## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

E5SO Revision 1 CONTINENTAL TSIO-550-A, -B, -C, -E

January 29, 1997

## TYPE CERTIFICATE DATA SHEET NO. E5S0

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E5S0) 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, operate, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Teledyne Continental Motors

	P.O. Box 90 Mobile, Alabama	36601	
Model		<u>TSIO-550-A</u>	<u>TSIO-550-B</u>
Type -		6HOA	
Rating, ICAO or ARDC Standard Atmosphere At Sea Level Pressure Altitude.		240	250
Max Continuous HP		360	350
Max Continuous RPM		2600	2700
Max Continuous Man. Pr. Ir	n. Hg.	41.0	38.0
Max Continuous Critical		12,000	
Altitude - Feet		12,000	
Fuel (Min. Grade Aviation Gasoline)		100 or 100LL	100, 100LL or RH-95/130 (See Note 11)
Lubricating Oil		Oils meeting Teledyne Continental Specification MHS-24 are eligible for use in this engine.	
Bore and Stroke - In.		5.25 x 4.25	
Displacement, Cu. In.		552	
Compression Ratio		7.5:1	
Weight (Basic Engine, Dry) Weight (Turbo, Dry) Lbs.		442 28.2 (2 each)	
C.G. Location (Basic Engine) Fwd of Rear Face Accessory Case-I Below Crankshaft Centerline - In. Beside Crankshaft Centerline - In.	n.	11.41 1.056 .365 on 2-4-6 side	
C.G. Location (Turbo)		See TCM Dwg. 646618	See TCM Dwg. 653021

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Type Certificate Holder

Propeller Shaft	TSIO-550-A Special Integral Flange 4-7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. diameter circle.	<u>TSIO-550-B</u> 
Fuel Injection	TCM Injector	
Ignition - Dual Magnetos	See Note 10	
Timing °BTC	R-24°, L-24°	
Spark Plugs	Ref. TCM Service Bulletin 85-7 or latest FAA approved revision	
Oil Sump Capacity Qts. Total	8; 5 usable at 16° nose up, and 4.5 usable at 10° nose down attitudes.	12; 7.5 usable at $20^{\circ}$ nose up, and 6.5 usable at 14.5° nose down attitudes.
Applicable Notes	1 through 11	
Model	<u>TSIO-550-C</u>	<u>TSIO-550-E</u>
Туре	6НОА	
Rating, ICAO or ARDC Standard Atmosphere at Sea Level Pressure Altitude Max Continuous HP Max Continuous RPM Max Continuous Man. Pr In. Hg. Critical Altitude - Feet	310 2600 35.5 18,000	350 2700 38.5 18,000
Fuel (Min. Grade Aviation Gasoline	100 or 100LL	
Lubricating Oil	Oils meeting TCM Specifiction MHS-24 are eligible for use in this engine.	
Bore and Stroke - In.	5.25 X 4.25	
Displacement - Cu. In.	552	
Compression Ratio	7.5:1	
Weight (Basic Engine, Dry) Lbs. Weight (Turbo, Dry) Lbs.	442 28.2 (2 each)	
<ul> <li>C. G. Location (Basic Engine)</li> <li>Fwd of Rear Face Accessory Case - In.</li> <li>Below Crankshaft Centerline - in.</li> <li>Beside Crankshaft Centerline - In.</li> <li>C. G. Location (Turbo)</li> </ul>	11.41 1.056 0.365 on 2-4-6 side See TCM Dwg. 646618	
	500 I CIVI Dwg. 040010	

