthiness	(1)
20.	AFC-K015-PL	Parts List	(1)

### Installation Instructions No. AFC-K015-A-II

# Installation of the remote oil filter kit on Boeing Model 75 series aircraft with Pratt & Whitney R985 radial engines.

First Release 09/01/99 Revised 10/01/00

- Note A: Some hoses or wires may have to be rerouted so the oil filter assembly will fit into position. Reference and material per AC 43.13-1B & 2A.
- 01. Remove left engine cowl (top and door) and bottom engine cowl.
- 02. Drain oil (optional).
- 03. Remove engine oil return line P/N A75N1-3004 (note this may be a length of 1" Mil 6000 hose). This line runs from the engine to the oil tank.
- 04. Turn the AN842-16D on top of the oil tank to where it points to the engine primer mounted in the step.
- 05. Remove the screw that goes through the end of the firewall stiffener P/N 75-2912. This is located on the left side of the firewall on the aft side. Loosen the screw that goes through the firewall stiffener and the tab welded on the fuselage. This screw is 4-5/16" inboard of the removed screw. (see attached drawing). Drill the hole of the removed screw to 1/4" (.250).
- 06. Measure 3-9/16" out from a vertical line drawn from the C/L of the left engine mount studs. Using reinforcing plate P/N DBL-10 as a template drill the other 5 holes 1/4" (.250). The previously drilled hole is the middle outboard hole.

### \*\*\*\*\* SEE WARNING (A) BELOW \*\*\*\*\*

- 07. Slip reinforcement plate (DBL-10) between the firewall and stiffeners. The long side goes up.
- 08. Bolt oil filter base support angle P/N OFM-11 to firewall and reinforcement plate using (6ea) provided AN 4-5A bolts.

### \*\*\*\*\* SEE WARNING (B) BELOW \*\*\*\*\*

- 09. Install provided AN842-16D fittings in the oil filter base. The fitting in B hole points horizontal with the filter base. The other points over the first fitting.
- Bolt oil filter base (OFB-15) to oil Filter Mount Plate, Vertical (22b) using provided AN4H-4A bolts. Oil inlet hole "B" is positioned to the front of the aircraft. Secure bolts with safety wire.

### \*\*\*\* SEE WARNING (C) BELOW \*\*\*\*

- 11. Install one 25" piece of 1" Mil 6000H hose using provided QS100M16H hose clamps. The "B" hole is the oil inlet and goes to the oil pump. The "A" port is the oil outlet and it goes to the oil tank. Tighten clamps.
- 12. Install oil filter as per manufacturers specifications and safety wire.
- 13. Using the 2" piece of 3/4" Mil 6000 hose provided, secure to bottom of oil filter with (1) QS100M52W 3-3/4" clamp obtained locally, and locate between bottom of oil filter and existing firewall. This will stengthen the oil filter mount and dampen the vibrations of the engine.
- 14. Safety wire drain and refill oil tank with 4.4 gals. oil. (If step #2 is omitted this step is not necessary).
- 15. Run engine and check for leaks.
- 16. Determine weight and balance, initiate 337 form, and update the equipment list.

### \*\*\*\*\* WARNING (A) \*\*\*\*\*

LOCAL STIFFENING OF THE FIREWALL MAY BE NECESSARY TO SUPPORT WEIGHT OF OIL FILTER AND PREVENT FIREWALL CRACKING.

### \*\*\*\*\* WARNING (B) \*\*\*\*\*

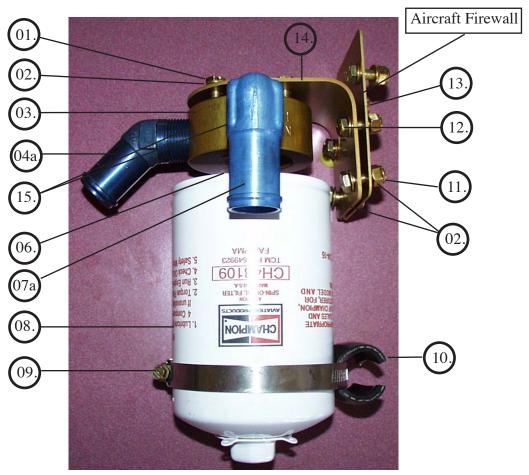
USE LOCTITE® 567 PST TEFLON THREAD SEALANT BEFORE INSTALLATION OF FITTINGS. DO NOT ASSEMBLE FITTINGS INTO OIL FILTER BASE WITHOUT SEALANT OTHERWISE GALLING OF MATERIAL WILL RESULT.

### \*\*\*\*\* WARNING (C) \*\*\*\*\*

NO ROUTING OF FLAMMABLE FLUID LINES ABOVE EXHAUST SYSTEM, UNLESS SHROUDED.

INSTALLER IS RESPONSIBLE FOR INTER-RELATIONSHIP BETWEEN THIS AND OTHER ENGINE CHANGES (INCLUDING ACCESSORIES)

### FIREWALL INSTALLATION ON P&W R985 SERIES



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(4) (16) (1) (2)
(1)
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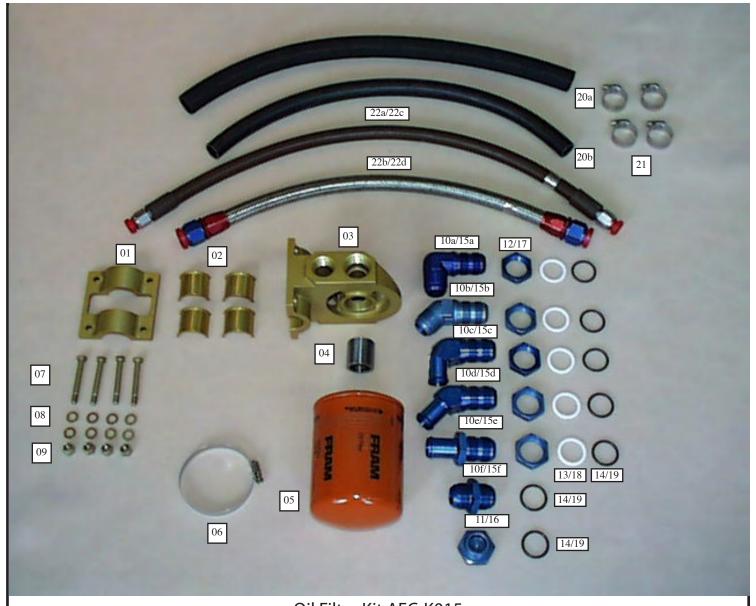
### \*\*\*\*\* WARNING (B) \*\*\*\*\*

USE LOCTITE® 567 PST TEFLON THREAD SEALANT BEFORE INSTALLATION OF FITTINGS. DO NOT ASSEMBLE FITTINGS INTO OIL FILTER BASE WITHOUT SEALANT OTHERWISE GALLING OF MATERIAL WILL RESULT.

# Airwolf Filter Corp.

Assembly Drawing. Firewall Mounted Oil Filter

Drawing # AFC-D-0049



# Oil Filter Kit AFC-K015

Applicability:		Pratt & Whitney powered Aircraft having firewalls of .021 ASTM A527 galvanized steel or equivalent.	First Release 09/01/99 Revised 10/01/00
Index	Part Number	Parts List No. AFC-K015-PL  Description	Quantity
01.	OFB-18-12	Clamp Plate, Oil Filter Base	(1)
02a. or	OFB-18-13	1.000" Bushing Set	(1)
02b. or	OFB-18-14	1.125" Bushing Set	(1)
02c. or	OFB-18-15	1.250" Bushing Set	(1)
02d. or	OFB-18-16	1.375" Bushing Set	(1)
02e. or	OFB-18-17	1.500" Bushing Set	(1)
02f.	OFB-18-18	1.625" Bushing Set	(1)
03.	OFB-18-11	Adapter Body, Oil Filter Base	(1)
04.	OFS-12	Oil Filter Stud	(1)
05.	AFC-700	Oil Filter	(1)
06.	QS100M76H	5-1/2" Hose Clamp	(1)
07.	AN5H-12A	5/16" Bolt, 1-1/4" Long	(4)
08.	AN960-516	5/16" Flat Washer	(8)
09.	MS20365-516	5/16" Locknut	(4)
10a. or	AN833-16D	90° Bulkhead Fitting, Flared Ends	(2)
10b. or	AN837-16D	45° Bulkhead Fitting, Flared Ends	(2)
10c. or	AN838-16D	90° Bulkhead Fitting, MIL6000 Type Hose	(2)
10d. or	AN839-16D	45° Bulkhead Fitting, MIL6000 Type Hose	(2)

Applicability:

Pratt & Whitney R985 and larger, powered Aircraft having firewalls of .021 ASTM A527 galvanized steel or equivalent.

