

## ENGINE MECHANICAL

## SERVICE DATA

SS00Q-05

CO/HC	Idle CO concentration	0 - 0.5 %
Compression pressure	at 250 rpm STD Minimum Difference of pressure between each cylinder	1,255 kPa (12.8 kgf/cm <sup>2</sup> , 182 psi) or more 981 kPa (10.0 kgf/cm <sup>2</sup> , 142 psi) 98 kPa (1.0 kgf/cm <sup>2</sup> , 14 psi) or less
Valve clearance	at cold Intake Exhaust Valve lifter (for repair part)	0.15 - 0.25 mm (0.006 - 0.010 in.) 0.25 - 0.35 mm (0.010 - 0.014 in.) No.06 5.060 mm (0.1992 in.) No.08 5.080 mm (0.2000 in.) No.10 5.100 mm (0.2008 in.) No.12 5.120 mm (0.2016 in.) No.14 5.140 mm (0.2024 in.) No.16 5.160 mm (0.2031 in.) No.18 5.180 mm (0.2039 in.) No.20 5.200 mm (0.2047 in.) No.22 5.220 mm (0.2055 in.) No.24 5.240 mm (0.2063 in.) No.26 5.260 mm (0.2071 in.) No.28 5.280 mm (0.2079 in.) No.30 5.300 mm (0.2087 in.) No.32 5.320 mm (0.2094 in.) No.34 5.340 mm (0.2102 in.) No.36 5.360 mm (0.2110 in.) No.38 5.380 mm (0.2118 in.) No.40 5.400 mm (0.2126 in.) No.42 5.420 mm (0.2134 in.) No.44 5.440 mm (0.2142 in.) No.46 5.460 mm (0.2150 in.) No.48 5.480 mm (0.2157 in.) No.50 5.500 mm (0.2165 in.) No.52 5.520 mm (0.2173 in.) No.54 5.540 mm (0.2181 in.) No.56 5.560 mm (0.2189 in.) No.58 5.580 mm (0.2197 in.) No.60 5.600 mm (0.2205 in.) No.62 5.620 mm (0.2213 in.) No.64 5.640 mm (0.2220 in.) No.66 5.660 mm (0.2228 in.) No.68 5.680 mm (0.2236 in.) No.70 5.700 mm (0.2244 in.) No.72 5.720 mm (0.2252 in.) No.74 5.740 mm (0.2260 in.)
Ignition timing	w/ Terminals TC and E1 connected of check connector	8 -12° BTDC @ idle
Idle speed	-	650 ± 50 rpm

Cylinder head	Warpage		
	Cylinder block side	Maximum	0.20 mm (0.0079 in.)
	Intake manifold side	Maximum	0.20 mm (0.0079 in.)
	Exhaust manifold side	Maximum	0.30 mm (0.0118 in.)
	Valve seat		
	Refacing angle	Intake	30°, 45°, 60°
		Exhaust	15°, 45°, 60°
	Contacting angle		45°
	Contacting width		1.0 - 1.4 mm (0.039 - 0.055 in.)
Protrusion height		6.8 - 7.2 mm (0.268 - 0.3283 in.)	
Cylinder head bolt outside diameter	STD		8.7 - 8.8 mm (0.343 - 0.346 in.)
	Minimum		8.6 mm (0.339 in.)
Valve guide bushing	Inside diameter		5.010 - 5.030 mm (0.1972 - 0.1980 in.)
	Outside diameter (for repair part)	STD	9.727 - 9.738 mm (0.3830 - 0.3834 in.)
		O/S 0.05	9.777 - 9.788 mm (0.3849 - 0.3854 in.)
Valve	Valve overall length	STD Intake	91.75 mm (3.6122 in.)
		Exhaust	91.79 mm (3.6138 in.)
		Minimum Intake	91.25 mm (3.5925 in.)
		Exhaust	91.29 mm (3.5941 in.)
	Valve face angle		44.5°
	Stem diameter	Intake	4.970 - 4.985 mm (0.1957 - 0.1963 in.)
		Exhaust	4.965 - 4.980 mm (0.1955 - 0.1961 in.)
	Stem oil clearance	STD Intake	0.025 - 0.060 mm (0.0010 - 0.0024 in.)
		Exhaust	0.030 - 0.065 mm (0.0012 - 0.0026 in.)
		Maximum Intake	0.08 mm (0.0031 in.)
		Exhaust	0.10 mm (0.0039 in.)
	Margin thickness	STD Intake	0.8 mm (0.315 in.)
Exhaust		1.0 mm (0.394 in.)	
Minimum		0.5 mm (0.020 in.)	
Valve spring	Deviation	Maximum	2.0 mm (0.079 in.)
	Free length		47.3 mm (1.862 in.)
	Installed tension at 33.5 mm (1.319 in.)		188 - 204 N (19.2 - 20.8 kgf-cm, 42.3 - 45.9 lbf)
Valve lifter	Lifter diameter		30.966 - 30.976 mm (1.2191 - 2.2195 in.)
	Lifter bore diameter		31.000 - 31.025 mm (1.2205 - 1.2215 in.)
	Oil clearance	STD	0.024 - 0.059 mm (0.0009 - 0.0023 in.)
		Maximum	0.08 mm (0.0031 in.)
Camshaft	Thrust clearance	STD Intake	0.045 - 0.100 mm (0.0018 - 0.0039 in.)
		Exhaust	0.045 - 0.110 mm (0.0012 - 0.0043 in.)
	Journal oil clearance	STD	0.025 - 0.062 mm (0.0010 - 0.0024 in.)
		Maximum	0.08 mm (0.0031 in.)
	Journal diameter		26.959 - 26.975 mm (1.0614 - 1.0620 in.)
	Circle runout		0.06 mm (0.0024 in.)
	Cam lobe height	STD Intake	46.75 - 46.85 mm (1.8405 - 1.8445 in.)
		Exhaust	46.27 - 46.37 mm (1.8216 - 1.8256 in.)
		Minimum Intake	46.6 mm (1.8346 in.)
		Exhaust	46.1 mm (1.8150 in.)
Camshaft gear backlash	STD	0.020 - 0.200 mm (0.0008 - 0.0079 in.)	
	Maximum	0.30 mm (0.0188 in.)	
Camshaft gear spring end free distance		17.6 - 18.2 mm (0.693 - 0.717 in.)	
Exhaust manifold	Warpage	Maximum	0.70 mm (0.0276 in.)

