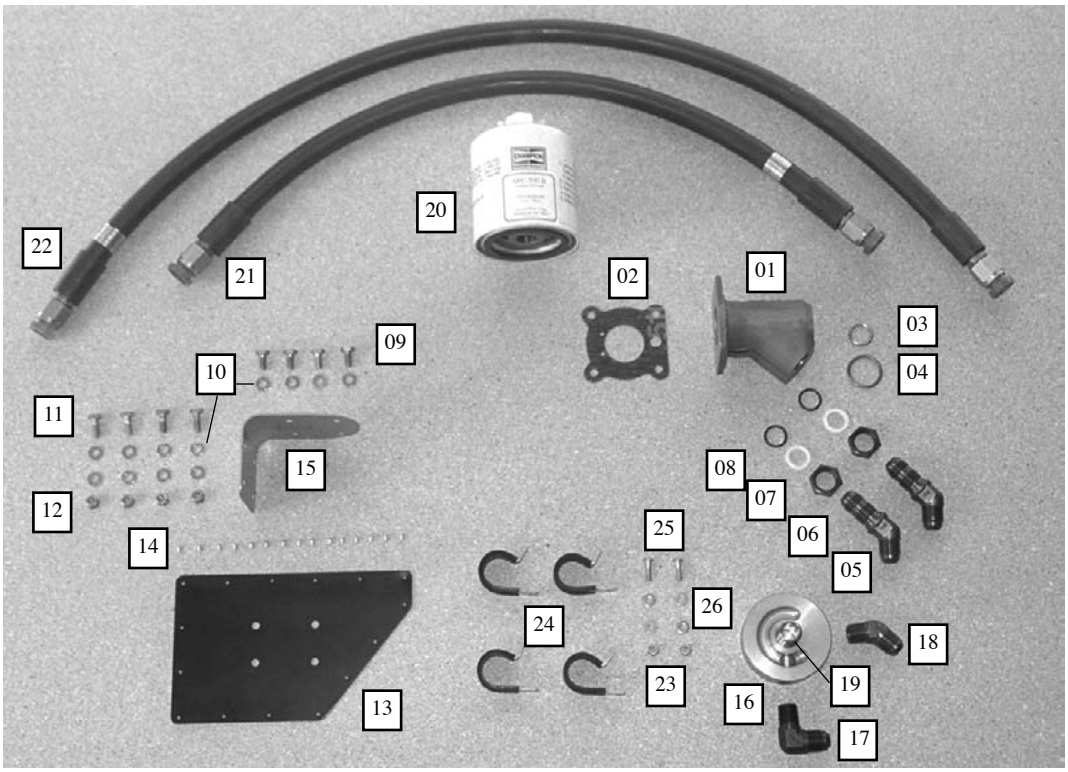


Oil Filter Kit AFC-K011

Applicability: **Robinson Model R-44 helicopters with Lycoming Engines O540-F1B5 or IO540-AE1A5**

First Release 05/24/95

Ammended 01/08/2010

Parts List No. AFC-K011-PL

Index	Part Number	Description	Quantity
01.	LYC-10	Adapter - Engine, Full Flow	(1)
02.	61173	Adapter Base Gasket	(1)
03.	MS35769-11	Gasket, Oil Temperature Sensor	(1)
04.	MS35769-21	Gasket, Thermostatic Valve	(1)
05.	AN837-8D	Bulkhead Fitting, 45°	(2)
06.	AN6289-8D	Bulkhead Nut	(2)
07.	MS28773-08	Boss Gasket, Teflon	(2)
08.	MS9387-08	“O” Ring, Viton	(2)
09.	AN4H-4A	Bolt, Drilled Head	(4)
10.	AN960-416	Flat Washers	(12)
11.	AN4-5A	Bolt	(4)
12.	MS20365-428A	Locknut	(4)
13.	OFM-16	Doubler Plate - R-44	(1)
14.	MS20613-3C3	Solid Rivet, Stainless	(15)
15.	OFM-11	Oil FIlter Mount Plate	(1)
16.	OFB-10	Oil Filter Base	(1)
17.	MS20822-8D	Fitting, 90°	(1)
18.	MS20823-8D	Fitting, 45°	(1)
19.	OFS-10	Oil Filter Stud	(1)
20a.	AFC-500	Oil Filter, or Equivalent [Champion CH48108]	(1)
20b.	AFC-600	Oil Filter, or Equivalent [Champion CH48109]	(1)
21.	F13000008-0274	Teflon Hose w/ Firesleeving, 27-1/2" Length	(1)
22.	F13000008-0404	Teflon Hose w/ Firesleeving, 40-1/2" Length	(1)
23.	MS20365-1032A	Locknut	(2)
24.	MS21919WDG-14	Clamp, Cushion Loop Support	(4)
25.	AN3-4A	Bolt	(2)
26.	AN960-10	Flat Washer	(4)
27.	56707	Loctite® PST Teflon Thread Sealant	(1)
28.	AFC-K011-II	Installation Instructions	(1)
29.	AFC-K011-MI	Instructions for Continued Airworthiness	(1)
30.	AFC-K011-PL	Parts List	(1)

Applicability: **Robinson Model R-44 helicopters with Lycoming Engines O540-F1B5 or IO540-AE1A5**

First Release 05/24/95

Ammended 01/08/2010

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 LH and RH engine cowling.

02. Remove the Lycoming P/N 69510 engine oil screen housing from the accessory case.

03. Remove oil temperature sensor and thermostatic valve from existing oil screen housing.

04. Per assembly drawing AFC-D-0034, install a new gasket (03) under the head of the oil temperature sensor and install in the oil filter adapter (01). Turn the oil temp sensor until the sealing surfaces are in contact and then tighten an additional 135°. Install a new gasket (04) under the head of the P/N 75944 Lycoming thermostatic valve, install in the oil filter adapter (01), torque to 300 in/lbs and secure with .032 MS20995-C safety wire.

05. Onto each bulkhead fitting (05), install **(in order)** 1 ea. bulkhead nut (06), boss gasket (07), and “O” Ring (08). Install each completed assembly into the oil filter adapter (01). Do not tighten fittings until after routing of hoses has been determined in step 12.

CAUTION: Boss gasket (07) & "O"-Ring (08) must seal in the smooth area between the threaded areas of the bulkhead fitting.

06. Per installation drawing AFC-D-0034 install gasket (02) on base of filter adapter (01) and install onto the engine accessory case. Torque to specifications 96 in/lbs.

07. Inside the R-44 cockpit, remove P/N C003-11 LH rear seat back assy. Using installation drawing AFC-D-0035 as a reference, locate firewall doubler to be positioned as follows. Angle of doubler plate to be positioned and butted against lower LH "J" channel. Doubler then to be positioned inboard and butted against LH side of existing doubler. Doubler is positioned correctly when butted against both "J" channel and existing firewall doubler as explained above. While maintaining position of doubler, drill attachment holes using a #40 drill bit. Drill oil filter mounting holes using a letter "F" drill bit. Remove doubler from firewall, debur all previously drilled holes, remove all drill chips from helicopter. Install doubler plate using solid stainless steel rivets (14) supplied.

NOTE: Exercise care not to contaminate aircraft electronics equipment as necessary.

08. Remove all remaining drill chips from aircraft.

09. Install oil filter mount as show in drawing AFC-D-0038.

**** SEE WARNING (A) BELOW ****

10. Per installation drawing AFC-D-0038, install 1 ea. fittings (18) into port "B" of the oil filter base and 1ea. fitting (17) into port "A" of the oil filter base (16) and tighten. Mount to oil filter mount (15) per assembly drawing using bolts (09), washers (10), and secure with .032 MS20995-C safety wire.

**** SEE WARNING (B) BELOW ****

11. Install hose assy (22) to the **“A” port** on the oil filter base (16) and tighten "B"-nut on the hose end.. Route hose towards oil filter adapter (01). forward of lower LH frame tube, underneath throttle control rod and up to the **"A" port** of the oil filter adapter (01). Assure that hose passes to the right of the manifold pressure sense line. Tighten bulkhead nut (06) at this time. Line to be adel clamped to LH frame per installation drawing AFC-D-0038, using 1ea. screw (25), locknut (23), and 2 ea. washers (26), provided.

