

Engine Mechanical Specifications Y Car - LSI

Application	Specification	
	Metric	English
General Data		
Engine Type	V8	
Displacement	5.7L 5665 cc	346 CID
Bore	99.0-99.018 mm	3.897-3.898 in
Stroke	92.0 mm	3.622 in
Compression Ratio	10.1:1	
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Gap	1.524 mm	0.06 in
Lubrication System		
Oil Capacity - without Oil Filter Change	5.678 Liters	6.0 Quarts
Oil Capacity - with Oil Filter Change	6.151 Liters	6.5 Quarts
Oil Pressure - Minimum-Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
Oil Type	Mobil® 5W-30 Synthetic or Equivalent	
Camshaft		
Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
Camshaft Journal Diameter Out-of-Round	0.025 mm	0.001 in
Camshaft Lobe Lift - Intake	6.96 mm	0.274 in
Camshaft Lobe Lift - Exhaust	7.13 mm	0.281 in
Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
Connecting Rod Bearing Bore Diameter	56.505-56.525 mm	2.224-2.225 in
Connecting Rod Bearing Bore Out-of-	0.006 mm	0.00023 in

Round - Production		
Connecting Rod Bearing Bore Out-of-Round - Service Limit	0.006 mm	0.00023 in
Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
Connecting Rod Bearing Clearance - Service Limit	0.023-0.076 mm	0.0009-0.003 in
Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
Crankshaft Bearing Clearance - Production	0.020-0.052 mm	0.0008-0.0021 in
Crankshaft Bearing Clearance - Service	0.020-0.065 mm	0.0008-0.0025 in
Crankshaft Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
Crankshaft Connecting Rod Journal Diameter - Service Limit	53.308 mm - Minimum	2.0987 in - Minimum
Crankshaft Connecting Rod Journal Taper - Production	0.005 mm - Maximum for 1/2 of Journal Length	0.0002 in - Maximum for 1/2 of Journal Length
Crankshaft Connecting Rod Journal Taper - Service Limit	0.02 mm - Maximum	0.00078 in - Maximum
Crankshaft Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
Crankshaft Connecting Rod Journal Out-of-Round - Service Limit	0.01 mm	0.0004 in
Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
Crankshaft Main Journal Diameter - Production	64.993-65.007 mm	2.558-2.559 in
Crankshaft Main Journal Diameter - Service Limit	64.993 mm - Minimum	2.558 in - Minimum
Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
Crankshaft Main Journal Out-of-Round - Service Limit	0.008 mm	0.0003 in
Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
Crankshaft Main Journal Taper - Service Limit	0.02 mm	0.00078 in
Crankshaft Reluctor Ring Runout -	0.7 mm	0.028 in

Measured 1.0 mm (0.04 in) Below Tooth Diameter		
Crankshaft Runout - at Rear Flange	0.05 mm	0.002 in
Crankshaft Thrust Wall Runout	0.025 mm	0.001 in
Crankshaft Thrust Wall Width - Production	26.14-26.22 mm	1.029-1.0315 in
Crankshaft Thrust Wall Width - Service	26.2 mm - Maximum	1.0315 in - Maximum
Cylinder Bore		
Cylinder Bore Diameter	99.0-99.018 mm	3.897-3.898 in
Cylinder Bore Taper Thrust Side	0.018 mm - Maximum	0.0007 in - Maximum
Cylinder Head		
Cylinder Head Engine Block Deck Flatness - Measured within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
Cylinder Head Engine Block Deck Flatness - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
Cylinder Head Exhaust Manifold Deck Flatness	0.22 mm	0.008 in
Cylinder Head Intake Manifold Deck Flatness	0.22 mm	0.008 in
Cylinder Head Height - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm - Minimum	4.732 in - Minimum
Engine Block		
Camshaft Bearing Bore 1 and 5 Diameter	59.08-59.13 mm	2.325-2.327 in
Camshaft Bearing Bore 2 and 4 Diameter	58.83-58.88 mm	2.316-2.318 in
Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
Engine Block Cylinder Head Deck Surface Flatness - Measured within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
Engine Block Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
Engine Block Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in

