

TECHNICAL DATA

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ENGINE	TD-2

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ENGINE

AME931001001101

Item			Specification	
Cylinder head				
Valve clearance [Engine cold] (mm {in})		IN	0.12—0.18 {0.0048—0.0070} (0.15 ± 0.03 {0.0059 ± 0.0012})	
		EX	0.32—0.38 {0.0126—0.0149} (0.35 ± 0.03 {0.0138 ± 0.0012})	
Cylinder head gasket contact surfaces distortion (mm {in})		Maximum	X direction:0.01 {0.0004} Y direction:0.04 {0.0016}	
		Maximum	0.06 {0.0024}	
Manifold contact surfaces direction (mm {in})		Maximum	0.20 {0.008}	
		Maximum grinding		
Valve and valve guide				
Margin thickness (mm {in})		IN	0.8 {0.0315}	
		EX	1.0 {0.0394}	
Valve length (mm{in})		IN	Standard	115.01—115.51 {4.528—4.547}
			Minimum	114.785 {4.519}
		EX	Standard	114.35—114.85 {4.502—4.521}
			Minimum	114.125 {4.493}
Valve stem diameter (mm {in})		IN	Standard	5.970—5.985 {0.2351—0.2356}
			Minimum	5.920 {0.2331}
		EX	Standard	5.965—5.980 {0.2349—0.2354}
			Minimum	5.915 {0.2329}
Valve guide inner diameter (mm {in})			6.030—6.050 {0.2374—0.2381}	
Valve guide protrusion height (mm {in})		IN	18.7—19.2 {0.737—0.755}	
		EX	17.6—18.1 {0.693—0.712}	
Valve seat contact width (mm {in})		IN	1.3—1.9 {0.052—0.074}	
		EX	1.3—1.9 {0.052—0.074}	
Valve seat angle		IN	45°	
		EX	45°	
Valve recession (mm{in})		IN	Standard	0.42—0.90 {0.017—0.035}
			Maximum	1.25 {0.049}
		EX	Standard	0.46—0.94 {0.019—0.037}
			Maximum	1.29 {0.051}
Valve spring				
Standard height (mm {in})		IN	38.0 {1.50}	
		EX	38.0 {1.50}	
Pressing force/height (N {kgf, lbf}/mm{in})		IN	172.1—194.9 {17.55—19.87,38.61—43.79}/38.0 {1.50}	
		EX	172.1—194.9 {17.55—19.87,38.61—43.79}/38.0 {1.50}	
Out-of-square (mm{in})		Maximum	1.55 {0.061}	
Camshaft				
Runout (mm {in})		Maximum	0.03 {0.0012}	
Cam lobe height (mm {in})		IN	Standard	40.140 {1.5803}
			Minimum	39.940 {1.5724}
		EX	Standard	39.809 {1.5673}
			Minimum	39.609 {1.5594}
Journal diameter (mm {in})		Standard	31.950—31.975 {1.2579—1.2588}	
		Minimum	31.920 {1.2567}	
Journal oil clearance (mm {in})		Standard	0.025—0.030 {0.0010—0.0011}	
		Maximum	0.075 {0.0030}	
End play (mm {in})		Standard	0.03—0.16 {0.0012—0.0062}	
		Maximum	0.20 {0.0079}	

