SUPERIOR AIR PARTS, INC

Service Letter

Experimental

Number: L05-07 B

Replaces L05-07 A

Date: 01/21/2006

Subject: Engine Starting Instructions for Installations with Electronic Ignitions and Lightweight Sumps

Application: This Service Letter is applicable to engines utilizing Electronic Ignition systems and Superior's Lightweight Sump as defined below.

Lightweight Sump Assembly	Engine Applications
SV78901 (front mount – injected, dual fuel drain boss) SV78903 (rear mount – injected, dual fuel drain boss) SV78905 (front mount – injected, single fuel drain boss) SV78907 (rear mount – injected, single fuel drain boss)	Superior XP-IO-360 Engine Series and other Experimental 4-cylinder Lycoming style Aircraft Engines utilizing Electronic Ignition as defined below.
ELECTRONIC IGNITION NOTE: This Service Letter is applicable to engines with electronic ignitions that utilize wasted-spark technology and energize the ignition system immediately upon crankshaft rotation during starting. Wasted-spark systems fire the spark plugs during every rotation of a 4-stroke engine. Electronic Ignition systems that do not utilize wasted spark technology, such as Unison's LASAR®, or that delay energizing the wasted spark ignition until after 2 or more crankshaft rotations during starting are not effected by this Service Letter.	

Compliance: Before further operation

A small number of engines of this description have experienced failure of the lightweight sump due to induction backfire (ignition of fuel vapor) during engine starting. This is not a flight safety issue, as it has only occurred during starting. These engines utilized electronic ignitions where wasted-spark technology is utilized and the ignition system is energized at the time the crankshaft began to rotate during starting. To avoid this condition, the engine starting procedure must incorporate one of the following:

1. Engine Start with One Conventional Magneto and One Wasted-Spark Electronic Ignition: The ignition circuitry should be wired such that during start the electronic ignition is de-energized and only a conventional magneto is energized.

2. Engine Start with Dual Wasted Spark Electronic Ignition: The starter and ignition circuitry should be wired such that the engine can be rotated (starter engaged) with the ignition system de-energized until at least two (2) full crankshaft rotations have completed, evacuating any fuel vapor. After two (2) crankshaft rotations, the ignition system may be energized (while the engine is rotating) to start the engine.

Corporate Office – 621 S. Royal Lane, Suite 100 – Coppell, Texas (972) 829-4600
www.superiorairparts.com

Reference Documents:

The following documents may provide additional information helpful to the completion of the work outlined in this service letter.

L03-04	Induction Kit Installation for Lightweight Sumps
L03-06	Lightweight Sump Installation Instructions

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