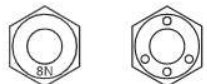
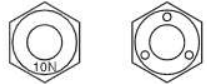


SERVICE SPECIFICATIONS – STANDARD BOLT

SS-3

HOW TO DETERMINE NUT STRENGTH

Nut Type

Present Standard Hexagon Nut	Old Standard Hexagon Nut		Class
	Cold Forging Nut	Cutting Processed Nut	
No Mark 			4N
No Mark (w/ Washer) 	No Mark (w/ Washer) 	No Mark 	5N (4T)
			6N
			7N (5T)
			8N
		No Mark 	10N (7T)
			11N
			12N

HINT:

- *: Nut with 1 or more marks on one side surface of the nut.
- Use a nut with the same nut strength classification number (or greater) as the bolt strength classification number when tightening parts with a bolt and nut.

Example:

- Bolt = 4T
- Nut = 4N or more

SS

SS-30**SERVICE SPECIFICATIONS – BRAKE CONTROL****TORQUE SPECIFICATIONS**

Part tightened	N*m	kgf*cm	ft.*lbf
Brake actuator assembly x Brake actuator bracket	8	82	71 in.*lbf
Brake actuator with No. 1 brake actuator bracket x Brake actuator bracket assembly	19	195	14
Brake actuator bracket x Body	19	195	14
Brake actuator assembly x Brake line	15 (14)	155 (143)	11 (10)
Cooler bracket x Body	9.8	100	87 in.*lbf
Front speed sensor x Knuckle	8	82	71 in.*lbf
Front speed sensor x Body	5	51	44 in.*lbf
Front speed sensor x Absorber	19	194	14
Yaw rate and acceleration sensor	13	133	10
Skid control ECU x Body	5	51	44 in.*lbf
Wiring harness clamp bracket x Body	8	82	71 in.*lbf
Brake control power supply assembly x Bracket	5	51	44 in.*lbf
Brake control power supply with bracket x Body	5	51	44 in.*lbf
Brake pedal stroke sensor x Brake pedal support assembly	8.5	87	75 in.*lbf

SS

SS-10

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

TORQUE SPECIFICATIONS

Part Tightened		N ^o m	kgf ^o cm	ft. ^o lbf
Engine mounting bracket No. 2 RH x Timing chain cover		52	531	38
Engine mounting bracket RH x Cylinder block		54	551	40
Engine moving control rod with bracket x Engine mounting bracket No. 2 RH		64	653	47
Engine moving control rod with bracket x Fender apron RH		64	653	47
Engine mounting stay No. 2 RH x Cylinder head		64	653	47
Engine mounting stay No. 2 RH x Engine mounting bracket No. 2 RH		64	653	47
Engine hanger No. 1 x Cylinder head		38	387	28
Engine hanger No. 2 x Cylinder head		38	387	28
ECT sensor x Cylinder head		20	204	15
Knock sensor x Cylinder block		20	204	15
Engine oil pressure switch assembly x Cylinder head		15	153	11
Water by-pass pipe No. 1 x Cylinder block		9.0	92	80 in. ^o lbf
Transverse engine engine mounting bracket x Cylinder block		54	551	40
Drive shaft bearing bracket x Cylinder block		64	653	47
V-ribbed belt tensioner assembly x V-ribbed belt tensioner cover assembly		9.0	92	80 in. ^o lbf
Idle pulley bracket x Chain tensioner cover assembly		60	607	44
V-ribbed belt tensioner assembly x Timing chain cover	Bolt A	52	531	38
	Bolt B	21	214	15
Ignition coil assembly x Cylinder head		9.0	92	80 in. ^o lbf
Engine cover x Cylinder head cover		7.0	71	62 in. ^o lbf
Exhaust manifold converter x Cylinder head		37	378	27
Exhaust manifold stay x Exhaust manifold converter		44	449	32
Manifold converter insulator No. 1 x Exhaust manifold converter		12	122	9
Oil level gauge guide x Water by-pass pipe No. 1		9.0	92	80 in. ^o lbf
Intake manifold x Cylinder head		30	306	22
Transmission control cable assembly x Control shaft		13	133	10
Transmission input damper assembly x Crankshaft		30	306	22
Flywheel sub-assembly x Crankshaft		130	1,330	96
Engine mounting insulator LH x Automatic transaxle assembly		95	969	70
Engine mounting insulator LH x Manual transaxle assembly		143	1,459	105
Engine mounting insulator RH x Engine mounting bracket RH	Nut A	95	969	70
Engine mounting insulator RH x Frame	Nut B	87	888	64
Engine mounting insulator FR x Engine mounting bracket FR		87	888	64
Frame side plate x Front frame assembly	Bolt A	85	867	63
Frame side plate x Body	Bolt B	32	326	24
Front suspension member brace rear x Front frame assembly	Bolt C	85	867	63
Front suspension member brace rear x Body	Bolt D	32	326	24
Electric inverter compressor x Cylinder block		25	250	18
Speed sensor front LH x Steering knuckle		8.0	82	71 in. ^o lbf
Speed sensor front RH x Steering knuckle		8.0	82	71 in. ^o lbf
Air cleaner assembly x Body		5.0	51	44 in. ^o lbf
Air cleaner inlet assembly x Body		5.0	51	44 in. ^o lbf
Balanceshaft housing x Stiffening crankcase assembly	1st	22	220	16
	2nd	Turn 90°	Turn 90°	Turn 90°
Stiffening crankcase assembly x Cylinder block		24	245	18
with head taper screw plug No. 1 x Cylinder block		26	265	19
No. 1 oil nozzle sub-assembly x Cylinder block		7.0	71	62 in. ^o lbf
Oil control valve filter x Cylinder block		30	306	22

