



**HUGHES
SERVICE INFORMATION
NOTICE**

NOTICE NO N-41 *

DATE March 15, 1968

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*Supersedes Hughes Service
Information Letter No. L-20.

**SUBJECT: AC ENGINE MOUNTED FULL-FLOW OIL FILTER-
INSTALLATION, 269 SERIES HELICOPTERS**

**MODELS AFFECTED: All 269 Series Helicopters with Avco Lycoming O-360
or HIO-360 Aircraft Engines Installed**

TIME OF COMPLIANCE: At owners and operators discretion

PREFACE:

The data given in this Service Information Notice lists supplementary instructions and all components and hardware required for installation of the AC engine mounted full-flow oil filter on Hughes 269 Series Helicopters. Basic installation for installing the full-flow oil filter on Avco Lycoming engines are provided in Lycoming Service Letter No. L157A reprinted as part of this Service Information Notice.

It is noted that this Service Information Notice supersedes Hughes Service Information Letter No. L-20, dated 1 April 1966.

Reference

269A/A-1/TH-55A Handbook of Maintenance Instructions, Reissued 15 December 1967
269R Handbook of Maintenance Instructions. Reissued 15 August 1967

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PARTS LIST

<u>Nomenclature</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Mfgr.</u>
Kit-Oil Filter, Full-Flow	269A8589	1	HTC-AD

PROCEDURE

- a. Perform steps 1 through 14, per Lycoming Service Letter No. L157A.
- b. Remove oil cooler inlet line from engine accessory case. (See Figure 3-16, 269A/A-1/TH-55A HMI; Figure 3-11, 269B HMI)
- c. Install bulkhead elbow (P/N AN833-6D) on engine accessory case; position elbow so that it faces straight down.
- d. Install 90⁰ elbow (P/N AN939-6D) to firewall fitting; position elbow so that it faces toward oil cooler.
- e. Install pipe fitting (P/N AN816-6D) to 90⁰ elbow; install oil cooler inlet line to pipe fitting.
- f. Perform steps 15 and 16 per Lycoming Service Letter No. L157A attached.

Weight and Balance Data

Weight and balance not affected.



LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

Service Letter



Service Letter No. L157A
December 9, 1966

TO: All owners and operators of aircraft powered with Avco Lycoming O-320, IO-320, O-340, O-360, IO-360, HIO-360, O-540 and IO-540 aircraft engines

SUBJECT: Engine Mounted Full-Flow Oil Filter

Gentlemen:

Clean engine oil is essential to long engine life; consequently, the quest for new and better ways to keep the lubricating oil free from contaminants is endless. The recently developed full-flow oil filter is an added improvement over older methods of filtration and will be installed as optional equipment on many new direct drive Avco Lycoming aircraft engines.

Along with the advantages of complete oil filtration, the full-flow filter has some characteristics that are a decided improvement over other filters: The resin-impregnated paper that constitutes the full-flow filter element is heat-cured, acid-resistant, and capable of removing contaminants that would be injurious to the engine. However, to the operator, the most worthy advantage of the full-flow filter is that it permits longer periods of operation between oil changes; for example, the oil change interval can be increased by 25 to 100 per cent, depending on environmental conditions; and provided the oil filter element is replaced after each 50 hours of engine operation.

The AC full-flow oil filter designed especially for use on Avco Lycoming engines is shown in figure 1. It is mounted on the accessory housing at the pad provided for the oil pressure screen chamber. The filter is mounted on the engine by means of a special adapter which also serves as a mounting for the thermostatic oil cooler bypass valve and housing for the oil temperature bulb.

Most models of Avco Lycoming direct drive engines can be converted to use the full-flow filter; however, before installation is accomplished, check the distance between the firewall and the mounting pad on the accessory housing. See figure 2.