First Release 09/01/99 Revised 10/01/00

### Parts List No. AFC-K015-PL (continued)

<u>Index</u>	Part Number	Description	<b>Quantity</b>
10e. or 10f. 11.	AN807-16D AN815-16D AN814-16D	Straight Tube to Hose Adapter Union Plug	(2) (2) (2)
12. 13. 14. 15a. or 15b. or 15c. or 15d. or 15e. or 15f. 16. 17. 18.	AN6289-16D MS28773-916 M83248/1-916 AN833-12D AN837-12D AN838-12D AN807-12D AN815-12D AN815-12D AN6289-12D MS28773-912 M83248/1-912	Bulkhead Nut Teflon Boss Gasket Viton O-Ring 90° Bulkhead Fitting, Flared Ends 45° Bulkhead Fitting, Flared Ends 90° Bulkhead Fitting, MIL6000 Type Hose 45° Bulkhead Fitting, MIL6000 Type Hose Straight Tube To Hose Adapter Union Plug Bulkhead Nut Teflon Boss Gasket Viton O-Ring	(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)
20a. or 20b.	MIL6000-1 MIL6000-3/4 AE102-22 J253	1" I.D. MIL6000 Hose 3/4" I.D. MIL6000 Hose Firesleeve for MIL6000 Hose Firesleeve Band Clamps	(2) (2)
21. 22a. or 22b. or 22c. or 22d. or 23. 24. 25. 26. 27.	QS100M16H F13000016-0xxx 13000016-0xxx F13000012-0xxx 13000012-0xxx DBL-14 B-7669B AFC-K015-II AFC-K015-MI AFC-K015-PL	1" Hose Clamp Titeflex® Teflon Hose Assy with Fire Sleeving. [-16 Size] Titeflex® Teflon Hose Assy w/o Fire Sleeving. [-16 Size] Titeflex® Teflon Hose Assy with Fire Sleeving. [-12 Size] Titeflex® Teflon Hose Assy w/o Fire Sleeving. [-12 Size] Doubler Plate, Beaver Chip Detector Installation Instructions Maintenance Instructions Parts List	(4) (2) (2) (2) (2) (1) (1) (1) (1)

### \*\*\*\*\* WARNING (A) \*\*\*\*\*

LOCAL STIFFENING OF THE FIREWALL MAY BE NECESSARY TO SUPPORT WEIGHT OF OIL FILTER AND PREVENT FIREWALL CRACKING.

### \*\*\*\*\* WARNING (B) \*\*\*\*\*

LUBRICATE FITTINGS WITH THREAD LUBE OR LIGHT OIL BEFORE INSTALLATION INTO OIL FILTER BASE OTHERWISE GALLING OF MATERIAL MAY RESULT.

### \*\*\*\*\* WARNING (C) \*\*\*\*\*

NO ROUTING OF FLAMMABLE FLUID LINES ABOVE EXHAUST SYSTEM, UNLESS SHROUDED.

INSTALLER IS RESPONSIBLE FOR INTER-RELATIONSHIP BETWEEN THIS AND OTHER ENGINE CHANGES (INCLUDING ACCESSORIES)

### \*\*\*\*\* WARNING (D) \*\*\*\*\*

NO SUBSTITUTION OF OIL FILTER ALLOWED. THIS FILTER INCORPORATES AN INTERNAL BYPASS RELIEF VALVE SET TO OPEN TO AIRWOLF'S SPECS, HAS THE LASTEST MICROGLAS FILTER TECHNOLOGY WHICH ALLOWS FOR HI FLOW RATES AND HIGH EFFICIENCY, AND HAS AN INTERNAL SCREEN COVERING THE OIL PRESSURE BYPASS VALVE, WHICH HELPS CONTAIN THE METAL INSIDE THE FILTER CAN WHEN A CATASTROPHIC ENGINE FAILURE OCCURS.

### Installation Instructions No. AFC-K015-B-II

Applicability: DeHaviland DHC-2 Beaver with Pratt & Whitney R985 engine

having firewall of .021 ASTM A527 galvanized steel or equivalent.

First Release 09/01/00 Revised 10/01/00

Note A: Some hoses or wires may have to be rerouted so the oil filter assembly will fit into position.

Reference and material per AC 43.13-1B & 2A.

- 01. Remove engine cowling as needed to gain access to engine, oil cooler and oil tank.
- 02. Drain engine oil and tank (optional).
- 03. Remove engine scavenge oil return line. This line routes from the engine to the oil cooler.

**TIP:** You always want to filter oil at it's hottest point, and in front of the oil cooler. The hotter the oil is, the more it is willing to get rid of dirt and contaminants, and it keeps the oil cooler from becoming a trash collector. Therefore the oil filter should always be installed ahead of the oil cooler.

- O4. Per installation drawing AFC-0053, locate the lower RH footwell, and drill and install DBL-14 doubler plate to cabin side of firewall, and secure with (28) MS20613-4C4 Stainless Steel Rivets provided.
- Using bolts (07), washers (08), and locknuts (09) supplied, secure oil filter base (03) to doubler plate, install rear clamp plate (01) to inside of footwell, and torque to 100-140 in/lbs.

Note: When done correctly, the firewall and doubler will be sandwiched between the oil filter base (03) and oil filter clamp plate (01).

06. Onto each bulkhead fitting (10a), install in order 1 ea. bulkhead nut (12), boss gasket (13), and O-Ring (14).

**CAUTION:** O-ring (14) and boss gasket (13 <u>must</u> seal and be positioned in the center, smooth, non threaded area of the bulkhead fitting. If this is not done, when you tighten down the blue bulkhead nut (12), you will force the O-Ring (14) against the end of the first set of threads on the bulkhead fitting, cutting the O-Ring, and mushrooming out the Teflon Boss gasket (13) like a large "C" causing a small oil leak.

07. Lightly oil assembled bulkhead fittings and install into appropriate inlet/outlet holes of oil filter base (03) but do not tighten at this time.

### \_\*\*\*\* WARNING \*\*\*\*\*

### DO NOT INSTALL DRY FITTINGS INTO OIL FILTER BASE OTHERWISE GALLING OF MATERIAL WILL RESULT.

- 08. Install and connect the 27" long -16 hose from the outlet of the scavenge oil pump to the "IN" fitting on the oil filter base (03).
- 09. Install and connect the 37" long -16 hose from "OUT" fitting on the oil filter base (03) to the inlet of the oil cooler.
- Torque hose ends to specs at this time.
- 11. Tighten bulkhead nuts at this time.

**NOTE:** The entire sealing function occurs by lightly compressing the O-Ring. Once the Teflon boss gasket (13) comes in contact with the O-Ring (14), 1/4 to 1/2 turn on the bulkhead nut (12) is all that is needed. Do not overtighten bulkhead nut as it does not need to bottom out against the oil filter adapter (03).

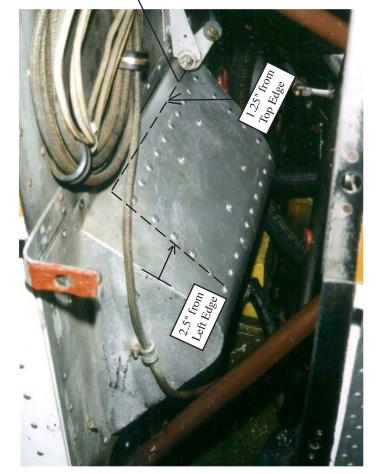
12. Install appropriate O-Ring (19) onto plug/bleeder (16) and install into unused inlet/outlet holes, torque to specs and safety wire

**NOTE:** If the optional chip detector was purchased, install it at this time into the -12 "IN" hole on the oil filter base. Ground one of the leads on the chip detector and run the second lead up to the cockpit dash, to be connected to the yellow warning light.

- 13. Install oil filter (05) and tighten per filter manufacturers specifications.
  - Using hose clamp (06) provided, secure to bottom to oil filter to provided attachment vehicle for safety wiring of oil filter.
- 14. Safety wire drain plug and refill oil tank with oil. (If step #2 is omitted this step is not necessary).
- 15. Run engine and check for leaks.
- 16. Determine weight and balance, initiate 337 form, and update the equipment list.

**NOTE:** The assembled Airwolf oil filter Assy, with double plate and hoses weighs 9.5 lbs. and is located 51" AFT of datum Ref. STA 100.00.

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### INSTALLATION DRAWING# AFC-D-0054

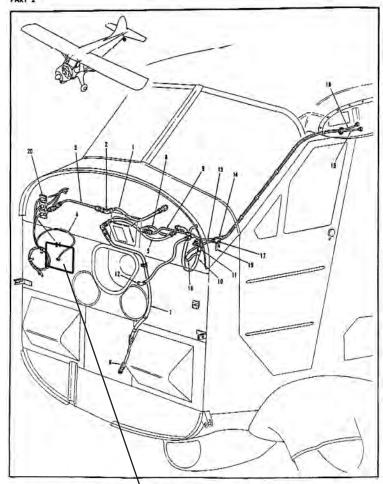


View from inside RH footwell P/N C2E502A

# Airwolf Filter Corp.

Installation Drawing.
DBL-14 Beaver Doubler Plate

GROUP ASSEMBLY PART LIST PART 2





Piping And Wiring - Instrument panel

Additional doubler field made from .090 6061-T6 Viewed from backside of firewall

### INSTALLATION DRAWING# AFC-D-0054-A



Alternate acceptable mounting location for aircraft with military style exhaust systems.

# Airwolf Filter Corp.

Installation Drawing.
DBL-14 Beaver Doubler Plate

### Installation Instructions No. AFC-K015-C-II

Applicability: Pratt & Whitney R985 & Larger, powered Aircraft having firewalls of .021 ASTM A527 galvanized steel or equivalent.

First Release 09/01/99 Revised 10/01/00

- Note A: Some hoses or wires may have to be rerouted so the oil filter assembly will fit into position. Reference and material per AC 43.13-1B & 2A.
- 01. Remove engine cowling as needed to gain access to engine, oil cooler and oil tank.
- 02. Drain engine oil and tank (optional).
- 03. Remove engine scavenge oil return line. (Note this may be a length of 3/4" or 1" MIL6000 hose). This line routes from the engine to the oil tank, or from the engine to the oil cooler, whichever is applicable on your aircraft.

**NOTE:** You always want to filter oil at it's hottest point, and in front of the oil cooler. The hotter the oil is, the more it is willing to get rid of dirt and contaminants, and it keeps the oil cooler from becoming a trash collector. Therefore the oil filter should always be installed ahead of the oil cooler.