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

SS-11

Part Tightened		N*m	kgf*cm	ft.*lbf
Cylinder block water drain cock x Stiffening crankcase assembly		25 13	255 130	18 9
Cylinder head x Cylinder block	1st	79	806	58
	2nd	Turn 90°	Turn 90°	Turn 90°
Camshaft timing gear assembly x Camshaft		54	551	40
Camshaft timing sprocket x Camshaft		54	551	40
Camshaft bearing cap No. 1 x Cylinder head		30	301	22
Camshaft bearing cap No. 2 x Cylinder head		30	301	22
Camshaft bearing cap No. 3 x Cylinder head		9.0	92	80 in.*lbf
Oil pump assembly x Stiffening crankcase assembly		19	194	14
Chain tensioner plate x Stiffening crankcase assembly		12	122	9
Oil pump drive gear x Oil pump		30	301	22
Chain vibration damper No. 1 x Cylinder head		9.0	92	80 in.*lbf
Chain vibration damper No. 1 x Cylinder block		9.0	92	80 in.*lbf
Chain tensioner slipper x Cylinder block		19	194	14
Timing chain guide x Crankshaft bearing cap No. 1		9.0	92	80 in.*lbf
Oil pan x Stiffening crankcase assembly		9.0	92	80 in.*lbf
Oil pan drain plug x Oil pan		25	255	18
Timing chain cover x Cylinder block, Cylinder head	Bolt A	9.0	92	80 in.*lbf
	Bolt B	25	255	18
	Bolt C	55	561	41
	Nut	11	112	8
Crankshaft position sensor x Timing chain cover		9.0	92	80 in.*lbf
Crankshaft pulley x Crankshaft		170	1,733	125
Chain tensioner assembly No. 1 x Timing chain cover		9.0	92	80 in.*lbf
Camshaft position sensor x Cylinder head		9.0	92	80 in.*lbf
Radio setting condenser x Cylinder head		10	102	7
Cylinder head cover x Cylinder head	Bolt A	11	112	8
	Bolt B	14	143	10
	Nut	11	112	8
Cylinder head cover x Engine wire		8.4	86	74 in.*lbf
Oil filter union x Stiffening crankcase assembly	Oil filter union	79	806	58
	Nut	9.0	92	80 in.*lbf
	Union bolt	25	255	18
Oil filter x Oil filter union		13	133	10
Spark plug x Cylinder head		19	194	14
Ventilation valve x Cylinder head cover		19	194	14
No. 1 exhaust pipe support bracket x Body		19	194	14
Stud bolt (cylinder head)	Bolt A	5	51	44 in.*lbf
	Bolt B	5	51	44 in.*lbf
	Bolt C	9.5	97	84 in.*lbf
	Bolt D	9.5	97	84 in.*lbf
Stud bolt (cylinder block)	Bolt A	5.0	51	44 in.*lbf
	Bolt B	22	220	16
	Bolt C	9.5	97	84 in.*lbf
	Bolt D	5.0	51	44 in.*lbf
Crankshaft bearing cap x Cylinder block	1st	20	204	15
	2nd	40	408	29
	3rd	Turn 90°	Turn 90°	Turn 90°

