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SERVICE LETTER

Service Letter No. L220C
(Supersedes Service Letter No. L220B)
August 2, 2011

TO: All Lycoming Engine Owners, Operators, and Authorized Lycoming Distributors

MODELS AFFECTED: All Lycoming engines made since July 1, 1987 except O-235 engines

SUBJECT: Wide Deck Cylinder Configuration on Lycoming Engines

NOTE

Incomplete review of all the information in this document can cause errors. Read the entire Service Letter to make sure you have a complete understanding of the requirements.

This Service Letter is an informational document about wide deck cylinders on Lycoming aircraft engines. Except for O-235 series engines, Lycoming Engines has made all **new** engines with a “wide deck cylinder” configuration instead of the narrow deck cylinder configuration since July 1, 1987.

Although spare parts, including new cylinder kits are still available for the overhaul of narrow deck engines, Lycoming no longer supplies assembled rebuilt or overhauled engines with the narrow deck cylinder configuration. Except for O-235 engines, all rebuilt or overhauled engines are supplied with the wide-deck cylinder configuration.

Background

The Narrow Deck, or formally known as Standard Cylinder Flange, was the standard design of Lycoming cylinders in the 1940’s and 1950’s. The narrow deck cylinder had a thin cylinder base flange. Round internal wrenching type nuts were installed against the cylinder base flange in the smaller, low-powered engines. These same nuts were used with two semi-circular hold-down plates installed over the cylinder mounting flange in higher horsepower engines.

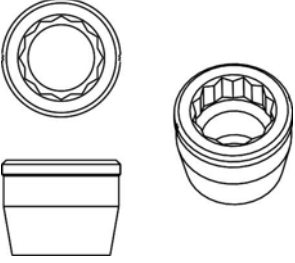
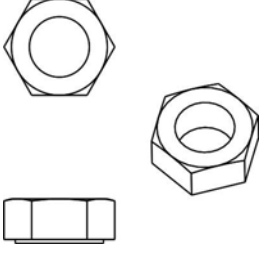
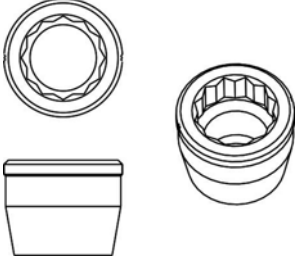
In the early 1960’s, Lycoming made new crankcases which used the new wide deck cylinder flange design. The diameter of the stud circle that attached the cylinder to the crankcase was larger and the cylinder base flange was thicker (approximately 3/8-inch (0.375 mm)). Except for IO-390 and IO-580-engine models, external hex nuts are used in the wide deck configuration instead of the internal wrenching nuts. The wide deck cylinder does not include a hold-down plate.



ISSUED			REVISED			PAGE NO.	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		
05	19	87	08	02	11	1 of 3	C

Table 1

Variations Between Wide Deck, Narrow Deck, and IO-390/IO-580 Series Engines

Narrow Deck	Wide Deck	IO-390 and IO-580 Series Engines
Narrow deck flange	Wide deck flange	Wide deck flange
Internal wrenching nuts 	External wrenching nuts 	Internal wrenching nuts 
Low Compression - No hold-down plates High Compression - Have hold-down plates	No hold-down plates	No hold-down plates

Engine Serial Number Suffix Designations

Table 2 identifies the suffix used at the end of engine serial numbers for indication of wide deck cylinders and roller tappets. At this time, Lycoming does not install roller tappets in narrow deck engines.

NOTE

Currently, roller tappets are installed on some wide deck engines. The serial number for these engines has an E suffix. On rebuilt and overhauled wide deck engines with roller tappets, the A suffix is replaced with an E suffix. Refer to the latest revision of Service Instruction No. 1514 for roller tappet part numbers. Engines with the converted crankcase for large diameter hydraulic lifters, the engine serial number has a T suffix. Refer to the latest revision of Service Instruction No. 1406.

**Table 2
Engine Serial Number Suffix Designations**

Suffix	Definition/Indication
A	Wide deck engine without roller tappets
E	Wide deck engine with roller tappets
T	New crankcase with large diameter hydraulic lifters
Two digit number (No Letter)	Narrow deck engine without roller tappets

Conversion from Standard Cylinder Flange Engines to Wide Cylinder Flange Engines could require a slight modification to the Airframe Manufacturer's engine baffling.

ISSUED			REVISED			PAGE NO.	REVISION	S.L. L220
MO	DAY	YEAR	MO	DAY	YEAR	2 of 3	C	
05	19	87	08	02	11			

NOTE

Propeller governor drive speeds are slightly faster on wide cylinder flange -540 model engines than on standard cylinder flange engines. If the engine upgrade is made to a wide deck from a narrow deck engine, the customer must also change the propeller governor. The gear ratio is .947:1 versus .895:1. Refer to the propeller manufacturer's instructions.

ISSUED			REVISED			PAGE NO.	REVISION	S.L. L220
MO	DAY	YEAR	MO	DAY	YEAR	3 of 3	C	
11	23	10	08	02	11			