DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E3SO
Revision 12
CONTINENTAL AEROSPACE TECHNOLOGIES, INC.
IO-550-A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R
IOF-550-B, -C, -D, -E, -F, -L, -N -P, -R
April 6, 2020

TYPE CERTIFICATE DATA SHEET NO. E3SO

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E3SO) and other approved data on file with 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 manual and other approved instructions.

Type Certificate Holder: Continental Aerospace Technologies, Inc. (Continental®)
2039 South Broad St.
Mobile, Alabama 36615

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

Teledyne Continental Motors
Ownership & name change as of April 19, 2011 (Continental Motors, Inc.)

Model	IO-550-A	IO-550-B	IO-550-C	IO-550-D
Type Rating, ICAO or ARDC Standard atmosphere	6HOA	- -	- -	- -
Max. continuous Hp., RPM full throttle at sea level pressure altitude	300-2700	- -	- -	- -
Takeoff Hp., 5 min. R.P.M. full throttle at sea level pressure altitude	300-2700	- -	- -	- -
Fuel, Minimum grade aviation gasoline	100LL, 100, B95/130 CIS, or RH95/130	- -	- -	- -
Lubricating oil	Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under Continental Spec MHS-24			
Bore and stroke, in.	5.25 X 4.25	- -	- -	- -
Displacement, cu. in.	552	- -	- -	- -
Compression ratio	8:5:1	- -	- -	- -
Weight (dry), lb.	430.72	421.61	433.20	437.1
C.G. location (basic engine)				
Forward of rear face acc. case, in.	12.20	12.42	12.00	11.29
Below crankshaft centerline, in.	.54	1.22	.94	.54
Beside crankshaft centerline toward 1-3-5 side, in.	.25	.12	.40	.24
Propeller shaft	ARP-502, Type I flange 4-7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. Diameter circle	- -	- -	- -

Page No.	1	2	3	4	5	6	7	8	9
Rev. No.	12	7	12	12	12	12	10	12	12

Model	IO-550-A	IO-550-B	IO-550-C	IO-550-D
Fuel injection	Continental Injection system	- -	- -	- -
Ignition, dual	(See Note 8)	- -	- -	- -
Timing, °BTC	22	- -	- -	- -
Spark plugs	(See Note 9)	- -	- -	- -
Oil Sump Capacity, qts.	12; 6.1 usable at 26° Noseup and 6.1 usable at 13.5° Nosedown attitudes	12; 10 usable at 18° noseup and 14° nosedown attitudes	12; 7 usable at 20° Noseup and 7 usable at 15° nosedown Attitudes	12; 7 usable at 20° noseup and 6 usable at 10° nosedown Attitudes
Applicable Notes	1,2,3,4,5,6,7,8,9,10, 11,12,13	- -	- -	- -

Model	IO-550-F	IO-550-L	IO-550-G	IO-550-E
Type Rating, ICAO or ARDC Standard atmosphere	- -	- -	- -	- -
Max. continuous Hp., RPM full throttle at sea level pressure altitude	- -	- -	280-2500	300-2700
Takeoff Hp., 5 min. R.P.M. full throttle at sea level pressure altitude	- -	- -	280-2500	300-2700
Fuel, Minimum grade aviation gasoline	- -	- -	- -	- -
Lubricating oil	- -	- -	- -	- -
Bore and stroke, in.	- -	- -	- -	- -
Displacement, cu. in.	- -	- -	- -	- -
Compression ratio	- -	- -	- -	- -
Weight (dry), lb.	- -	438.5	428.97	450.50
C.G. location (basic engine)				
Forward of rear face acc. case, in.	- -	- -	12.76	11.29
Below crankshaft centerline, in.	- -	- -	.21	.54
Beside crankshaft centerline toward 1-3-5 side, in.	- -	- -	.23	.22
Propeller shaft	- -	- -	- -	- -
Fuel injection	- -	- -	- -	- -
Ignition, dual	- -	- -	- -	- -
Timing, °BTC	- -	- -	- -	- -
Spark plugs	- -	- -	- -	- -
Oil Sump Capacity, qts.	- -	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown attitude	8; 5 usable at 16° noseup and 4.5 usable at 10° nosedown attitude	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown attitude
Applicable Notes	- -	- -	- -	- -