Main Bearing Bore Diameter - Production	69.871-69.889 mm	2.750-2.751 in
Main Bearing Bore Out-of-Round	0.005 mm	0.0002 in
Valve Lifter Bore Diameter - Production	21.417-21.443 mm	0.843-0.844 in
Intake Manifold		
Intake Manifold Cylinder Head Deck Flatness - Measured at Gasket Sealing Surfaces	0.5 mm	0.02 in
Oil Pan and Front/Rear Cover Alignment		
Oil Pan to Rear of Engine Block Alignment - at Transmission Bellhousing Mounting Surface	0.0-0.25 mm - Maximum	0.0-0.01 in - Maximum
Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
Rear Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
Piston		
Piston Outside Diameter - Non Coated Skirt - at Size Point	98.969-98.987 mm	3.8964-3.8997 in
Piston - Piston Diameter - Measured Over Skirt Coating	98.984-99.027 mm	3.897-3.899 in
Piston to Bore Clearance - Non Coated Skirt - Production	0.013-0.049 mm	0.0005-0.0019 in
Piston to Bore Clearance - Non Coated Skirt - Service	0.013-0.074 mm	0.0005-0.0029 in
Piston - Piston to Bore Clearance - Coated Skirt - Production	-0.027 to +0.029 mm	-0.001 to +0.0011 in
Piston - Piston to Bore Clearance - Coating Worn Off - Service Limit	0.074 mm	0.0029 in
Piston Pin		
Piston Pin Clearance to Piston Bore - Production	0.01-0.02 mm	0.0004-0.00078 in
Piston Pin Clearance to Piston Bore - Service Limit	0.01-0.022 mm - Maximum	0.0004-0.00086 in - Maximum
Piston Pin Diameter	23.997-24.0 mm	0.9447-0.9448 in
Piston Pin Fit in Connecting Rod	0.02-0.043 mm - Interference	0.00078-0.00169 in - Interference
Piston Rings		
Piston Compression Ring End Gap -	0.23-0.44 mm	0.009-0.017 in

Production - Top - Measured in Cylinder Bore		
Piston Compression Ring End Gap - Production - 2nd - Measured in Cylinder Bore	0.44-0.7 mm	0.017-0.027 in
Piston Oil Ring End Gap - Production - Measured in Cylinder Bore	0.18-0.75 mm	0.007-0.029 in
Piston Compression Ring End Gap - Service - Top - Measured in Cylinder Bore	0.23-0.50 mm - Maximum	0.009-0.0196 in - Maximum
Piston Compression Ring End Gap - Service - 2nd - Measured in Cylinder Bore	0.44-0.76 mm - Maximum	0.0173-0.03 in - Maximum
Piston Oil Ring End Gap - Service Limit - Measured in Cylinder Bore	0.18-0.81 mm - Maximum	0.007-0.032 in - Maximum
Piston Compression Ring Groove Clearance - Production - Top	0.04-0.086 mm	0.00157-0.0033 in
Piston Compression Ring Groove Clearance - Production - 2nd	0.05-0.088 mm	0.002-0.0034 in
Piston Oil Ring Groove Clearance - Production	-0.008 to +0.176 mm	-0.0003 to +0.0069 in
Piston Compression Ring Groove Clearance - Service - Top	0.04-0.086 mm - Maximum	0.00157-0.0033 in - Maximum
Piston Compression Ring Groove Clearance - Service - 2nd	0.05-0.088 mm - Maximum	0.002-0.0034 in - Maximum
Piston Oil Ring Groove Clearance - Service Limit	-0.008 to +0.176 mm - Maximum	-0.0003 to +0.0069 in - Maximum
Valve System		
Valve Face Angle	45 degrees	
Valve Guide Installed Height - Measured from the Cylinder Head Spring Seat Surface to the Top of the Valve Guide	17.32 mm	0.682 in
Valve Lash	Net Lash - No Adjustment	
Valve Lift - Intake	11.79 mm	0.464 in
Valve Lift - Exhaust	12.16 mm	0.479 in
Valve Lifter	Hydraulic Roller	
Valve Margin	1.25 mm - Minimum	0.05 in - Minimum
Valve Rocker Arm Ratio	1.70:1	

Valve Seat Angle	46 degrees	
Valve Seat Runout	0.05 mm - Maximum	0.002 in - Maximum
Valve Seat Width - Intake	1.02 mm	0.04 in
Valve Seat Width - Exhaust	1.78 mm	0.07 in
Valve Spring Free Length	52.9 mm	2.08 in
Valve Spring Installed Height - Intake	45.75 mm	1.8 in
Valve Spring Installed Height - Exhaust	45.75 mm	1.8 in
Valve Spring Pressure - Closed	340 N at 45.75 mm	76 lb at 1.8 in
Valve Spring Pressure - Open	980 N at 33.55 mm	220 lb at 1.32 in
Valve Stem Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
Valve Stem Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
Valve Stem Clearance Service - Intake	0.093 mm - Maximum	0.0037 in - Maximum
Valve Stem Clearance - Service - Exhaust	0.093 mm - Maximum	0.0037 in - Maximum
Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
Valve Stem Diameter - Service	7.95 mm - Minimum	0.313 in - Minimum
Valve Stem Oil Seal Installed Height - Measured from the Valve Spring Shim to Top Edge of Seal Body - First Design Seal	18.1-19.1 mm	0.712-0.752 in