TELEDYNE CONTINENTAL® AIRCRAFT ENGINE

SERVICE INFORMATION LETTER

Contains Useful Information Pertaining To Your Aircraft Engine

Category 5

SIL05-6A

Technical Portions
FAA Approved
Supersedes SIL05-6

SUBJECT: IO-240-B SERIES PRODUCT UPGRADES

PURPOSE: To provide an overview of product upgrades necessary to upgrade IO-240-series engines to current production configuration.

COMPLIANCE: At next scheduled engine inspection.

MODELS AFFECTED: IO-240-B Series Engines

REASON FOR REVISION: To provide FAA required Instructions for Continued Airworthiness for the fuel pump inlet filter.

GENERAL INFORMATION

Teledyne Continental Motors has incorporated several product upgrades available for the IO-240-B Series. This bulletin contains a synopsis of the available TCM bulletins and information required for updates to the IO240-Series engines. Refer to each individual bulletin to determine if the upgrades are required or optional.

NOTE: Modifications found in this bulletin may be specific to the IO-240-B as installed in the Diamond DA-20C. Owners wising to incorporate engine upgrades in other applications should contact TCM Technical Customer Service at 888-826-5465 or 251-438-3411.

NOTE: This Service Information Letter includes a Product Upgrade Compliance Form so TCM may track progress of the product upgrade program. Compliance with this SIL should be accomplished and the compliance form returned to TCM no later than the next scheduled inspection.

PRODUCT UPGRADE BULLETINS

(1) SB03-7 IO-240 Series Magneto Drive Gear

Purpose**:** To notify owners, operators, maintenance facilities and distributors of inspection, repair and/or replacement of magneto drive gear P/N 36066.

NOTE: Magneto timing must be reset after compliance with SB03-7 using the instructions contained in the latest revision of MSB94-8 and the engine Maintenance Manual.

(2) SIL04-8 Replacement Starter For IO-240-Series Engines

Purpose: To provide removal and installation instructions for P/N 655957 starter assembly on engines equipped with earlier P/N starter assemblies.

(3) SIL04-7 IO-240-Series Crankshaft Cluster Gear Inspection and Replacement

Purpose: To announce the availability of an improved crankshaft cluster gear P/N 656752 for IO-240 series engines and provide inspection criteria for currently installed crankshaft cluster gears.

(4) Start Vibrator Battery

In order to ensure proper start voltage to the start vibrator during engine start, Diamond Aircraft has installed a backup battery utilized during the start process. This battery should be inspected at the airframe manufacturers recommended interval, using procedures contained in the latest revision of the Airframe Maintenance Manual. In addition, the start vibrator backup battery must be replaced at least every 12 months. The start vibrator battery is available through Diamond Aircraft as P/N LCR12V1.3P.

> ***CAUTION:*** *Low voltage to the start vibrator (below 8 volts) will cause loss of start vibrator boost voltage output and possible reversion of the magneto to the advanced timing mode. Engine damage may result from improper start vibrator operation.*

(5) SB04-4A Replacement Of Manifold Valve Spring P/N 630184

Purpose: To provide instructions for the replacement of manifold valve spring P/N 630184 with spring P/N 627378.

(6) SIL04-9 IO240B13B Manifold Valve replacement, Heat Isolation Modifications and Throttle Body Modification

Purpose: To reduce heat on the engine fuel system components and enhance idle stability.

(7) SIL05-4 IO240B-Series Engines P/N 656859 Inline Fuel Filter Installation and Inspection Procedures

Purpose: To provide installation instructions for an additional fuel system filter and to provide Instructions For Continued Airworthiness for the filter once it is placed in service.

(8) SIL04-1 Installation of the Optional Altitude-Compensating Fuel Pump on IO-240-B Series Engines

Purpose: To provide instructions for the installation of the altitude compensating fuel pump on IO-240-B series engines.

(10) SIL05-5 IO-240-Series Manifold Valve Fuel Scavenge System Installation

Purpose: To reduce the effects of heat on the engine fuel system components and enhance idle stability.

(11) Installation of Fuel Pump Inlet Filter:

In order to enhance the aircraft fuel filtration system, DIAMOND AIRCRAFT has requested the optional installation of an additional fuel line filter screen at the engine driven fuel pump inlet fitting. Installation of the fuel pump inlet filter is recommended by Teledyne Continental Motors. Screen P/N 656143-1 is available from Diamond Aircraft or a TCM Authorized Distributor.

NOTE: The P/N 656143-1 fuel pump inlet filter is to be installed in addition to the P/N 656859 Inline Fuel Filter Installation, reference SIL05-4.