- 04. Determine what size scavenge oil line is used in this particular aircraft.
- 05. Determine location of oil filter base (03) and decide on what engine mount tube it will be mounted to.
- 06. Determine size of above mentioned engine mount.
- 07. After determining engine tube size, install appropriate bushing (02a-f) into oil filter base (03) and oil filter base clamp.
- 08. Using bolts (07), washers (08), and locknuts (09) supplied, secure assembled oil filter base to engine mount and torque to 100-140 in/lbs.
- 09. Determine which fittings needed based upon hose size and whether or not the original MIL6000 will still be used or whether the hose will be upgraded to the newer flare fitting type hose.
- 10. Onto each bulkhead fitting (10a-f) or (14a-f), install in order 1 ea. bulkhead nut (11/15), boss gasket (12/16), and O-Ring (13/17).

**CAUTION:** O-ring (13/17) and boss gasket (12/16) <u>must</u> seal and be positioned in the center, smooth, non threaded area of the bulkhead fitting. If this is not done, when you tighten down the blue bulkhead nut (11/15), you will force the O-Ring (13/17) against the end of the first set of threads on the bulkhead fitting, cutting the O-Ring, and mushrooming out the Teflon Boss gasket (12/16) like a large "C" causing a small oil leak.

11. Lightly oil assembled bulkhead fittings and install into appropriate inlet/outlet holes of oil filter base (03) but do not tighten at this time.

### \*\*\*\*\* WARNING \*\*\*\*\*

### DO NOT INSTALL DRY FITTINGS INTO OIL FILTER BASE OTHERWISE GALLING OF MATERIAL WILL RESULT.

12. Connect hose from the outlet of the scavenge oil pump to the "IN" fitting on the oil filter base (03). If using MIL6000H hose secure with the provided hose clamps (19).

### \*\*\*\*\* SEE WARNING C ABOVE \*\*\*\*\*

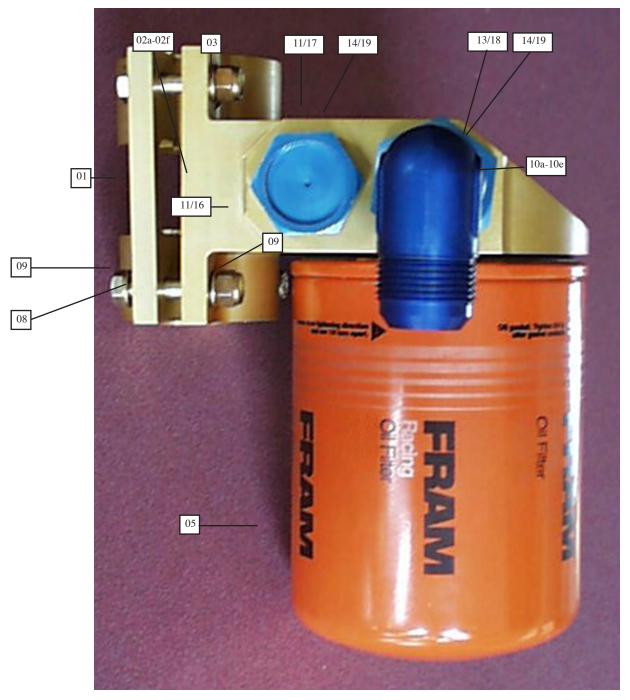
- 13. Connect hose from "OUT" fitting on the oil filter base (03) to the inlet of the oil tank or oil cooler where applicable. If using MIL6000H hose secure with the provided hose clamps (19).
- 14. Tighten bulkhead nuts at this time.

**NOTE:** The entire sealing function occurs by lightly compressing the O-Ring. Once the Teflon boss gasket (12/16) comes in contact with the O-Ring (13/17), 1/2 to 3/4 turn on the bulkhead nut (11/15) is all that is needed. Do not overtighten bulkhead nut as it does not need to bottom out against the oil filter adapter (03).

- 15. Install appropriate O-Ring (13/17) onto plug/bleeder and install into unused inlet/outlet holes,torque to specs and safety wire.
- 16. Install oil filter (05) and tighten per filter manufacturers specifications.

  Using hose clamp (06) provided, secure to bottom to oil filter to provided attachment vehicle for safety wiring of oil filter.
- 17. Safety wire drain plug and refill oil tank with oil. (If step #2 is omitted this step is not necessary).
- 18. Run engine and check for leaks.
- 19. Determine weight and balance, initiate 337 form, and update the equipment list.

# **INSTALLATION DRAWING# AFC-D-0050**



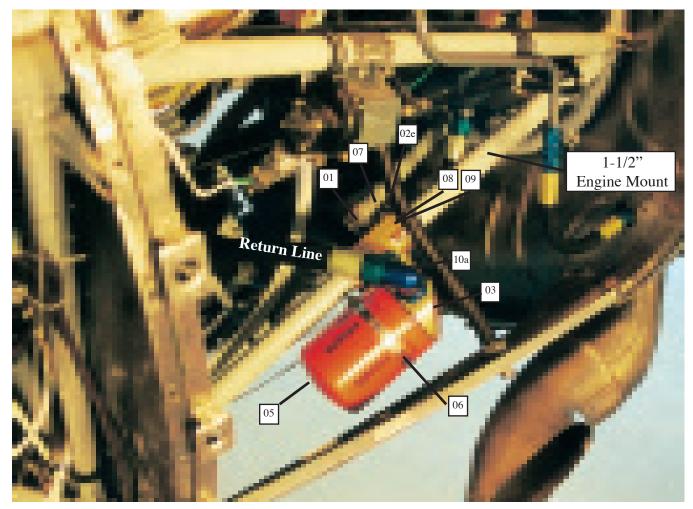
TYPICAL ENGINE MOUNT INSTALLATION

# Airwolf Filter Corp.

Installation Drawing.
OFB-18 Oil Filter Adapter, Engine Tube

Drawing# AFC-D-0050

# **INSTALLATION DRAWING# AFC-D-0053**



# Typical Radial Engine Installation Shown Mounted on T-6 Texan

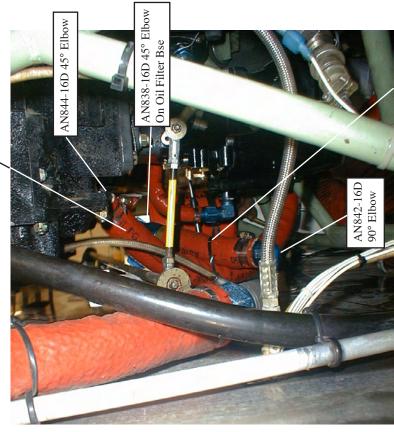
<u>Index</u>	Part Number	<u>Description</u>	<u>Quantity</u>
01.	OFB-18-12	Clamp Plate Oil Filter Base	(1)
02e.	OFB-18-17	1.500" Bushing Set	(1)
03.	OFB-18-11	Adapter Body Oil Filter Base	(1)
05.	AFC-700	Oil Filter	(1)
06.	QS100M76H	5-1/2" Hose ClampSafety Wire Attachment	(1)
07.	AN5-13A	5/16" Bolt, 1-3/8" Long	(4)
08.	AN960-516	5/16" Flat Washer	(8)
09.	MS20365-516	5/16" Locknut	(4)
10a.	AN833-16D	90° Bulkhead Fitting	(2)

# Airwolf Filter Corp.

Installation Drawing.
OFB-18 Oil Filter Adapter, Engine Tube

1" MIL-H-6000 hose with AE102-22 Firesleeve from Engine to Oil Filter Base Inlet.

RH VIEW



1" MIL-H-6000 hose with AE102-22
Firesleeve. secured to AN838-16D
fitting on oil filter base outlet. Hose
Clamped end goes to oil cooler.

LH VIEW

1" MIL-H-6000 hose with AE102-22
Firesleeve. secured to AN839-16D 90
fitting on oil filter base outlet.

Top of oil filter base even with lower edge

On Oil Filter Base Inlet

I" X 1.5" X .125" 606176

angle on each side of oil
filter base front and back
of firewall. Edge of outer
angle is 5" from edge of
firewall.

AN839-16D 90° Elbow

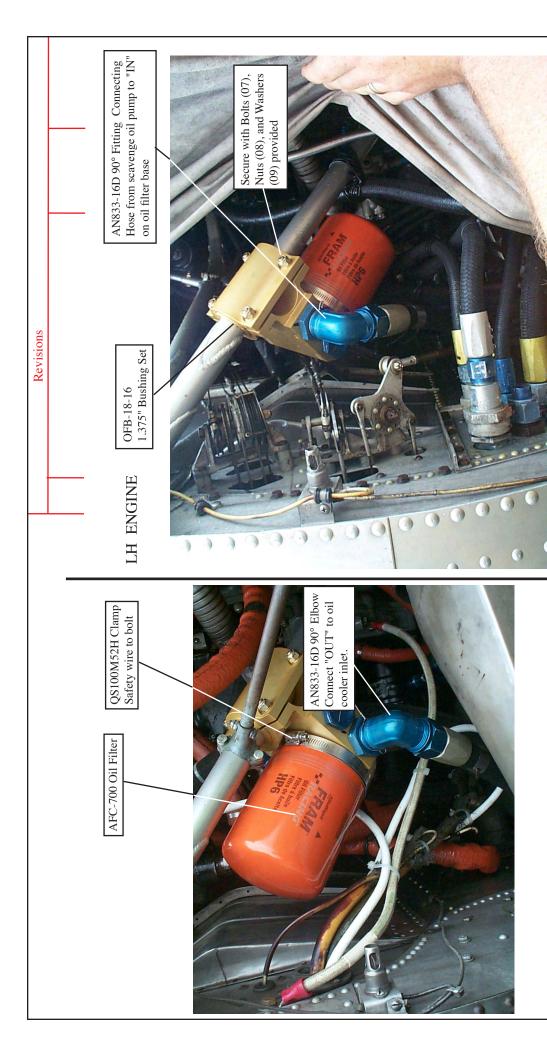
of stiffener

Oil Filter Base mounted 18.5" Forward of Datum, which is wing leading edge.

