SERVICE SPECIFICATIONS

SERVICE DATA

EGGC5-1K

EG

Idle CO	Concentration		0 — 0.5 %
Compression pressure		at 250 rpm STD	1,230 kPa (12.5 kgf/cm², 178 psi) or more
		Minimum	880 kPa (9.0 kgf/cm², 128 psi)
	Difference of pressure between each cylinder		98 kPa (1.0 kgf/cm², 14 psi) or less
Valve clearance		at cold Intake	0.20 — 0.30 mm (0.008 — 0.012 in.)
		Exhaust	0.25 — 0.35 mm (0.010 — 0.014 in.)
	Adjusting shim thickness	No.01	2.20 mm (0.0866 in.)
		No.03	2.25 mm (0.0886 in.)
		No.05	2.30 mm (0.0906 in.)
		No.07	2.35 mm (0.0925 in.)
		No.09	2.40 mm (0.0945 in.)
		No.11	2.45 mm (0.0965 in.)
		No.13	2.50 mm (0.0984 in.)
		No.15	2.55 mm (0.1004 in.)
		No.17	2.60 mm (0.1024 in.)
		No.19	2.65 mm (0.1043 in.)
		No.21	2.70 mm (0.1063 in.)
		No.23	2.75 mm (0.1083 in.)
		No.25	2.80 mm (0.1102 in.)
		No.27	2.85 mm (0.1122 in.)
		No.29	2.90 mm (0.1142 in.)
		No.31	2.95 mm (0.1161 in.)
		No.33	3.00 mm (0.1181 in.)
		No.35	3.05 mm (0.1201 in.)
		No.37	3.10 mm (0.1220 in.)
		No.39	3.15 mm (0.1240 in.)
		No.41	3.20 mm (0.1260 in.)
		No.43	3.25 mm (0.1280 in.)
		No.45	3.30 mm (0.1299 in.)
		No.47	3.35 mm (0.1319 in.)
		No.49	3.40 mm (0.1339 in.)
Ignition timing	—		5° BTDC @ idle w/ Terminals TE1 and E1 of check connector connected
Idle speed	—		750 ± 50 rpm
Intake manifold vacuum		at idle speed	60 kPa (450 mmHg, 17.7 in.Hg)
Cylinder head	Warpage		
	Cylinder block side	Maximum	0.15 mm (0.0059 in.)
	Manifold side	Maximum	0.20 mm (0.0079 in.)
	Valve seat		
	Refacing angle		30°, 45°, 60°
	Contacting angle		45°
	Contacting width		1.0 — 1.4 mm (0.039 — 0.055 in.)
	Cylinder head bolt thread outside diameter	STD	10.760 — 10.970 mm (0.4236 — 0.4319 in.)
		Minimum	10.40 mm (0.4094 in.)

