

Chassis

Brake pads and disc					
Pad thickness		Limit	1.0 mm	0.039 in.	
Disc thickness	Limit	Front	23.0 mm	0.906 in.	
		Rear	9.0 mm	0.354	
Disc runout	Limit	Front	0.07 mm	in.	
		Rear	0.15 mm	0.0028 in.	
Brake linings and drums					
Lining thickness		Limit	1.0 mm	0.039 in.	
Drum inside diameter	Limit	Drum brake	201.0 mm	7.913 in.	
		Disc brake	171.0 mm	6.732 in.	
Front axle and suspension					
Ball joint vertical play		Limit	0 mm	0 in.	
Steering wheel play			30 mm	1.18 in.	
Torque specifications					
Front seat mounting bolts			37 N-m	375 kgf-cm	27 ft-lbf
Engine mounting center member-to-body mounting bolts			73 N-m	740 kgf-cm	54 ft-lbf
Front suspension lower crossmember-to-body mounting bolts			152 N-m	1,550 kgf-cm	112 ft-lbf
Rear suspension lower crossmember-to-body mounting bolts			159 N-m	1,620 kgf-cm	117 ft-lbf

ENGINE MECHANICAL (4A–FE)

Specifications

Intake manifold vacuum	at idle speed		60 kPa	450 mmHg	17.7 in.Hg
Compression pressure	at 250 rpm	STD	1,320 kPa (13.5 kgf/cm ² , 191 psi) or more		
	Difference of pressure between each cylinder	Limit	981 kPa 10.0 kgf/cm ² , 142 psi 98 kPa (1.0 kgf/cm ² , 14 psi) or less		
Idler pulley tension spring	Free length		38.4 mm	1.512 in.	
	Installed load at 51.9 mm (2.043 in.)		35 – 39 N	3.6 – 4.0 kgf 7.9 – 8.8 lbf	
Cylinder head	Warpage Cylinder block side	Limit	0.05 mm	0.020 in.	
	Manifold side	Limit	0.10 mm	0.039 in.	
	Valve seat Refacing angle		30°, 45°, 60°		
	Contacting angle		45°		
	Contacting width		1.2 – 1.6 mm	0.047 – 0.063 in.	
Valve guide bushing	Inside diameter		6.010 – 6.030 mm		0.2366 – 0.2374 in.
	Outside diameter (for repair part)	STD	11.048 – 11.059 mm		0.4350 – 0.4354 in.
		O/S 0.05	11.098 – 11.109 mm		0.4369 – 0.4374 in.

Specifications (Cont'd)

Valve	Valve overall length	STD	Intake	91.45 mm	3.6004 in.
			Exhaust	91.90 mm	3.6181 in.
	Valve face angle	Limit	Intake	90.95 mm	3.5807 in.
			Exhaust	91.40 mm	3.5984 in.
	Stem diameter			44.5°	
			Intake	5.970 – 5.985 mm	0.2350 – 0.2356 in.
	Stem oil clearance	STD	Exhaust	5.965 – 5.980 mm	0.2348 – 0.2354 in.
			Intake	0.025 – 0.060 mm	0.0010 – 0.0024 in.
		Limit	Exhaust	0.030 – 0.065 mm	0.0012 – 0.0026 in.
			Intake	0.08 mm	0.0031 in.
Margin thickness	STD	Exhaust	0.10 mm	0.0039 in.	
		Intake	0.08 mm	0.0031 in.	
	Limit	STD	0.8 – 1.2 mm	0.031 – 0.047 in.	
		Limit	0.5 mm	0.020 in.	
Valve spring	Squareness	Limit		2.0 mm 0.079 in.	
	Free length			43.8 mm 1.774 in.	
	Installed tension at 34.7 mm (1.366 in.)			143 – 155 N (14.6 – 15.8 kgf, 32.2 – 34.8 lbf)	
Valve lifter	Lifter diameter			27.975 – 27.985 mm	1.1014 – 1.1018 in.
	Lifter bore diameter			28.005 – 28.026 mm	1.1026 – 1.1034 in.
	Oil clearance	STD		0.020 – 0.051 mm	0.0008 – 0.0020 in.
		Limit		0.07 mm	0.0028 in.
Manifold	Warpage	Limit	Intake	0.20 mm	0.0079 in.
			Exhaust	0.30 mm	0.0118 in.
Camshaft and gear	Thrust clearance	STD	Intake	0.030 – 0.085 mm	0.0012 – 0.0033 in.
			Exhaust	0.035 – 0.090 mm	0.0014 – 0.0035 in.
	Journal oil clearance	Limit		0.11 mm	0.0043 in.
			STD	0.035 – 0.072 mm	0.0014 – 0.0028 in.
	Journal diameter	Limit		0.10 mm	0.0039 in.
			Exhaust No.1	24.949 – 24.965 mm	0.9822 – 0.9829 in.
	Circle runout	Others		22.949 – 22.965 mm	0.9035 – 0.9041 in.
			Limit	0.04 mm	0.0016 in.
	Cam lobe height	STD	Intake	35.210 – 35.310 mm	1.3862 – 1.3902 in.
			Exhaust	34.910 – 35.010 mm	1.3744 – 1.3783 in.
	Camshaft gear backlash	Limit	Intake	34.81 mm	1.3705 in.
			Exhaust	34.51 mm	1.3587 in.
Camshaft gear spring end free distance	STD		0.020 – 0.200 mm	0.0008 – 0.0079 in.	
		Limit	0.30 mm	0.0188 in.	
Cylinder block	Cylinder head surface warpage	Limit		0.05 mm	0.0020 in.
	Cylinder bore diameter	STD	Mark 1	81.000 – 81.010 mm	3.1890 – 3.1894 in.
			Mark 2	81.010 – 81.020 mm	3.1894 – 3.1898 in.
			Mark 3	81.020 – 81.030 mm	3.1898 – 3.1902 in.
	Limit	STD		81.23 mm	3.1980 in.
		O/S 0.50		81.73 mm	3.2177 in.

