

**2-3.4. TSIO-550-G Specifications and Operating Limits**

Table 2-4. TSIO-550-G Specifications & Operating Limits		
Cylinders		
Model	TSIO-550-G	
FAA Type Certificate	E5SO	
Installation Drawing Number	657154	
Arrangement	Individual cylinders horizontally opposed	
Compression Ratio	7.5:1	
Number of Cylinders	6	
Firing Order	1-6-3-2-5-4	
Time Between Overhaul	2000 accumulated operating hours or 12 years	
Bore	5.25 inches	13.335 cm
Stroke	4.25 inches	10.795 cm
Piston Displacement	552 cubic inches	9.05 L
Crankshaft Speed & Brake Horsepower		
Rated Maximum Continuous Operation*	310 bhp -0%+5% @ 2700 rpm @ 34 in. Hg	
Crankshaft Speed (Maximum rated)	2700 rpm	
Engine Idle Speed, Minimum	600 rpm	
Rated Manifold Pressure	34.0 in. Hg Full Throttle (Sea Level)	
Maximum Recommended Cruise	262 bhp @ 2500 rpm @ 30.5 in. Hg	
* Performance is based on sea level, standard day, zero water vapor pressure conditions at the throttle inlet and exhaust exit with no engine accessory load. Standard day conditions are 29.92 in Hg and 59° F. Horsepower will vary approximately 1% for each 6° F (5.6° C) change in throttle inlet air temperature. Correction must also be made for the effect of exhaust backpressure and accessory drive losses. Contact TCM engineering for correction factors for specific applications.		
Fuel System Specifications		
Fuel Control System	TCM Continuous Flow Fuel Injection	
Fuel Minimum Grade**	100LL Blue or 100 Green	
Russian Commonwealth of Independent States	B95/130	
People's Republic of China	RH95/130***	
Fuel System Pressure & Flow	Refer to Chapter 5, "Engine Operational Check"	
Boost Fuel Pump Specifications	Refer to TCM's Detailed Model Specifications	
** Engine is certified for operation with 100-LL Blue or 100 Green aviation fuel. If the minimum fuel grade is not available, use the next higher grade available; never use a lower grade fuel.		
*** Engine operation with this fuel is limited to 9840 ft (2999 m) at maximum continuous power and speed and 19680 feet (5998 m) at maximum recommended cruise power and speed.		
Fuel Consumption		
Power Level	BHP (kW)	lbs./hr (max)
Rated Power, 100%	310 (231)	210
Max. Cruise, 85%	262 (196)	155
Cruise, 75%	233 (174)	127
Cruise, 65%	202 (115)	102
Ignition		
Spark Plugs to be used	Refer to TCM's Service Information Letter SIL 03-2A "Currently Active Approved Spark Plug Application"	
Ignition Timing	24°BTC±1°	
Spark Plug Gap	Spark plug manufacturer's specified gap.	



Table 2-4. TSIO-550-G Specifications & Operating Limits		
Cylinder Head Temperature (measured with bayonet thermocouple)		
Normal Operational Temperature (cruise)	420°F	216°C
Maximum Allowable Operational Temperature	460°F	238°C
Minimum Take-off Temperature	240°F	116°C
*All temperatures are measured with bayonet thermocouples.		
Exhaust		
Exhaust System back-pressure, maximum, measured at port, inches Hg (kPa)	2.5 (8.5)	
EGT Thermocouple Probe, min. location distance from port, in (mm)	2.00/2.50 (50.8/63.5)	
Oil		
Oil Pressure – Normal Operation @ 100°F to 240°F (38 to 116°C)*	30 to 60 psig	
Maximum Allowable Oil Pressure* (cold oil)	100 psig	
Minimum Oil Pressure @ Idle (600 RPM)*	10 psig at or below 200°F	
Maximum Allowable Oil Temperature*	240°F	116°C
Minimum Take-off Oil Temperature*	100°F	38°C
Cruise Flight Operation Oil Temperature	160° to 200°F	71° to 93°C
Oil Sump Capacity	8.0 Quarts	
Useable Oil - 16° Nose Up (8 quart fill)	5.0 Quarts	
Useable Oil – 10° Nose Down (8 quart fill)	4.5 Quarts	
Recommended Oil Grade, SAE – above 40°F	50 or Multi Viscosity	
Recommended Oil Grade, SAE – below 40°F	30 or Multi Viscosity	
Oil Grade, TCM Specification	MHS-24	
CAUTION: Oil must be rated for aviation use, conforming to MHS-24.		
*Oil pressure and temperature are measured at the oil cooler adapter.		
Brake Specific Oil Consumption (BSOC)		
Maximum BSOC = .006 lb/HP/HR x (%Power/100)		
Engine Physical Specifications		
Weight, Dry, lb. (kg) +/- 2.5%	554 (251)	
Minimum runnable engine	Refer to TCM's Detailed Model Specifications	
Detailed weights by Specification Number		
Overall Dimensions, inches (mm)		
Height	35.4	(899.9)
Width	35.9	(912.4)
Length	40.3	(1022)
Center of Gravity, inches (mm)		
Forward of rear accessory case	11.41	(289.8)
Below crankshaft centerline	1.056	(26.8)
Beside crankshaft centerline toward 1-3-5 side	0.365	(9.27)
Moment of Inertia, standard accessory package, in·lb·sec <sup>2</sup> (mm·kg·sec <sup>2</sup> )		
Roll - Longitudinal Axis, (I <sub>x-x</sub> )	134.3	(946)
Pitch - Lateral Axis, (I <sub>y-y</sub> )	138.79	(1206)
Yaw - Vertical Axis, (I <sub>z-z</sub> )	218.9	(1976)