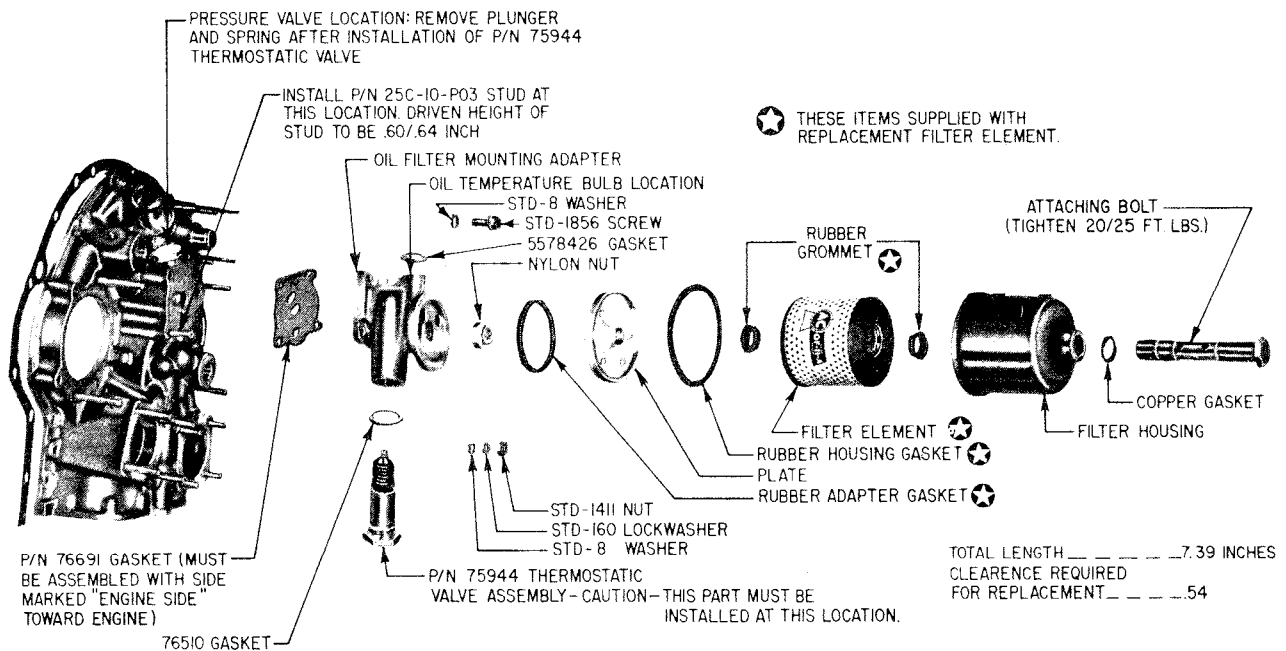


Figure 1. Exploded View of Full-Flow Oil Filter Assembly

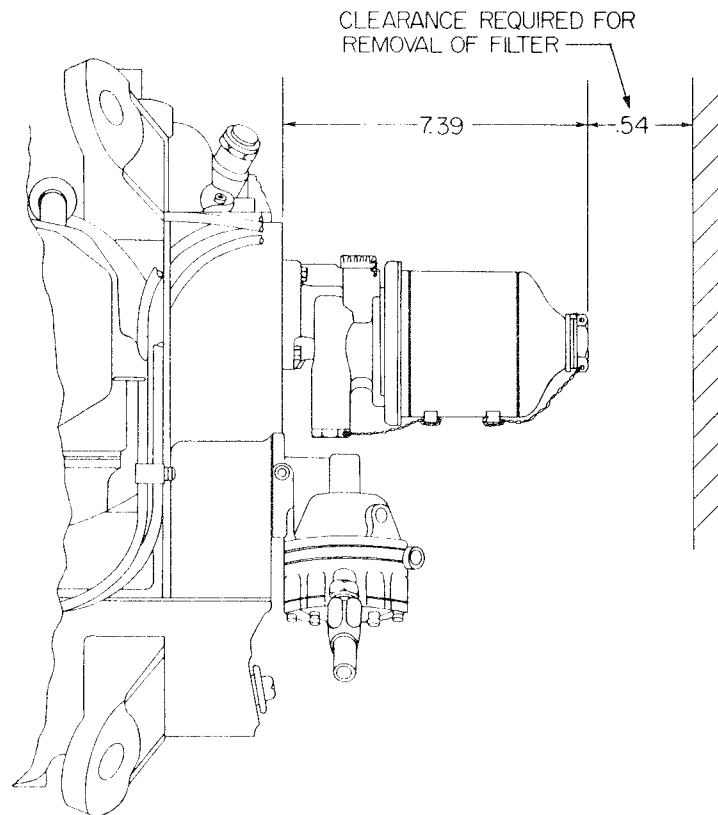


Figure 2. Full-Flow Oil Filter Installed at Rear of Engine, Side View

Installation of the new filter is accomplished as follows:

1. Disconnect oil temperature bulb from end of oil pressure screen housing. Also, remove the thermostatic by-pass valve if engine is equipped with one.
2. If necessary, remove left magneto to provide sufficient clearance for removal of oil pressure screen housing and installation of new filter and adapter.
3. Remove the four capscrews and washers that attach the oil pressure screen housing to the engine. Remove the housing screen and gasket. If any portion of the gasket adheres to the mounting surface of the accessory housing, remove it completely before the new gasket is assembled.
4. If engine has not been equipped with a thermostatic by-pass valve, remove the plug located above the oil filter mounting pad and remove the spring and plunger that serve as an oil cooler by-pass valve. Replace the plug and gasket. See figure 1.
5. Using a 1/4 inch stud driver, install a P/N 25C-10-P03 stud (AC P/N 5579090) in the lower left tapped hole in the accessory housing mounting pad. See figure 1. Drive the stud to a height of .60/.64 inch.
6. Using the three STD-1856 1/4 inch capscrews, check the depth of the tapped holes in the mounting pad by turning the capscrews into the holes by hand, as far as they will go. Measure the distance between the pad and the underside of the screws. If the distance is more than 1/8 inch, retap the hole using a 1/4-20 bottoming tap to clean the threads in the bottom of the hole.
7. Assemble a new adapter gasket No. 76691 (AC 6437520) on the pad on the accessory housing. Use POB or equivalent gasket sealant. Note that one side of the gasket is marked "ENGINE SIDE"; this side of the gasket must be assembled toward the engine.
8. Assemble the filter and adapter assembly No. 74911 (AC 5578770) on the accessory mounting pad and secure it with a STD-8 plain washer, STD-160 internal tooth lockwasher and STD-1411 nut over the stud in the lower left corner of the mounting pad. (If there is not enough clearance between the end of the stud and the adapter to install the nut, remove the adapter assembly and drive the stud one additional turn.) Also, after tightening nut, make sure end of stud does not interfere with adapter.

