

4.0L V8 Selected Block

1996 Soarer/Lexus SC 400

For Lextreme Powertrain 2020 S. Hacienda Blvd. # D Hacienda Heights California 91745

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GENERAL ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS TABLE

Application	Specification
Displacement	244 Cu. In.
Bore	3.44" (87.5 mm)
Stroke	3.25" (82.5 mm)
Compression Ratio	10.4:1
Fuel System	SFI
Horsepower @ RPM	260 @ 5300
Torque Ft. Lbs. @ RPM	270 @ 4500

CRANKSHAFT, MAIN & CONNECTING ROD BEARINGS TABLE

Application	In. (mm)
Crankshaft	
End Play	
Standard	.0008-.0087 (.020-.220)
Wear Limit	.0118 (.300)
Runout	.0031 (.080)
Main Bearings	
Journal Diameter (1)	
Size Mark "00"	2.63779 (67.0000)
Size Mark "01"	2.63775 (66.9990)
Size Mark "02"	2.63771 (66.9980)
Size Mark "03"	2.63767 (66.9970)
Size Mark "04"	2.63763 (66.9960)
Size Mark "05"	2.63759 (66.9950)
Size Mark "06"	2.63755 (66.9940)
Size Mark "07"	2.63751 (66.9930)
Size Mark "08"	2.63748 (66.9920)
Size Mark "09"	2.63744 (66.9910)
Size Mark "10"	2.63740 (66.9900)
Size Mark "11"	2.63736 (66.9890)
Size Mark "12"	2.63732 (66.9880)
Journal Out-Of-Round	.0008 (.020)
Journal Taper	.0008 (.020)
Oil Clearance	
No. 1 & 5	
Standard	.0006-.0013 (.014-.033)
Wear Limit	.0017 (.043)
All Others	
Standard	.0010-.0018 (.026-.045)
Wear Limit	.0022 (.055)

Connecting Rod Bearings

Journal Diameter (2)		
Size Mark "1"	2.0470-2.0472	(51.994-52.000)
Size Mark "2"	2.0468-2.0470	(51.988-51.994)
Size Mark "3"	2.0465-2.0468	(51.982-51.988)
Journal Out-Of-Round .....	.0008	(.020)
Journal Taper .....	.0008	(.020)
Oil Clearance		
Standard .....	.0011-.0021	(.027-.053)
Wear Limit .....	.0026	(.065)

- (1) - Main bearing journal diameter is identified by size mark on crankshaft. See Fig. 41.
- (2) - Connecting rod bearing journal diameter is identified by size mark on crankshaft. See Fig. 39.

CONNECTING RODS TABLE

Application		In. (mm)
Bore Diameter		
Pin Bushing Bore .....	.8663-.8667	(22.005-22.014)
Crankpin Bore (1)		
Size Mark "1"	2.1654-2.1656	(55.000-55.006)
Size Mark "2"	2.1656-2.1658	(55.006-55.012)
Size Mark "3"	2.1658-2.1661	(55.012-55.018)
Size Mark "4"	2.1661-2.1663	(55.018-55.024)
Maximum Bend .....	.0020 Per 3.94	(.050 Per 100.1)
Maximum Twist .....	.0059 Per 3.94	(.150 Per 100.1)
Side Play		
Standard .....	.0063-.0114	(.160-.290)
Wear Limit .....	.0138	(.350)

- (1) - Crankpin diameter is identified by size mark on connecting rod cap. See Fig. 39.

PISTONS, PINS & RINGS TABLE

Application		In. (mm)
Pistons		
Clearance		
Standard .....	.0031-.0039	(.080-.100)
Wear Limit .....	.0047	(.012)
Diameter (1)		
Size Mark "1"	3.4413-3.4417	(87.410-87.420)
Size Mark "2"	3.4417-3.4421	(87.420-87.430)

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Size Mark "3"	3.4421-3.4425	(87.430-87.440)
Pins		
Diameter	.8660-.8664	(21.997-22.006)
Piston Fit		(2)
Rod Fit		
Standard	.0002-.0004	(.005-.011)
Wear Limit	.002	(.05)
Rings		
No. 1		
End Gap		
Standard	.0098-.0177	(.250-.450)
Maximum	.0413	(1.050)
Side Clearance	.0008-.0024	(.020-.060)
No. 2		
End Gap		
Standard	.0138-.0197	(.350-.500)
Maximum	.0433	(1.100)
Side Clearance	.0008-.0024	(.020-.060)
No. 3 (Oil)		
End Gap		
Standard	.0059-.0217	(.150-.550)
Wear Limit	.0453	(1.150)

- (1) - Piston diameter is determined by size mark on top of piston. See Fig. 36.
- (2) - With piston heated to 140°F (60°C), piston pin should slide into piston with thumb pressure.