Specifications (Cont'd)

Piston and piston ring	Piston diameter	STD	Mark 1	80.930 – 80.940 mm	3.1862 – 3.1866 in.
			Mark 2	80.940 – 80.950 mm	3.1866 – 3.1870 in.
			Mark 3	80.950 – 80.960 mm	3.1870 – 3.1874 in.
		0/S 0.50		81.430 – 81.460 mm	3.2059 – 3.2071 in.
	Piston oil clearance	STD		0.060 – 0.080 mm	0.0024 – 0.0031 in.
		Limit		0.10 mm	0.0039 in.
	Piston ring groove clearance	No.1		0.040 – 0.081 mm	0.0016 – 0.0032 in.
		No.2		0.030 – 0.070 mm	0.0012 – 0.0028 in.
	Piston ring end gap	STD	No.1	0.250 – 0.450 mm	0.0098 – 0.0177 in.
			No.2	0.150 – 0.400 mm	0.0059 – 0.0157 in.
			Oil	0.100 – 0.700 mm	0.0039 – 0.0276 in.
		Limit	No.1	1.05 mm	0.0413 in.
		No.2	1.00 mm	0.0394 in.	
		Oil	1.30 mm	0.0512 in.	
Connecting rod	Thrust clearance	STD		0.150 – 0.250 mm	0.0059 – 0.0098 in.
		Limit		0.30 mm	0.0118 in.
	Connecting rod bearing center wall thickness	STD	Mark 1	1.486 – 1.490 mm	0.0585 – 0.0587 in.
			Mark 2	1.490 – 1.494 mm	0.0587 – 0.0588 in.
			Mark 3	1.494 – 1.498 mm	0.0588 – 0.0590 in.
	Connecting rod oil clearance	STD	STD	0.020 – 0.051 mm	0.0008 – 0.0020 in.
			U/S 0.25	0.019–0.065 mm	0.0007 – 0.0026 in.
		Limit		0.08 mm	0.0031 in.
			Rod bending Limit per 100 mm (3.94 in.)	0.05 mm	0.0020 in.
			Rod twist Limit per 100 mm (3.94 in.)	0.05 mm	0.0020 in.
Crankshaft	Thrust clearance			0.020 – 0.220 mm	0.0008 – 0.0087 in.
		Limit		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	0.015–0.033 mm	0.0006 – 0.0013 in.
			U/S 0.25	0.018 – 0.056 mm	0.0007 – 0.0022 in.
		Limit		0.10 mm	0.0039 in.
	Main journal diameter		STD	47.982 – 48.000 mm	1.8891 – 1.8898 in.
	Main bearing center wall thickness		U/S 0.25	47.745 – 47.755 mm	1.8797 – 1.8881 in.
		STD	Mark 1	2.002 – 2.005 mm	0.0788 – 0.0789 in.
			Mark 2	2.005 – 2.008 mm	0.0789 – 0.0791 in.
			Mark 3	2.008 – 2.011 mm	0.0791 – 0.0792 in.
			Mark 4	2.011 – 2.014 mm	0.0792 – 0.0793 in.
			Mark 5	2.014 – 2.017 mm	0.0793 – 0.0794 in.
	Crank pin diameter	STD		39.985 – 40.000 mm	1.5742 – 1.5748 in.
		U/S 0.25		39.745 – 39.755 mm	1.5648 – 1.5652 in.
Circle runout		Limit	0.06 mm	0.0024 in.	
Main journal taper and out-of-round		Limit	0.02 mm	0.0008 in.	
Crank pin taper and out-of-round		Limit	0.02 mm	0.0008 in.	