# Airwolf Filter Corp.

Typical Installation in Weatherly

INSTALLATION DRAWING# AFC-D-0055



# Airwolf Filter Corp.

Typical Installation in Douglas DC-3 / C-47

# INSTALLATION DRAWING# AFC-D-0056

	INC	TRUCTIONS FOR CO	AITIAILIED AIDW	Form AFC-K015-ICA Revised 10/01/00
A/C	Make :	TRUCTIONS FOR CO  Model:		<u> Reg#:</u>
	ision: Date:			
This	sixteen item checklist are Ins	ructions for Continued Airwort		with FAA Handbook Bulletin for Airworthihe following equipment is installed:
SYS	STEM:Airwolf Remote Mo	unt Oil Filter System.		Airwolf Filter Corp 15369 Madison Rd Middlefield, OH 44062
ITEM		CHECKLIST	INFORMATION	
1.	information on the content, s		applicability, definitions	nponent that has been altered. Include and other, abbreviations, precautions, units of measure-
	Comment:		with P	ratt & Whitney engine.
		Aircraft Model		Engine Model
2.	Description: Of the major alteration, it's function including an explanation of it's interface with other systems, if any.			
	Comment: Installation of A	sirwolf Remote Mounted Oil	Filter Kit P/N AFC-K01	15
3.	Control: Operation information: Or special procedures if any.			
		ooth the engine and engine mperature is 30°F or below.	oil is recommended p	rior to starting the engine during periods of
4.	Servicing information: Suc	h as types of fluids used, serv	vicing points, and location	on of access panels, as appropriate.
	should be changed at leas	t once each 12 months. Cu	t the old filter open wi	ervice Bulletin 1183 Revision T or higher. Oil th Airwolf AFC-570 oil filter cutter at each oil ate impending engine problems.
5.	nents are inspected, cleaned scheduled maintenance per	d, lubricated, adjusted, tested, od. This section can refer to t	including applicable we he manufactures instru	ods in which each of the major alteration compo- ear tolerances and work recommended at each ctions for the equipment installed where appropri- al notes, cautions, or warnings as applicable.
	Comment: Inspect for sec and check for leaks before		hr . inspection. After a	any oil change, always ground run the engine
6.	Trouble shooting informat dial actions to be taken.  Comment:N/A	ion: Information describing pr	obably malfunctions, ho	ow to recognize those malfunctions, and the reme
7.	and any necessary precaution		describe or refer to the	nethod of removing and replacing products, parts manufacture's instructions to make required tests etc., if any.
	Comments:N/A			
8.	Diagrams: Of access plate	s and information, if needed, t	o gain access for inspe	ction.

**Special inspection requirements:** Such as X-ray, ultrasonic testing, or magnetic particle inspection, if required.

Application of protective treatments: To the affected area after inspection and/or maintenance, if any.

Comment:\_\_N/A

Comment: \_\_N/A

Comment:\_\_N/A

9.

10.

	INSTRUCTIONS FOR CONTINUED AIRWORTHINESS Form AFC-K015-ICA Revised 10/01/00
11.	Data: Relative to structural fasteners such as type, torque, and installation requirements if any.
	Comment:N/A
12.	List of special tools: Special tools that are required, if any.
	Comment:N/A
13.	For commuter category aircraft: The following additional information must be furnished, as applicable:  A. Electrical Loads  B. Methods of balancing flight controls.  C. Identification of primary and secondary structures>  D. Special repair methods applicable to the airplane.
	Comment:N/A
14.	<b>Recommended overhaul periods:</b> Are required to be noted on the ICA when an overhaul period has been set by the manufacturer of a component, or equipment. If there is no overhaul period, the ICA should state for item 14: "No additional overhaul time limitations."
	Comment:N/A
15.	<b>Airworthiness Limitation Section:</b> Include any "approved" airworthiness limitations identified by the manufacturer of FAA type Certificate Holding Office (e.g., An STC incorporated in a larger field approved major alteration may have an airworthiness limitation.) The FAA inspector should not establish, alter, or cancel airworthiness limitations without coordinating with the appropriate FAA type Certificate Holding Office. If there are no changes to the airworthiness limitations, the ICA should state for item 15: "No additional airworthiness limitations" or " Not Applicable."
	Comment:N/A
16.	<b>Revision:</b> This section should include information on how to revise the ICA. For example, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA. The FAA inspection accepts the change by signing Block 3 and including the following statement: "The attached revised/new Instructions for Continued Airworthiness (date) for the above aircraft or component major alteration have been accepted by the FAA, superseding the Instructions for Continued Airworthiness (date)." Once the revision has been accepted, a maintenance record entry will be made, identifying the revision, its location, date of the Form 337.
	Comment: A letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA. The FAA inspector accepts the change by signing Block 3 and including the following statement: "The attached revised/new Instructions for Continued Airworthiness (date) for the above aircraft or component major alteration have been accepted by the FAA, superseding the Instructions for Continued Airworthiness (date)." Once the revision has been accepted, a maintenance record entry will be made, identifying the revision, its location, date of the Form 337.
NOT	E.

### NOTE

Implementation and Record Keeping: For major alterations performed in accordance with FAA Field Approval policy, the owner operator operating under part 91 is responsible for ensuring that the ICA is made part of the applicable section 92.409 inspection program for their aircraft. This is accomplished when a maintenance entry is made in the aircraft's maintenance record in accordance with section 43.9. This entry recorded the major alteration and identifies the original ICA location (e.g., Block 8 of FAA Form 337, dated 5/28/98) along with a statement that the ICA is now part of the aircraft's inspection/maintenance requirements.

For major alterations performed in accordance with field approval on air carrier aircraft, the air carrier operator is responsible for ensuring that the ICA is made part of the applicable inspection/maintenance program for their aircraft. If a procedure is not currently included in the operator's manual to incorporate ICA, this process will need to be appropriately addressed (i.e. the operator submits a revision to its maintenance program to the applicable certificate-holding district office (CHDO).

For aircraft inspected under an Approved Aircraft Inspection Program (AAIP), the operator will submit a change to the CHDO in accordance with section 135.419b).

For air carrier aircraft inspected using an annual/100 hour inspection program, a reference to the new ICA will be made in the aircraft's maintenance record in accordance with section 43.9. This entry records the major alteration and identifies the original ICA location (e.g., ICA are located/attached to Block 8 of FAA Form 337, dated 5/28/98). In addition, the operator will request a revision to the operator's Operations Specifications, additional maintenance requirements, which incorporates the ICA into the inspection program.



# **Reference Data** for

**AFC-K015** 

for

**STC SA01282NY** Oil Filter Kit

AFC-K015

Dated: 4/2/2021

Airwolf Filter, Corp 12801 Hwy. 75 N. **OKMULGEE, OK 74447** 

(918) 561-8696 Ph (918) 561-8695 Fx

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### READ THIS BEFORE INSTALLING OIL FILTER KITS, DATA PERTINENT TO ALL INSTALLATIONS

### TO THE MECHANIC:

This P/N AFC-K015 remote mount oil filter kit incorporates our STC approved for all Pratt & Whitney powered aircraft. The STC paperwork provided with this kit utilizes the approved model list (AML) system instituted by the FAA.

Upon installing this filter kit, you will need to fill out and file a 337 form for this installation referencing the P/N AFC-K015 kit and the STC# SA01282NY. If your aircraft is not listed on the AML, you will also need a field approval by your local FSDO for this installation. This is necessary until your aircraft is listed, a field approval is required. If you are unsure whether you need a field approval, please call us directly.

If you have any questions or concerns on this STC, please call Airwolf Filter Corp, which we will clarify the details. Personnel are very familiar with our filter kits and can address any concerns you may have on your installation.

Airwolf Filter Corp 12801 Hwy 75 N. Okmulgee, OK 74447 Phone: (918) 561-8696

Fax: (918) 561-8695

After completion of the installation of this kit, place a copy of the instructions along with the ICA in the Aircraft records for maintenance and replacement parts identification.

### DATA PERTINENT TO ALL INSTALLATIONS

Prior to installing the filter kit on the aircraft, weigh the filter kit, add the weight of the hoses, and subtract the oil screen or oil filter adapter removed from the engine, and determine the net weight being added to the aircraft for determining the weight and balance of the aircraft later. Once the filter kit is installed on the aircraft, if you choose to purchase the hoses from Airwolf, we will supply you with the Hoses specified in this STC. At the time of the order, we will need the flare-to-flare length of the hoses, and hose ends needed on each hose i.e.: Straight to Straight, Straight to 90°, Straight to 45°, etc. allowing for engine torque and vibration per AC43.13.

# If our instructions do not specifically say you can do something, assume that means you are not allowed to do it without our written approval

- 1. Review all installation data and written material before beginning
- 2. Please inspect contents of kit and inventory components before beginning.
- 3. <u>Do not</u> over tighten the fittings on Adapters or housings. This can distort or crack housings, causing oil to leak.
- **4.** It is <u>EXTREMELY</u> important that oil lines be routed properly in accordance with AC 43.13-1A & 2A Acceptable Methods and Practices. (see Tip below)
- **5.** See Warnings and Notes contained in the instructions concerning routing of lines and the use of sealant on NPT fittings.

