DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E00056SE
Revision 4
CONTINENTAL AEROSPACE TECHNOLOGIES, INC.
IO-370-CL, -CM, -C1F,
-DA3A, -D3A

February 12, 2020

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 Aerospace Technologies, Inc.
2039 South Broad Street
Mobile, AL 36615

Type Certificate Record Holder — Continental Motors, Inc.
Company name change January 1, 2020 (Continental Aerospace Technologies, Inc.)

Model	IO-370-CL	IO-370-CM	IO-370-C1F
Type -	4HOA Direct Drive Naturally Aspirated	- -	- -
Rating (see NOTE 1)			
Standard Atmosphere at Sea Level Pressure Altitude:			
Max Continuous HP	195	- -	190
Max Continuous RPM	2700	- -	- -
Fuel (Min. Grade Aviation Gasoline)	100 or 100LL Per ASTM D-910	- -	- -
Lubricating Oil	Compliant with specifications SAE-J1899 or J1966 by Continental Specification MHS-24	- -	- -
Bore and Stroke – In. (mm)	5.125 (130.1) x 4.5 (114.3)	- -	- -
Displacement, In3 (cm3)	371 (6079)	- -	- -
Compression Ratio	9.6:1	- -	- -
Weight (Dry), lbs (kg)	295 (133.8)	- -	289.5 (131.3)
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)	- -	--

	IO-370-CL	IO-370-CM	IO-370-C1F
Physical Dimensions			
Length, in (mm)	29.90 (759.5)	- -	29.90 (759.5)
Width, in (mm)	33.41 (848.6)	- -	- -
Height, in (mm)	22.39 (568.7)	- -	25.28 (642.1)
Center of Gravity, in (mm)			
Aft of propeller flange	14.0 (355.6)	- -	14.1 (360.4)
Beside crank centerline	0.0 (0.0)	- -	- -
Below crankshaft centerline	0.75 (19)	- -	0.407 (10.3)
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	R-20°, L-20°	- -	- -
Spark Plugs	Tempest UREM38E	- -	- -
Applicable Notes	NOTE 1 through NOTE 7, NOTE 9, NOTE 15, NOTE 21, NOTE 22 and NOTE 23	- -	- -

Model	IO-370-DA3A	IO-370-D3A	
Type -	4HOA Direct Drive Naturally Aspirated	- -	
Rating (see NOTE 1)			
Standard Atmosphere at Sea Level Pressure Altitude:			
Max Continuous HP	180	185	
Max Continuous RPM	2700	- -	
Fuel (Min. Grade Aviation Gasoline)	100 or 100LL Per ASTM D-910	- -	
Lubricating Oil	Compliant with specifications SAE-J1899 or J1966 by Continental Specification MHS-24	- -	
Bore and Stroke – In. (mm)	5.125 (130.1) x 4.5 (114.3)	- -	
Displacement, In3 (cm3)	371 (6079)	- -	
Compression Ratio	8.1:1	- -	
Weight (Dry), lbs (kg)	292.5 (132.7)	- -	
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)	- -	
Physical Dimensions			
Length, in (mm)	33.02 (838.7)	- -	
Width, in (mm)	33.41 (848.6)	- -	
Height, in (mm)	24.43 (620.5)	- -	
Center of Gravity, in (mm)			
Aft of propeller flange	14.45 (367.0)	- -	
Beside crank centerline, toward 2-4 side	0.18 (4.6)	- -	
Above crankshaft centerline	0.79 (20.1)	- -	
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 (2)	- -	
Timing	R-22°, L-22°	R-25°, L-25°	
Spark Plugs	Tempest UREM38E	- -	
Applicable Notes	NOTE 1 through NOTE 7, NOTE 9, NOTE 15, NOTE 21, NOTE 22 and NOTE 23	- -	- -

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).
IO-370-C1F – 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-DA3A – 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-D3A – 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