Model	IO-550-N	IO-550-P	IO-550-R
Type Rating	- -	- -	- -
ICAO or ARDC Standard atmosphere			
Max. continuous hp., RPM full throttle at sea level pressure altitude	310 – 2700	- -	- -
Takeoff hp., 5 min. RPM full throttle at sea level pressure altitude	310 – 2700	- -	- -
Fuel, Minimum grade aviation gasoline	- -	- -	- -
Lubricating oil	- -	- -	- -
Bore and Stroke, in.	- -	- -	- -
Displacement, cu.in.	- -	- -	- -
Compression ratio	8.5:1	- -	- -
Weight (dry), lb.	428.97	429	439.5
C.G. location (basic engine)			
Forward of rear face acc. case, in.	12.76	12.66	12.81
Below crankshaft centerline, in.	.21	.21	.45
Beside crankshaft centerline, in.	.23 toward 1-3-5 side	.23 toward 2-4-6 side	- -
Propeller shaft	- -	- -	- -
Fuel injection	- -	- -	- -
Ignition, dual	- -	- -	- -
Timing, °BTC	22	- -	- -
Spark plugs	- -	- -	- -
Oil sump capacity, qts.	8; 5 usable at 16° nose up & 4.5 usable at 10° nose down	10; 7.8 usable at 20° nose up & 6.7 usable at 10° nose down	12; 7.5 usable at 20° nose up & 7.3 usable at 10° nose down
Applicable Notes	- -	- -	- -

Model	IOF-550-B	IOF-550-C	IOF-550-D
Type Rating, ICAO or ARDC Standard atmosphere	6-Cylinder, air-cooled, naturally aspirated, horizontally opposed, fuel injected, spark ignition, four-stroke, direct drive. The engine incorporates a full authority digital electronic control (FADEC) system to control the ignition and fuel injection functions.		
Max. continuous Hp., RPM full throttle at sea level pressure altitude	300-2700	- -	- -
Takeoff Hp., 5 min. R.P.M. full throttle at sea level pressure altitude	300-2700	- -	- -
Fuel, Minimum grade aviation gasoline	100LL, 100, B95/130 CIS, or RH95/130	- -	- -
Lubricating oil	Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under Continental Spec MHS-24		
Bore and stroke, in.	5.25 X 4.25	- -	- -
Displacement, cu. in.	552	- -	- -
Compression ratio	8:5:1	- -	- -
Weight (dry), lb.	447.1	453.2	455.0
C.G. location (basic engine)			
Forward of rear face acc. case, in.	12..66	12.23	11.47
Below crankshaft centerline, in.	1.30	.50	.58
Beside crankshaft centerline toward 1-3-5 side, in.	.12	.40	.24
Propeller shaft	ARP-502, Type I flange 4-7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. Diameter circle	- -	- -
Fuel injection	Continental FADEC	- -	- -
Ignition, dual	Continental FADEC	- -	- -
Timing, °BTC	Automatic	- -	- -
Spark plugs	(See Note 9)	- -	- -
Oil Sump Capacity, qts.	12; 10 usable at 18° noseup and 14° nosedown attitudes	12; 7 usable at 20° noseup and 7 usable at 15° nosedown attitudes	12; 7 usable at 20° noseup and 6 usable at 10° nosedown attitudes
Applicable Notes	1,2,3,4,5,6,7,9,10,11, 12,13,14,15,16,17,18	- -	- -

(End of Page)

Model	IOF-550-F	IOF-550-L	IOF-550-E
Type Rating, ICAO or ARDC Standard atmosphere	6-Cylinder, air-cooled, naturally aspirated, horizontally opposed, fuel injected, spark ignition, four-stroke, direct drive. The engine incorporates a full authority digital electronic control (FADEC) system to control the ignition and fuel injection functions.		
Max. continuous Hp., RPM full throttle at sea level pressure altitude	300-2700	- -	300-2700
Takeoff Hp., 5 min. R.P.M. full throttle at sea level pressure altitude	300-2700	- -	300-2700
Fuel, Minimum grade aviation gasoline	100LL, 100, B95/130 CIS, or RH95/130	- -	- -
Lubricating oil	Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under Continental Spec MHS-24	- -	- -
Bore and stroke, in.	5.25 X 4.25	- -	- -
Displacement, cu. in.	552	- -	- -
Compression ratio	8:5:1	- -	- -
Weight (dry), lb.	460.1	455.0	462.8
C.G. location (basic engine)			
Forward of rear face acc. case, in.	11.47	11.17	11.17
Below crankshaft centerline, in.	.58	.58	.58
Beside crankshaft centerline toward 1-3-5 side, in.	.24	.22	.22
Propeller shaft	ARP-502, Type I Flange 4-7/8 in. O.D. With six 1/2 in. bolt holes in 4 in. Diameter Circle	- -	- -
Fuel injection	Continental FADEC	- -	- -
Ignition, dual	Continental FADEC	- -	- -
Timing, °BTC	Automatic	- -	- -
Spark plugs	(See Note 9)	- -	- -
Oil Sump Capacity, qts.	12; 10 usable at 18° noseup and 14° nosedown attitudes	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown attitude	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown attitude
Applicable Notes	1,2,3,4,5,6,7,9,10,11, 12,13,14,15,16,17,18	- -	- -