12. Install hose assy (21) to the **"B" port** on the oil filter base (16) and tighten "B"-nut on the hose end. Route hose towards oil filter adapter (01). Hose is to pass on the aft side of the LH frame, above throttle control rod. and routed to **"B" port** of oil filter adapter (01). Assure that hose passes to the left side of manifold pressure sense line. Tighten end bulkhead nut (06) at this time. Line to be adel clamped to LH frame per assy drawing AFC-D-0038, using 1ea. screw (25), locknut (23), and 2 ea. washers (26), provided.

**** SEE WARNING (C) BELOW ****

13. Ty- rap "B" hose assy (21) to manifold pressure sense line configuring tie raps to provide a standoff to prevent chaffing.

Applicability: **Robinson Model R-44 helicopters with Lycoming Engines O540-F1B5 or IO540-AE1A5**

First Release 05/24/95

Ammended 01/08/2010

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.

14. Install oil filter (16), torque per instructions on oil filter and secure with .032 MS20995-C safety wire.

15. Run engine and check for leaks.

16. Determine weight and balance, initiate a 337 form, and update the equipment list.

******* WARNING (A) *******

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 (B) *******

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 (C) *******

NO LOAD BEARING TO BE IMPOSED ON MANIFOLD PRESSURE SENSING LINE.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Form AFC-K011-ICA Revised 01/08/10

A/C Make : Robinson Helicopter Co. **Model:** R44 **S/N:** _____ **Reg#:** _____

Revision: Date: 01/08/2010

This sixteen item checklist are Instructions for Continued Airworthiness (ICA), to comply with FAA Handbook Bulletin for Airworthiness (HBAW-98-18 Dated October 7, 1998), are applicable to the aircraft above when the following equipment is installed:

SYSTEM: Airwolf Remote Mount Oil Filter System.

Airwolf Filter Corp
15369 Madison Rd
Middlefield, OH 44062

ITEM	CHECKLIST INFORMATION
1.	**Introduction:** This section briefly describes the aircraft, engine, propeller, or component that has been altered. Include and other information on the content, scope, purpose, arrangement, applicability, definitions, abbreviations, precautions, units of measurement, reverenced publications, and distribution of the ICA as applicable. **Comment: Robinson R44 Series Helicopters with Lycoming O540-F1B5 or IO540-AE1A5 engines.** Aircraft Model Engine Models
2.	**Description:** Of the major alteration, it's function including an explanation of it's interface with other systems, if any. **Comment: Installation of Airwolf Remote Mounted Oil Filter Kit P/N AFC-K011**
3.	**Control:** Operation information: Or special procedures if any. **Comment: Pre-heating of both the engine and engine oil is recommended prior to starting the engine during periods of cold weather where the temperature is 30°F or below.**
4.	**Servicing information:** Such as types of fluids used, servicing points, and location of access panels, as appropriate. **Comment: Oil System to be serviced in accordance with Lycoming Service Bulletin 480C or higher. Oil should be changed at least once each 12 months. Cut the old filter open with Airwolf AFC-470 oil filter cutter at each oil change and inspect for metal contamination or any evidence that may indicate impending engine problems.**
5.	**Maintenance Instructions**: Such as recommended inspection/maintenance periods in which each of the major alteration components are inspected, cleaned, lubricated, adjusted, tested, including applicable wear tolerances and work recommended at each scheduled maintenance period. This section can refer to the manufactures instructions for the equipment installed where appropriate e.g. functional checks, repairs, inspections.) It should also include any special notes, cautions, or warnings as applicable. **Comment: Inspect for security at each annual or 100 hr . inspection. After any oil change, always ground run the engine and check for leaks before flight.**
6.	**Trouble shooting information:** Information describing probably malfunctions, how to recognize those malfunctions, and the remedial actions to be taken. **Comment:__N/A**
7.	**Removal and replacement information:** This section describes the order and method of removing and replacing products, parts, and any necessary precautions. This section should also describe or refer to the manufacture's instructions to make required tests trim checks, alignment, calibrations, center of gravity changes, lifting or shoring, etc., if any. **Comments:__N/A**
8.	**Diagrams:** Of access plates and information, if needed, to gain access for inspection. **Comment:__N/A**
9.	**Special inspection requirements:** Such as X-ray, ultrasonic testing, or magnetic particle inspection, if required. **Comment: __N/A**
10.	**Application of protective treatments:** To the affected area after inspection and/or maintenance, if any. **Comment:__N/A**

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Form AFC-K011-ICA Revised 01/08/10

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.	**Recommended overhaul periods:** 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.	**Airworthiness Limitation Section:** 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.	**Revision:** 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.**

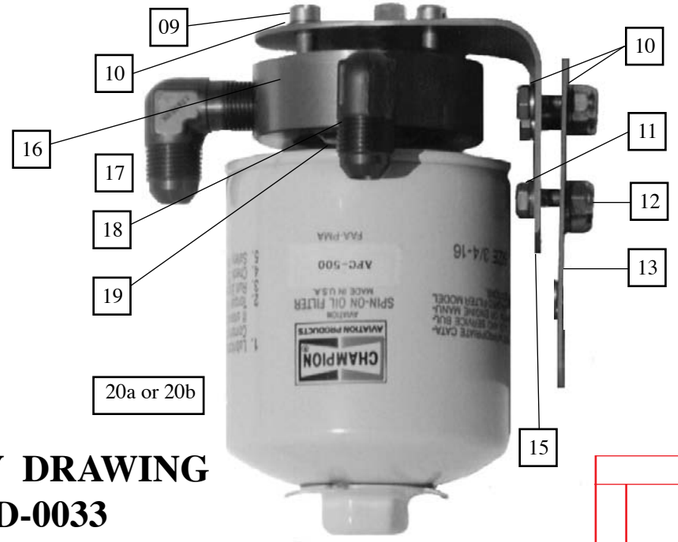
NOTE:

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 CIA 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.



ASSEMBLY DRAWING AFC-D-0033

Revisions

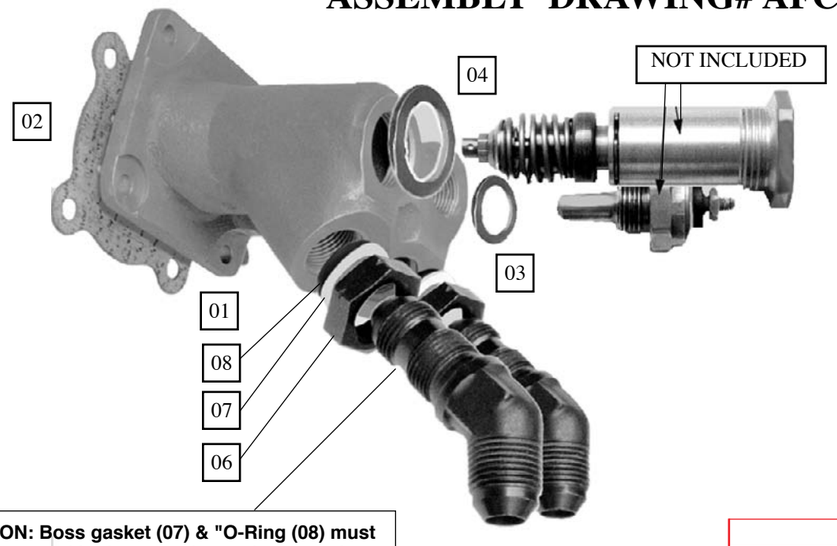
MATERIAL LIST

Index	Part Number	Description	Qty
09.	AN4H-4A	Bolt, Drilled Head	(4)
10.	AN960-416	Flat Washers	(12)
11.	AN4-5A	Bolts	(4)
12.	MS20365-428A	Locknut	(4)
13.	OFM-16	Doubler Plate, R-44	(1)
15.	OFM-11	Oil Filter Mount, Vertical	(1)

MATERIAL LIST

Index	Part Number	Description	Qty
16.	OFB-10	Oil Filter Base	(1)
17.	MS20822-8D	Fitting, 90°	(1)
18.	MS20823-8D	Fitting, 45°	(1)
19.	OFS-10	Oil Filter Stud	(1)
20.a	AFC-500	Oil Filter, Std.	(1)
20.b	AFC-600	Oil Filter, Long	(1)

ASSEMBLY DRAWING# AFC-D-0034



CAUTION: Boss gasket (07) & "O-Ring (08) must seal in the smooth area between the threaded areas of the bulkhead fitting.