Torque Specifications

Part tightened	N·m	kgf-cm	ft-lbf
Crankshaft pulley x Crankshaft	118	1,200	87
Camshaft timing pulley x Camshaft	59	600	43
Idler pulley x Cylinder block	37	375	27
Cylinder head x Cylinder block	60	610	44
Camshaft bearing cap x Cylinder head	13	130	9
PS drive belt adjusting strut x Cylinder head	39	400	29
Engine hanger x Cylinder head	27	280	20
Fan belt adjusting bar x Cylinder head	20	200	14
Cylinder head cover x Cylinder head	7.8	80	69 in.-lbf
Intake manifold x Cylinder head	19	195	14
Intake manifold stay x Intake manifold	19	195	14
Intake manifold stay x Cylinder block	39	400	29
EGR valve x Intake manifold	13	130	9
ACV x Intake manifold	13	130	9
Water inlet housing x Cylinder head	20	200	14
Water outlet x Cylinder head	15	150	11
Exhaust manifold x Cylinder head	25	250	18
Exhaust manifold stay x Exhaust manifold	39	400	29
Exhaust manifold stay x Cylinder block	39	400	29
Main bearing cap x Cylinder block	60	610	44
Connecting rod cap x Connecting rod	49	500	36
Rear oil seal retainer x Cylinder block	9.3	95	82 in.-lbf
PS pump bracket x Cylinder block	19	195	14
RH engine mounting bracket x Cylinder block	51	525	38
Alternator bracket x Cylinder block	39	400	29
Rear end plate x Cylinder block	9.3	95	82 in.-lbf
Flywheel (M/T) x Crankshaft	78	800	58
Drive plate (A/T) x Crankshaft	64	650	47
LH engine mounting bracket x Transaxle	52	530	38
LH engine mounting insulator x LH mounting bracket	48	490	35
LH engine mounting insulator x Body	87	890	64
R H engine mounting insulator x R H mounting bracket	52	530	38
	Nut		
	Bolt		
	64	650	47
RH engine mounting insulator x Body	87	890	64
R H engine mounting stay x R H mounting insulator	42	430	31
RH engine mounting stay x PS drive belt adjusting strut	42	430	31
LH engine mounting stay x Transaxle	21	210	15
LH engine mounting stay x LH mounting insulator	21	210	15
Front engine mounting bracket x Transaxle	77	790	57
Rear engine mounting bracket x Transaxle	77	790	57
Engine mounting center member x Body	52	530	38
Engine mounting center member x Front mounting insulator	64	650	47
Engine mounting center member x Rear mounting insulator	64	650	47
Front engine mounting bracket x Front mounting insulator	87	890	64
Rear engine mounting bracket x Rear mounting insulator	87	890	64

Torque Specifications (Cont'd)

Part tightened	N-m	kgf-cm	ft-lbf
PS pump x Bracket	39	400	29
A/C compressor x Bracket	25	250	18
Suspension lower crossmember x Body	152	1,550	112

ENGINE MECHANICAL (3S-GTE)

Specifications

Idle speed				800 ± 50 rpm
Intake manifold vacuum	at idle speed			60 kPa 450 mmHg 17.7 in.Hg
Compression	at 250 rpm	STD Limit		1,128 kPa (11.5 kgf/cm ² , 164 psi) or more 883 kPa 9.0 kgf/cm ² 128 psi 98 kPa (1.0 kgf/cm ² , 14 psi) or less
Timing belt tensioner	Protrusion			8.5 – 9.5 m m 0.335 – 0.374 in.
Cylinder head	warpage	Cylinder block side	Limit	0.20 mm 0.0079 in.
		Intake manifold side	Limit	0.20 mm 0.0079 in.
		Exhaust manifold side	Limit	0.30 mm 0.0118 in.
	Valve seat	Refacing angle		30°, 45°, 75°
		Contacting angle		45°
	Contacting width			1.0 – 1.4 mm 0.039 – 0.055 in.
Valve guide bushing	Inside diameter			6.000 – 6.018 mm 0.2362 – 0.2369 in.
	Outside diameter (for repair part)	STD		11.030 – 11.041 mm 0.4343 – 0.4347 in.
		O/S 0.05		11.080 – 11.091 mm 0.4362 – 0.4367 in.
Valve	Valve overall length	STD	Intake	100.50 m m 3.9567 in.
			Exhaust	99.55 mm 3.9193 in.
		Limit	Intake	99.80 m m 3.9291 in.
			Exhaust	98.85 mm 3.8917 in.
	Valve face angle			44.5°
	Stem diameter		Intake	5.960 – 5.975 mm 0.2346 – 0.2352 in.
			Exhaust	5.955 – 5.970 mm 0.2344 – 0.2350 in.
	Stem oil clearance	STD	Intake	0.025 – 0.058 mm 0.0010 – 0.0023 in.
			Exhaust	0.030 – 0.063 mm 0.0012 – 0.0025 in.
		Limit	Intake	0.08 mm 0.0031 in.
			Exhaust	0.10 mm 0.0039 in.
Margin thickness	STD		0.8 – 1.2 mm 0.031 – 0.047 in.	
	Limit		0.5 mm 0.020 in.	
Valve spring	Squareness	Limit		2.0 mm 0.079 in.
	Free length			44.43 mm 1.7492 in.
	Installed tension at 34.4 mm (1.354 in.)			201 – 236 N (20.5 – 24.1 kgf, 45.2 – 53.1 lbf)