(End of Page)

Model	IOF-550-N	IOF-550-P	IOF-550-R
Type Rating ICAO or ARDC Standard atmosphere	6-Cylinder, air-cooled, naturally aspirated, horizontally opposed, fuel injected, spark ignition, four-stroke, direct drive. The engine incorporates a full authority digital electronic control (FADEC) system to control the ignition and fuel injection functions.		
Max. continuous hp., RPM full throttle at sea level pressure altitude	310 – 2700	- -	- -
Takeoff hp., 5 min. RPM full throttle at sea level pressure altitude	310 – 2700	- -	- -
Fuel, Minimum grade aviation gasoline	100LL, 100, B95/130 CIS, or RH95/130	- -	- -
Lubricating oil	Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under Continental Spec MHS-24	- -	- -
Bore and Stroke, in.	5.25 X 4.25	- -	- -
Displacement, cu.in.	552	- -	- -
Compression ratio	8.5:1	- -	- -
Weight (dry), lb.	460.0	460.0	470..5
C.G. location (basic engine)			
Forward of rear face acc. case, in.	12.76	12.66	12.81
Below crankshaft centerline, in.	.21	.21	.45
Beside crankshaft centerline, in.	.23 toward 1-3-5 side	.23 toward 2-4-6 side	.23 toward 2-4-6 side
Propeller shaft	ARP-502, Type I Flange 4-7/8 in. O.D. With six 1/2 in. bolt holes in 4 in. Diameter Circle	- -	- -
Fuel injection	Continental FADEC	- -	- -
Ignition, dual	Continental FADEC	- -	- -
Timing, °BTC	Automatic	- -	- -
Spark plugs	(See Note 9)	- -	- -
Oil sump capacity, qts.	8; 5 usable at 16° nose up & 4.5 usable at 10° nose down	10; 7.8 usable at 20° nose up & 6.7 usable at 10° nose down	12; 7.5 usable at 20° nose up & 7.3 usable at 10° nose down
Applicable Notes	1,2,3,4,5,6,7,9,10,11, 12,13,14,15,16,17,18	- -	- -

"- -" indicates "same as previous model"
"—" indicates "does not apply"

Certification basis:

Models IO-550-A, -B, -C, -D, -F, -L, -E; FAR 33, effective February 1, 1965, as amended through Amendment, 33-8, dated May 2, 1977.

Model IO-550G; FAR 33, effective February 1, 1965, as amended through Amendment 33-11, dated April 24, 1986.

Model IO-550-N; FAR 33, effective February 1, 1965, as emended through Amendment 33-14, dated August 10, 1990.

Model IO-550-P and -R; FAR 33, effective February 1, 1965, as amended through Amendment 33-19, dated April 30, 1998.

Model IOF-550-B, -C, -D, -F, -L, -E; FAR 33, effective February 1, 1965, as amended through Amendment 33-8, dated May 2, 1977 and including FAR 33.28 (amdt. 15).

Model IOF-550-N; FAR 33, effective February 1, 1965, as amended through Amendment 33-14, dated August 10, 1990 and including FAR 33.28 (amdt. 15).

Model IOF-550-P and -R; FAR 33, effective February 1, 1965, as amended through Amendment 33-19, dated April 30, 1998.

Type Certificate No. E3SO issued October 13, 1983 for models IO-550-A, -B and –C; models –D, -F and –L added June 23, 1988; model –G added March 17, 1989; model –E added December 20, 1989; model –N added August 16, 1996, model –P and -R added March 1, 2000, and FADEC models IOF-550-B, -C, -D, -E, -F, -L, -N, -P, and -R added February 4, 2002.

Production basis: Production Certificate No. 508

NOTE 1. Maximum permissible temperature:
Cylinder head bayonet thermocouple: 460°F
Oil inlet 240°F

NOTE 2. Fuel pressure limits:

		IO-550 Series	IOF-550 FADEC Series
Inlet to injection pump,	min-	- 3.5 p.s.i.g.	- 3.5 p.s.i.g. at max flow
	max-	+ 6.0 p.s.i.g.	+ 50.0 p.s.i.g.
Outlet to upper return line,	max-	+ 3.5 p.s.i.g.	+ 3.5 p.s.i.g.