Revisions

MATERIAL LIST

Index	Part Number	Description	Qty
01.	LYC-10	Adapter-Engine, Full Flow	(1)
02.	61173	Oil Filter Gasket	(1)
03.	MS35769-11	Gasket, Oil Temperature Sensor	(1)
04.	MS35769-21	Gasket, Thermostatic Valve	(1)

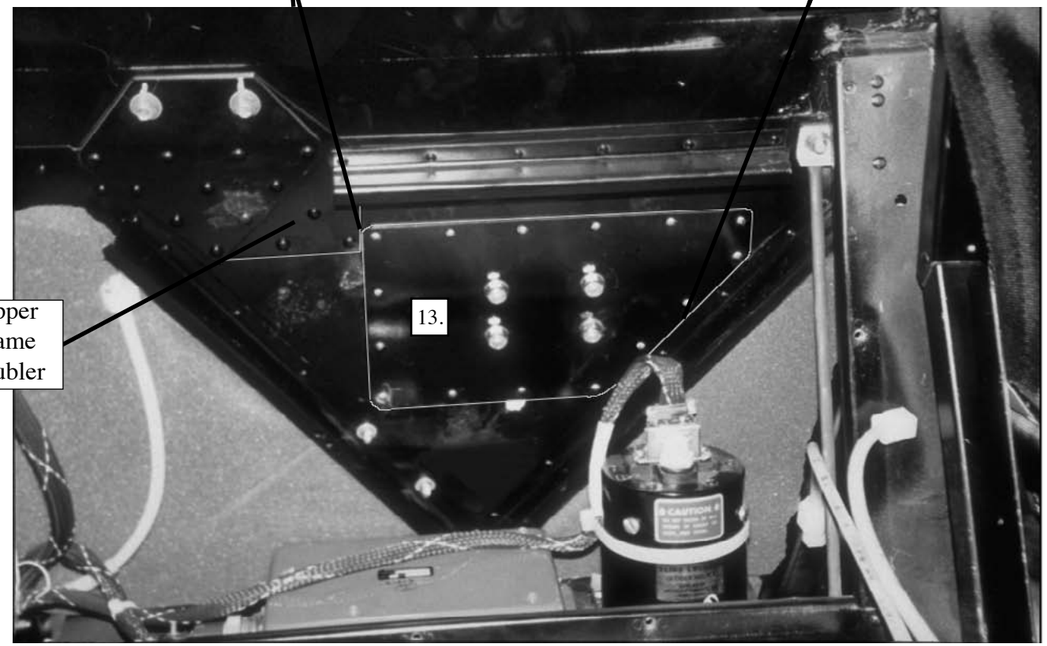
MATERIAL LIST

Index	Part Number	Description	Qty
05.	AN837-8D	Bulkhead Fitting, 45°	(2)
06.	AN6289-8D	Bulkhead Nut	(2)
07.	MS28773-08	Boss Gasket	(2)
08.	MS9387-08	"O" Ring	(2)

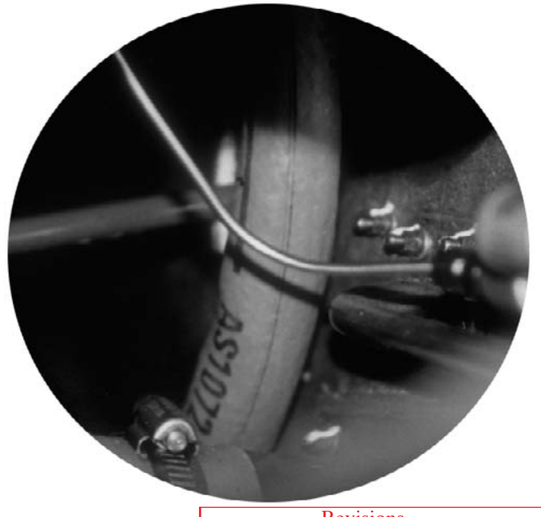
INSTALLATION DRAWING# AFC-D-0035

STEP 2. Continue to slide doubler plate (13) down until it makes contact with LH side of existing upper frame doubler.

STEP 1. Slide doubler plate (13) down until it makes contact with the lower LH "J" channel.