(a) Insure that the aircraft Master Switch is in the OFF position.
(b) Turn the aircraft fuel selector valve to the OFF position.
(c) In accordance with the aircraft manufacturers instructions, remove the engine cowling to gain access to the engine driven fuel pump.
(d) Select the proper size open end wrenches to fit the fuel inlet fitting body and the fuel inlet hose "B" nut.

WARNING

FAILURE TO PROPERLY SUPPORT COMPONENT FITTINGS DURING REMOVAL/INSTALLATION CAN RESULT IN FITTING AND/OR COMPONENT DAMAGE, POSSIBLE FAILURE OF THE FITTING OR COMPONENT, LOSS OF SYSTEM PRESSURE, ENGINE FIRE, LOSS OF POWER AND FORCED LANDING.

(e) Loosen the fuel inlet hose fitting while maintaining sufficient force on the fuel pump inlet fitting to prevent twisting or shear loads.
(f) Remove the fuel inlet hose from the fuel pump inlet fitting.
(g) Insert the P/N 656143-1 fuel filter element into the fuel inlet fitting. Ensure that the fuel filter flange seats against the fitting flare. Reference Figure 1.
(h) Install the fuel inlet hose on to the fuel pump fuel inlet fitting.
(i) Torque the fuel inlet hose "B" nut to 150 to 195 inch pounds while maintaining sufficient force on the fuel pump inlet fitting to prevent twisting or shear loads.
(j) Turn the aircraft fuel selector to the ON position.
(k) In accordance with the aircraft manufacturers instructions perform a fuel system leak test. Correct any discrepancies before proceeding.
(l) Check the fuel system for proper adjustment in accordance with the latest revision to TCM service bulletin SID 97-3. Make adjustments as necessary to meet specifications published in the latest revision of SID 97-3.
(m) Re-installed any aircraft or engine mounted equipment removed to facilitate compliance with this Special Service Instruction.
(n) In accordance with the aircraft manufacturers instructions re-install the aircraft cowling.
(o) Make appropriate log book entries for the installation of the P/N 656143-1 Fuel filter screen.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS P/N 656143-1 FUEL FILTER SCREEN:

The following procedure must be performed at intervals not to exceed every 100 hours.

(a) Insure that the aircraft Master Switch is in the OFF position.
(b) Turn the aircraft fuel selector valve to the OFF position.
(c) In accordance with the aircraft manufacturer's instructions, remove the engine cowling to gain access to the engine driven fuel pump.
(d) Select the proper size open end wrenches to fit the fuel inlet fitting body and the fuel inlet hose "B" nut.

WARNING

FAILURE TO PROPERLY SUPPORT COMPONENT FITTINGS DURING REMOVAL/INSTALLATION CAN RESULT IN FITTING AND/OR COMPONENT DAMAGE, POSSIBLE FAILURE OF THE FITTING OR COMPONENT, LOSS OF SYSTEM PRESSURE, ENGINE FIRE, LOSS OF POWER AND FORCED LANDING.

(e) Loosen the fuel inlet hose fitting while maintaining sufficient force on the fuel pump inlet fitting to prevent twisting or shear loads.
(f) Remove the fuel inlet hose from the fuel pump inlet fitting. Install a protective cover on the fuel supply line to prevent contamination.
(g) Remove the P/N 656143-1 inlet screen from the fuel pump inlet fitting. Install a protective cover on the fuel pump inlet fitting to prevent contamination.
(h) Clean the filter cone by soaking in lacquer thinner or acetone for several hours. Blow the filter cone dry with clean, filtered dry compressed air. If any physical damage is noted to the filter, it must be replaced.
(i) Remove the protective cover from the fuel pump inlet fitting and insert the P/N 656143-1 fuel filter element into the fuel inlet fitting. Ensure that the fuel filter flange seats against the fitting flare. (Reference Figure 1.)
(j) Remove the protective cover from the fuel supply hose. Temporarily restore power to the aircraft and open the fuel selector valve. Placing the end of the fuel supply hose into a proper container, use the aircraft boost pump to flush the hose to remove any contaminants. Turn the fuel selector valve back to the off position and remove power from the aircraft.
(k) Install the fuel inlet hose on to the fuel pump inlet fitting.
(l) Torque the fuel inlet hose "B" nuts to 150 to 195 inch pounds while maintaining sufficient force on the fuel pump inlet fitting to prevent twisting or shear loads.
(m) Restore electrical power to the aircraft. Turn the aircraft fuel selector to the ON position.
(n) In accordance with the aircraft manufacturers instructions perform a complete fuel system leak test. Correct any discrepancies before proceeding.
(o) Re-install any aircraft or engine mounted equipment removed to facilitate compliance with this Special Service Instruction.
(p) In accordance with the aircraft manufacturers instructions re-install the aircraft cowling.
(q) Make appropriate log book entries for the required 100-hour inspection and cleaning of the P/N 656143-1 fuel inlet filter screen.

