

## **Engine Mechanical Specifications LS6**

<b>Application</b>	<b>Specification</b>	
	<b>Metric</b>	<b>English</b>
<b>General</b>		
Engine Type	V 8	
Displacement	5.7 L - 5665 cc	346 CID
RPO	LS6	
VIN	S	
Bore	99.0-99.018 mm	3.897-3.898 in
Stroke	92.0 mm	3.622 in
Compression Ratio	10.5:1	
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Gap	1.016 mm	0.04 in
<b>Block</b>		
Camshaft Bearing Bore 1 and 5 Diameter - First Design	59.08-59.13 mm	2.325-2.327 in
Camshaft Bearing Bore 2 and 4 Diameter - First Design	58.83-58.88 mm	2.316-2.318 in
Camshaft Bearing Bore 3 Diameter - First Design	58.58-58.63 mm	2.306-2.308 in
Camshaft Bearing Bore 1 and 5 Diameter - Second Design	59.58-59.63 mm	2.345-2.347 in
Camshaft Bearing Bore 2 and 4 Diameter - Second Design	59.08-59.13 mm	2.325-2.327 in
Camshaft Bearing Bore 3 Diameter - Second Design	58.58-58.63 mm	2.306-2.308 in
Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
Crankshaft Main Bearing Bore Out-of-Round	0.005 mm	0.0002 in
Cylinder Bore Diameter	99.0-99.018 mm	3.897-3.898 in
Cylinder Bore Taper - Thrust Side	0.018 mm	0.0007 in
Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block	0.22 mm	0.008 in

Deck		
Valve Lifter Bore Diameter	21.417- 21.443 mm	0.843-0.844 in
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 Out-of-Round	0.025 mm	0.001 in
Camshaft Lobe Lift - Exhaust	8.19 mm	0.322 in
Camshaft Lobe Lift - Intake	8.24 mm	0.324 in
Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
Connecting Rod Bore Diameter - Bearing End	56.505- 56.525 mm	2.224-2.225 in
Connecting Rod Bore Out-of-Round - Bearing End	0.006 mm	0.00023 in
Connecting Rod Bore Out-of-Round - Bearing End - Service	0.006 mm	0.00023 in
Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
Connecting Rod Journal Diameter - Production	53.318- 53.338 mm	2.0991-2.0999 in
Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in

Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
Crankshaft Rear Flange Runout	0.05 mm	0.002 in
Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
Surface Flatness - Exhaust Manifold Deck	0.22 mm	0.008 in
Surface Flatness - Intake Manifold Deck	0.22 mm	0.008 in
Intake Manifold		
Surface Flatness - Measured at Gasket Sealing Surfaces	0.5 mm	0.02 in
Lubrication System		
Oil Capacity - with Filter	6.151 Liters	6.5 Quarts
Oil Capacity - without Filter	5.678 Liters	6.0 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 Pan		
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
Oil Pan Alignment - to Rear of Engine Block at Transmission Bellhousing Mounting Surface	0.0-0.25 mm	0.0-0.01 in
Piston Rings		
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore	0.23-0.5 mm	0.009-0.0196 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore	0.44-0.76 mm	0.0173-0.03 in
Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
Piston Ring to Groove Clearance - First Compression Ring - Production	0.04-0.086 mm	0.00157-0.0033 in
Piston Ring to Groove Clearance - First Compression Ring - Service	0.04-0.068 mm	0.00157-0.0033 in
Piston Ring to Groove Clearance - Second Compression Ring - Production	0.05-0.088 mm	0.002-0.0034 in
Piston Ring to Groove Clearance - Second Compression Ring - Service	0.05-0.088 mm	0.002-0.0034 in
Piston Ring to Groove Clearance - Oil Control Ring - Production	-0.008 to +0.0176 mm	-0.0003 to +0.0069 in
Piston Ring to Groove Clearance - Oil Control Ring - Service	-0.008 to +0.0176 mm	-0.0003 to +0.0069 in
Pistons and Pins		
Piston - Piston 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 - Piston to Bore Clearance - Non Coated Skirt - Production	0.013-0.049 mm	0.0005-0.0019 in
Piston - Piston to Bore Clearance - Non	0.013-0.074 mm	0.0005-0.0029 in

Coated Skirt - Service		
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
Pin - First Design Press Fit Pin Fit in Connecting Rod Bore	0.02-0.043 mm - Interference	0.00078-0.00169 in - Interference
Pin - First Design Press Fit Pin Clearance to Piston Pin Bore - Production	0.01-0.02 mm	0.0004-0.00078 in
Pin - First Design Press Fit Pin Clearance to Piston Pin Bore - Service	0.01-0.022 mm	0.0004-0.00086 in
Pin - First Design Press Fit Pin Diameter	23.997-24.0 mm	0.9447-0.9448 in
Pin - Second Design Full Floating Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
Pin - Second Design Full Floating Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
Pin - Second Design Full Floating Pin Clearance to Piston Pin Bore - Production	0.002-0.01 mm	0.00008-0.0004 in
Pin - Second Design Full Floating Pin Clearance to Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
Pin - Second Design Full Floating Pin Diameter	23.952-23.955 mm	0.943-0.943 in
Valve System		
Valves - Valve Face Angle	45 degrees	
Valves - Valve Face Width	1.25 mm	0.05 in
Valves - Valve Lash	Net Lash - No Adjustment	
Valves - Valve Lift - Intake	14.02 mm	0.552 in
Valves - Valve Lift - Exhaust	13.92 mm	0.548 in
Valves - Valve Seat Angle	46 degrees	
Valves - Valve Seat Runout	0.05 mm	0.002 in
Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
Valves - Valve Seat Width - Intake	1.02 mm	0.04 in
Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
Valves - Valve Stem Diameter - Service	7.96 mm	0.314 in
Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
Valves - Valve Stem-to-Guide Clearance -	0.093 mm	0.0037 in

Service - Intake		
Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
Valve Rocker Arm - Valve Rocker Arm Ratio	1.70:1	
Valve Springs - Valve Spring Free Length	53.4 mm	2.1 in
Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
Valve Springs - Valve Spring Load - Closed	400 N at 45.75 mm	90 lb at 1.8 in
Valve Springs - Valve Spring Load- Open	1310 N at 31.75 mm	294 lb at 1.25 in