Valve guide bushing	Inside diameter		8.010 — 8.030 mm (0.3154 — 0.3161 in.)
	Outside diameter (for repair part)	STD	13.040 — 13.051 mm (0.5134 — 0.5138 in.)
		O/S 0.05	13.090 — 13.101 mm (0.5154 — 0.5158 in.)
Valve	Valve overall length	STD Intake	101.70 — 102.30 mm (4.0039 — 4.0278 in.)
		Exhaust	102.05 — 102.45 mm (4.0177 — 4.0335 in.)
		Minimum Intake	101.50 mm (3.9961 in.)
		Exhaust	101.75 mm (4.0059 in.)
	Vale face angle		44.5°
	Stem diameter	Intake	7.970 — 7.985 mm (0.3138 — 0.3144 in.)
		Exhaust	7.965 — 7.980 mm (0.3136 — 0.3142 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	1.00 — 1.40 mm (0.0394 — 0.0551 in.)
		Exhaust	1.30 — 1.70 mm (0.0512 — 0.0669 in.)
		Minimum Intake	0.70 mm (0.0276 in.)
		Exhaust	1.00 mm (0.0394 in.)
Valve spring	Deviation	Maximum	2.0 mm (0.079 in.)
	Free length		47.70 mm (1.8779 in.)
	Installed tension at 40.30 mm (1.5866 in.)		252 — 278 N (25.7 — 28.4 kgf, 56.7 — 62.6 lbf)
Camshaft	Thrust clearance	STD	0.080 — 0.155 mm (0.0031 — 0.0061 in.)
		Maximum	0.25 mm (0.0098 in.)
	Journal oil clearance	STD	0.0025 — 0.066 mm (0.0010 — 0.0026 in.)
		Maximum	0.10 mm (0.0039 in.)
	Journal diameter		33.959 — 33.975 mm (1.3370 — 1.3376 in.)
	Circle runout	Maximum	0.03 mm (0.0012 in.)
	Cam lobe height	STD	47.840 — 47.940 mm (1.8835 — 1.8874 in.)
		Minimum	47.44 mm (1.8677 in.)
Valve lifter	Lifter diameter		37.922 — 37.932 mm (1.4930 — 1.4934 in.)
	Lifter bore diameter		37.960 — 37.975 mm (1.4955 — 1.4951 in.)
	Oil clearance	STD	0.028 — 0.053 mm (0.0011 — 0.0021 in.)
		Maximum	0.10 mm (0.0039 in.)
Manifold	Warpage	Maximum Intake	0.20 mm (0.0079 in.)
		Exhaust	0.70 mm (0.0276 in.)
Chain and timing gear	Chain elongation at 16 links	Maximum	146.6 mm (5.772 in.)
	Gear diameter (w/ chain)	Minimum Camshaft	113.8 mm (4.480 in.)
		Crankshaft	59.4 mm (2.339 in.)
Chain tensioner slipper and vibration damper	Wear	Maximum	1.0 mm (0.039 in.)
Cylinder block	Cylinder head surface warpage	Maximum	0.05 mm (0.0020 in.)
	Cylinder bore diameter	STD	85.990 — 86.003 mm (3.3854 — 3.3859 in.)
		Maximum STD	86.203 mm (3.3938 in.)
		O/S 0.50	86.703 mm (3.4135 in.)
	Main bearing cap bolt thread outside diameter	STD	10.760 — 10.970 mm (0.4236 — 0.4319 in.)
		Minimum	10.40 mm (0.4094 in.)

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Piston and piston ring	Piston diameter	STD	85.950 — 85.960 mm (3.3839 — 3.3842 in.)
		O/S 0.50	86.450 — 86.460 mm (3.4035 — 3.4039 in.)
	Piston oil clearance	STD	0.030 — 0.053 mm (0.0012 — 0.0021 in.)
		Maximum	0.073 mm (0.0029 in.)
	Piston ring groove clearance	No.1	0.030 — 0.080 mm (0.0012 — 0.0031 in.)
		No.2	0.040 — 0.080 mm (0.0016 — 0.0031 in.)
	Piston ring end gap	STD No.1	0.220 — 0.350 mm (0.0087 — 0.0138 in.)
		No.2	0.450 — 0.600 mm (0.0177 — 0.0236 in.)
		Oil	0.130 — 0.380 mm (0.0051 — 0.0150 in.)
		Maximum No.1	0.95 mm (0.0374 in.)
		No.2	1.20 mm (0.0472 in.)
		Oil	0.98 mm (0.0386 in.)
Connecting rod	Thrust clearance	STD	0.160 — 0.312 mm (0.0063 — 0.0123 in.)
		Maximumt	0.35 mm (0.0138 in.)
	Connecting rod bearing center wall thickness		
	(Reference)	STD Mark 4	1.482 — 1.485 mm (0.0583 — 0.0585 in.)
		Mark 5	1.485 — 1.488 mm (0.0585 — 0.0586 in.)
		Mark 6	1.488 — 1.491 mm (0.0586 — 0.0587 in.)
	Connecting rod oil clearance	STD STD	0.030 — 0.055 mm (0.0012 — 0.0022 in.)
		U/S 0.25	0.031 — 0.071 mm (0.0012 — 0.0028 in.)
		Maximum	0.08 mm (0.0031 in.)
	Rod bend	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.)
	Bushing inside diameter		24.008 — 24.017 mm (0.9452 — 0.9455 in.)
	Piston pin diameter		24.000 — 24.009 mm (0.9449 — 0.9452 in.)
	Piston pin oil clearance	STD	0.005 — 0.011 mm (0.0002 — 0.0004 in.)
		Maximum	0.05 mm (0.0020 in.)
	Connecting rod bolt tension portion diameter	STD	7.800 — 7.900 mm (0.3071 — 0.3110 in.)
		Minimum	7.50 mm (0.2953 in.)
Crankshaft	Thrust clearance	STD	0.020 — 0.220 mm (0.0008 — 0.0087 in.)
		Maximum	0.30 mm (0.0118 in.)
	Thrust washer thickness		2.440 — 2.490 mm (0.0961 — 0.0980 in.)
	Main journal oil clearance	STD STD No.3	0.030 — 0.055 mm (0.0012 — 0.0022 in.)
		Others	0.024 — 0.049 mm (0.0009 — 0.0019 in.)
		U/S 0.25 No.3	0.030 — 0.070 mm (0.0012 — 0.0028 in.)
		Others	0.025 — 0.065 mm (0.0010 — 0.0026 in.)
		Maximum	0.08 mm (0.0031 in.)
	Main journal diameter	STD No.3	59.981 — 59.994 mm (2.3615 — 2.3620 in.)
		Others	59.987 — 60.000 mm (2.3617 — 2.3622 in.)
		U/S 0.25 No.3	59.740 — 59.750 mm (2.3520 — 2.3524 in.)
		Others	59.745 — 59.755 mm (2.3522 — 2.3526 in.)
	Main bearing center wall thickness	STD Mark 1	1.987 — 1.990 mm (0.0782 — 0.0783 in.)
	(Reference)	Mark 2	1.990 — 1.993 mm (0.0783 — 0.0785 in.)
		Mark 3	1.993 — 1.996 mm (0.0785 — 0.0786 in.)
	Crank pin diameter	STD	52.987 — 53.000 mm (2.0861 — 2.0866 in.)
		U/S 0.25	52.745 — 52.755 mm (2.0766 — 2.0770 in.)
	Circle runout	Maximum	0.03 mm (0.0012 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.)