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Item		Specification	
Cylinder block			
Cylinder head gasket contact surfaces distortion	(mm {in})	Maximum	X direction: 0.01 {0.0004}
			Y direction: 0.03 {0.0012}
Cylinder bore diameter	(mm {in})	Standard	86.000—86.022 {3.3859—3.3866}
		0.25 {0.01} oversize	86.250—86.272 {3.3957—3.3965}
		0.50 {0.02} oversize	86.500—86.522 {3.4055—3.4063}
Wear limit		(mm {in})	0.15 {0.006}
Oil jet valve,nozzle			
Nozzle opening pressure		(kPa{kgf/cm ² ,psi})	138—196 {1.4—2.0,20—28}
Piston			
Piston diameter		Standard	85.973—86.015 {3.3848—3.3864}
[Measured at 90° to pin bore axis and 10mm {0.39 in} above the bottom of piston] (mm {in})		0.25 {0.01} oversize	86.223—86.265 {3.3946—3.3962}
		0.50 {0.02} oversize	86.473—86.515 {3.4045—3.4061}
Piston-to-cylinder clearance	(mm {in})	Standard	0—0.034 {0—0.0013}
		Maximum	0.10 {0.0039}
Piston pin bore diameter		(mm {in})	29.997—30.007 {1.1810—1.1813}
Piston ring			
Piston ring-to-ring groove clearance	(mm {in})	Top	0.05—0.09 {0.0020—0.0035}
		Second	0.04—0.08 {0.0016—0.0031}
		Oil	0.03—0.07 {0.0012—0.0027}
		Maximum	0.15 {0.0059}
End gap [Measured in cylinder] (mm {in})	(mm {in})	Top	0.20—0.30 {0.008—0.011}
		Second	0.20—0.30 {0.008—0.011}
		Oil	0.20—0.30 {0.008—0.011}
		Maximum	1.0 {0.039}
Piston pin			
Diameter	(mm {in})		29.994—30.000 {1.1809—1.1811}
Connecting rod-to-piston pin clearance	(mm {in})		0.014—0.036 {0.00056—0.00141}
Piston-to-piston pin clearance	(mm {in})		-0.003—0.013 {-0.00011—0.00051}
Crankshaft			
Runout	(mm {in})		0.03 {0.001}
Main journal diameter	(mm {in})	Standard	59.937—59.955 {2.3598—2.3604}
		0.25{0.01} undersize	59.687—59.705 {2.3499—2.3505}
		0.50{0.02} undersize	59.437—59.455 {2.3401—2.3407}
		0.75{0.03} undersize	59.187—59.205 {2.3302—2.3309}
Out-of-round		(mm {in})	0.03 {0.001}
Crank pin diameter	mm {in})	Standard	50.940—50.955 {2.0056—2.0060}
		0.25{0.01} undersize	50.690—50.705 {1.9957—1.9962}
		0.50{0.02} undersize	50.440—50.455 {1.9859—1.9864}
		0.75{0.03} undersize	50.190—50.205 {1.9760—1.9765}
Out-of-round		(mm {in})	0.03 {0.001}
Main journal oil clearance	(mm {in})	Standard	0.025—0.044 {0.0010—0.0017}
		Maximum	0.08 {0.003}
Main journal brearing thickness	(mm {in})	Standard	2.007—2.022 {0.0791—0.0796}
		0.25{0.01} undersize	2.129—2.139 {0.0839—0.0842}
		0.50{0.02} undersize	2.254—2.264 {0.0888—0.0891}
		0.75{0.03} undersize	2.379—2.389 {0.0937—0.0940}
Crankshaft end play	(mm {in})	Standard	0.040—0.282 {0.00158—0.01110}
		Maximum	0.30 {0.012}
Trust bearing thickness	(mm {in})	Standard	2.00—2.05 {0.0788—0.0807}
		0.35{0.01}undersize	2.175—2.225 {0.0857—0.0876}

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Item		Specification		
Connecting rod				
Small end inner diameter		(mm {in})	30.014—30.030 {1.1817—1.1822}	
Length (Center to center)		(mm {in})	151.95—152.05 {5.983—5.986}	
Bending		(mm {in})	0.080 {0.0031} max./50 {2.0}	
Distortion		(mm {in})	0.080 {0.0031} max./50 {2.0}	
Connecting rod bearing oil clearance		(mm {in})	Standard	0.027—0.055 {0.0011—0.0021}
		Maximum	0.10 {0.0039}	
Connecting rod bearing thickness		(mm {in})	Standard	1.506—1.515 {0.0593—0.0596}
		0.25 {0.01}undersize	1.630—1.640 {0.0642—0.0645}	
		0.50 {0.02}undersize	1.755—1.765 {0.0691—0.0694}	
		0.75 {0.03}undersize	1.880—1.890 {0.0741—0.0744}	
Connecting rod side clearance		(mm {in})	Standard	0.110—0.262 {0.0044—0.0103}
		Maximum	0.512 {0.0202}	
Bolt				
Cylinder head bolt length		(mm {in})	Maximum	161.0 {6.338}
Timing belt auto tensioner				
Rod project ion[Free length]		(mm {in})		12.9—14.6 {0.508—0.574}
Oil pump				
Relief spring free length		(mm {in})		43.8 {1.724}
Inner rotor tooth tip to outer rotor clearance		(mm {in})	Standard	0.030—0.120 {0.0012—0.0047}
		Maximum	0.16 {0.006}	
Outer rotor to body clearance		(mm {in})	Standard	0.200—0.294 {0.0079—0.0115}
		Maximum	0.35 {0.013}	
Side clearance		(mm {in})	Standard	0.040—0.100 {0.0016—0.0039}
		Maximum	0.15 {0.0059}	
Oil seal				
Camshaft oil seal tapping amount		(mm {in})		0.5—1.5 {0.020—0.059}
Rear oil seal tapping amount		(mm {in})		0—0.5 {0—0.019}
Front oil seal tapping amount		(mm {in})		0—0.5 {0—0.019}