MODEL	APPLICATION	ISSUED/AMENDED	DELETED
IO-370-CL	February 17, 2018	ISSUED June 18, 2018	
IO-370-CM	February 17, 2018	ISSUED June 18, 2018	
IO-370-C1F	March 13, 2018	AMENDED May 29, 2019	
IO-370-DA3A	September 2018	AMENDED June 12, 2019	
IO-370-D3A	September 2018	AMENDED June 12, 2019	

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	245°F (118.3°C)

Minimum Temperature Limits

Minimum CHT for Takeoff	150°F (65.6°C)
Minimum Oil Temperature for Takeoff/Maximum Power	245°F (118.3°C)
Minimum Oil Temperature for Starting	20°F (-7°C)

NOTE 3. PRESSURE LIMITS

Fuel Pump 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)
Normal 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-lb (Nm)	Maximum Overhang Moment in-lb (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)	AS54 Type 1
Alternator	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.

IO-370-C1F Same as the IO-370-CL except hot oil sump, straight barrel fins, different cylinder baffle configuration.

IO-370-D3A Same as the IO-370-C1F except straight oil filter adapter; non-counterweighted, solid crankshaft.

IO-370-DA3A Same as the IO-370-D3A except the timing is set to 22° to reduce power.

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

Ignition

IO-370-CL, CM, C1F	S4LSC-21, S4LSC-204 Magnetos Radio Shielded Ignition Harness Tempest UREM38E Spark Plugs (8)
IO-370-DA3A, D3A	S4LSC-21 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 the Aircraft Type Certificate

Propeller Governors

As approved by the Aircraft Type Certificate

NOTE 8. ANTI-ICING REQUIREMENTS

Not Applicable

NOTE 9. 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, -C1F, -D3A, -DA3A 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. Engine mount bosses have been tested to meet utility category aircraft load requirements specified in 14 CFR §23.337.

NOTE 10. POWER BOOST, INJECTION, OR AUGMENTATION SYSTEMS AND LIMITS

Not Applicable

NOTE 11. SPECIAL INSTALLATION REQUIREMENTS

Not Applicable

NOTE 12. MANUFACTURER'S SERVICE BULLETIN

Not Applicable

NOTE 13. SPECIAL OPERATING PROCEDURES OR LIMITATIONS

Not Applicable

NOTE 14. SPECIAL REPAIR OR OVERHAUL LIMITATIONS

Not Applicable

NOTE 15. APPLICABLE INSTALLATION, MAINTENANCE AND OVERHAUL MANUALS

Document	**IO-370-CL**	**IO-370-CM**	**IO-370-C1F**	**IO-370-DA3A**	**IO-370-D3A**
Installation Drawing	AEL30064	AEL30064	658805	658807	658807
Installation and Operation Manual	OI-32				
Maintenance and Overhaul Manual	M-32				

Instructions for Continuous Airworthiness are contained in M-32

NOTE 16. IMPORT REQUIREMENTS STATEMENT FOR FOREIGN MANUFACTURED ENGINES

Not Applicable

NOTE 17. LIFE LIMITED PART INFORMATION
Not Applicable

NOTE 18. MILITARY MODEL INFORMATION
Not Applicable

NOTE 19. HORIZONTAL OR VERTICAL INSTALLATION (ROTORCRAFT)
Not Applicable

NOTE 20. CENTER OF GRAVITY TABULATION
Not Applicable – CG data provided in body of TCDS E00056SE

NOTE 21. VIBRATION DAMPER PROVISION LIMITATIONS
The IO-370-CL, -CM, & -C1F have counterweighted crankshafts. One 6.3 order; one 8th order counterweight installed on the crankshaft cheeks.

The IO-370-D3A & -DA3A have non-counterweighted crankshafts.

NOTE 22. 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).

NOTE 23. ALTERNATIVE MARKING / SALES NAMES
Continental will market the IO-370 Series engines as Continental Prime.

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