Engine Mechanical Specifications (6.0L)

Application	Specification	
	Metric	English
General		
Engine Type	V8	
Displacement	6.0L	364 CID
RPO	LS2	
VIN	H	
Bore	101.618-101.636 mm	4.0007-4.0017 in
Stroke	92.0 mm	3.622 in
Compression Ratio	10.86:1	
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Gap	1.02 mm	0.04 in
Block		
Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
Camshaft Bearing Bore 3 Diameter	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	0.006 mm	0.0002 in
Cylinder Bore Diameter	101.618-101.636 mm	4.0007-4.0017 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	0.11 mm	0.004 in
Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
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 Bearing Diameter	55.063-55.088 mm	2.1678-2.1688 in
Camshaft Journal-to-Bearing Clearance	0.023-0.098 mm	0.0009-0.0038 in
Camshaft Journal Out-of-Round	0.025 mm	0.001 in
Camshaft Lobe Lift - Intake	7.78 mm	0.306 in

Camshaft Lobe Lift - Exhaust	7.77 mm	0.305 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 - Production	0.004-0.008 mm	0.00015-0.0003 in
Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 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	0.13 mm	0.005 in
Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
Oil Capacity - with Filter	5.68 liters	6.0 quarts
Oil Capacity - without Filter	5.20 liters	5.5 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 Pressure Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
Crankshaft Rear Oil Seal Housing 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 Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.20-0.41 mm	0.008-0.016 in
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.20-0.41 mm	0.008-0.016 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.37-0.69 mm	0.015-0.027 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.37-0.69 mm	0.015-0.027 in
Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.22-0.79 mm	0.009-0.031 in
Piston Ring End Gap - Oil Control Ring - Measured	0.22-0.79 mm	0.009-0.031 in

in Cylinder Bore - Service		
Piston Ring to Groove Clearance - First Compression Ring - Production	0.030-0.10 mm	0.0012-0.0040 in
Piston Ring to Groove Clearance - First Compression Ring - Service	0.030-0.10 mm	0.0012-0.0040 in
Piston Ring to Groove Clearance - Second Compression Ring - Production	0.035-0.078 mm	0.0014-0.0031 in
Piston Ring to Groove Clearance - Second Compression Ring - Service	0.035-0.078 mm	0.0014-0.0031 in
Piston Ring to Groove Clearance - Oil Control Ring - Production	0.013-0.201 mm	0.0005-0.0079 in
Piston Ring to Groove Clearance - Oil Control Ring - Service	0.013-0.201 mm	0.0005-0.0079 in
Pistons and Pins		
Pin - Piston Pin Clearance to Piston Pin Bore - Production	0.002-0.01 mm	0.0008-0.0004 in
Pin - Piston Pin Clearance to Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
Pin - Piston Pin Diameter	23.952-23.955 mm	0.943-0.943 in
Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
Piston - Piston Diameter - Measured Over Skirt Coating	101.611-101.642 mm	4.0-4.001 in
Piston - Piston to Bore Clearance - Production	-0.022 to +0.030 mm	-0.0009 to +0.0012 in
Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off	0.024-0.08 mm	0.00094-0.0031 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	13.23 mm	0.52 in
Valves - Valve Lift - Exhaust	13.22 mm	0.52 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 - 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	7.95 mm	0.313 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 - Service - Intake	0.093 mm	0.0037 in
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
Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in