CAUTION: *After any fuel system modifications in accordance with the latest revisions of bulletins SIL04-1, SB04-4, SIL04-9, SIL04-10, SIL05-4, SIL05-5 or installation of the fuel pump inlet filter the fuel system must be set up using the instructions contained in the latest revision of SID97-3 and the latest revision of the engine Maintenance Manual Form X30621.*

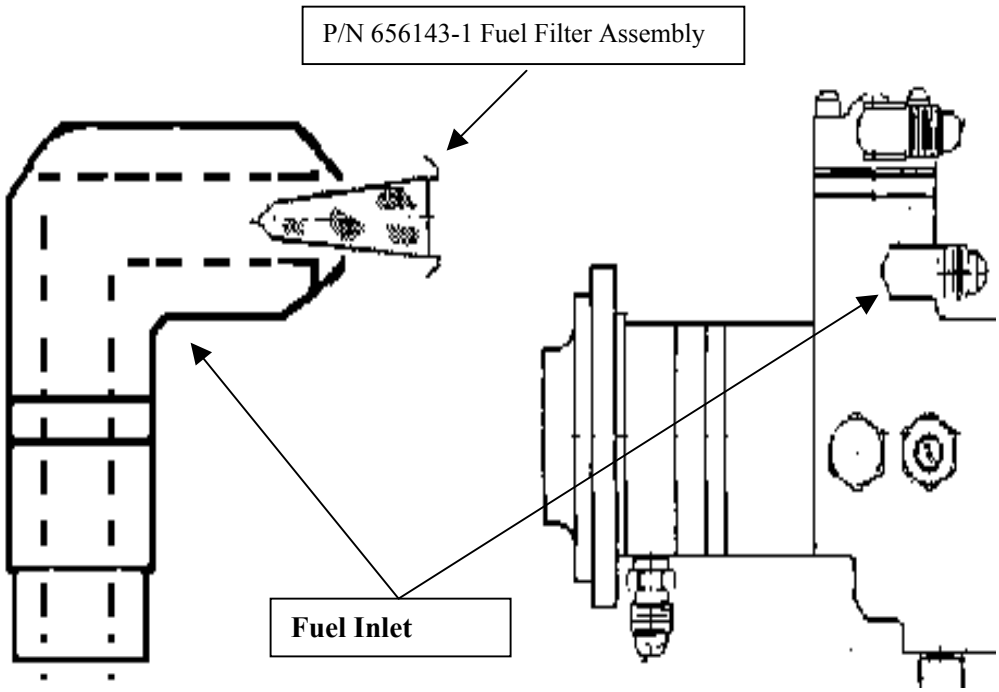

FIGURE 1
P/N 656143-1 FUEL PUMP INLET FILTER INSTALLATION

NOTE: The P/N 656143-1 fuel pump inlet filter is to be installed in addition to the P/N 656859 Inline Fuel Filter Installation, reference SIL05-4.

(12) SIL00-11 Cylinder Drain Port Connectors

In order to enhance cold starting, modified cylinder induction port drain connectors P/N 655472 are now available. The P/N 655742 Cylinder Induction Port Drain Connector may be installed using the instructions contained in the latest revision of TCM Service Information Letter SIL00-11.

IO-240-B Series Product Upgrade Compliance Form

Return Form to:
Teledyne Continental Motors Technical Customer Service
PO Box 90 Mobile, AL 36601 Attn: Joe Barton FAX: 251-432-7352

Owner Name:		**Date:**
Address:		
City:	**State/Country/ZIP**	**PH#**
FBO Name:		
Address:		
City:	**State/Country/ZIP**	**PH#**
Aircraft Registration #:	**Make/Model:**	**S/N:**
Bulletin:	**Facility:**	**Date of Compliance:**
SB03-7: IO240-Series Magneto Drive Gear (SSI2001-1 constitutes previous compliance)		
SIL04-8 Replacement Starter (SSI2002-5 constitutes previous compliance)		
SB04-7 Cluster Gear Inspection / Replacement		
Start Vibrator Battery Inspection/Replacement		
SB04-4A Replacement of Manifold Valve Spring (SSI2002-1 Constitutes Previous Compliance)		
SIL04-1A Altitude Compensating Pump		
Fuel Pump Inlet Filter Installation		
SIL04-9 IO240B13B Manifold Valve Replacement, Heat Isolation Mods and Throttle Body Modifications		
SIL05-4A IO240-Series P/N 656859A1 Fuel Filter Installation		
SIL05-5 IO-240-Series Manifold Valve Fuel Scavenge System Installation		
SILO0-11B Cylinder Drain Port Connectors		
Engine Model:	**Serial Number:**	**Date Installed:**
Engine Total Time (Hours):		