		<u>TSIO-550-C</u>	<u>TSIO-550-E</u>			
Propeller Shaft		Special Integral Flange 4-7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. diameter circle				
Fuel Injection		TCM Injector				
Ignition		See Note 10				
Timing - °BTC		R - 24°, L - 24°				
Spark Plugs		Ref. TCM Service Bulletin 85-7 or latest FAA approved revision				
Oil Sump Capacity - Qts		8; 5 usable at 16° nose up and 4.5 usable at 10° nose down attitudes	12; 7.7 usable at 20° nose up and 6.5 usable at 14.5° nose down attitude.			
Applicable Notes		1 through 10				
Certification Basis : TSIO-550- A - FAR 33 through Amendment 9 effective October 14, 1980 TSIO-550-B - FAR 33 through Amendment 12 effective September 2, 1988 TSIO-550-C and -E - FAR 33 through Amendment 13 effective August 18, 1990						
Production Basis -		Production Certificate No. 508				
Note 1. Maximum Permissible Temperatures						
Cylinder Head	460°F					
Oil Inlet	240°F					
Exhaust Gas - TurbochargerInlet Temperature (TIT)Continuous Operation30 Second Limit1800°F						
Note 2. Fuel Pressure Limits						
Inlet to Injection Pump,	Min - Max -	Minus 2 psig Plus 6 psig				
Outlet to Vapor Return L	ine	3.5 psig Max				
Note 3. Oil Pressure Limits, at Outlet	Normal Idle Max (Cold Oil)	30-60 psig 10 psig 100 psig				
Turbocharger Oil Inlet	Normal Idle	30-60 psig 10 psig				

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		Direction of	Drive Ratio to	<u>(In</u>	Forque Lbs.)	Max. Overhang Moment
	Accessory	Rotation*	Crankshaft	Cont	Static	(InLbs.)
	Tachometer	CCW	.5:1	7	50	25
	Magneto	CCW	1.5:1	-	-	-
	Starter	CCW	48:1	200	400	60
	Alternator (Gear Dr.)	CW	3:1	150	800	150
**	Propeller Gov.	CW	1:1	29	825	50
	Fuel Pump (Injection)	CW	1:1	25	680	60
**	Accessory Drives (2)	CW	1.5:1	100	800	40

Note 4. The following accessory drive or mounting provisions are available for the TSIO-550 series engines.

\* "CW" - Clockwise and "CCW" - Counterclockwise (viewing drive pad)

\*\* This drive is a modified AND 20010 and shall be supplied with a cover.

\*\*\* One drive eligible at 200 in.-lbs. continuous torque load provided the other does not exceed 100 in.lbs. continuous torque load. These drives shall be supplied with covers.

Note 5. The TSIO-550-A and -C engines are similar to the TSIO-520-BE except the hardware required to increase the displacement, namely the crankshaft and pistons. The two stage fuel pump has been replaced by a single stage fuel pump on the TSIO-550-C.

The TSIO-550-B engine is similar to the TSIO-550-A except the TSIO-550-B engine has a 12 quart sump. The sonic venturii have been removed, and the two stage fuel pump has been replaced by a single stage fuel pump.

The TSIO-550-E engine is similar to the TSIO-550-C except the oil sump and maximum continuous power rating are the same as the TSIO-550-B.

- Note 6. The TSIO-550-A, -B, -C and -E engines incorporate a crankshaft with two sixth, one fourth, and one fifth order dampers.
- Note 7. Maximum exhaust back pressure shall not exceed 2 in. Hg. above ambient at the turbocharger exhaust outlet flange.
- Note 8. A means of controlling maximum turbocharger discharge pressure, engine manifold pressure and proper placarding shall be provided to limit manifold pressure as outlined below except as stated in Note 11.

## Maximum Allowable Manifold Pressure - In. Hg.

Altitude (FT.)	TSIO-550-A	<u>TSIO-550-B</u>	TSIO-550-C	<u>TSIO-550-E</u>
12,000	41.0	38.0 (See Note 11)		
18,000			35.5	38.5
20,000	33.0			
25,000		31.0 (See Note 11)		

- Note 9. The engine is provided with a gear driven alternator, optional provisions for a front mounted, belt-driven alternator, and for a belt-driven freon compressor are available. The compatibility of these options must be accomplished by the installer.
- Note 10. The following magnetos are suitable for use on these engines.

Slick Electro 6220 (both sides) or TCM S6RN-201 and S6RN-205, or TCM S6RSC-25P pressurized with appropriate pressurization system and ignition harness.

Note 11. When operating with 95/130 grade fuel, the altitude limitation for maximum continuous power and speed is 3000 meters (9840 feet) and, for maximum recommended cruise power and speed, is 6000 meters (19680 feet).