### DO NOT USE TEFLON TAPE ON FITTINGS.

- **6.** The use of sealant on AN/Flared type fittings is not required, it is only required on NPT fittings.
- 7. When mounting Adapters use the supplied doublers for reinforcing mounting locations.
- **8. BE PATIENT!!!** Take your time and you will see the results of your effort.

### TIP

### How to get correct length of hose

Hose length is measured from flare to flare. Do not use a string or a tape measure but take a section of old garden hose. Touch one end of the garden hose to the tip of one fitting and touch the other end of the hose to the other fitting, that is the correct length of hose needed. The garden hose is trying to bend to its natural set, which is normally the extra length needed for engine torque and vibration per AC43.13, Also, if you kink a garden hose, you are obviously going to kink an aircraft hose. Doing it this way allows you to snake a hose across the back of an engine and around obstacles and this will replicate exactly how the aircraft hose will fit.

Thank you for taking the time to read this.

### **WARNINGS & NOTES**

### \*\*\*\*\*WARNING (A) \*\*\*\*\*

USE LOCTITE® BRAND 567 TEFLON THREAD SEALANT BEFORE INSTALLATION OF FITTINGS. DO NOT ASSEMBLE FITTINGS INTO OIL FILTER BASE WITHOUT SEALANT OTHERWISE GALLING OF MATERIAL WILL RESULT.

### \*\*\*\*\* WARNING (B) \*\*\*\*\*

NO ROUTING OF FLAMMABLE FLUID LINES ABOVE EXHAUST SYSTEM, UNLESS FIRESLEEVED. INSTALLER IS RESPONSIBLE FOR INTER-RELATIONSHIP BETWEEN THIS AND OTHER ENGINE CHANGES (INCLUDING ACCESSORIES)

### \*\*\*\*\* WARNING (C) \*\*\*\*\*

THE USE OF PARTS AND COMPONENTS NOT INCLUDED IN THE KIT, IS NOT COVERED BY THE STC APPROVAL. ALWAYS REMEMBER THAT THE DIRTY OIL FROM THE ENGINE ENTERS THE OIL FILTER FROM THE OUTSIDE OF THE FILTER. THE CLEAN OIL EXITS THROUGH THE LARGE HOLE IN THE CENTER OF THE OIL FILTER AND RETURNS TO THE ENGINE.

### \*\*\*\*\* WARNING (D) \*\*\*\*\*

DO NOT, UNDER ANY CIRCUMSTANCES, CONNECT AN OIL COOLER THAT DOES NOT HAVE A THERMOSATIC CONTROL VALVE, IN SERIES WITH OUR REMOTE MOUNT OIL FILTER KIT. OUR FILTER KIT IS A "FULL FLOW" OIL FILTERING SYSTEM WHICH MEANS ALL OF THE OIL IS FILTERED ALL OF THE TIME. DURING STARTUP ON A COLD DAY, THE COLD THICK OIL WILL PARTIALLY BYPASS A CH48108 OR CH48109 OIL FILTER UNTIL THE VISCOSITY DROPS AND THE THIN OIL CAN FLOW THROUGH THE FILTER MEDIA THEREBY ALLOWING OIL TO CIRCULATE IN THE ENGINE. IF AN OIL COOLER HAS NO THERMOSTATIC BYPASS BUILT INTO THE UNIT, WHEN THE OIL FILTER GOES INTO PARTIAL BYPASS, THIS THICK SLUG OF OIL WILL BE STOPPED, OR SEVERELY RESTRICTED AT THE OIL COOLER. ONE OF THREE THINGS WILL HAPPEN:

- 1. THE OIL COOLER WILL SEPARATE IN HALF.
- 2. THE OIL FILTER GASKET WILL FAIL AND/OR THE OIL FILTER WILL EXPLODE.
- 3. THE OIL HOSE WILL FAIL

ANY OF THE THREE SCENARIOS ABOVE WILL CAUSE COMPLETE LOSS OF OIL IN A SHORT PERIOD OF TIME.

### NOTE.

### **COMMON TO ALL INSTALLATIONS**

SOME HOSES OR WIRES MAY HAVE TO BE REROUTED SO THE OIL FILTER ASSEMBLY WILL FIT INTO POSITION. REFERENCE AND MATERIAL PER AC 43.13-1B & 2A.

### Illustrated Parts List No. AFC-K015-PL-A

Applicability: Pratt & Whitney R-985 Powered Aircraft having firewalls of .021" ASTM A527 galvanized steel or equivalent.



Parts Illustration Pratt & Whitney R-985 Engine Series

### Parts List No. AFC-K015-PL-A

Applicability: Pratt & Whitney R-985 Powered Aircraft

having firewalls of .021" ASTM A527 galvanized steel or equivalent.

<u>Index</u>	Part Number	Description	<u>Quantity</u>
1	MIL6000-3/4	Hose ¾" ID	24
2	MIL6000-3/4	Hose ¾" ID	24
3	AFC-500 or AFC-600	Oil Filter, or Equivalent [Champion CH48108/CH48109]	1
4	OFB-15	Oil Filter Base, -12 Ports, (with OFS-10 Installed)	1
5	OFM-11	Oil Filter Mount Plate - 90°	1
6	DBL-10	Plate, Doubler	1
7	567	Loctite Thread Sealant	1
8	MIL6000-3/4-2	Dampener, Vibration	1
9	AN4-5A	Bolt	6
10	AN4H-4A	Bolt	4
11	AN960-416	Flat Washer	12
12	AN960-416	Flat Washer	4
13	MS20365-428A	Locknut	6
14	QS100M52H	Clamp	1
15	QS100M12H	Clamp	4
16	AN840-12D	Fitting, NPT-Hose, Straight	1
NS	AN840-16D	Fitting, NPT-Hose, Straight	opt
17	AN842-12D	Fitting, NPT–Hose, 90°	1
NS	AN842-16D	Fitting, NPT–Hose, 90°	opt
NS	AN844-12D	Fitting, NPT–Hose, 45°	1
NS	AN844-16D	Fitting, NPT–Hose, 45°	opt

### Installation Instructions No. AFC-K015-II-A

# Applicability: Installation of the remote oil filter kit on Boeing Model 75 series aircraft with Pratt & Whitney R-985 Radial Engine.

- 1. Remove left engine cowl (top and door) and bottom engine cowl.
- 2. Drain oil (optional).
- 3. Remove engine oil return line P/N A75N1-3004 (note this may be a length of 1" Mil 6000 hose). This line runs from the engine to the oil cooler / tank.
- 4. Remove the screw that goes through the end of the firewall stiffener P/N 75-2912. This is located on the left side of the firewall on the aft side. Loosen the screw that goes through the firewall stiffener and the tab welded on the fuselage. This screw is 4-5/16" inboard of the removed screw. (see attached drawing AFC-D-0019). Drill the hole of the removed screw to 1/4" (.250).
- 5. Measure 3-9/16" out from a vertical line drawn from the C/L of the left engine mount studs. Using doubler plate P/N DBL-10 as a template drill the other 5 holes 1/4" (.250). The previously drilled hole is the middle outboard hole.
- 6. Slip doubler plate (DBL-10) between the firewall and stiffeners. The long side goes up (see attached drawing AFC-D-0064).
- 7. Bolt oil filter base support angle P/N OFM-11 to firewall and doubler plate using(6ea) provided AN 4-5A bolts.

### \*\*\*\* SEE WARNING (A) \*\*\*\*

- 8. Install provided AN842-16D fittings in the oil filter base. The fitting in port B points horizontal with the filter base. The other points over the first fitting.
- 9 Bolt oil filter base (OFB-15) to oil Filter Mount Plate, Vertical (5) using provided AN4H-4A bolts. Oil inlet port "B" is positioned to the front of the aircraft. Secure bolts with safety wire.

### \*\*\*\* SEE WARNING (B) \*\*\*\*

- 10. Install one 25" piece of 1" Mil 6000H hose using provided QS100M16H hose clamps. The "B" port is the oil inlet and goes to the oil out of the Engine. The "A" port is the oil outlet, and it goes to the oil cooler / tank. Tighten clamps.
- 11. Install oil filter as per manufacturers specifications and safety wire.
- 12. Using the 2" piece of 3/4" Mil 6000 hose provided, secure to bottom of oil filter with (1) QS100M52W 3-3/4" clamp, locate between bottom of oil filter and existing firewall. This will strengthen the oil filter mount and dampen the vibrations of the engine.
- 13. Safety wire drain and refill oil tank with oil. (If step #2 is omitted this step is not necessary).
- 14. Run engine and check for leaks.
- Determine weight and balance, initiate 337 form, and update the equipment list.

### Illustrated Parts List No. AFC-K015-PL-B

Applicability: Pratt & Whitney R-985, and R-1340, Powered Aircraft having firewalls of .021" ASTM A527 galvanized steel or equivalent.



Parts Illustration Pratt & Whitney Engine Series

Applicability:

# Parts List No. AFC-K015-PL-B Pratt & Whitney R-985, and R-1340, Powered Aircraft having firewalls of .021" ASTM A527 galvanized steel or equivalent.