CYLINDER BLOCK TABLE

Application	In. (mm)
Cylinder Bore Standard Diameter (1)	
Size Mark "1"	3.4449-3.4453 (87.500-87.510)
Size Mark "2"	3.4453-3.4457 (87.510-87.520)
Size Mark "3"	3.4457-3.4461 (87.520-87.530)
Main Bearing Bore Inside Diameter (2)	
Size Mark "00"	2.83464 (72.0000)
Size Mark "01"	2.83468 (72.0010)
Size Mark "02"	2.83472 (72.0020)
Size Mark "03"	2.83476 (72.0030)
Size Mark "04"	2.83480 (72.0040)
Size Mark "05"	2.83484 (72.0050)
Size Mark "06"	2.83488 (72.0060)
Size Mark "07"	2.83492 (72.0070)
Size Mark "08"	2.83496 (72.0080)
Size Mark "09"	2.83500 (72.0090)
Size Mark "10"	2.83503 (72.0100)

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Size Mark "11"	2.83507 (72.0110)
Size Mark "12"	2.83511 (72.0120)
Size Mark "13"	2.83515 (72.0130)
Size Mark "14"	.....	2.83520 (72.0140)
Size Mark "15"	.....	2.83523 (72.0150)
Size Mark "16"	.....	2.83527 (72.0160)
Maximum Deck Warp	.....	.0028 (.070)

- (1) - Cylinder bore diameter is identified by size mark on cylinder block. See Fig. 37. Maximum diameter is 3.4539" (87.730 mm).
- (2) - Main bearing bore diameter is identified by size mark on cylinder block oil pan flange. See Fig. 41.

VALVES & VALVE SPRINGS TABLE

Application	Specification
Intake Valves	
Face Angle	..... 44.5°
Minimum Margin	..... .020" (.50 mm)
Minimum Refinish Length	..... 3.7224" (94.550 mm)
Stem Diameter	..... .2350-.2356" (5.970-5.985 mm)
Exhaust Valves	
Face Angle	..... 44.5°
Minimum Margin	..... .020" (.50 mm)
Minimum Refinish Length	..... 3.7953" (96.400 mm)
Stem Diameter	..... .2348-.2354" (5.965-5.980 mm)
Valve Springs	
Free Length	..... 2.039" (51.80 mm)
Out-Of-Square	..... .079" (2.00 mm)
	Lbs. @ In. (kg @ mm)
Pressure	..... 41.9-46.3 @ 1.295 (19.0-21.0 @ 32.90)

CYLINDER HEAD TABLE

Application	Specification
Maximum Warp	
Cylinder Block Surface	..... .0039" (0.10 mm)
Manifold Surface0039" (0.10 mm)
Valve Seats	
Intake Valve	
Seat Angle 45°
Seat Width039-.055" (1.00-1.40 mm)

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Exhaust Valve	
Seat Angle	45°
Seat Width039-.055" (1.00-1.40 mm)
Valve Guides	
Intake Valve	
Valve Guide Cylinder Head Bore I.D.	
Standard Valve Guide .....	.4325-.4335" (10.985-11.012 mm)
Oversize Valve Guide .....	.4344-.4355" (11.035-11.062 mm)
Valve Guide I.D. ....	.2366-.2374" (6.010-6.030 mm)
Valve Stem-To-Guide Oil Clearance	
Standard .....	.0010-.0024" (.025-.060 mm)
Wear Limit .....	.0031" (.080 mm)
Exhaust Valve	
Valve Guide Cylinder Head Bore I.D.	
Standard Valve Guide .....	.4325-.4335" (10.985-11.012 mm)
Oversize Valve Guide .....	.4344-.4355" (11.035-11.062 mm)
Valve Guide I.D. ....	.2366-.2374" (6.010-6.030 mm)
Valve Stem-To-Guide Oil Clearance	
Standard .....	.0012-.0026" (.030-.065 mm)
Wear Limit .....	.0039" (.100 mm)

CAMSHAFT TABLE

Application	In. (mm)
End Play	
Standard .....	.0016-.0035 (.040-.090)
Wear Limit .....	.0047 (.120)
Journal Diameter	
Exhaust Camshaft	
Thrust Journal (1) .....	.9433-.9439 (23.959-23.975)
All Other Journals	1.0612-1.0618 (26.954-26.970)
Intake Camshaft	
All Journals	1.0612-1.0618 (26.954-26.970)
Journal Runout .....	.0031 (.080)
Lobe Height	
Intake	
Standard	1.6618-1.6657 (42.210-42.310)
Wear Limit	1.6560 (42.060)
Exhaust	
Standard	1.6520-1.6560 (41.960-42.060)
Wear Limit	1.6460 (41.810)
Oil Clearance	
Exhaust Camshaft	

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Thrust Journal (1)		
Standard0010-.0024 (.025-.061)
Wear Limit0039 (.100)
All Other Journals		
Standard	.....	.0012-.0026 (.030-.067)
Wear Limit	.....	.0039 (.100)
Intake Camshaft		
All Journals		
Standard	.....	.0012-.0026 (.030-.067)
Wear Limit	.....	.0039 (.100)
Gear Backlash		
Standard	.....	.0008-.0079 (.020-.200)
Wear Limit	.....	.0118 (.300)

(1) - Exhaust camshaft thrust journal is the small camshaft journal.

VALVE LIFTERS TABLE

Application		In. (mm)
Bore Diameter	.....	1.2205-1.2211 (31.000-31.016)
Lifter Diameter	1.2191-1.2195 (30.966-30.976)
Oil Clearance		
Standard0009-.0020 (.024-.050)
Wear Limit0028 (.070)

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