INSTALLATION DRAWING# AFC-D-0036

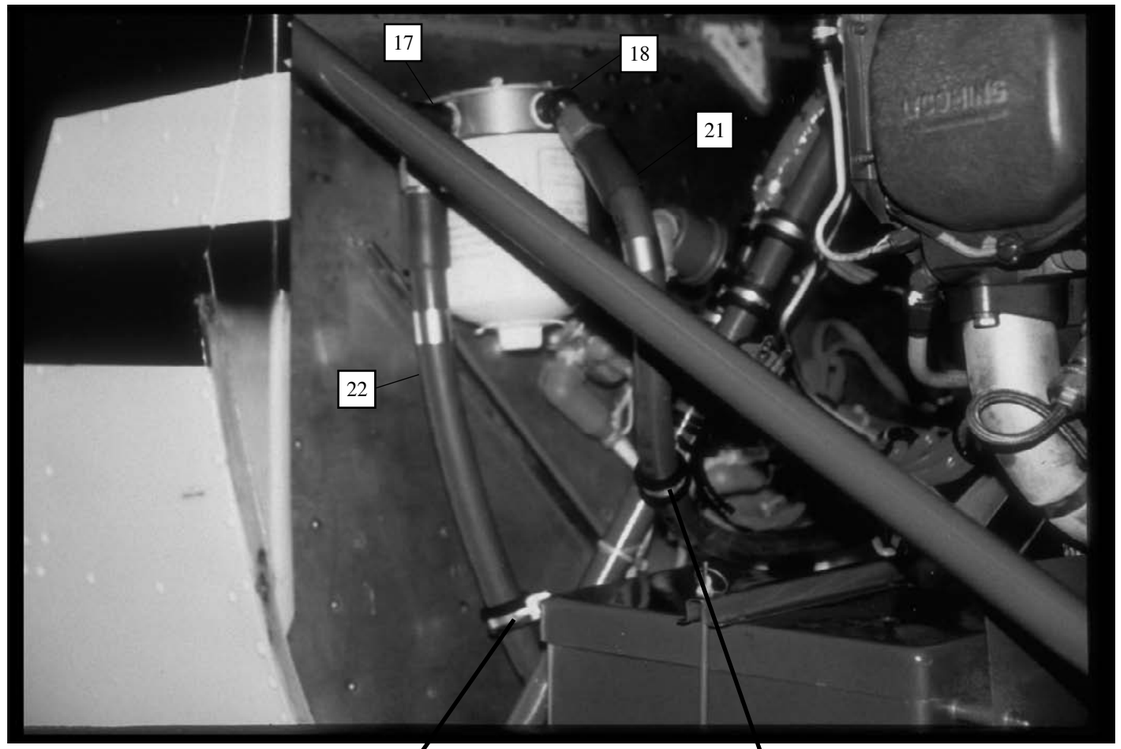


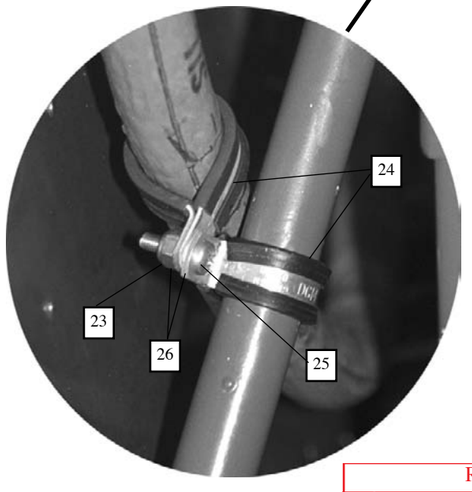
Revisions

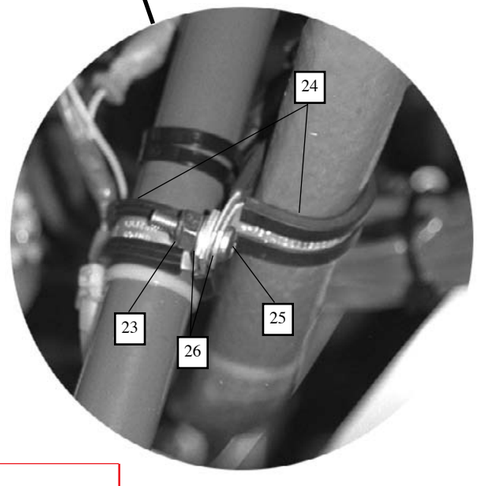
INSTALLATION DRAWING# AFC-D-0037

Revisions

INSTALLATION DRAWING# AFC-D-0038







Revisions

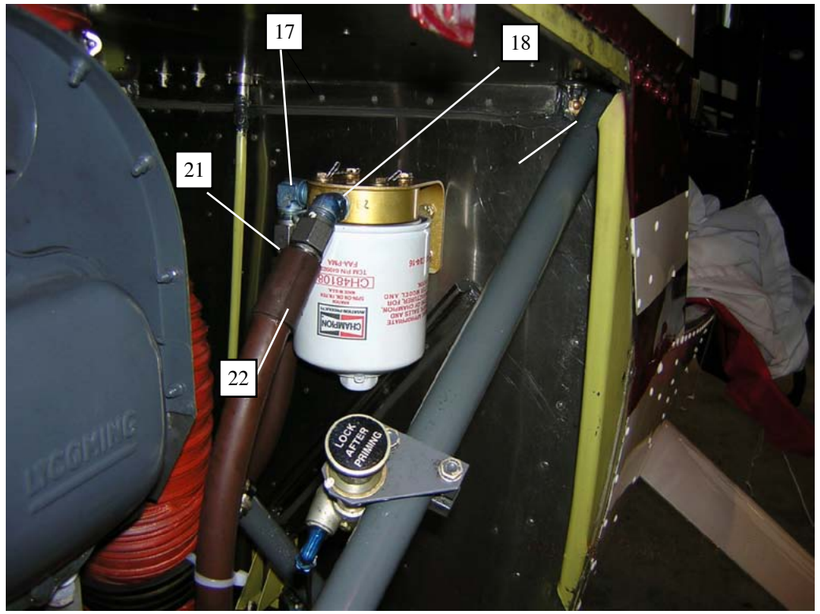
MATERIAL LIST

Index	Part Number	Description	Qty
17.	MS20822-8D	Fitting, 90°	(1)
18.	MS20823-8D	Fitting, 45°	(1)
21.	F13000008-0274	Teflon Hose w/ Firesleeving	(1)
22.	F13000008-0404	Teflon Hose w/ Firesleeving	(1)

MATERIAL LIST

Index	Part Number	Description	Qty
23.	MS20365-1032A	Locknut	(2)
24.	MS21919DG-14	Clamp, Cushion Loop Support	(4)
25.	MS27039-1-10	Screw	(2)
26.	AN960-10	Washer	(4)

INSTALLATION DRAWING# AFC-D-0038-A



Optional RH Location

MATERIAL LIST

Index	Part Number	Description	Qty
17.	MS20822-8D	Fitting, 90°	(1)
18.	MS20823-8D	Fitting, 45°	(1)
21.	F13000008-0274	Teflon Hose w/ Firesleeving	(1)
22.	F13000008-0404	Teflon Hose w/ Firesleeving	(1)

MATERIAL LIST

Index	Part Number	Description	Qty
23.	MS20365-1032A	Locknut	(2)
24.	MS21919DG-14	Clamp, Cushion Loop Support	(4)
25.	MS27039-1-10	Screw	(2)
26.	AN960-10	Washer	(4)

WEIGHT AND BALANCE REPORT
ROBINSON R-44 ALL MODELS

SURPLUS EQUIPMENT

	WEIGHT	ARM-INCHES		MOMENT - IN/LBS.	
EQUIPMENT - ITEM	LBS.	LONG	LATR	LONG	LATR
REMOTE OIL FILTER	4.5	95.0	- 16.0	427.5	- 72.0

Reference Data
for
AFC-K011-II
for
STC SR00342NY
Oil Filter Kit
AFC-K011

Dated: 4/2/2021

Airwolf Filter, Corp
12801 Hwy. 75 N.
OKMULGEE, OK 74447
(918) 561-8696 Ph
(918) 561-8695 Fx

List of Effective Pages

Page Number	Revision	Revision Date
Cover	IR	4/2/2021
1	IR	4/2/2021
2	IR	4/2/2021
3	IR	4/2/2021
4	IR	4/2/2021
5	IR	4/2/2021
6	IR	4/2/2021
7	IR	4/2/2021
8	IR	4/2/2021
9	IR	4/2/2021
10	IR	4/2/2021
11	IR	4/2/2021
12	IR	4/2/2021
13	IR	12/15/2020
14	A	12/08/2020
15	A	12/08/2020
16	A	12/08/2020
17	A	12/08/2020
18	A	12/08/2020
19	A	12/08/2020
20	IR	12/08/2020

Page Number	Revision	Revision Date

Table of Contents

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

TO THE MECHANIC:

This P/N AFC-K011 remote mount oil filter kit incorporates our STC approved for Robinson Helicopters, Powered by Lycoming engine models O-540-F1B5 Series Engines.

Upon installing this filter kit, you will need to fill out and file a 337 form for this installation referencing the P/N AFC- K011 kit and the STC# SR00342NY.

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. **Do not** over tighten the fittings on Adapters or housings. This can distort or crack housings, causing oil to leak.
4. It is ***EXTREMELY*** 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 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**

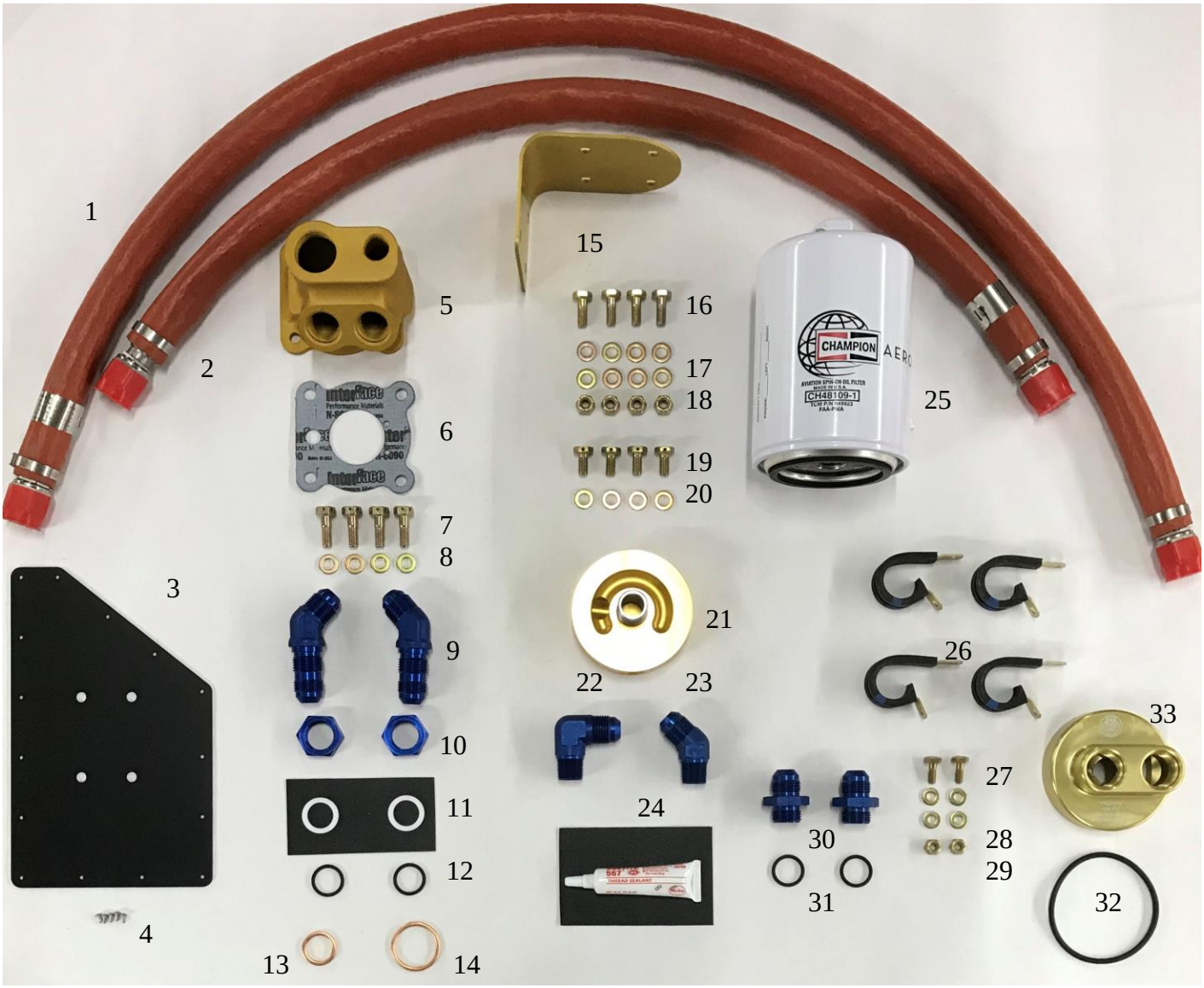
ANY OF THE THREE SCENARIOS ABOVE WILL CAUSE COMPLETE LOSS OF OIL IN A SHORT PERIOD OF TIME.