<u>Index</u>	Part Number	<u>Description</u>	<u>Quantity</u>
1	OFB-18-12 or	Plate, Clamp Oil Filter Base	1
1	OFB-20-12	Plate, Clamp Oil Filter Base	1
2	OFB-18-13 or	Bushing Set, 1.000"	1
2	OFB-20-13	Bushing Set, 1.000"	1
2	OFB-18-14 or	Bushing Set, 1.125"	Opt
2	OFB-20-14	Bushing Set, 1.125"	Opt
2	OFB-18-15 ro	Bushing Set, 1.250"	Opt
2	OFB-20-15	Bushing Set, 1.250"	Opt
2	OFB-18-16 or	Bushing Set, 1.375"	Opt
2	OFB-20-16	Bushing Set, 1.375"	Opt
2	OFB-18-17 or	Bushing Set, 1.500"	Opt
2	OFB-20-17	Bushing Set, 1.500"	Opt
2	OFB-18-18 or	Bushing Set, 1.625"	Opt
2	OFB-20-18	Bushing Set, 1.625"	Opt
3	OFB-18-11 or	Adapter Body, Oil Filter Base (with OFS-12 Installed)	1
3	OFB-20-11	Adapter Body, Oil Filter Base (with OFS-12 Installed)	1
4	AFC-700	Oil Filter	1
5	AN5H-13A	Bolt, 5/16" 1-1/4"Long	4
6	AN960-516	Washer, Flat	8
7	MS20365-516	Nut, Locking 5/16	4
8	QS100M76H	Clamp, Screw 5-1/2"	1
9	AN815-16D	Fitting, Union	1
9	AN815-20D	Fitting, Union	1
10	AN837-16D	Fitting, Bulkhead to Flare 45°	1
10	AN837-20D	Fitting, Bulkhead to Flare 45°	1
11	AN833-16D	Fitting, Bulkhead to Flare 90°	1
11	AN833-20D	Fitting, Bulkhead to Flare 90°	1
12	AN839-16D	Fitting, Bulkhead to Hose 45°	1
12	AN839-20D	Fitting, Bulkhead to Hose 45°	1
13	AN838-16D	Fitting, Bulkhead to Hose 90°	1
13	AN838-20D	Fitting, Bulkhead to Hose 90°	1
14	AN807-16D	Fitting, Bulkhead to Hose Straight	1
14	AN807-20D	Fitting, Bulkhead to Hose Straight	1
15	AN814-16D	Plug	2
15	AN814-20D	Plug	2
16	AN6289-16D	Nut, Bulkhead	2
16	AN6289-20D	Nut, Bulkhead	2
17	M83248/1-916	O-Ring, Viton	4
17	M83248/1-920	O-Ring, Viton	4
18	MS28773-16	Boss Gasket, Teflon	2
18	MS28773-20	Boss Gasket, Teflon	2

### Installation Instructions No. AFC-K015-II-B

### Applicability:

Installation of the remote oil filter kit on DeHavilland DHC-2 Beaver series aircraft with Pratt & Whitney R-985 Radial Engine having firewalls of .021" ASTM A527 galvanized steel or equivalent.

- 1. Remove engine cowling as needed to gain access to engine, oil cooler and oil tank.
- Drain engine oil and tank (optional).
- Remove engine scavenge oil return line. This line routes from the engine to the oil cooler.

TIP: You always want to filter oil at its hottest point, and in front of the oil cooler. The hotter the oil is, the more it is willing to get rid of dirt and contaminants, and it keeps the oil cooler from becoming a trash collector. Therefore, the oil filter should always be installed ahead of the oil cooler.

- 4. Per installation drawings AFC-D-0045 and AFC-D-0054, locate the lower RH footwell, and drill and install DBL-14 doubler plate to cabin side of firewall, and secure with (28ea.) MS20613-4C4 Stainless Steel Rivets provided.
- 5. Using bolts (5), washers (6), and locknuts (7) supplied, secure oil filter base (3) to doubler plate, install rear clamp plate (1) to inside of footwell, and torque to 100-140 in/lbs.

Note: When done correctly, the firewall and doubler will be sandwiched between the oil filter base (3) and oil filter clamp plate (1).

6. Onto each bulkhead fitting (10-14), install in order 1 ea. bulkhead nut (16), boss gasket (18), and O-Ring (17).

CAUTION: O-ring (17) and boss gasket (18) <u>must</u> seal and be positioned in the center, smooth, non-threaded area of the bulkhead fitting. If this is not done, when you tighten down the blue bulkhead nut (16), you will force the O-Ring (17) against the end of the first set of threads on the bulkhead fitting, cutting the O-Ring, and mushrooming out the Teflon Boss gasket (18) like a large "C" causing a small oil leak.

### \*\*\*\*\* WARNING \*\*\*\*\*

### DO NOT INSTALL DRY FITTINGS INTO OIL FILTER BASE OTHERWISE GALLING WILL RESULT

7. Lightly oil assembled bulkhead fittings and install into appropriate inlet/outlet holes of oil filter base (3) but do not tighten at this time.

### \*\*\*\*\* SEE WARNING (B) \*\*\*\*\*

- 8. Install and connect the -16 hose from the outlet of the scavenge oil pump (Oil out of Engine) to the "IN" fitting on the oil filter base (3).
- 9. Install and connect the -16 hose from "OUT" fitting on the oil filter base (3) to the inlet of the oil cooler.
- 10. Torque hose ends to specs at this time.
- 11. Tighten bulkhead nuts at this time.

NOTE: The entire sealing function occurs by lightly compressing the O-Ring. Once the Teflon boss gasket (18) comes in contact with the O-Ring (17), 1/4 to 1/2 turn on the bulkhead nut (16) is all that is needed. Do not overtighten bulkhead nut as it does not need to bottom out against the oil filter adapter (3).

- 12. Install appropriate O-Ring (17) onto plug/bleeder (15) and install into unused inlet/outlet holes, torque to specs and safety wire.
- 13. Install oil filter (4) and tighten per filter manufacturers specifications
- 14. Using hose clamp (8) provided, secure to bottom to oil filter to provided attachment vehicle for safety wiring of oil filter
- Safety wire drain plug and refill oil tank with oil. (If step #2 is omitted this step is not necessary).
- 16. Run engine and check for leaks.
- 17. Determine weight and balance, initiate 337 form, and update the equipment list.

### Illustrated Parts List No. AFC-K015-PL-C

Applicability: Pratt & Whitney R-1830, Powered Aircraft

having firewalls of .021" ASTM A527 galvanized steel or equivalent.



Parts Illustration OFB-19 Oil Filter Adapter

### Parts List No. AFC-K015-PL-C

Applicability: Pratt & Whitney R-1830, Powered Aircraft

having firewalls of .021" ASTM A527 galvanized steel or equivalent.

.

Index	Part Number	<u>Description</u>	Quantity			
<u>1</u>	OFB-19-11	Adapter Body, Oil Filter Base (with OFS-12 Installed)	1			
2	OFB-19-12	Plate, Clamp Oil Filter Base	1			
3	AN5H-13A	N5H-13A Bolt, 5/16" 1-1/4" Long				
4	AN960-516	Washer, Flat	8			
5	MS20365-516	Nut, Locking 5/16	4			
6	AFC-700	Oil Filter	2			
7	OFB-19-13	Bushing Set, 1.500"	1			
7	OFB-19-14	Bushing Set, 1.625"	opt			
7	OFB-19-15	Bushing Set, 1.750"	opt			
7	OFB-19-16	Bushing Set, 1.875"	opt			
7	OFB-19-17	Bushing Set, 2.000"	opt			
7	OFB-19-18	Bushing Set, 1.125"	opt			
7	OFB-19-19	Bushing Set, 1.250"	opt			
7	OFB-19-20	Bushing Set, 1.375"	opt			
8	QS100M76H	Clamp, Screw 5-1/2"	2			
9	AN833-24D	Fitting, Bulkhead to Flare 90°	1			
10	AN815-24D	Fitting, Union	1			
NS	AN837-24D	Fitting, Bulkhead to Flare 45°	1			
11	AN6289-24D	Nut, Bulkhead	2			
12	AN814-24D	Plug	2			
13	MS28773-24	Boss Gasket, Teflon	2			
14	M83248/1-924	O-Ring, Viton	4			

### Installation Instructions No. AFC-K015-II-C

# Applicability: Installation of the remote oil filter kit on aircraft with Pratt & Whitney Radial Engines having firewalls of .021" ASTM A527 galvanized steel or equivalent.

- 1. Remove engine cowling as needed to gain access to engine, oil cooler and oil tank.
- 2. Drain engine oil and tank (optional).
- Remove engine scavenge oil return line. This line routes from the engine to the oil cooler.
  - TIP: You always want to filter oil at its hottest point, and in front of the oil cooler. The hotter the oil is, the more it is willing to get rid of dirt and contaminants, and it keeps the oil cooler from becoming a trash collector. Therefore, the oil filter should always be installed ahead of the oil cooler.
- 4. Per the following installation drawings AFC-D-0055, AFC-D-0056, AFC-D-0057, AFC-D-0060, AFC-D-0062, and AFC-D-0065. Determine the best location for the Oil filter Adapter to be mounted Engine Mount Tube or Firewall as per applicable aircraft.
- 5. Using bolts (3), washers (4), and locknuts (5) supplied, secure oil filter base (1) to firewall or Engine Mount tube, and torque to 100-140 in/lbs.
- 6. Onto each bulkhead fitting (9-10), install in order 1 ea. bulkhead nut (11), boss gasket (13), and O-Ring (14).

CAUTION: O-ring (14) and boss gasket (13) must seal and be positioned in the center, smooth, non-threaded area of the bulkhead fitting. If this is not done, when you tighten down the blue bulkhead nut (11), you will force the O-Ring (14) against the end of the first set of threads on the bulkhead fitting, cutting the O-Ring, and mushrooming out the Teflon Boss gasket (13) like a large "C" causing a small oil leak.

# \*\*\*\*\* WARNING \*\*\*\*\* DO NOT INSTALL DRY FITTINGS INTO OIL FILTER BASE OTHERWISE GALLING WILL RESULT

7. Lightly oil assembled bulkhead fittings and install into appropriate inlet/outlet holes of oil filter base (1) but do not tighten at this time.