SS

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SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

Part Tightened		N*m	kgf*cm	ft.*lbf
Connecting rod cap x Connecting rod	1st	25	250	18
	2nd	Turn 90°	Turn 90°	Turn 90°

SS

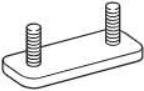
SERVICE SPECIFICATIONS – STANDARD BOLT

SS-1

STANDARD BOLT

HOW TO DETERMINE BOLT STRENGTH

Bolt Type

Hexagon Head Bolt		Stud Bolt	Weld Bolt	Class
Normal Recess Bolt	Deep Recess Bolt			
	No Mark 	No Mark 		4T
 				5T
	w/ Washer 			6T
 	 			7T
		 		8T
				9T
	 			10T
	 			11T

SS

SS-2

SERVICE SPECIFICATIONS – STANDARD BOLT

SPECIFIED TORQUE FOR STANDARD BOLTS

Class	Diameter (mm)	Pitch (mm)	Specified torque					
			Hexagon head bolt			Hexagon flange bolt		
			N*m	kgf*cm	ft.*lbf	N*m	kgf*cm	ft.*lbf
4T	6	1	5	55	48 in.*lbf	6	60	52 in.*lbf
	8	1.25	12.5	130	9	14	145	10
	10	1.25	26	260	19	29	290	21
	12	1.25	47	480	35	53	540	39
	14	1.5	74	760	55	84	850	61
	16	1.5	115	1,150	83	-	-	-
5T	6	1	6.5	65	56 in.*lbf	7.5	75	65 in.*lbf
	8	1.25	15.5	160	12	17.5	175	13
	10	1.25	32	330	24	36	360	26
	12	1.25	59	600	43	65	670	48
	14	1.5	91	930	67	100	1,050	76
	16	1.5	140	1,400	101	-	-	-
6T	6	1	8	80	69 in.*lbf	9	90	78 in.*lbf
	8	1.25	19	195	14	21	210	15
	10	1.25	39	400	29	44	440	32
	12	1.25	71	730	53	80	810	59
	14	1.5	110	1,100	80	125	1,250	90
	16	1.5	170	1,750	127	-	-	-
7T	6	1	10.5	110	8	12	120	9
	8	1.25	25	260	19	28	290	21
	10	1.25	52	530	38	58	590	43
	12	1.25	95	970	70	105	1,050	76
	14	1.5	145	1,500	108	165	1,700	123
	16	1.5	230	2,300	166	-	-	-
8T	8	1.25	29	300	22	33	330	24
	10	1.25	61	620	45	68	690	50
	12	1.25	110	1,100	80	120	1,250	90
9T	8	1.25	34	340	25	37	380	27
	10	1.25	70	710	51	78	790	57
	12	1.25	125	1,300	94	140	1,450	105
10T	8	1.25	38	390	28	42	430	31
	10	1.25	78	800	58	88	890	64
	12	1.25	140	1,450	105	155	1,600	116
11T	8	1.25	42	430	31	47	480	35
	10	1.25	87	890	64	97	990	72
	12	1.25	155	1,600	116	175	1,800	130

