

CONTINENTAL[®] AIRCRAFT ENGINE

MAINTENANCE MANUAL

**STANDARD PRACTICE
FOR SPARK IGNITED ENGINES**



Technical Portions Accepted by the Federal Aviation Administration

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Chapter 6. Engine Inspection and Service

6-1. Engine Inspection Introduction

Inspections described in this chapter apply only to the Continental Motors engines covered by this manual. Perform the engine inspections according to the instructions provided. Perform aircraft inspections according to the aircraft manufacturer's instructions. Refer to the following sections:

- Section 6-2, "Inspection and Maintenance Schedule"
- Section 6-3, "Time Between Overhaul"
- Section 6-4, "Scheduled Inspections"
- Section 6-5, "Unscheduled Maintenance"
- Section 6-6, "Inspection Checklists"

Some inspections are at predetermined intervals (scheduled) while others are based on circumstance (unscheduled). Engine servicing is performed at scheduled intervals but may also be performed "on condition." The first part of this chapter is devoted to scheduled maintenance intervals and associated procedures; unscheduled maintenance instructions follow the scheduled maintenance instructions.

NOTE: Discrepancies discovered by the person conducting the scheduled or unscheduled inspections, even if the discrepancy is not an itemized inspection item, should be corrected upon discovery. Fuel and oil system contamination affects engine performance and service life. If oil or fuel system contamination is discovered, do not limit the correction to the symptom; isolate and correct the source of the contamination, including any residual material left in the engine by the source of the contamination.

6-2. Inspection and Maintenance Schedule

Unless another FAA-approved Inspection Program is established, the Engine Inspection and Maintenance Schedule shows the inspections for the subject engines covered by this manual in their original type design. The inspections described in this chapter apply to the engine and not to the aircraft. Refer to the Aircraft Manufacturer's manual for airframe inspection requirements.

The inspections are progressive; commencing from the date the engine is placed in service. The inspection intervals are tracked by Engine Log entries and designated by hours of operation or calendar time, whichever occurs first. Inspection techniques must be executed consistently for reliability.

6-3. Time Between Overhaul

Continental Motors (CM) provides operational limitations and instructions for your engine along with the requirements for continued airworthiness as specified in the engine Operator Manuals, Maintenance Manuals, Overhaul Manuals, and Service Documents. The Time Between Engine Overhaul provided in this document applies only to engines that have been operated and maintained in accordance with these instructions. Engine mounted components and accessories require overhaul at the same hourly and calendar intervals as the engine, unless otherwise specified by the component or accessory manufacturer.



Engine Inspection and Service

An engine's published TBO DOES NOT mean that every engine will operate the number of hours or years listed without requiring component replacements and/or unscheduled maintenance events. Noncompliance with CM instructions for continued airworthiness, operational and/or environmental factors may necessitate repair or replacement of the engine, engine components and accessories earlier than the published TBO.

TBO periods were established on most CM engines beginning in the 1960s. Since that time, CM has made significant engineering improvements to virtually all major engine components. CM has refined manufacturing processes and implemented computer numerical controlled (CNC) machining tools enabling CM factory engines to meet higher standards than possible when the engines were originally granted FAA Type Certificates. These improvements have enabled CM to increase TBO limits for many of our new and rebuilt engines.

CM recommends the following factors be used, along with the engine's published TBO, to determine the engine's continued airworthiness:

1. Environmental corrosion occurs internally and externally on an engine. This naturally occurring process can affect continued airworthiness of the engine and engine mounted components or accessories. Regardless if the engine has been operated regularly or has been in storage; gaskets, seals, and synthetic and natural rubber goods deteriorate over time. Replace or overhaul the engine upon accumulating the operating hours specified in Table 6-1, or twelve (12) years after being placed in service, whichever occurs first.
2. For engines used in aerial spraying, TBO is 1200 hours or twelve (12) years whichever occurs first.
3. Engines used in parachute jumping, glider towing, banner towing, blimp propulsion, or other unusually stressful applications may require more frequent overhauls than listed.
4. The quality of parts, accessories and workmanship utilized during routine maintenance, engine top overhaul and major overhaul has a direct effect on the service life of the engine. Also, the maintenance and condition of engine-related components - including, but not limited to, propeller, propeller governor, vacuum pump, gear driven alternator, mount, baffles, instrumentation, and controls has a direct effect on engine durability. The TBO periods listed are predicated on the engine having been maintained according to the Instructions for Continued Airworthiness, (ICA) accepted by the FAA, specified in the engine Maintenance Manual, Overhaul Manual, and Service Documents, and operated within the limitations published in the engine operating instructions or the aircraft manufacturer's Aircraft Flight Manual / Pilot's Operating Handbook (AFM / POH).
5. Continental Motors does not provide a TBO for engines that have been:
 - Assembled with parts not supplied by Continental Motors
 - Assembled with parts that do not conform to the original FAA approved type design for the engine
 - Modified from the original type certificate configuration



- Overhauled or repaired in a manner that is inconsistent with the specifications, limits, and instructions provided in the CM Instructions for Continued Airworthiness and FAA Airworthiness Directives
6. The “Hobbs Meter” is commonly used by the aviation industry as an acceptable device to record time elapsed while electrical power is applied to the device. The conditions under which the Hobbs Meter records operation vary widely within the aviation industry. Continental Motors does not specify a method to record engine operating hours, rather, Continental Motors defers to the end application installer.