### \*\*\*\*\* WARNING (B)\*\*\*\*\*

- 8. Install and connect the hose from the outlet of the scavenge oil pump (Oil out of Engine) to the "IN" fitting on the oil filter base (1).
- 9. Install and connect the hose from "OUT" fitting on the oil filter base (1) to the inlet of the oil cooler.
- 10. Torque hose ends to specs at this time.
- 11. Tighten bulkhead nuts at this time.

NOTE: The entire sealing function occurs by lightly compressing the O-Ring. Once the Teflon boss gasket (13) comes in contact with the O-Ring (14), 1/4 to 1/2 turn on the bulkhead nut (11) is all that is needed. Do not overtighten bulkhead nut as it does not need to bottom out against the oil filter adapter (1).

- 12. Install appropriate O-Ring (14) onto plug/bleeder (15) and install into unused inlet/outlet holes, torque to specs and safety wire.
- 13. Install oil filter (6) and tighten per filter manufacturers specifications
- 14. Using hose clamps (8) provided, secure to bottom of oil filters to provided attachment vehicle for safety wiring of oil filters.
- 15. Safety wire drain plug and refill oil tank with oil. (If step #2 is omitted this step is not necessary).
- 16. Run engine and check for leaks.
- 17. Determine weight and balance, initiate 337 form, and update the equipment list.

### WEIGHT AND BALANCE REPORT

SURPLUS EQUIPMENT	SURPLUS EQUIPMENT WEIGHT ARM-INCHES		MOMEN	T - IN/LBS.	
EQUIPMENT - ITEM	LBS.	LONG		LONG	
REMOTE OIL FILTER					

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REVISIONS							
REV.	DESCRIPTION	BY	DATE				



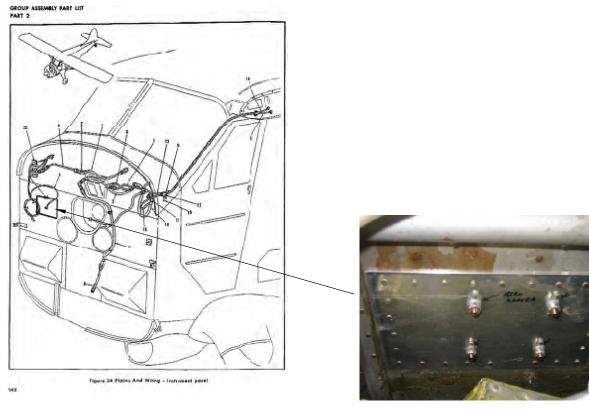


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		3 PLACE ±.005 4 PLACE ±.0005	ENG APPR.					BOEING STEARMAN, OFM-15, Oil Filter			
		ANGULAR ±0°30'	MFG APPR.				(				
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.				Mount Plate				
		MATERIAL						. NO.	10	REV	
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REV.	DESCRIPTION	BY	DATE					



ADDITIONAL DOUBLER FIELD MADE FROM .090 6061-T6 VIEWED FROM BACKSIDE OF FIREWALL

LINI ESS OTHERWISE SPECIFIED:



ALTERNATE ACCEPTABLE MOUNTING LOCATION FOR AIRCRAFT WITH MILITARY STYLE EXHAUST SYSTEMS.

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			4 PLACE ±.0005 ANGULAR ±0°30'	MFG APPR.			DBL-14 BEAVER			
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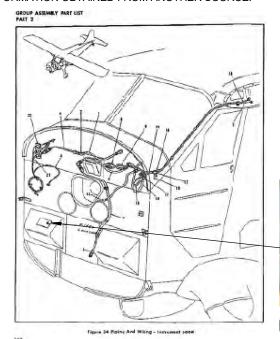
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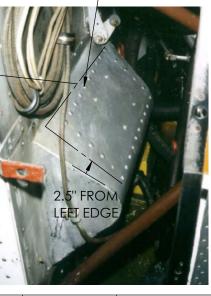
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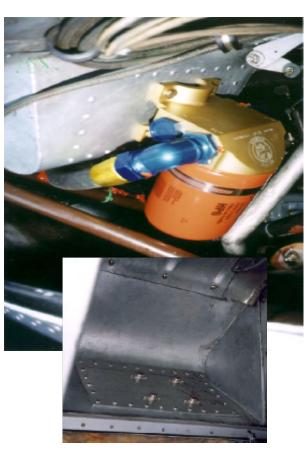
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REV.	DESCRIPTION	BY	DATE				
Α	REDRAWN IN SOLIDWORKS	GM	12/8/2020				



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— 1.25" FROM TOP EDGE





VIEW FROM INSIDE RH FOOTWELL P/N C2E502A

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		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.			DDL-14	BEAVER DOC	IDLEK	FLAIE
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REV.	DESCRIPTION	BY	DATE					
Α	REDRAWN IN SOLIDWORKS	GM	12/8/2020					

RH VIEW

1" MIL-H-6000 HOSE WITH AE102-22 FIRESLEEVE FROM ENGINE TO OIL FILTER BASE INLET.



AN844-16D 45° ELBOW

AN838-16D 45° ELBOW ON OIL FILTER BASE

-1" MIL-H-6000 HOSE WITH AE102-22 FIRESLEEVE. SECURED TO AN838-16D FITTING ON OIL FITER BASE OUTLET. HOSE CLAMPED END GOES TO OIL COOLER.

AN842-16D 90° ELBOW-

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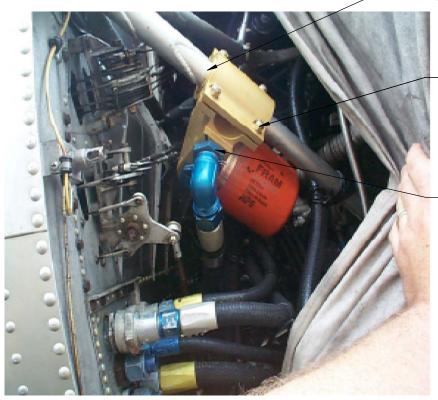
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REVISIONS								
REV.	DESCRIPTION	BY	DATE					
Α	REDRAWN IN SOLIDWORKS	GM	12/8/2020					

AFC-700 OIL FILTER

LH ENGINE

OFB-18-16 1.375" **BUSHING SET** 



5

APPLICATION

SECURE WITH BOLTS, NUTS, AND WASHERS PROVIDED

AN833-16D 90° FITTING **CONNECTING HOSE** FROM SCAVENGE OIL PUMP TO "IN" ON OIL FILTER BASE



UNLESS OTHERWISE SPECIFIED: NAME DATE Airwolf Filter Corp. DIMENSIONS ARE IN INCHES GM 12/8/2020 DRAWN TOLERANCES: 1 PLACE ±.030 TITI F: BDA 12/8/2020 APPR. BY 2 PLACE ±.010 3 PLACE ±.005 ENG APPR. 4 PLACE ±.0005 TYPICAL INSTALLATION ANGULAR ±0°30' MFG APPR. IN DOUGLAS DC-3/C-47 Q.A. INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H MATERIAL SIZE DWG. NO. **REV** AFC-D-0056 FINISH COMMENTS: NEXT ASSY USED ON SCALE: WEIGHT: SHEET 1 OF 1

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	REVISIONS		
REV.	DESCRIPTION	BY	DATE
Α	REDRAWN IN SOLIDWORKS	GM	12/8/2020



# TYPICAL RADIAL ENGINE INSTALLATION SHOWN MOUNTED ON ENGINE MOUNT TUBE

	MATERIAL LIST								
ITEM	PART NUMBER	DESCRIPTION	QTY.						
1	OFB-19-12	CLAMP PLATE OIL FILTER BASE	1						
2e	OFB-19-17	1.500" BUSHING SET	1						
3	OFB-19-11	ADAPTER BODY OIL FILTER BASE	1						
5	AFC-700	OIL FILTER	2						
6	AN814-24DL	CAP	2						
7	AN6-17A	3/8" BOLT, 1-7/8" LONG	4						
8	AN960-616	3/8" FLAT WASHER	8						
9	MS20365-624A	3/8" LOCKNUT	4						
10a	AN833-24D OR	90° BULKHEAD FLARE FITTING	2						
10b	AN838-24D	90° BULKHEAD SLIP-ON FITTING	2						

					100	7 (1 1000 Z-1D	IFITING		
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Δ	irwolf Filter	Corn	
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		ANGULAR ±0°30'	MFG APPR.				OIL FILTER A		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.			ENGINE TUBE			•
		MATERIAL				SIZE DWG			REV
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(3)(2)(1)												
		(10)							MATERIA	I LIST		
		(11)					ITEM	PART NUMBER	DESCRIPTION			QTY.
							1	AN5H-12A	BOLT, 5/16	" 1-1/4" LONG		4
(4)		(12a)(	(12b)(12c)(	(12d) (12	(e)(12f)		2	AN960-516	WASHER, F	ELAT		8
			$\bigcirc$	$\bigcirc$			3	MS2035-516	NUT, LOCK	(		4
ET (50 (50 (50 (50 (50 (50 (50 (50 (50 (50							4	OFB-18-12	CLAMP PL	ATE, OIL FILTER	BASE	1
(5f) (5e) (5d) (5c) (5b) (5a)		(13)					5a or	OFB-18-13	1.00" BUSH	ING SET		1
							5b or	OFB-18-14	1.125" BUS	HING SET		1
	*						5c or	OFB-18-15	1.250" BUS	HING SET		1
							5d or	OFB-18-16	1.375" BUS	HING SET		1
6	MRWOLF WIL	TER CO					5e or	OFB-18-17	1.500" BUS	HING SET		1
		A LIVE					5f	OFB-18-18	1.625" BUS	HING SET		1
7) -		C_700					6	OFB-18-11	-	BODY, OIL FILTE	R BASE	1
	1 1 1 1 7 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P-700	1				7	OFS-12	STUD, FILTE	ER .		1
		IT FILE					8	AFC-700	FILTER			1
	THON						9	M83248/1-916	VITON O-R			4
	Million Company						10	M\$28773-16	-	EFLON BOSS		2
8 -							11	AN6289-16D	NUT, BULKI			2
						-	12a or	AN833-16D	-	AD FITTING, FL		2
						-	12b or	AN837-16D		AD FITTING, FLA AD FITTING, MI		2
		1				-	12c or 12d or	AN838-16D AN839-16D		AD FITTING, MI		2
		Acres 19				-	12e or	AN807-16D	+	TUBE TO HOSE		2
						-	12f	AN815-16D	UNION	1002 10 11002		2
							13	AN814-16D	PLUG			2
		UNLESS OTHERWISE SPE	CIFIED:		NAME	DATE			1	iltor C	orn	$\Box$
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		4 PLACE ±.0005 ANGULAR ±0°30'	MFG A				$\cap$	-B-18 C				R. l
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y	Q.A.							E TUBE		,
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REVISIONS						
REV.	DESCRIPTION	BY	DATE			



