DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E00001SC
REVISION: 2

Superior Air Parts Engines
O-360-A1A1, A1A2, A2A1, A2A2, A3A1, A3A2, B1A1, B1A2, B2A1, B2A2, B3A1, B3A2, B4A1, B4A2, B5A1, B5A2, B6A1, B6A2, C1A1, C1A2, C2A1, C2A2, C2A1, C3A2, D1A1, D1A2, D2A1, D2A2, D3A1, D3A2, D4A1, D4A2, D5A1, D5A2, D6A1, D6A2, E1A1, E1A2, E2A1, E2A2, E3A1, E3A2
IO-360-A1A1, A1A2, A2A1, A2A2, A3A1, A3A2, B1A1, B1A2, B2A1, B2A2, B3A1, B3A2, B4A1, B4A2, B5A1, B5A2, B6A1, B6A2, C1A1, C1A2, C2A1, C2A2, C2A1, C3A2, D1A1, D1A2, D2A1, D2A2, D3A1, D3A2, D4A1, D4A2, D5A1, D5A2, D6A1, D6A2, E1A1, E1A2, E2A1, E2A2, E3A1, E3A2

October 19, 2007

TYPE CERTIFICATE DATA SHEET NO. E00001SC

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E00001SC) 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: Superior Air Parts, Inc.
621 South Royal Lane, Suite 100
Coppell, TX 75019

Model	**O-360**-A1A2, A2A2, A3A2	**O-360**-B1A2, B2A2, B3A2, B4A2, B5A2, B6A2, C1A2, C2A2, C3A2	**O-360**-D1A2, D2A2, D3A2, D4A2, D5A2, D6A2	**O-360**-E1A2, E2A2, E3A2
Type	4HOA	— —	— —	— —
Rating U.S. Standard Atmosphere and ICAO at Sea Level Pressure Altitude				
Take-Off/Max. Continuous HP	180	— —	— —	— —
Take-Off/Max. Continuous RPM	2700	— —	— —	— —
Take-Off/Max. Cont. Manifold Press. – in Hg	29.5	— —	— —	— —
Fuel Aviation Gasoline	ASTM D910, Min Grade 91/98 (lead optional)	— —	— —	— —
Motor Gasoline (R+M/2) (See Note 7)	ASTM D4814, Min Octane 91 (no alcohol)	— —	— —	— —
Lubricating Oil	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Bore and Stroke – in	5.125 x 4.375	— —	— —	— —
Displacement – cubic in	361	— —	— —	— —
Compression Ratio	8.5:1	— —	— —	— —

Model	**O-360**-A1A2, A2A2, A3A2	**O-360**-B1A2, B2A2, B3A2, B4A2, B5A2, B6A2, C1A2, C2A2, C3A2	**O-360**-D1A2, D2A2, D3A2, D4A2, D5A2, D6A2	**O-360**-E1A2, E2A2, E3A2
Weight (Basic Engine, Dry) – lbs See Installation & Operation Manual, SVIOM01, for detailed model weights	288	291	294	295
C.G. Location (Basic Engine)	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Principal Dimensions – in (Height x Width x Length)	24.6 x 33.4 x 32.8	— —	— —	— —
Propeller Shaft	Direct, SAE Modified Type 2 per AS127	— —	— —	— —
Fuel System	Precision Airmotive Carburetor MA-4-5 type	— —	— —	— —
Ignition – Two Magnetos	Unison Impulse Magnetos 4371 with the appropriate ignition harness	— —	— —	— —
Timing – °BTC	R: 25°, L: 25°	— —	— —	— —
Spark Plugs	Champion REM40E, Unison UREM40E	— —	— —	— —
Oil Sump Capacity	8 quarts; 6 qts. usable at 20° noseup, and 6.5 qts. usable at 10° nosedown attitudes	— —	— —	— —

— — indicates "same as preceding model"

Model	**O-360**-A1A1, A2A1, A3A1	**O-360**-B1A1, B2A1, B3A1, B4A1, B5A1, B6A1, C1A1, C2A1, C3A1	**O-360**-D1A1, D2A1, D3A1, D4A1, D5A1, D6A1	**O-360**-E1A1, E2A1, E3A1
Type	4HOA	— —	— —	— —
Rating U.S. Standard Atmosphere and ICAO at Sea Level Pressure Altitude				
Take-Off/Max. Continuous HP	168	— —	— —	— —
Take-Off/Max. Continuous RPM	2700	— —	— —	— —
Take-Off/Max. Cont. Manifold Press. – in Hg	29.5	— —	— —	— —
Fuel Aviation Gasoline	ASTM D910, Min Grade 91/98 (lead optional)	— —	— —	— —
Motor Gasoline (R+M/2) (See Note 7)	ASTM D4814, Min Octane 91 (no alcohol)	— —	— —	— —
Lubricating Oil	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Bore and Stroke – in	5.125 x 4.375	— —	— —	— —
Displacement – cubic in	361	— —	— —	— —
Compression Ratio	7.2:1	— —	— —	— —
Weight (Basic Engine, Dry) – lbs See Installation & Operation Manual, SVIOM01, for detailed model weights	288	291	294	295
C.G. Location (Basic Engine)	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Principal Dimensions – in (Height x Width x Length)	24.6 x 33.4 x 32.8	— —	— —	— —