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Cylinder block	Cylinder head surface warpage	Maximum	0.05 mm (0.0020 in.)	
	Cylinder bore diameter	STD	75.010 – 75.023 mm (2.9531 – 2.9537 in.)	
		Maximum	94.231 mm (3.7099 in.)	
	Main journal bore diameter (Reference)	Mark 1	59.026 – 59.032 mm (2.3239 – 2.3241 in.)	
		Mark 2	59.032 – 59.038 mm (2.3241 – 2.3243 in.)	
Mark 3		59.038 – 59.044 mm (2.3243 – 2.3246 in.)		
Piston and piston ring	Piston diameter	STD	74.93 – 74.94 mm (2.9500 – 2.9504 in.)	
		O/S 0.50	75.43 – 75.44 mm (2.9697 – 2.9701 in.)	
	Piston oil clearance	STD	0.070 – 0.093 mm (0.0028 – 0.0037 in.)	
		Maximum	0.11 mm (0.0043 in.)	
	Piston ring groove clearance	No.1	0.030 – 0.080 mm (0.0012 – 0.0031 in.)	
		No.2	0.030 – 0.070 mm (0.0012 – 0.0028 in.)	
	Piston ring end gap	STD	No.1	0.25 – 0.35 mm (0.0098 – 0.0138 in.)
			No.2	0.35 – 0.45 mm (0.0138 – 0.0178 in.)
		Oil	Maximum No.1	0.15 – 0.40 mm (0.0059 – 0.0157 in.)
			No.2	0.95 mm (0.0374 in.)
No.2			1.05 mm (0.0413 in.)	
Oil	Maximum	1.00 mm (0.0394 in.)		
Connecting rod	Thrust clearance	STD	0.200 – 0.402 mm (0.0079 – 0.0158 in.)	
		Maximum	0.45 mm (0.0188 in.)	
	Connecting rod oil clearance	STD	0.016 – 0.047 mm (0.0006 – 0.0019 in.)	
		Maximum	0.07 mm (0.0028 in.)	
	Connecting rod bearing center wall thickness (Reference)	Mark 3	1.488 – 1.492 mm (0.0586 – 0.0587 in.)	
		Mark 4	1.492 – 1.496 mm (0.0587 – 0.0589 in.)	
		Mark 5	1.496 – 1.500 mm (0.0589 – 0.0591 in.)	
	Rod out-of alignment	Maximum per 100 mm (3.94 in.)	0.05 mm (0.0020 in.)	
Rod twist	Maximum per 100 mm (3.94 in.)	0.15 mm (0.0059 in.)		
Crankshaft	Thrust clearance	STD	0.020 – 0.221 mm (0.0008 – 0.0087 in.)	
		Maximum	0.30 mm (0.0118 in.)	
	Thrust washer thickness		1.940 – 1.990 mm (0.0764 – 0.0783 in.)	
	Main journal oil clearance	STD No.4	0.032 – 0.050 mm (0.0013 – 0.0020 in.)	
		Others	0.020 – 0.038 mm (0.0008 – 0.0015 in.)	
		Maximum	0.08 mm (0.0031 in.)	
	Main journal diameter (Reference)	STD No.4	STD	54.970 – 54.988 mm (2.1641 2.1649 in.)
			Others	54.982 – 55.000 mm (2.1646 2.1654 in.)
		STD No.4	Mark 0	54.982 – 54.988 mm (2.1646 2.1649 in.)
			Mark 1	54.976 – 54.982 mm (2.1644 2.1646 in.)
		Others	Mark 2	54.970 – 54.976 mm (2.1642 2.1644 in.)
			Mark 0	54.994 – 55.000 mm (2.1651 2.1654 in.)
		Main bearing center wall thickness (Reference)	Mark 1	54.988 – 54.994 mm (2.1649 2.1651 in.)
			Mark 2	54.982 – 54.988 mm (2.1646 2.1649 in.)
			Mark 1	2.000 – 2.003 mm (0.0787 – 0.0789 in.)
			Mark 2	2.003 – 2.006 mm (0.0789 – 0.0790 in.)
	Mark 3		2.006 – 2.009 mm (0.0790 – 0.0791 in.)	
Crank pin diameter	Mark 4	2.009 – 2.012 mm (0.0791 – 0.0792 in.)		
	Mark 5	2.012 – 2.015 mm (0.0792 – 0.0793 in.)		
	STD	43.985 – 44.000 mm (1.7317 – 1.7322 in.)		
	Maximum	0.06 mm (0.0024 in.)		
	Maximum	0.02 mm (0.0008 in.)		
Main journal taper and out-of-round	Maximum	0.02 mm (0.0008 in.)		
Crank pin taper and out-of-round	Maximum	0.02 mm (0.0008 in.)		