- 9. Use three No. STD-1856 (equivalent to AC 6437521) self-locking bolts to attach the adapter to the mounting pad. Use STD-8 (AC 6437523) plate washers between the adapter and the lockwasher on the bolt.
- 10. Tighten the bolts and nut installed in steps 8 and 9 to 75 inch pounds torque.
- 11. If the filter housing is not assembled on the adapter, proceed as follows: Make sure the adapter gasket and housing gasket are correctly seated, then check the nylon nut. The nut should be snugly seated against the cover plate by finger-tightening. The nylon nut must not protrude above the metal surface of the cover plate.
- 12. Tighten the attaching bolt with 20 to 25 foot pounds torque. Lockwire the bolt through the loop on the side of the housing as shown in figure 2.
- 13. Using AC 5578426 gasket, install the oil temperature bulb at the location shown in figure 1. Note that the well provided for the oil temperature bulb is tapped 5/8-18 NF-3 to accommodate an MS 28034-1 temperature bulb. If a different type bulb is used an adapter may be required. Lockwire the oil temperature bulb as shown in figure 2.
- 14. A thermostatic oil cooler by-pass valve, P/N 75944, must be assembled at the location provided on the adapter. Use the gasket, P/N 76510, that accompanies the valve. See figure 1. Lockwire as shown in figure 2.
- 15. If a magneto has been removed, reinstall it and retune the magneto to the engine.
- 16. Start the engine and check for oil leaks. Also check engine oil; addition of the filter assembly will require adding approximately one quart of oil.

FILTER ELEMENT REPLACEMENT

The oil filter element should be replaced after each fifty hours of engine operation; this is accomplished by removing the lockwire from the bolt head at the end of the filter housing; loosening the bolt, and removing the filter assembly from the adapter.

Before discarding the filter element, remove the outer perforated paper cover; and using a sharp knife, cut through the folds of the element at both ends, close to the metal caps. Then, carefully unfold the pleated element and examine the material trapped in the filter for evidence of internal engine damage such as chips or particles from bearings. In new or newly overhauled engines, some small particles of metallic shavings might be found, these are generally of no consequence and should not be confused with particles produced by impacting, abrasion or pressure. Evidence of internal engine damage found in the oil filter justifies further examination to determine the cause.

After the element has been replaced, tighten the attaching bolt as described in step 12 above. Be sure the lockwire is replaced.

PARTS DATA:

P/N 75528 (AC P/N 5578941) Oil Filter and Adapter Assembly Kit (AC Type OF-202-A)	
Consists of: (1) 74911 filter and adapter assembly, AC 5578770; (1) 76691 oil filter adapter gasket, AC 6437520; (4) STD-8 washers, AC 6437523; (1) STD-1411 nut; (1) 25C-10-P03 stud, AC 5579090; (3) STD-1856 self-locking screws; (1) STD-160 internal tooth lockwasher; (1) AC P/N 5578426 temperature bulb gasket	
	Kit Price \$80.00
P/N AC 6435683 Replacement Filter Element (Package AC OF-11-A)	
Consists of: (1) AC 6435640 element; (1) AC 6436635 square gasket; (1) AC 5579654 copper gasket; (1) AC 6436637 flat gasket	
	Replacement element, price each . . \$ 5.00
P/N 75944 Thermostatic Oil Cooler By-Pass Valve (not required if already installed)	
	Price each \$24.82

December 9, 1966

Service Letter No. L157A

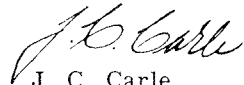
ADDITIONAL WEIGHTS:

75944	By-Pass Valve	0.30 lb.
75528	Filter and Adapter Assembly (Less 0.73 lb., weight of oil screen and housing removed from engine)	1.77 lbs.

The oil filter kit, thermostatic valve, and replacement elements are available through your local Avco Lycoming Distributor. All of the above prices are f. o. b., Williamsport, Pennsylvania.

Very truly yours,

AVCO LYCOMING DIVISION
AVCO CORPORATION


J. C. Carle
Service Manager

NOTE: Revision "A" to Service Letter No. L157 replaces AC 5579088 and AC 5579089 bolts with (3) STD-1856 self-locking screws; adds retapping instructions; replaces 74904 gasket with 76691 gasket; replaces AC 5579091 nut with STD-1411 nut; torque value 15 - 18 ft. lbs. changed to 20 - 25 ft. lbs.; torque value 60 in. lbs. changed to 75 in. lbs.; 69451 by-pass valve changed to 75944 by-pass valve; check for oil leaks added; revised figure 1 to reflect changes; changed 7.29 inch to 7.39 inch in figure 2; and revised lock-wiring in figure 2.