NOTE:
COMMON TO ALL INSTALLATIONS

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

Illustrated Parts List No. AFC-K011-PL

Applicability: **Robinson Helicopter Models: R-44**
with Lycoming Engines



Parts Illustration Lycoming Engine Series

Parts List No. AFC-K011-PL
(see Illustration)

Index	Part Number	Description	Quantity
1	F13000008-0404	Teflon Hose w/ Fire sleeving, 40-1/2" Length	1
2	F13000008-0274	Teflon Hose w/ Fire sleeving, 27-1/2" Length	1
3	OFM-16	Doubler Plate R-44	1
4	MS20613-3C3	Solid Rivet, Stainless	15
5	LYC-10	Adapter - Engine, Full Flow	1
6	61173 or GT-61173	Gasket, Adapter Base, O-235-540	1
7	AN74A-6	Bolt, Drilled Head	4
8	AN960-416	Flat Washers	4
9	AN837-8D	Bulkhead Fitting, 45°	2
10	AN6289-8D	Bulkhead Nut	2
11	MS28773-08	Boss Gasket, Teflon	2
12	M83248/1-908	“O” Ring, Viton	2
13	MS35769-11	Gasket, Oil Temperature Sensor	1
14	MS35769-21	Gasket, Thermostatic Valve	1
15	OFM-11	Oil Filter Mount Plate	1
16	AN4-5A	Bolt	4
17	AN960-416	Flat Washers	8
18	MS20365-428A	Locknut	4
19	AN4H-4A	Bolt, Drilled Head	4
20	AN960-416	Flat Washers	4
21	OFB-10	Oil Filter Base, (with OFS-10)	1
22	MS20822-8D	Fitting, 90°	1
23	MS20823-8D	Fitting, 45°	1
24	567	Loctite Thread Sealant	1
25	AFC-500 or AFC-600	Oil Filter, or Equivalent [Champion CH48108/CH48109]	1
26	MS21919WDG-14	Clamp, Cushion Loop Support	4
27	AN3-4A	Bolt	2
28	AN960-10	Flat Washers	4
29	MS20365-1032A	Locknut	2
30	AN919-15D-SP	Fitting, Reducer, -10 - 8	2
31	M83248/1-910	“O” Ring, Viton	2
32	M83248/1-230	“O” Ring, Viton	1
33	OFB-17	Full Flow Engine Adapter	1

Installation Instructions No. AFC-K011-II-A

Applicability: **Robinson Helicopter Models: R-44 with Lycoming Engines**

1. Remove LH and RH engine cowling.

2. Remove the Lycoming P/N 69510 engine oil screen housing from the accessory case.

3. Remove oil temperature sensor and thermostatic valve from existing oil screen housing.

4. Per Assembly Drawing AFC-D-0034, install a new gasket (3) under the head of the oil temperature sensor and install in the engine adapter (1). Turn the oil temp sensor until the sealing surfaces are in contact and then tighten an additional 135°. Install a new gasket (4) under the head of the P/N 75944 Lycoming thermostatic valve, install in the engine adapter (1), torque to 300 in/lbs. and secure with .032 MS20995-C safety wire.

5. Per Assembly Drawing AFC-D-0034, onto each bulkhead fitting (5), install **(in order)** 1 ea. bulkhead nut (6), boss gasket (7), and “O” Ring (8). Install each completed assembly into the engine adapter (1). Do not tighten fittings until after routing of hoses has been determined in step 12.

CAUTION:

Boss gasket (7) & "O"-Ring (8) must seal in the smooth area between the threaded areas of the bulkhead fitting.
If this is not done, when you tighten down the bulkhead nut (6), you will force the O-Ring (8) against the end of the first set of threads on the bulkhead fitting, cutting the O-Ring, and mushrooming out the Teflon Boss gasket (7) like a large "C" causing a small oil leak.

6. Per Assembly Drawing AFC-D-0034, install gasket (2) on base of engine adapter (1) and install onto the engine accessory case. Torque to specifications 96 in/lbs.

7. Per Installation Drawing AFC-D-0035, Inside the R-44 cockpit, remove P/N C003-11 LH rear seat back assy. Locate firewall doubler to be positioned as follows. Angle of doubler plate to be positioned and butted against lower LH "J" channel. Doubler then to be positioned inboard and butted against LH side of existing doubler. Doubler is positioned correctly when butted against both "J" channel and existing firewall doubler as explained above. While maintaining position of doubler, drill attachment holes using a #40 drill bit. Drill oil filter mounting holes using a letter "F" drill bit. Remove doubler from firewall, deburr all previously drilled holes, remove all drill chips from helicopter. Install doubler plate using solid stainless-steel rivets (2) supplied.

   NOTE: Exercise care not to contaminate aircraft electronics equipment, as necessary.

8. Remove all remaining drill chips from aircraft.

9. Per Installation Drawing AFC-D-0038, Install oil filter mount as show.

(Continued)

Installation Instructions No. AFC-K011-II-A

Applicability: **Robinson Helicopter Models: R-44**
with Lycoming Engines

**** SEE WARNING (A) ****

10. Per Assembly Drawing AFC-D-0033, install 1 ea. fittings (9) into port "B" of the oil filter base and 1ea. fitting (8) into port "A" of the oil filter base (7) and tighten. Mount to oil filter mount (6) per assembly drawing using bolts (1), washers (2), and secure with .032 MS20995-C safety wire.

**** SEE WARNING (B) ****

11. Per Installation Drawing AFC-D-0038, Install hose assy (4) to the **"A" port** on the oil filter base and tighten "B"-nut on the hose end. Route hose towards engine adapter. Forward of lower LH frame tube, underneath throttle control rod and up to the **"A" port** of the engine adapter. Assure that hose passes to the right of the manifold pressure sense line. Tighten bulkhead nut at this time. Line to be Adel clamped to LH frame per installation drawing AFC-D-0038, using 1ea. screw (7), locknut (5), and 2 ea. washers (8), provided.

12. Per installation drawing AFC-D-0038, Install hose assy (3) to the **"B" port** on the oil filter base and tighten "B"-nut on the hose end. Route hose towards engine adapter. Hose is to pass on the aft side of the LH frame, above throttle control rod and routed to **"B" port** of engine adapter. Assure that hose passes to the left side of manifold pressure sense line. Tighten end bulkhead nut at this time. Line to be Adel clamped to LH frame per installation drawing AFC-D-0038, using 1ea. screw (7), locknut (5), and 2 ea. washers (8), provided.

CAUTION:
No load bearing to be imposed on manifold pressure sensing line.

