

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E00056SE
Revision 1
CONTINENTAL MOTORS, INC.
IO-370-CL, IO-370-CM

October 11, 2018

TYPE CERTIFICATE DATA SHEET NO. E00056SE

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E00056SE) and other approved data on file with the Federal Aviation Administration meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder Continental Motors, Inc.
2039 South Broad Street
Mobile, AL 36615

Model	<u>IO-370-CL</u>	<u>IO-370-CM</u>
Type -	4HOA Direct Drive, Naturally Aspirated	--
Rating, (See NOTE 1) Standard Atmosphere At Sea Level Pressure Altitude.		
Max Continuous HP	195	--
Max Continuous RPM	2700	--
Fuel (Min. Grade Aviation Gasoline)	100 or 100LL per ASTM D-910	--
Lubricating Oil	Lubricating oils verified compliant with specifications SAE-J1899 or J1966 by CMI Specification MHS-24.	--
Bore and Stroke - In.(mm)	5.125 (130.1) x 4.5 (114.3)	--
Displacement, In ³ (cm ³).	371 (6079)	--
Compression Ratio	9.6:1	--
Weight (Dry), lbs (kg),	295 (133.8)	--
Oil Sump Capacity, qt (L)	8.0 (6.5) Usable – 30° Nose Up 4.0 (3.79) Usable – 30° Nose Down 5.0 (4.73)	-- -- --
Principal Dimensions		
Length, in (mm)	22.38 (568.4)	--
Width, in (mm)	29.57 (751.0)	--

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Height, in (mm)

33.41 (848.6)

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	<u>IO-370-CL</u>	<u>IO-370-CM</u>
Center of Gravity, in (mm)		
Aft of propeller flange	14.0 (355.6)	--
Beside crank centerline .	0.0 (0.0)	--
Below crankshaft centerline .	0.75 (19)	--
Propeller Shaft	AS127D Flange, Type 2 modified	--
Fuel Injection	Servo-style fuel injection system, AC Type fuel pump	--
Control System	Manual Control	
Ignition, Dual		
Magnetos	S4LSC-21, S4LSC-204	--
Timing °BTC	R-20°, L-20°	--
Magnetos	S4LSC-21, S4LSC-204	--
Spark Plugs	Tempest UREM38E	--
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Applicable Notes	1 through 11	--

Certification Basis: IO-370-CL – 14 CFR, Part 33, effective February 1, 1965, as amended by 33-1 through 33-34 except replace §33.8 with compliance to CAR13.16(c).
IO-370-CM – 14 CFR, Part 33, effective February 1, 1965, as amended by 33-1 through 33-34 except replace §33.8 with compliance to CAR13.16(c).

TYPE CERTIFICATE NUMBER E00056SE

<u>MODEL</u>	<u>APPLICATION</u>	<u>ISSUED/AMENDED</u>	<u>DELETED</u>
IO-370-CL	February 2018		
IO-370-CM	February 2018		

PRODUCTION BASIS FAA Production Certificate 508.

NOTES

NOTE 1. ENGINE RATINGS

Engine ratings are based on calibrated test stand performance under the following conditions:

- 1) US Standard Atmosphere. Horsepower may vary up to +/- 2.5%
- 2) Sea level static, standard day conditions (29.92 inHg, 59°F, no water vapor) for sea level ratings
- 3) No external power extraction (all accessory drives unloaded)
- 4) Ideal inlet and exhaust (no losses)
- 5) 0% Relative Humidity (no water vapor)
- 6) Manifold temperature maintained at 56 °F above inlet temperature (115°F at sea level, standard day)

NOTE 2. TEMPERATURE LIMITS

Maximum Temperature Limits

Maximum cylinder head temperature (CHT)
(well type thermocouple) 500°F (260°C)

Maximum oil temperature

IO-370-CL 245°F (118.3°C)
IO-370-CM 245°F (118.3°C)

Minimum Temperature Limits

Minimum CHT for takeoff 150°F (65.6°C)
Minimum oil temperature for takeoff / maximum continuous power 100°F (37.7°C)

Minimum oil temperature for starting 20°F (-7°C)