Model	**O-360**-A1A1, A2A1, A3A1	**O-360**-B1A1, B2A1, B3A1, B4A1, B5A1, B6A1, C1A1, C2A1, C3A1	**O-360**-D1A1, D2A1, D3A1, D4A1, D5A1, D6A1	**O-360**-E1A1, E2A1, E3A1
Propeller Shaft	Direct, SAE Modified Type 2 per AS127	— —	— —	— —
Fuel System	Precision Airmotive Carburetor MA-4-5 type	— —	— —	— —
Ignition – Two Magnetos	Unison Impulse Magnetos 4371 with the appropriate ignition harness	— —	— —	— —
Timing – °BTC	R: 25°, L: 25°	— —	— —	— —
Spark Plugs	Champion REM40E, Unison UREM40E	— —	— —	— —
Oil Sump Capacity	8 quarts; 6 qts. usable at 20° noseup, and 6.5 qts. usable at 10° nosedown attitudes	— —	— —	— —

— — indicates "same as preceding model"

Model	**IO-360**-A1A2, A2A2, A3A2	**IO-360**-B1A2, B2A2, B3A2, B4A2, B5A2, B6A2, C1A2, C2A2, C3A2	**IO-360**-D1A2, D2A2, D3A2, D4A2, D5A2, D6A2	**IO-360**-E1A2, E2A2, E3A2
Type	4HOA	— —	— —	— —
Rating U.S. Standard Atmosphere and ICAO at Sea Level Pressure Altitude				
Take-Off/Max. Continuous HP	180	— —	— —	— —
Take-Off/Max. Continuous RPM	2700	— —	— —	— —
Take-Off/Max. Cont. Manifold Press. – in Hg	29.5	— —	— —	— —
Fuel Aviation Gasoline	ASTM D910, Min Grade 91/98 (lead optional)	— —	— —	— —
Motor Gasoline (R+M/2) (See Note 7)	ASTM D4814, Min Octane 91 (no alcohol)	— —	— —	— —
Lubricating Oil	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Bore and Stroke – in	5.125 x 4.375	— —	— —	— —
Displacement – cubic in	361	— —	— —	— —
Compression Ratio	8.5:1	— —	— —	— —
Weight (Basic Engine, Dry) – lbs See Installation & Operation Manual, SVIOM01, for detailed model weights	290	293	296	297
C.G. Location (Basic Engine)	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Principal Dimensions – in (Height x Width x Length)	24.0 x 33.4 x 32.8	— —	— —	— —
Propeller Shaft	Direct, SAE Modified Type 2 per AS127	— —	— —	— —
Fuel System	Precision Airmotive Fuel Injection RSA-5 type	— —	— —	— —
Ignition – Two Magnetos	Unison Impulse Magnetos 4371 with the appropriate ignition harness	— —	— —	— —

Model	**IO-360**-A1A2, A2A2, A3A2	**IO-360**-B1A2, B2A2, B3A2, B4A2, B5A2, B6A2, C1A2, C2A2, C3A2	**IO-360**-D1A2, D2A2, D3A2, D4A2, D5A2, D6A2	**IO-360**-E1A2, E2A2, E3A2
Timing – °BTC	R: 25°, L: 25°	— —	— —	— —
Spark Plugs	Champion REM40E, Unison UREM40E	— —	— —	— —
Oil Sump Capacity	8 quarts; 6 qts. usable at 20° noseup, and 6.5 qts. usable at 10° nosedown attitudes	— —	— —	— —

— — indicates "same as preceding model"