13. Tie-rap "B" hose assy (3) to manifold pressure sense line configuring tie-raps to provide a standoff to prevent chaffing

14. Install oil filter, torque per instructions on oil filter and secure with .032 MS20995-C safety wire.

15. Run engine and check for leaks.

16. Determine weight and balance, initiate a 337 form, and update the equipment list.

Installation Instructions No. AFC-K011-II-B

Applicability: **Robinson Helicopter Models: R-44**
with Lycoming Engines

1. Remove LH and RH engine cowling

2. Remove existing spin on oil filter from rear of accessory case.

3. **DO NOT remove the Champion P/N CH48210 converter plate and gasket.**

4. Per Assembly Drawing AFC-D-0013, for OFB-17 (2) engine adapter apply liberal amount of Dow Corning DC-4 silicon grease or equivalent to O-Ring (8). Install O-ring (8) into machined groove in engine adapter (2) and install onto the accessory case. Torque to specifications 16-18 ft./lbs. and secure with .032 MS20995-C safety wire.

5. Per Assembly Drawing AFC-D-0013, place O-rings (33) onto fittings (28) and install into engine adapter (2).

6. Per Installation Drawing AFC-D-0035, Inside the R-44 cockpit, remove P/N C003-11 LH rear seat back assy. Locate firewall doubler to be positioned as follows. Angle of doubler plate to be positioned and butted against lower LH "J" channel. Doubler then to be positioned inboard and butted against LH side of existing doubler. Doubler is positioned correctly when butted against both "J" channel and existing firewall doubler as explained above. While maintaining position of doubler, drill attachment holes using a #40 drill bit. Drill oil filter mounting holes using a letter "F" drill bit. Remove doubler from firewall, deburr all previously drilled holes, remove all drill chips from helicopter. Install doubler plate using solid stainless-steel rivets (2) supplied.

   NOTE: Exercise care not to contaminate aircraft electronics equipment, as necessary.

7. Remove all remaining drill chips from aircraft.

8. Per Installation Drawing AFC-D-0038, Install oil filter mount as show.

**** SEE WARNING (A) ****

9. Per Assembly Drawing AFC-D-0033, install 1 ea. fittings (9) into port "B" of the oil filter base and 1ea. fitting (8) into port "A" of the oil filter base (7) and tighten. Mount to oil filter mount (6) per assembly drawing using bolts (1), washers (2), and secure with .032 MS20995-C safety wire.

(Continued)

Installation Instructions No. AFC-K011-II-B

Applicability: **Robinson Helicopter Models: R-44**
with Lycoming Engines

**** SEE WARNING (B) ****

10. Per Installation Drawing AFC-D-0038, Install hose assy (4) to the **"A" port** on the oil filter base fitting and tighten "B"-nut on the hose end. Route hose towards engine adapter. Forward of lower LH frame tube, underneath throttle control rod and up to the **"A" port** of the engine adapter. Assure that hose passes to the right of the manifold pressure sense line. Per Installation Drawing AFC-D-0034, tighten bulkhead nut (6) at this time. Line to be Adel clamped to LH frame per Installation Drawing AFC-D-0038, using 1ea. screw (7), locknut (5), and 2 ea. washers (8), provided.

11. Per installation drawing AFC-D-0038, install hose assy (3) to the **"B" port** on the oil filter base and tighten "B"-nut on the hose end. Route hose towards engine adapter. Hose is to pass on the aft side of the LH frame, above throttle control rod. and routed to **"B" port** of engine adapter. Assure that hose passes to the left side of manifold pressure sense line. Tighten end bulkhead nut at this time. Line to be Adel clamped to LH frame per Installation Drawing AFC-D-0038, using 1ea. screw (7), locknut (5), and 2 ea. washers (8), provided.

CAUTION:
No load bearing to be imposed on manifold pressure sensing line.

12. Tie-rap "B" hose assy (3) to manifold pressure sense line configuring tie-raps to provide a standoff to prevent chaffing

17. Install oil filter, torque per instructions on oil filter and secure with .032 MS20995-C safety wire.

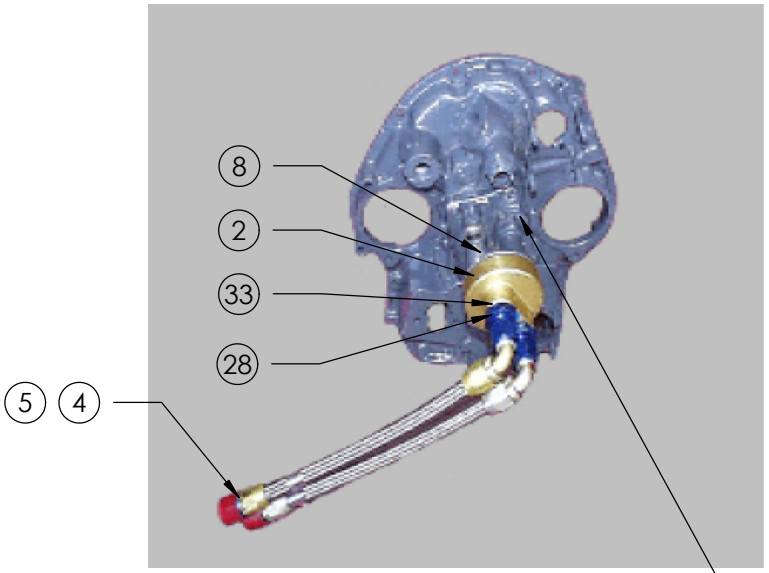
18. Run engine and check for leaks.

19. Determine weight and balance, initiate a 337 form, and update the equipment list.

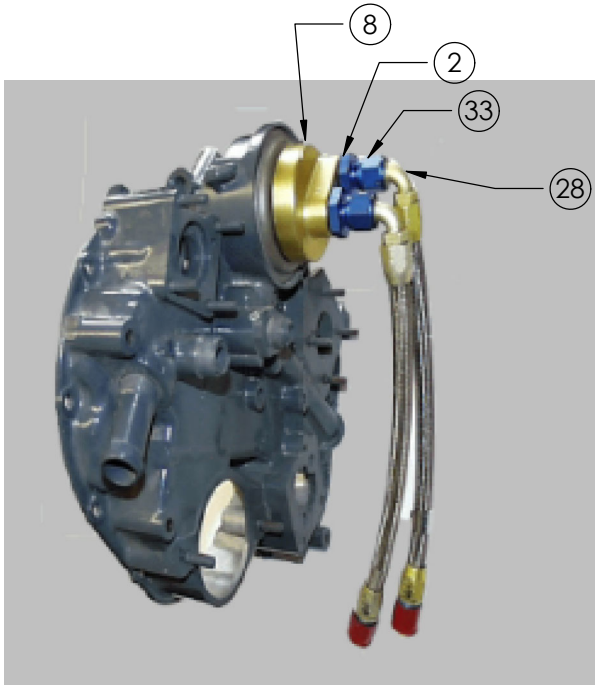
WEIGHT AND BALANCE REPORT
ENSTROM HELICOPTER
ALL MODELS

SURPLUS EQUIPMENT	WEIGHT	ARM-INCHES		MOMENT - IN/LBS.	
EQUIPMENT - ITEM	LBS.	LONG	LATR	LONG	LATR
REMOTE OIL FILTER	4.5	95.0	-16.0	427.5	-72.0

REVISIONS			
REV.	DESCRIPTION	BY	DATE



ORIGINAL LYCOMING
P/N 77852 ADAPTER



MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
2	OFB-17	FULL FLOW ENGINE ADAPTER - SINGLE DRIVE DUAL MAGS (NEW STYLE)	1
4	TBD	FIRESLEEVED HOSE ASSY, TSO'D	(OPT)
5	TBD	FIRESLEEVED HOSE ASSY, TSO'D	(OPT)
8	M83248/1-230	VITON "O" RING, SINGLE DRIVE DUAL MAGS (NEW STYLE)	1
28	AN919-15D-SP	REDUCER FITTING, -10 -> -8 SINGLE DRIVE DUAL MAGS (NEW STYLE)	2
33	M83248/1-910	VITON "O" RINGS,	2

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: 1 PLACE ±.030 2 PLACE ±.010 3 PLACE ±.005 4 PLACE ±.0005 ANGULAR ±0°30'	DRAWN	GM	12/15/2020
			APPR. BY	BDA	12/15/2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:
ASSEMBLY DRAWING
OFB-17 ADAPTER,
ENGINE - FULL FLOW