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TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Distributor x Cylinder head		20	200	14
Camshaft bearing cap x Cylinder head		15	160	11
Cylinder head rear plate x Cylinder head		18	185	13
Plug plate, Water outlet x Cylinder head		20	200	15
Intake manifold x Cylinder head		29	300	21
Exhaust manifold x Cylinder head		49	500	36
Cylinder head x Cylinder block	1st	39	400	29
	2nd	Turn 90°	Turn 90°	Turn 90°
	3rd	Turn 90°	Turn 90°	Turn 90°
Cylinder head x Timing chain cover		21	210	15
Camshaft timing gear x Camshaft		73	750	54
Chain tensioner x Cylinder head		21	210	15
Fuel inlet pipe x Delivery pipe, Fuel filter		29.5	300	22
Intake manifold stay x Intake manifold, LH engine mounting bracket		37	380	27
Cylinder head cover x Cylinder head		5.0	55	44 in.·lbf
Oil jet x Cylinder block		18	185	13
Chain tensioner slipper x Cylinder block		27	270	20
Chain vibration damper x Cylinder block		29	300	21
Timing chain cover x Cylinder block				
	12 mm head for 35 mm (1.38 in.) length bolt	18	185	13
	12 mm head for except 35 mm (1.38 in.) length bolt	20	200	15
	14 mm head	39	440	29
Water bypass pipe x Thermostat guide plate		19.5	200	14
Alternator drive belt adjusting bar x Cylinder block		63.7	650	47
Crankshaft pulley x Crankshaft		259	2,650	191
Fluid coupling x Water pump		20.5	210	15
Alternator drive belt adjusting bar x Alternator		19	195	14
Alternator x Alternator bracket		59	600	44
Main bearing cap x Cylinder block	1st	39	400	29
	2nd	Turn 90°	Turn 90°	Turn 90°
Connecting rod cap x Connecting rod	1st	45	460	33
	2nd	Turn 90°	Turn 90°	Turn 90°
Rear oil seal retainer x Cylinder block		13	135	10
Engine coolant drain union x Cylinder block		24.5	250	18
Oil filter bracket x Cylinder block	Union bolt	68.5	700	51
	Nut	12	120	9
Engine mounting bracket x Cylinder block		51	520	38
Fuel filter x Cylinder block		20	200	15
Alternator bracket x Cylinder block		74.5	760	55
Rear end plate x Cylinder block		18	185	13
Flywheel x Crankshaft		88	900	65

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