NOTE 3. PRESSURE LIMITS

Fuel Pump Inlet Pressure Limits

Minimum pressure -2 psig (-0.13 bar)
Maximum pressure 35 psig (2.41 bar)

Oil Pressure Limits

Maximum gauge pressure, cold engine 115 psig (7.9 bar)
Nominal gauge pressure 55 to 95 psig (3.79 to 6.6 bar)
Minimum gauge pressure at idle 25 psig (1.7 bar) at or below 200°F

NOTE 4. ACCESSORY DRIVE PROVISIONS

Original Accessory	Direction of Rotation*	Speed Ratio to Crankshaft	Maximum Continuous Torque in-lb (Nm)	Maximum Static Torque in-lbs (Nm)	Maximum Overhang Moment in-lbs (Nm)	Drive
Propeller Governor	CW	0.895:1	125 (14.1)	1200 (135.5)	40 (4.5)	AND 20010
Tachometer	CW	0.5:1	7 (.79)	50 (5.6)	5 (.56)	AND 20000
Alternator (Belt driven)	CW	**	60 (6.7)	120 (13.5)	40 (4.5)	Belt ISO 9982
Starter	CCW	16.56:1	-	450 (50.8)	25 (2.8)	N/A
Vacuum Pump	CCW	1.30:1	100(11.3)	800(90.3)	25 (2.8)	AND 20000
* CCW = counterclockwise, CW = Clockwise. The rotation direction is indicated facing the drive pad or from the front of the engine for accessories driven from the front pulley of the engine.						
** Driving pulley speed. Accessory rotation speed dependent on accessory pulley ratio.						

NOTE 5. MODEL DESCRIPTION

IO-370-CL Base Model. Four cycle, four cylinder air/oil cooled, horizontally opposed, direct drive engine with a wet sump, positive displacement lubrication system, 9.6:1 compression ratio, engine cranking accomplished by a geared Bendix-style starter mounted on the crankcase that engages an external ring gear, fuel delivery via a traditional diaphragm-style AC, plunger-driven pump assembly mounted on the rear accessory housing, a fuel servo mounted below the engine, and a flow divider to direct the fuel flow to nozzles installed in each cylinder head. The engine is attached to the airframe using a Dynafocal mount.

IO-370-CM Same as the IO-370-CL except the aircraft mounting interface is conical.

NOTE 6. ACCESSORIES, COMPONENTS, OR SYSTEM ASSEMBLIES PROVIDED AS PART OF THE ENGINE TYPE DESIGN

Ignition

IO-370-CL, -CM S4LSC-21, S4LSC-204 Magnetos

Radio shielded ignition harness
 Tempest UREM38E spark plugs (8)

NOTE 7. COMPATIBLE ACCESSORIES, COMPONENTS, OR SYSTEM ASSEMBLIES NOT PART OF THE ENGINE TYPE DESIGN

Alternators

As approved by Aircraft Type Certificate

Propeller Governors

As approved by Aircraft Type Certificate

NOTE 8. ENGINE MOUNT SYSTEM PROVISIONS

The IO-370 has four integral mount legs at rear of crankcase, two on each crankcase half. The IO-370-CL crankcase is designed for a dynafocal mount; the IO-370-CM crankcase is designed for a conical mount. The aircraft manufacturer must incorporate appropriate mounting interface and engine mount isolators to satisfy specifications provided herein. Engine mount bosses must meet utility category aircraft load requirements specified in 14 CFR §23.337.

NOTE 9. APPLICABLE INSTALLATION, MAINTENANCE AND OVERHAUL MANUALS

Document	IO-370-CL	IO-370-CM
Installation Drawing	AEL30064	AEL30064
Installation and Operation Manual	OI-32	OI-32
Maintenance and Overhaul Manual	M-32	M-32

Instructions of Continuous Airworthiness are contained in Document M-32.

NOTE 10. VIBRATION DAMPER PROVISION LIMITATIONS

One 6.3 order; one 8th order counterweight installed on the crankshaft cheeks

NOTE 11. ENGINE MODEL SPECIFICATION NUMBERS

Engine model numbers may include a suffix to define minor specification changes and/or accessory packages. Example: IO-370-CL (C1U8).

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