

ENGINE TECHNICAL DATA

B3E015001001201

Item				Engine		
				L8	LF	L3, L3 (with variable valve timing mechanism)
Cylinder head						
Cylinder head gasket contact surfaces distortion	(mm {in})	Maximum	0.10 {0.004}			
Manifold contact surfaces distortion	(mm {in})	Maximum	0.10 {0.004}			
		Maximum grinding	0.15 {0.006}			
Valve clearance [Engine cold]	(mm {in})	IN	0.22-0.28 {0.0087-0.0110}			
		EX	0.27-0.33 {0.0106-0.0130}			
Valve and valve guide						
Valve stem diameter	(mm {in})	Standard	IN	5.470-5.485 {0.2154-0.2159}		
			EX	5.465-5.480 {0.2152-0.2157}		
		Minimum	IN	5.440 {0.2142}		
			EX	5.435 {0.2140}		
Valve stem to guide clearance	(mm {in})	Standard	IN	0.024-0.069 {0.0009-0.0027}		
			EX	0.029-0.074 {0.0012-0.0029}		
		Maximum	IN	0.10 {0.004}		
			EX	0.10 {0.004}		
Valve length	(mm {in})	Standard	IN	102.99-103.79 {4.055-4.086}		
			EX	104.25-105.05 {4.105-4.135}		
		Minimum	IN	102.99 {4.055}		
			EX	104.25 {4.104}		
Valve guide inner diameter	(mm {in})	Standard	IN	5.509-5.539 {0.2169-0.2180}		
			EX	5.509-5.539 {0.2169-0.2180}		
Valve guide protrusion height	(mm {in})	Standard	IN	12.2-12.8 {0.481-0.503}		
			EX	12.2-12.8 {0.481-0.503}		
Valve head margin thickness	(mm {in})	Minimum	IN	1.62 {0.0637}		
			EX	1.82 {0.0716}		
Valve seat						
Valve seat contact width	(mm {in})	Standard	IN	1.2-1.6 {0.048-0.062}		
			EX	1.2-1.6 {0.048-0.062}		
Valve seat angle	(°)		IN	45		
			EX	45		
Valve seat sinking (Valve protrusion height)	(mm {in})	Standard	IN	40.64-42.24 {1.600-1.662}		
			EX	40.50-42.10{1.595-1.657}		
Valve spring						
Out-of-square	(mm {in})	Maximum	1% (2.10 {0.0826})			
Pressing force	(N {kgf, lbf})	Standard height H	390 {39.76, 87.67} [27.8 {1.094}]			

	[mm {in}]					
OCV (Oil control valve)						
Coil resistance [20° C {68° F}]	(ohm)	Standard	-		6.9-7.9	
Camshaft						
Camshaft runout	(mm {in})	Maximum	0.03 {0.0012}			
Cam lobe height	(mm {in})	Standard	IN	40.79 {1.606}	42.12 {1.659}	42.12 {1.659}
						42.44{1.671}*
		EX	41.08 {1.618}	41.08 {1.618}	41.08 {1.618}	
						41.18 {1.622}*
		Minimum	IN	40.692 {1.603}	42.022 {1.655}	42.022{1.655}
						42.342 {1.667}*
EX	40.982 {1.614}	40.982 {1.614}	40.982 {1.614}			
				41.082 {1.618}*		
Journal diameter	(mm {in})	Standard	24.96-24.98 {0.9827-0.9834}			
		Minimum	24.95 {0.982}			
Journal oil clearance	(mm {in})	Standard	0.04-0.08 {0.002-0.003}			
		Maximum	0.09 {0.0035}			
End play	(mm {in})	Standard	0.09-0.24 {0.0035-0.0099}			
		Maximum	0.25 {0.009}			
Tappet						
Tappet bore diameter	(mm {in})	Standard	31.000-31.030 {1.2205-1.2216}			
Tappet diameter	(mm {in})	Standard	30.970-30.980 {1.2193-1.2196}			
Tappet-to-Tappet bore oil clearance	(mm {in})	Standard	0.02-0.06{0.0008-0.0023}			
		Maximum	0.15 {0.006}			
Cylinder block						
Cylinder head gasket contact surfaces distortion	(mm {in})	Maximum	0.10 {0.004}			
Cylinder bore diameter [Measure the cylinder bore at 42 mm {1.65 in} below the top surface]	(mm {in})	Standard	83.000-83.030 {3.2677-3.2689}	87.500-87.530 {3.4449-3.4460}		
Minimum / maximum bore diameter Limit	(mm {in})		82.940-83.090 {3.2653-3.2712}	87.440-87.590 {3.4425-3.4484}		
Piston						
Piston diameter	(mm {in})	Standard	82.965-82.995 {3.2664-3.2675}	87.465-87.495 {3.4435-3.4446}		
Piston-to-cylinder clearance	(mm {in})	Standard	0.025-0.045 {0.0010-0.0017}			
		Maximum	0.11 {0.0043}			
Piston ring						
		Standard	Top	0.03-0.08 {0.0012-0.0031}		
			Second	0.03-0.07 {0.0012-0.0027}		