SS-4

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE CONTROL SYSTEM

2AZ-FXE ENGINE CONTROL SYSTEM

SERVICE DATA

Camshaft timing oil control valve assembly		
Standard resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Camshaft position sensor		
Standard resistance	1 (G+) - 2 (G-)	835 to 1,400 Ω at Cold
	1 (G+) - 2 (G-)	1,060 to 1,645 Ω at Hot
Crankshaft position sensor		
Standard resistance	Cold	985 to 1,600 Ω
	Hot	1,265 to 1,890 Ω
Throttle body assembly		
Standard resistance	at 20°C (68°F)	
	2 (M+) - 1 (M-)	0.3 to 100 Ω
E.F.I. engine coolant temperature sensor		
Standard resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Knock sensor		
Standard resistance	at 20°C (68°F)	120 to 280 kΩ
Circuit opening relay (engine room R/B Unit D)		
Specified condition	1E-8 - 1E-12	Below 1 Ω
	1E-7 - 1E-13	10 kΩ or higher
	1E-7 - 1E-13	Below 1 Ω (when battery voltage is applied to terminals 1G-5 and 1H-9)
EFI relay (engine room R/B Unit D)		
Specified condition	1E-9 - 1E-10	Below 1 Ω
	1E-7 - 1E-12	10 kΩ or higher
	1E-7 - 1E-12	Below 1 Ω (when battery voltage is applied to terminals 1H-10 and 1H-2)

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE CONTROL SYSTEM**SS-5****TORQUE SPECIFICATIONS**

Part Tightened		N*m	kgf*cm	ft.*lbf
Throttle body assembly x Intake manifold		30	305	22
Knock sensor x Cylinder block sub-assembly		20	204	15
Accelerator pedal rod assembly x Body		5.4	55	48 in.*lbf
Camshaft timing oil control valve assembly x Cylinder head sub-assembly		9.0	92	80 in.*lbf
Camshaft position sensor x Cylinder head sub-assembly		9.0	92	80 in.*lbf
Crankshaft position sensor x Timing chain cover sub-assembly		9.0	92	80 in.*lbf
Engine coolant temperature sensor x Cylinder head sub-assembly		20	204	15
Intake manifold x Cylinder head sub-assembly		30	306	22
Cowl top panel outer sub-assembly x Body	Nut	5.0	51	44 in.*lbf
	Bolt	85	867	63

SS

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

SS-5

2AZ-FXE ENGINE MECHANICAL

SERVICE DATA

Ignition timing	with Terminals TC and CG of DLC3 connected	8 to 12°BTC at idle (Transmission in neutral)
	with Terminals TC and CG of DLC3 disconnected	5 to 15°BTC at idle (Transmission in neutral)
Idle speed		950 to 1,050 rpm (Transmission in neutral)
Compression	Compression pressure	1.360 MPa (13.9 kgf/cm ² , 198 psi)
	Minimum pressure	0.98 MPa (10 kgf/cm ² , 142 psi)
	Difference between each cylinder	100 kPa (1.0 kgf/cm ² , 14 psi)
Valve clearance (cold)	Intake	0.19 to 0.29 mm (0.0075 to 0.0114 in.)
	Exhaust	0.38 to 0.48 mm (0.0150 to 0.0189 in.)
Balanceshaft		
Standard thrust clearance		0.050 to 0.090 mm (0.0020 to 0.0035 in.)
Maximum thrust clearance		0.09 mm (0.0035 in.)
Standard oil clearance		0.004 to 0.049 mm (0.0002 to 0.0019 in.)
Maximum oil clearance		0.049 mm (0.0019 in.)
Housing journal bore diameter	Mark 1	26.000 to 26.006 mm (1.0236 to 1.0239 in.)
	Mark 2	26.007 to 26.012 mm (1.0239 to 1.0241 in.)
	Mark 3	26.013 to 26.018 mm (1.0241 to 1.0243 in.)
Journal diameter	Mark 1	22.985 to 23.000 mm (0.9049 to 0.9055 in.)
	Mark 2	22.985 to 23.000 mm (0.9049 to 0.9055 in.)
	Mark 3	22.985 to 23.000 mm (0.9049 to 0.9055 in.)
	Standard bolt length	58.3 to 59.7 mm (2.295 to 2.350 in.)
	Maximum bolt length	60.3 mm (2.374 in.)
Bearing center wall thickness	Mark 1	1.486 to 1.489 mm (0.0585 to 0.0586 in.)
	Mark 2	1.490 to 1.492 mm (0.0586 to 0.0587 in.)
	Mark 3	1.493 to 1.495 mm (0.0587 to 0.0589 in.)
Oil pump drive sprocket	Minimum sprocket diameter (with chain)	48.2 mm (1.898 in.)
Oil pump drive shaft sprocket	Minimum sprocket diameter (with chain)	48.2 mm (1.898 in.)
Crankshaft timing sprocket	Minimum sprocket diameter (with chain)	51.6 mm (2.031 in.)
Chain tensioner slipper	Maximum wear	1.0 mm (0.039 in.)
Chain vibration damper No. 1	Maximum wear	1.0 mm (0.039 in.)
Chain tensioner plate	Maximum wear	0.5 mm (0.020 in.)
Cylinder head set bolt	Standard bolt length	141.3 to 142.7 mm (5.563 to 5.618 in.)
	Maximum bolt length	144.2 mm (5.677 in.)
Chain sub-assembly	Maximum chain elongation	114.5 mm (4.508 in.)
No. 2 Chain sub-assembly	Maximum chain elongation	102.2 mm (4.024 in.)
Camshaft timing gear assembly	Minimum gear or sprocket diameter (with chain)	97.3 mm (3.831 in.)
Camshaft timing sprocket	Minimum gear or sprocket diameter (with chain)	97.3 mm (3.831 in.)
Camshaft (Intake)		
Maximum circle runout		0.03 mm (0.0012 in.)
Standard cam lobe height		44.516 to 44.616 mm (1.7526 to 1.7565 in.)
Maximum cam lobe height		44.406 mm (1.7483 in.)
No. 1 journal diameter		35.971 to 35.985 mm (1.4162 to 1.4167 in.)
Outer journal diameter		22.959 to 22.975 mm (0.9039 to 0.9045 in.)