NOTE: TBO periods specified in this document are only estimates and do not reflect warranty periods. For engine warranty coverage, refer to the original Aircraft Engine Warranty received with the engine.

Table 6-1. Engine Time Between Overhaul (TBO)

		HOURS/YEARS	
		ENGINE S/N BEFORE 1006000	ENGINE S/N 1006000 AND LATER
ENGINE MODEL	SEE NOTE		
A65, A75 and C75, C85, C90 Series	1	1800/12	
O-200-A, B	1, 2	1800/12	2000/12
O-200-D	1	2000/12	2200/12
IO-240-A, B	1, 2		
IOF-240-B	1, 2		
IO-346-A	1	1500/12	
C125, C145 Series and O-300-A, B, C, D	1	1800/12	
GO-300-A, C, D, E	1	1200/12	
IO-360-A, AB, B, C, D, G, H, J, K	1	1500/12	
IO-360-CB, DB, GB, HB, JB	1, 2	1500/12	1700/12
IO-360-ES, KB	1, 2	2000/12	2200/12
TSIO-360-A, AB, B, C, D, E, F, H	1	1400/12	
LTSIO-360-E	1		
TSIO-360-CB, DB, HB, JB	1, 2	1400/12	1600/12
L/TSIO-360-EB, FB, GB, KB, LB, MB, RB, SB	1, 2	1800/12	2000/12
E165, E185, E225 Series	1	1500/12	
O-470-A, B, E, G, N, P	1		
O-470-J, K, L, M, R, S	1, 2	1500/12	1700/12
O-470-U	1, 2, 3	2000/12	2200/12
IO-470-C, D, E, F, G, H, J, K, L, M, N, P, R, S, U, V, VO	1, 2	1500/12	1700/12
TSIO-470-B, C, D	1	1400/12	
IO-520-B, BA, C, M	1	1700/12	
IO-520-A, BB, CB, D, E, F, J, K, L, MB	1, 2	1700/12	1900/12
L/IO-520-P	1, 2	2000/12	2200/12



Table 6-1. Engine Time Between Overhaul (TBO)

ENGINE MODEL	SEE NOTE	HOURS/YEARS	
		ENGINE S/N BEFORE 1006000	ENGINE S/N 1006000 AND LATER
GTSIO-520-F, K	1	1200/12	
GTSIO-520-C, D, H	1, 4	1600/12	
GTSIO-520-L, M, N	1		
TSIO-520-B, D, E, J, K, L, N	1	1400/12	
TSIO-520-BB, C, DB, EB, G, H, JB, KB, LB, M, P, R, T	1, 2	1400/12	1600/12
TSIO-520-NB	1, 2,	1600/12	1800/12
TSIO-520-M, P, R	1, 2, 5		
TSIO-520-AF, CE, UB, VB, WB	1, 2		
L/TSIO-520-AE	1,2	2000/12	2200/12
TSIO-520-BE	1, 2		
IO-550-A, B, C, D, E, F, L	1, 2	1700/12	1900/12
IO-550-G, N, P, R	1, 2	2000/12	2200/12
IOF-550-N	1, 2		
TSIO-550-B, E	1, 2	1600/12	1800/12
TSIO-550-C, G, K, N	1, 2	2000/12	2200/12
TSIOF-550-D, J, K, P	1, 2		
TSIOL-550-A, B, C	1	2000/12	

1. If an engine consistently accumulates 40 or more hours per month since being placed in service, add 200 hours to recommended TBO.
2. Engines with Serial Number 1006000 or higher include an additional 200 hours to TBO (as noted in Table 1, column 3).
3. Applies to: new and rebuilt O-470U Model Specifications 11, 12, 13, 14, 17, 18, and subsequent numbers manufactured, new or rebuilt, or overhauled (2002 or later).
4. Applies to GTSIO-520-C, D, H engine models listed utilizing cylinder part number 653453, or superseding (cylinder production released APRIL 1993-verify part number on cylinder flange). Also, all parts must be replaced as directed by the applicable current service bulletins, illustrated parts catalogs, and overhaul manuals. A log book entry is required.
5. Applies to new and rebuilt TSIO-520-M Spec. 6, 7, and 8; TSIO-520-P Spec. 5 and 6; TSIO-520-R Spec. 7, 9, 10, and 11, or new and rebuilt TSIO-520-M, P, and R model engines with subsequent specification numbers.