NOTE 3. Oil pressure limits:

2-4-6 side -	- Normal	30-60	p.s.i.g.
	- Idle	10	p.s.i.g.
	Maximum (cold oil)	100	p.s.i.g.

NOTE 4. The following accessory drive or mounting provisions are available:

	Accessory	Direction Or Rotation *	Drive Ratio to Crankshaft	Max. Torque (In.-Lbs.) Cont.	Max. Torque (In.-Lbs.) Static	Max. Overhang Moment (In.-Lbs.)	Pad Configuration
IO-550 and IOF-550 series							
A,B,C,G,N,P,R	Tachometer	CCW	.5:1	7	50	25	AND 20005
D.F.L.E.	Tachometer	CCW	.5:1	7	50	25	AS-54
A,B,C,D,F,L,G,E, N, P, R	Propeller Gov.	CW	1:1	29	825	50	(Mod) AND 20010
A,B,C,D,F,L,G,E, N, P, R	**Magneto	CCW	1.5:1	-	-		Special
A,B,C,G, N,P, R	Starter	CCW	48:1	200	400	60	Special
D,F,L,E	Starter	CCW	32:1	200	400	60	Special
A,B,C,G,N, P, R	Fuel Pump	CW	1:1	25	680	60	Special
D,F,L,E	Fuel Pump	CCW	1:1	25	680	60	Special
A,B,C,D,F,L,G,E, N, P, R	***Accessory Drive (2)	CW	1.5:1	100	800	40	AND 20000 or mod per MS3325
A,B,C,G,N, P, R	Alternator Gear Drive	CCW	3:1	100	500	150	Special
E,F,D,L	Belt Drive	CCW	2:1	125	800	N/A	N/A

* CW - Clockwise, CCW - Counterclockwise (viewing drive pad)
** Magneto drives not used on IOF-550 Series FADEC engines
*** One drive is eligible at 160 in-lbs. continuous torque load provided the other does not exceed 100 in-lbs. continuous torque load.

NOTE 5. All models incorporate a crankshaft with one 4th, one 5th and two 6th order dampers.

NOTE 6. Model IO-550-A is similar to the IO-520-MB except for the increased stroke from 4.00 to 4.25 inches resulting in the increased displacement.

Model IO-550-B is similar to the IO-520-BB except for the increased stroke from 4.00 to 4.25 inches resulting in the increased displacement.

Model IO-550-C is similar to the IO-520-CB except for increased stroke from 4.00 to 4.25 inches resulting in the increased displacement.

Model IO-550-D is similar to the IO-520-D except for increased stroke from 4.00 to 4.25 inches and rating changes.

Model IO-550-F is similar to the IO-520-F except for increased stroke from 4.00 to 4.25 inches, rating change, and altitude compensated fuel system.

Model IO-550-L is similar to the IO-520-L except for increased stroke from 4.00 to 4.25 inches, rating change, and altitude compensated fuel system.

Model IO-550-E is similar to the IO-520-E except for increased stroke from 4.00 to 4.25 inches, rating change, altitude compensated fuel system and throttle body support.

Model IO-550-G is similar to the IO-550-A,B,C, except for the top-mounted induction system and the 8-quart oil sump.

Model IO-550-N is similar to the IO-550-G except for the increased power rating.

Model IO-550-P is similar to the IO-550-N except for the oil sump which is similar to the IO-550-L.

Model IO-550-R is similar to the IO-550-N except for the oil sump, oil suction tube and mount legs which are similar to the IO-550-B.

Model IOF-550-B is similar to the IO-550-B except for the FADEC fuel and ignition control system.

Model IOF-550-C is similar to the IO-550-C except for the FADEC fuel and ignition control system.

Model IOF-550-D is similar to the IO-550-D except for the FADEC fuel and ignition control system.

Model IOF-550-E is similar to the IO-550-E except for the FADEC fuel and ignition control system.

Model IOF-550-F is similar to the IO-550-F except for the FADEC fuel and ignition control system.

Model IOF-550-L is similar to the IO-550-L except for the FADEC fuel and ignition control system.

Model IOF-550-N is similar to the IO-550-N except for the FADEC fuel and ignition control system.

Model IOF-550-P is similar to the IO-550-P except for the FADEC fuel and ignition control system.

Model IOF-550-R is similar to the IO-550-R except for the FADEC fuel and ignition control system.