SS

SS-6

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

Standard thrust clearance	Intake	0.040 to 0.095 mm (0.0016 to 0.0037 in.)
Maximum thrust clearance		0.110 mm (0.0043 in.)
Standard oil clearance	No. 1 journal bearing mark 1	0.007 to 0.038 mm (0.0003 to 0.0015 in.)
	No. 1 journal bearing mark 2	0.008 to 0.038 mm (0.0003 to 0.0015 in.)
	No. 1 journal bearing mark 3	0.008 to 0.038 mm (0.0003 to 0.0015 in.)
	Other journals	0.025 to 0.062 mm (0.0010 to 0.0024 in.)
Maximum oil clearance		0.070 mm (0.0028 in.)
Cylinder head journal bore diameter	Mark 1	40.000 to 40.008 mm (1.5748 to 1.5752 in.)
	Mark 2	40.009 to 40.017 mm (1.5752 to 1.5755 in.)
	Mark 3	40.018 to 40.025 mm (1.5755 to 1.5758 in.)
Standard bearing center wall thickness	Mark 1	2.000 to 2.004 mm (0.0787 to 0.0789 in.)
	Mark 2	2.005 to 2.008 mm (0.0789 to 0.0791 in.)
	Mark 3	2.009 to 2.012 mm (0.0791 to 0.0792 in.)
Camshaft journal diameter	Mark 1	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
	Mark 2	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
	Mark 3	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
Camshaft No. 2 (Exhaust)		
Maximum circle runout		0.03 mm (0.0012 in.)
Standard cam lobe height		45.983 to 46.083 mm (1.8104 to 1.8143 in.)
Minimum cam lobe height		45.873 mm (1.8060 in.)
No. 1 journal diameter		35.971 to 35.985 mm (1.4162 to 1.4167 in.)
Other journal diameter		22.959 to 22.975 mm (0.9039 to 0.9045 in.)
Standard thrust clearance	Exhaust	0.080 to 0.135 mm (0.0032 to 0.0053 in.)
Maximum thrust clearance		0.150 mm (0.0059 in.)
Standard oil clearance	No. 1 journal	0.015 to 0.054 mm (0.0006 to 0.0021 in.)
	Other journals	0.025 to 0.062 mm (0.0010 to 0.0024 in.)
Maximum oil clearance		0.100 mm (0.0039 in.)
Cylinder head journal bore diameter	Mark 1	40.000 to 40.008 mm (1.5748 to 1.5752 in.)
	Mark 2	40.009 to 40.017 mm (1.5752 to 1.5755 in.)
	Mark 3	40.018 to 40.025 mm (1.5755 to 1.5758 in.)
Standard bearing center wall thickness	Mark 1	2.000 to 2.004 mm (0.00787 to 0.0789 in.)
	Mark 2	2.005 to 2.008 mm (0.0789 to 0.0791 in.)
	Mark 3	2.009 to 2.012 mm (0.0791 to 0.0792 in.)
Camshaft journal diameter	Mark 1	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
	Mark 2	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
	Mark 3	35.971 to 35.985 mm (1.4162 to 1.4167 in.)
Intake manifold	Maximum warpage	0.20 mm (0.0079 in.)
Exhaust manifold	Maximum warpage	0.70 mm (0.0276 in.)
Cylinder head		
Maximum warpage	Cylinder block side	0.05 mm (0.0020 in.)
	Intake manifold side	0.08 mm (0.0031 in.)
	Exhaust manifold side	0.08 mm (0.0031 in.)
Inner compression spring	Free length	47.43 mm (1.867 in.)
	Maximum deviation	1.6 mm (0.063 in.)
Intake valve	Standard overall length	101.71 mm (4.0043 in.)
	Minimum overall length	101.21 mm (3.9846 in.)
	Valve stem diameter	5.470 to 5.485 mm (0.2154 to 0.2159 in.)
	Standard margin thickness	1.05 to 1.45 mm (0.0413 to 0.0571 in.)
	Minimum margin thickness	0.50 mm (0.0197 in.)

