4.6L ENGINE MECHANICAL SPECIFICATIONS

Description	English Specifications	Metric Specifications
General Information		
Type	Liquid Cooled, Overhead Camshaft	
Displacement	280 cid	4.6L
Number of cylinders	8	
Bore	3.55 in.	90.2mm
Stroke	3.54 in.	90.0mm
Compression ratio	9.0:1	
Firing order	1-3-7-2-6-5-4-8	
Oil Pressure	20-45 psi @ 1500 RPM (engine hot)	
Cylinder Head and Valve Train		
Valve guide bore diameter	0.3443-0.3433 in.	8.745-8.720
Valve seat width		
Intake	0.074-0.083 in.	1.9-2.1mm
Exhaust	0.074-0.083 in.	1.9-2.1mm
Valve seat angle	45 degrees	
Valve seat run-out	0.00094 in.	0.025mm
Valve stem-to-guide clearance		
Intake	0.00078-0.00272 in.	0.020-0.069mm
Exhaust	0.018-0.0037 in.	0.046-0.095mm
Valve guide inner diameter	0.2773-0.2762 in.	7.044-7.015mm
Valve head diameter		
Intake	1.75 in.	44.5mm
Exhaust	1.34 in.	34.0mm
Valve face run-out limit	0.001 in.	0.05mm
Valve face angle	45.5 degrees	
Valve stem diameter		
Intake	0.275-0.2746 in.	6.995-6.975mm
Exhaust	0.274-0.2736 in.	6.970-6.949mm
Free length		
Intake	1.976 in.	50.2mm
Exhaust	1.976 in.	50.2mm
Valve spring assembled length	1.566-1.637 in.	39.8-41.6mm
Rocker arm ratio	1.75:1	
Valve tappet diameter	0.63-0.629 in.	16.0-15.98mm
Valve tappet-to-bore clearance	0.00071-0.00272 in.	0.018-0.069mm
Valve tappet service limit	0.00063 in.	0.016mm
Valve tappet leakdown rate	5-25 seconds	
Valve tappet collapsed tappet gap (desired)	0.0335-0.0177 in.	0.85-0.45mm
Camshaft		
Lobe lift		
Intake	0.2594 in.	6.59mm
Exhaust	0.2594 in.	6.59mm
Lobe wear limit (all)	0.005 in.	0.127mm
Theoretical valve lift @ zero lash (all)	0.472 in.	12.0mm
End-play	0.00098-0.0065 in.	0.025-0.165mm
End-play wear limit	0.0075 in.	0.190mm
Bearing-to-journal clearance	0.00098-0.003 in.	0.025-0.076mm
Bearing-to-journal clearance service limit	0.0048 in.	0.121mm
Journal diameter	1.061-1.060 in.	26.962-26.936mm
Bearing journal inside diameter	1.063-1.0625 in.	27.012-26.987mm
Run-out	0.002 in.	0.05mm
Cylinder Block		
Cylinder bore diameter		
Out-of-round	0.0006 in.	0.015mm
Out-of-round (service limit)	0.00079 in.	0.020mm
Taper limit	0.00023 in.	0.006mm
Main bearing bore	2.85-2.851 in.	72.402-72.422mm
Crankshaft		
Main bearing journal diameter	2.65-2.657 in.	67.483-67.503mm
Main bearing journal taper	0.0007 in.	0.02mm
Main bearing journal run-out	0.002 in.	0.05mm
Main bearing-to-crankshaft clearance	0.0011-0.0026 in.	0.027-0.065mm
Bearing wall thickness	0.075-0.076 in.	1.920-1.928mm
Connecting rod bearing journal diameter	2.087-2.867 in.	52.988-53.003mm
Crankshaft free end-play	0.130-0.301 in.	0.0051-0.012mm
Crankshaft runout-to-rear face of the block	0.002 in.	0.05mm
Connecting Rod		
Connecting rod bearing-to-crankshaft clearance	0.001-0.0027 in.	0.027-0.069mm
Connecting rod bearing wall thickness	0.096-0.0965 in.	2.444-2.452mm
Connecting rod main bearing bore diameter	2.234-2.24 in.	56.756-56.876mm
Connecting rod length (center-to-center)	5.93 in.	150.7mm