Model	**IO-360**-A1A1, A2A1, A3A1	**IO-360**-B1A1, B2A1, B3A1, B4A1, B5A1, B6A1, C1A1, C2A1, C3A1	**IO-360**-D1A1, D2A1, D3A1, D4A1, D5A1, D6A1	**IO-360**-E1A1, E2A1, E3A1
Type	4HOA	— —	— —	— —
Rating U.S. Standard Atmosphere and ICAO at Sea Level Pressure Altitude Take-Off/Max. Continuous HP Take-Off/Max. Continuous RPM Take-Off/Max. Cont. Manifold Press. – in Hg	 168 2700 29.5	 — — — — — —	 — — — — — —	 — — — — — —
Fuel Aviation Gasoline Motor Gasoline (R+M/2) (See Note 7)	 ASTM D910, Min Grade 91/98 (lead optional) ASTM D4814, Min Octane 91 (no alcohol)	 — — — —	 — — — —	 — — — —
Lubricating Oil	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Bore and Stroke – in	5.125 x 4.375	— —	— —	— —
Displacement – cubic in	361	— —	— —	— —
Compression Ratio	7.2:1	— —	— —	— —
Weight (Basic Engine, Dry) – lbs See Installation & Operation Manual, SVIOM01, for detailed model weights	290	293	296	297
C.G. Location (Basic Engine)	See Installation & Operation Manual, SVIOM01	— —	— —	— —
Principal Dimensions – in (Height x Width x Length)	24.0 x 33.4 x 32.8	— —	— —	— —
Propeller Shaft	Direct, SAE Modified Type 2 per AS127	— —	— —	— —
Fuel System	Precision Airmotive Fuel Injection RSA-5 type	— —	— —	— —
Ignition – Two Magnetos	Unison Impulse Magnetos 4371 with the appropriate ignition harness	— —	— —	— —
Timing – °BTC	R: 25°, L: 25°	— —	— —	— —
Spark Plugs	Champion REM40E, Unison UREM40E	— —	— —	— —
Oil Sump Capacity	8 quarts; 6 qts. usable at 20° noseup, and 6.5 qts. usable at 10° nosedown attitudes	— —	— —	— —

— — indicates "same as preceding model"

CERTIFICATION BASIS: FAR 33 Through Amendment 20, effective 12/13/2000
PRODUCTION BASIS: Production Certificate 14SW

		O-360	IO-360
NOTE 1.	Maximum Permissible Temperatures		
	Oil at Engine Inlet	240° F	— —
	Cylinder Head Temperature	500° F	— —
NOTE 2.	Fuel Pressure Limits		
	Inlet to Pump, Min.	+0.5 psig	-2 psig
	Max.	+8 psig	+35 psig
NOTE 3.	Oil Pressure Limits into Engine		
	Normal	55-95 psig	— —
	Idle	20 psig	— —
	Max (Cold Oil)	115 psig	— —

— — indicates "same as preceding model"

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

Accessory	Direction of Rotation*	Drive Ratio to Crankshaft	Max. Torque (in-lbs) Continuous	Max. Torque (in-lbs) Static	Max. Overhang Moment (in-lbs)
Tachometer	CW	0.5:1	7	50	5
Starter	CCW	16.56:1	N/A	450	150
Alternator (not supplied)	CW	3.25:1	60	120	175
Propeller Governor, Rear**	CW	0.866:1	125	825	40
Propeller Governor, Front**	CW	0.895:1	125	825	40
Fuel Pump	Reciprocating	0.5:1	N/A	N/A	10
Accessory Drive***	CCW	1.3:1	70	450	25

* "CW" – Clockwise; and "CCW" – Counterclockwise (Viewing Drive Pad)
** This is an AND20010 drive pad and only applicable to models with provisions to control propeller pitch and shall be supplied with a cover.
*** This is an AND20000 drive pad and shall be supplied with a cover.

NOTE 5. The O-360 and IO-360 engines' detailed model designation includes a model suffix, which denotes details about the engine configuration in the format: O or IO-360-(letter)(number)(letter)(number). The first suffix digit is a letter which designates the crankshaft/propeller configuration: with 'A' designating provisions for a fixed pitch propeller, with a thin-wall front main bearing journal, 'B' designating provisions to control propeller pitch with pressurized oil, with a thin-wall front main bearing journal, 'C' designating provisions for a fixed pitch propeller, with a heavy-wall front main bearing journal, 'D' designating provisions to control propeller pitch with pressurized oil, with a heavy-wall front main bearing journal and 'E' designating provisions for a fixed pitch propeller , with a solid front main bearing journal. The second suffix digit is a number which designates crankcase/engine mount configuration: with '1' designating a #1 dynafocal engine mount type, '2' designating a #2 dynafocal engine mount type, '3' designating a conical engine mount type, '4' designating a #1 dynafocal engine mount with a crankcase utilizing a front mount prop governor, '5' designating a #2 dynafocal engine mount with a crankcase utilizing a front mount prop governor, and '6' designating a conical engine mount with a crankcase utilizing a front mount prop governor. The third suffix digit is a letter which designates accessory configuration, with 'A' being the only configuration. The last digit is a number designating power rating/compression ratio: with '1' being the low-compression configuration and with '2' being the high-compression configuration.

NOTE 6. Initial TBO of 1000 Hours

NOTE 7. Experience has shown that there is a higher probability of vapor locking on aircraft, especially on those equipped with fuel injected reciprocating engines when operating with high volatility fuels such as motor gasoline. Aircraft fuel system designs for the powerplant installation of these engines may need to incorporate special design features or enhanced cooling to accommodate operation with high volatility fuels such as motor gasoline. The aircraft fuel system hot weather testing requirements of FAR 23.961 must be successfully accomplished for each aircraft powerplant installation design of these engines (both carbureted and fuel injected) to obtain approval for operation with motor gasoline, reference AC 23.1521-1B.

...END...