Piston ring-to-ring groove clearance	(mm {in})		Oil (rail)	0.03-0.07 {0.0012-0.0027}	
		Maximum	Top	0.17 {0.0067}	
			Second	0.15 {0.0059}	
			Oil (rail)	0.15 {0.0059}	
End gap (measured in cylinder)	(mm {in})	Standard	Top	0.16-0.31 {0.0063-0.0122}	
			Second	0.33-0.48 {0.0130-0.0189}	
			Oil (rail)	0.20-0.70 {0.0079-0.0275}	
		Maximum	Top	1.0 {0.0393}	
			Second	1.0 {0.0393}	
			Oil (rail)	1.0 {0.0393}	
Connecting rod and connecting rod bearing					
Connecting rod side clearance	(mm {in})	Standard	0.14-0.36 {0.0056-0.0141}		
		Maximum	0.435 {0.0172}		
Connecting rod bearing size	(mm {in})	Standard	1.498-1.504 {0.0589-0.0592}	1.496-1.502 {0.0589-0.0591}	
		0.25 {0.01} Oversize	1.623-1.629 {0.0639-0.0641}	1.621-1.627 {0.0639-0.0641}	
		0.50 {0.02} Oversize	1.748-1.754 {0.0688-0.0690}	1.746-1.752 {0.0688-0.0690}	
Connecting rod bearing oil clearance	(mm {in})	Standard	0.026-0.052{0.0011-0.0020}		
		Maximum	0.10{0.0039}		
Crankshaft					
Crankshaft runout	(mm {in})	Maximum	0.05 {0.0019}		
Main journal diameter	(mm {in})	Standard	51.980-52.000 {2.0464-2.0472}		
		0.25 {0.01} undersize	51.730-51.750 {2.0366-2.0373}		
Main journal oil clearance	(mm {in})	Standard	0.019-0.035{0.0007-0.0013}		
		Maximum	0.10 {0.0039}		
Main journal out of round	(mm {in})	Maximum	0.05 {0.0019}		
Main bearing size	(mm {in})	Standard	2.506-2.509 {0.0987-0.0988}		
		0.25 {0.01} Oversize	2.628-2.634 {0.1034-0.1037}		
		0.50 {0.02} Oversize	2.753-2.759 {0.1084-0.1086}		
Crank pin journal diameter	(mm {in})	Standard	46.980-47.000 {1.8497-1.8503}	49.980-50.000 {1.9677-1.9685}	
		0.25 {0.01} undersize	46.730-46.750 {1.8398-1.8405}	49.730-49.750 {1.9579-1.9586}	
Crank pin out of round	(mm {in})	Maximum	0.05 {0.022}		
Crankshaft end play	(mm {in})	Standard	0.22-0.45{0.0087-0.0177}		
		Maximum	0.55 {0.0216}		
Front oil seal					
Pushing distance of the front oil seal [from the edge of the engine front cover]		(mm {in})	0-0.5 {0-0.019}		
Bolt					
		Standard	145.2-145.8 {5.72-5.74}		

Cylinder head bolt length		Maximum	146.5 {5.77}	
Connecting rod bolt length		Standard	44.7-45.3 {1.75-1.78}	
		Maximum	46.0 {1.81}	
Main bearing cap bolt length		Standard	110.0-110.6 {4.33-4.35}	
		Maximum	111.3 {4.38}	
Balance shaft				
Gear backlash	(mm {in})	Maximum	-	0.005-0.101 {0.00019-0.0039}

* : L3 (with variable valve timing mechanism)