NOTE 7. These models of engines are eligible for installation of the freon compressor drive system, equipment no. EQ6576 or EQ6580 - IO-550-A, B, C, G, N, P, R; IOF-550-B, C, N, P, R. equipment no. EQ6563 - IO-550-D, E, F, L; IOF-550-D, E, F, L and/or an auxiliary alternator EQ6562 - IO-550-D, E, F, L; IOF-550-D, E, F, L.

NOTE 8. The following magnetos equipped with an appropriate harness are eligible on these engines at the indicated weight change:

	IO-550-A Wt. Change	IO-550-B,C, Wt. Change	IO-550-D,F,L Wt. Change	IO-550-G, N, P, R Wt. Change	IO-550-E Wt. Change
One ea. Continental /TCM/Bendix Scintilla S6RN-201 and S6RN-205	None	-1 lb.	+3 lb.	-1 lb.	N/A
One ea. Continental/TCM S6RSC-201 and S6RSC-205	None	-1 lb.	+3 lb.	-1 lb.	N/A
One ea. Continental/TCM/Bendix Scintilla S6RN-1201 and S6RN-1205	+1 lb.	None	+4 lb.	N/A	None
Two Continental/TCM/Bendix Scintilla S6RN-25	+ 1 lb.	None	+2 lb.	None	N/A
Two Continental/TCM/Bendix S6RN-1225	+1 lb.	None	+ 4 lb.	N/A	None
Two Continental/TCM/Bendix S6RSC-25	+1 lb	None	+2 lb	None	N/A
Two Slick Electro Model 6210	-3 lb	-4 lb	None	N/A	N/A
Two Slick Electro Model 6310	-3 lb	-4 lb	None	N/A	N/A

NOTE 9. The following spark plugs and/or those listed in Section 6-4.9 of the latest revision of M-0, Standard Practice Maintenance Manual are approved on this engine:

AC	271, 273, 281, 281IR, 283, 283R, 291, 293
Auto Lite	PL350, URHB32E
Champion	RHB32E, RHB32S, RHB36S

NOTE 10. The following alternators are eligible on these engines at the indicated weight change.

	Wt. Change	
Continental 50AMP-24V	+12.31 lbs.	
Continental 100AMP-24V	+17.56 lbs.	
Prestolite 70AMP-24V	+11.6 lbs.	
Continental 60AMP-24V	+12.30 lbs.	
HET/KAPS 85AMP-24V	+10.7 lbs.	
HET/KAPS 100AMP-24V	+9.60 lbs.	
HET/KAPS 70AMP-24V	+7.00 lbs.	
HET/KAPS 70AMP-12V	-13.1 lbs.	(Not Applicable to the IOF-550-N, -P, or –R)

NOTE 11. All engine models shown are available as either 12V or 24V systems except the models IOF-550-N, -P and –R which are only available as 24V systems.

NOTE 12. Engine model numbers may include a suffix to define minor specification changes and/or accessory Packages. Example: IO-550-B(1B)

NOTE 13. Applicable manuals or latest FAA approved and/or accepted manuals:

	Operation & Installation	Maintenance	Overhaul
IO-550-D/E/F/L	X30605		X30607A
IO-550-A/B/C/G/N/P/R	OI-16	M-16	M-16
IOF-550-D/E/F/L	OI-23	M-23	M-23
IOF-550-B/C/N/P/R	OI-24	M-24	M-24

NOTE 14. The electronic control system for the IOF-550-B, -C, -D, -F, -L, and –E contains level “C” software which has been shown to meet the requirements for single and multi-engine aircraft of less than 6,000 lbs. maximum takeoff weight. The electronic control system for the IOF-550-N, -P, and –R contains level “B” software which has been shown to meet the requirements for single and multi-engine aircraft regardless of takeoff weight.

NOTE 15. The electronic control system must be supplied with two isolated sources of electrical power which meet the reliability requirements set forth in the Operation and Installation Manual. One of these power sources may be the aircraft primary bus. The second power source must be isolated from the aircraft bus, and if supported by a battery, this battery cannot be the battery which is utilized for engine starting. The use of an essential bus or a dedicated backup battery is an acceptable method of providing secondary power, as long as this source has sufficient capacity to meet aircraft certification requirements.

NOTE 16. If a back-up battery is used as a secondary source of electrical power for the electronic control system, the back-up battery must be replaced at the interval specified in the Operation and Installation Manual.

NOTE 17. Installation and evaluation of the Health Status Annunciator (HSA) display is subject to the requirements established by the certification basis of the aircraft.

NOTE 18. Takeoff is prohibited with annunciated faults shown on the Health Status Annunciator (HSA).

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