SIZE	DWG. NO.	REV
A	AFC-D-0013	IR

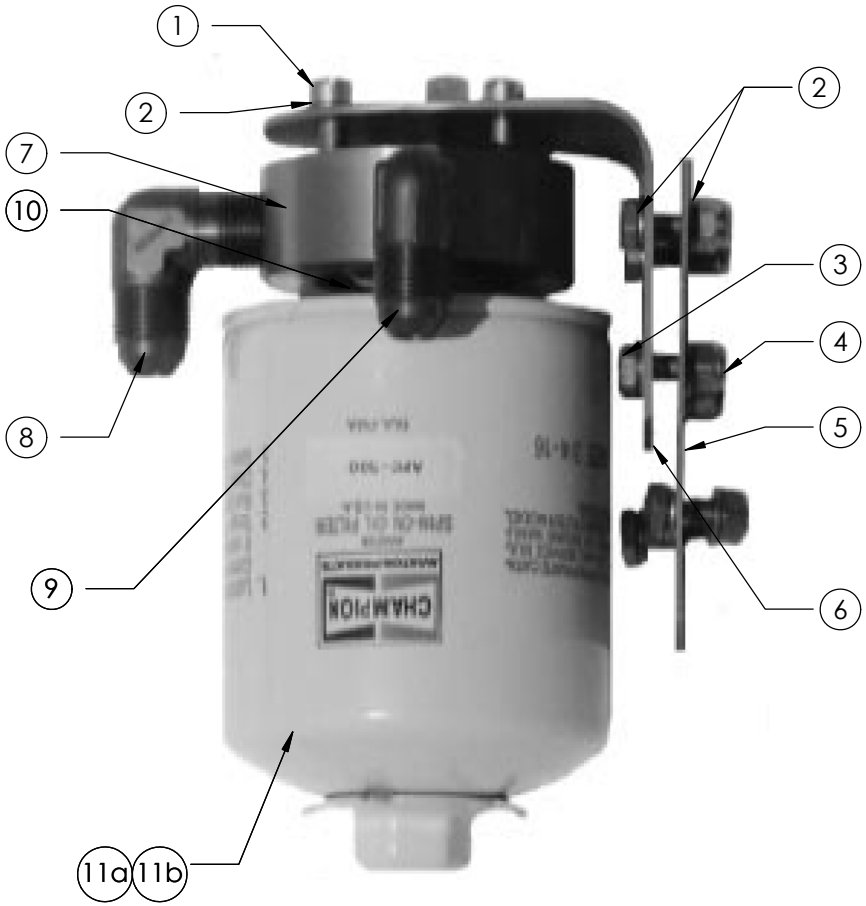
SCALE:	WEIGHT:	SHEET 1 OF 1

Part Number: AFC-K011-II

Date: 4-2-2021

5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020



MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	AN4H-4A	BOLT, DRILLED HEAD	4
2	AN960-416	FLAT WASHER	16
3	AN4-5A	BOLT	6
4	MS20365-428A	LOCKNUT	6
5	OFM-16	DOUBLER PLATE, R-44	1
6	OFM-11	OIL FILTER MOUNT PLATE, VERTICAL	1
7	OFB-10	OIL FILTER BASE	1
8	MS20822-8D	FITTING, 90°	1
9	MS20823-8D	FITTING, 45°	1
10	OFS-10	OIL FILTER STUD	1
11a	AFC-500	OIL FILTER	1
11b	AFC-600	OIL FILTER, LONG	1

				NAME	DATE
		UNLESS OTHERWISE SPECIFIED:			
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:

ASSEMBLY DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0033	A

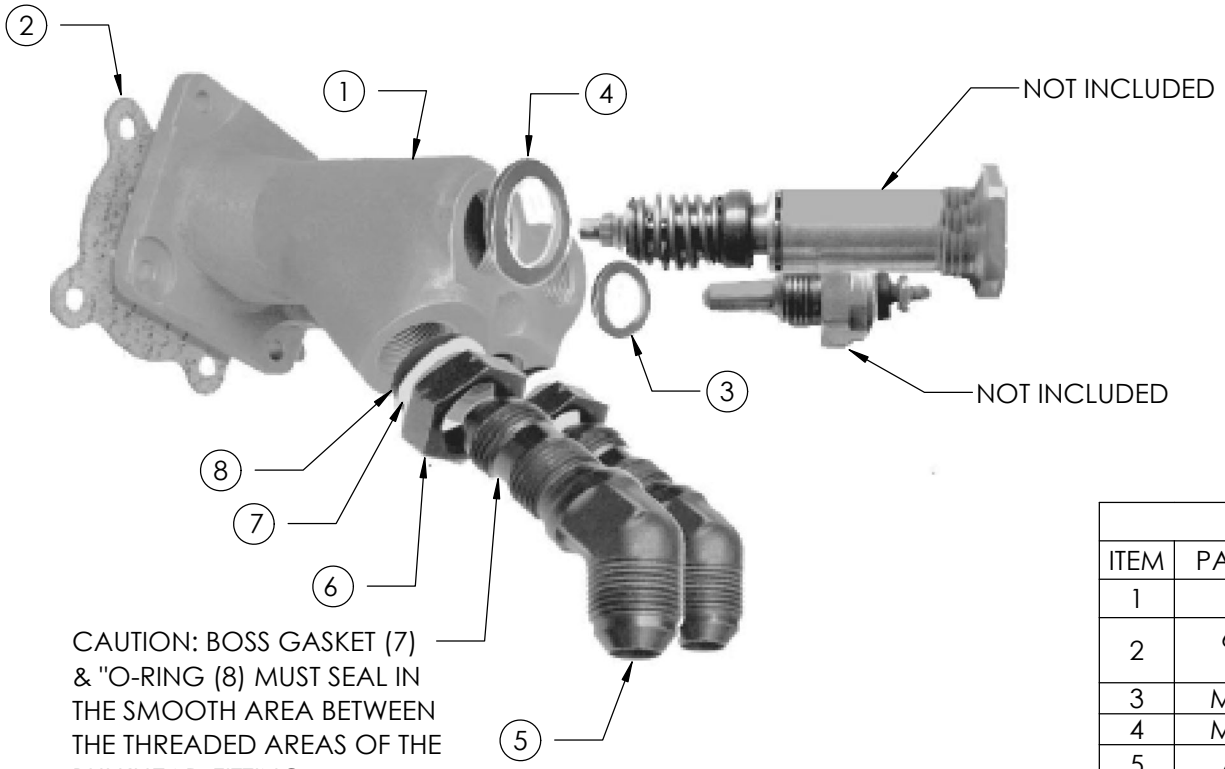
SCALE:	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

Part Number: AFC-K011-II

Date: 4-2-2021

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020



MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	LYC-10	ADAPTER-ENGINE, FULL FLOW	1
2	61173 OR GT-61173	OIL FILTER ADAPTER GASKET	1
3	MS35769-11	GASKET, OIL TEMPERATURE SENSOR	1
4	MS35769-21	GASKET, THERMOSTATUIC VALVE	1
5	AN837-8D	BULKHEAD FITTING, 45°	2
6	AN6289-8D	BULKHEAD NUT	2
7	MS28773-08	BOSS GASKET	2
8	M83248/1-908	"O" RING	2

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:

ASSEMBLY DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0034	A

SCALE:	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

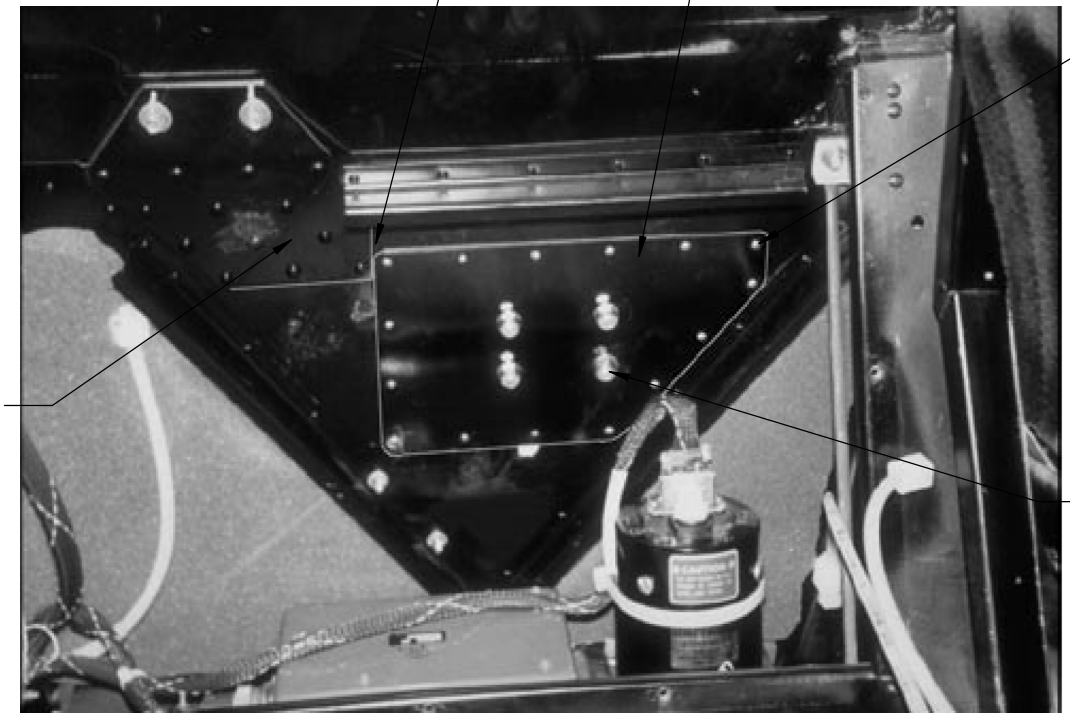
Part Number: AFC-K011-II

Date: 4-2-2021

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020

STEP 2. CONTINUE TO SLIDE DOUBLER PLATE (1) DOWN UNTIL IT MAKES CONTACT WITH LH SIDE OF EXISTING UPPER FRAME DOUBLER.

STEP 1. SLIDE DOUBLER PLATE (1) DOWN UNTIL IT MAKES CONTACT WITH THE LOWER LH "J" CHANNEL.



MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	OFM-16	DOUBLER PLATE, R-44	1
2	MS20613-3C	SOLID RIVET, STAINLESS STEEL	15
3	AN4-5A	BOLT	4
4	MS20365-428A	LOCKNUT	4
5	AN960-416	WASHER, FLAT	8

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:

INSTALLATION DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0035	A

SCALE:	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

Part Number: AFC-K011-II

Date: 4-2-2021

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:

INSTALLATION DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0036	A

SCALE:	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:

INSTALLATION DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0037	A

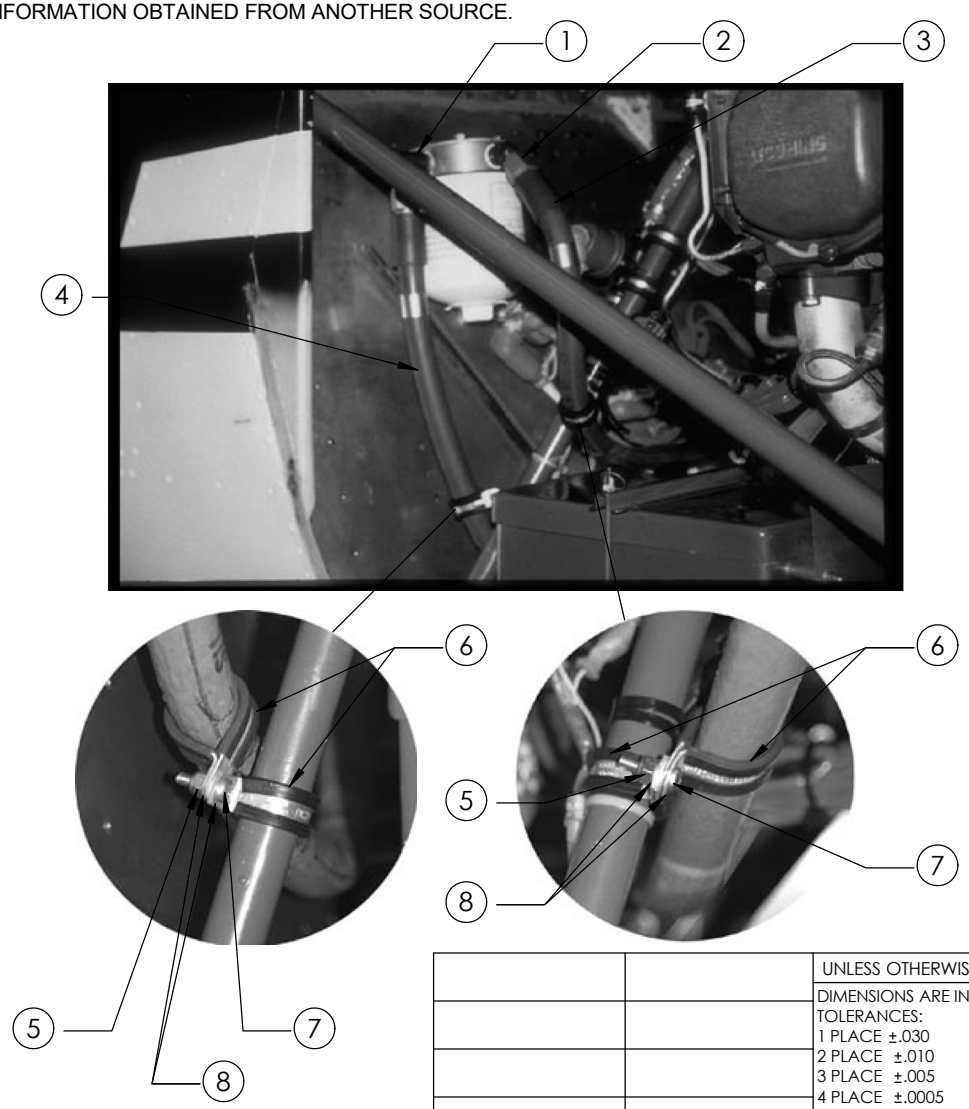
SCALE:	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

Part Number: AFC-K011-II

Date: 4-2-2021

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	REDRAWN IN SOLIDWORKS	GM	12-8-2020



MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	MS20822-8D	FITTING, 90°	1
2	MS20823-8D	FITTING, 45°	1
3	F13000008-0274	TEFLON HOSE W/ FIRESLEEVING	1
4	F13000008-0404	TEFLON HOSE W/ FIRESLEEVING	1
5	MS20365-1032A	LOCKNUT	2
6	MS21919DG-14	CLAMP. CUSHION LOOP SUPPORT	4
7	MS27039-1-10	SCREW	2
8	AN960-10	FLAT WASHER	4

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Airwolf Filter Corp.
		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	TITLE: INSTALLATION DRAWING
			APPR. BY	BDA	12-8-2020	
			ENG APPR.			
			MFG APPR.			
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.			
		MATERIAL				SIZE A / DWG. NO. AFC-D-0038 / REV A
NEXT ASSY	USED ON	FINISH	COMMENTS:			
APPLICATION						SCALE: / WEIGHT: / SHEET 1 OF 1

5 4 3 2 1

Part Number: AFC-K011-II

Date: 4-2-2021

REVISIONS			
REV.	DESCRIPTION	BY	DATE

OPTIONAL R/H LOCATION

MATERIAL LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	MS20822-8D	FITTING, 90°	1
2	MS20823-8D	FITTING, 45°	1
3	F13000008-0274	TEFLON HOSE W/ FIRESLEEVING	1
4	F13000008-0404	TEFLON HOSE W/ FIRESLEEVING	1
5	MS20365-1032A	LOCKNUT	2
6	MS21919DG-14	CLAMP. CUSHION LOOP SUPPORT	4
7	MS27039-1-10	SCREW	2
8	AN960-10	FLAT WASHER	4

				NAME	DATE
		UNLESS OTHERWISE SPECIFIED:			
		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
			APPR. BY	BDA	12-8-2020
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ANSY Y 14.5H	Q.A.		
		MATERIAL			
NEXT ASSY	USED ON	FINISH	COMMENTS:		
APPLICATION					

Airwolf Filter Corp.

TITLE:
INSTALLTION DRAWING

SIZE	DWG. NO.	REV
A	AFC-D-0042	IR

SCALE:	WEIGHT:	SHEET 1 OF 1

Part Number: AFC-K011-II

Date: 4-2-2021

5 4 3 2 1