		MATERIAL LIST	
ITEM	PART NUMBER	DESCRIPTION	QTY
1	AN4H-4A	BOLT, DRILLED HEAD	4
2	AN960-416	FLAT WASHER	4
3	OFB-15	OIL FILTER BASE	1
4a	AN844-16D	HOSE ELBOW, 45°	2
4b	AN844-12D	HOSE ELBOW, 45°	2
5a	AN840-16D	HOSE FITTING, STRAIGHT	2
5b	AN840-12D	HOSE FITTING, STRAIGHT	2
6	OFS-10	OIL FILTER STUD	1
7a	AN842-16D	HOSE ELBOW, 90°	2
7b	AN842-12D	HOSE ELBOW, 90°	2
8	AFC-600	OIL FILTER, LONG, OR EQUIVALENT (CHAMPION CH48109)	1
14	OFM-10	OIL FILTER MOUNT PLATE, HORIZONTAL	1

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE		
		DIMENSIONS ARE IN INCHES TOLERANCES:	DRAWN	GM	12/8/2020		
		1 PLACE ±.030 2 PLACE ±.010	APPR. BY	BDA	12/8/2020	TITI	
		3 PLACE ±.005	ENG APPR.				
		0.01 + 05 - 005	MFG APPR.				
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.				
		MATERIAL					
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### Airwolf Filter Corp.

TLE: ASSEMBLY DRAWING OFB-15 OIL FILTER ADAPTER, FIREWALL - HORIZONTAL

IZE DWG. NO. **REV** AFC-D-0061 **IR** SHEET 1 OF 1

SCALE: WEIGHT:

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APPLICATION

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AIRWOLF FILTER CORP P	ROPRIETA	ARY					REVISIONS		
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						-1/2" NGINE M	OUNT		
		1		201				MATERIAL LIST	
						ITEM	PART NUMBER	DESCRIPTION	QTY.
		Aug Die			(3)	1	OFB-18-12	CLAMP PLATE OIL FILTER BASE	1
		Sec.	- T			2	OFB-18-17	1.500" BUSHING SET	1
						3	OFB-18-11	ADAPTER BODY OIL FILTER BASE	1
						4	AFC-700	OIL FILTER	1
						5	Q\$100M52H	5-1/2" HOSE CLAMP SAFETY WIRE ATTACHMENT	1
						6	AN5-13A	5/16" BOLT, 1-3/8" LONG	4
						7	AN960-516	5/16" FLAT WASHER	8
RETURN LINE TO COOLER—/ (4) -	/					8	MS20365-516	5/16" LOCKNUT	4
TYPICAL RADIAL EN	NGINE INST	ALLATION SHOW	WN MOUNTED ON	N T-6 TEXAN	J	9a	AN833-16D	90° BULKHEAD TO FLARE	2
THE STATE OF THE S						9b	AN838-16D	90° BULKHEAD TO HOSE	2
			UNLESS OTHERWISE SPEC		NAM	DATE	Δi	rwolf Filter Corp.	•
			DIMENSIONS ARE IN INCHE TOLERANCES:	DRAWN	GM	12/8/2020			•

					9b	AN838-16D	90° BULKHEAD TO HOSE	2
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Λi	rwolf Filter Corp	<u> </u>
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		3 PLACE ±.005 4 PLACE ±.0005	ENG APPR.			INSTAL	LATION DRAWI	NG
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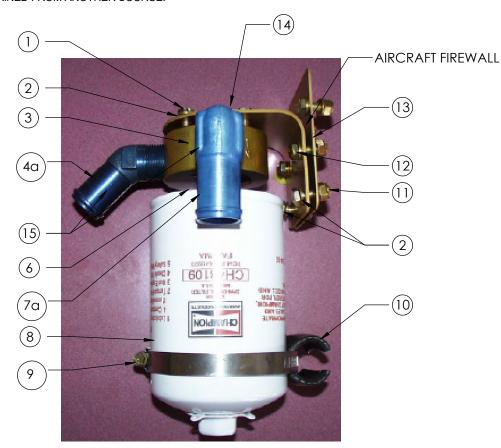
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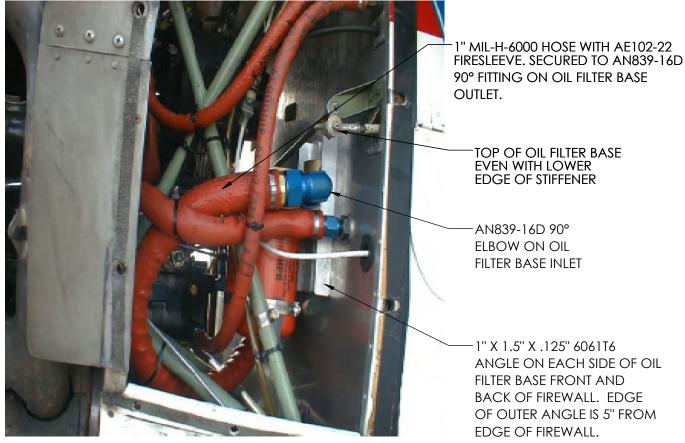
		MATERIAL LIST	
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	AN4H-4A	BOLT, 1/4" 1/2" LONG	4
2	AN960-416	1/4" FLAT WASHER	16
3	OFB-15	OIL FILTER BASE	1
4a or	AN844-16D or	45° HOSE ELBOW	2
5a	AN840-16D	STRAIGHT HOSE FITTING	2
6	OFS-10	OIL FILTER STUD	1
7a	AN842-16D	90° HOSE ELBOW	2
8	AFC-600	LONG OIL FILTER (CHAMPION CH48109) OR EQUIVALENT	1
9	Q\$100M52H	3-1/4" HOSE CLAMP	1
10	MIL6000-3/4-2	DAMPENER	1
11	MS20365-428A	1/4" LOCKNUT	6
12	AN4-5A	1/4" BOLT	6
13	DBL-10	DOUBLER PLATE	1
14	OFM-11	VERTICAL OIL FILTER MOUNT	1
15	567	LOCTITE 567 PST TEFLON THREAD SEALANT.	1

			UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Airwolf Filter Corp.			n	
			DIMENSIONS ARE IN INCHES TOLERANCES:	DRAWN	GM	12/8/2020			won i iitoi ooip.		
			1 PLACE ±.030 2 PLACE ±.010	APPR. BY	BDA	12/8/2020	TITLE:				
			3 PLACE ±.005 4 PLACE ±.0005	ENG APPR.			_	LLATION DF		_	
			ANGULAR ±0°30'	MFG APPR.			OFB-15	B-15 OIL FILTER ADAPTER			
			INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.							
			MATERIAL				SIZE DWG		/ /	REV	
	NEXT ASSY	USED ON	FINISH	COMMENTS:		A	FC-D-00	54	IR		
_	APPLIC	ATION		SCALE: WEIGHT: SHEE			ET 1 OF 1				
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REVISIONS								
REV.	DESCRIPTION	BY	DATE					

LH VIEW



FILTER BASE INLET

1" X 1.5" X .125" 6061T6

TOP OF OIL FILTER BASE **EVEN WITH LOWER EDGE OF STIFFENER** 

AN839-16D 90° ELBOW ON OIL

OIL FILTER BASE MOUNTED 18.5" FORWARD OF DATUM, WHICH IS WING LEADING EDGE.

5

ANGLE ON EACH SIDE OF OIL FILTER BASE FRONT AND BACK OF FIREWALL. EDGE OF OUTER ANGLE IS 5" FROM EDGE OF FIREWALL.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE		Airwolf Filter	Corr	<b>1</b>
		DIMENSIONS ARE IN INCHES TOLERANCES: 1 PLACE ±.030 2 PLACE ±.010 3 PLACE ±.005 4 PLACE ±.0005 ANGULAR ±0°30'	DRAWN	GM	12/8/2020		tii Woii i iitoi	COIL	·
			APPR. BY	BDA	12/8/2020	TITLE:			
			ENG APPR.						.
			MFG APPR.			TYPICAL INSTALLATION IN WEATHERLY - LEFT HAND VIEW			
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.						
		MATERIAL				SIZE DWG. NO. REV			
NEXT ASSY	USED ON	FINISH	COMMENTS:		<b>▲</b> AFC-D-0065			IR	
APPLICATION						SCALE:	WEIGHT:	SHE	ET 1 OF 1