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

SS-7

Exhaust valve	Standard overall length	101.15 mm (3.9823 in.)
	Minimum overall length	100.70 mm (3.9646 in.)
	Valve stem diameter	5.465 to 5.480 mm (0.2152 to 0.2157 in.)
	Standard margin thickness	1.20 to 1.60 mm (0.0472 to 0.0630 in.)
	Minimum margin thickness	0.50 mm (0.0197 in.)
Intake valve guide bush	Bush inside diameter	5.510 to 5.530 mm (0.2169 to 0.2177 in.)
	Standard bush oil clearance	0.025 to 0.060 mm (0.0010 to 0.0024 in.)
	Minimum bush oil clearance	0.080 mm (0.0031 in.)
Bush bore diameter	Use STD	10.285 to 10.306 mm (0.4049 to 0.4057 in.)
	Use O/S 0.05	10.335 to 10.356 mm (0.4069 to 0.4077 in.)
Protrusion height		9.6 to 10.0 mm (0.3779 to 0.3937 in.)
Standard oil clearance		0.025 to 0.060 mm (0.0010 to 0.0024 in.)
Exhaust valve guide bush	Bush inside diameter	5.510 to 5.530 mm (0.2169 to 0.2177 in.)
	Standard oil clearance	0.030 to 0.065 mm (0.0012 to 0.0026 in.)
	Minimum oil clearance	0.100 mm (0.0039 in.)
Bush bore diameter	Use STD	10.285 to 10.306 mm (0.4049 to 0.4057 in.)
	Use O/S 0.05	10.335 to 10.356 mm (0.4069 to 0.4077 in.)
Protrusion height		9.6 to 10.0 mm (0.3779 to 0.3937 in.)
Standard oil clearance		0.030 to 0.065 mm (0.0012 to 0.0026 in.)
Valve lifter	Lifter diameter	30.966 to 30.976 mm (1.2191 to 1.2195 in.)
	Lifter bore diameter	31.009 to 31.025 mm (1.2208 to 1.2215 in.)
	Standard oil clearance	0.033 to 0.059 mm (0.0013 to 0.0023 in.)
	Maximum oil clearance	0.070 mm (0.0028 in.)
Connecting rod		
Standard thrust clearance		0.160 to 0.362 mm (0.0063 to 0.0143 in.)
Maximum thrust clearance		0.362 mm (0.0143 in.)
Standard oil clearance		0.032 to 0.063 mm (0.0013 to 0.0025 in.)
Maximum oil clearance		0.063 mm (0.0025 in.)
Connecting rod bearing center wall thickness (Reference)	Mark 1	1.485 to 1.488 mm (0.0585 to 0.0586 in.)
	Mark 2	1.489 to 1.491 mm (0.0586 to 0.0587 in.)
	Mark 3	1.492 to 1.494 mm (0.0587 to 0.0588 in.)
Connecting rod small end bore diameter		22.005 to 22.014 mm (0.8663 to 0.8667 in.)
Connecting rod small end bore diameter (Reference)	Mark A	22.005 to 22.008 mm (0.8663 to 0.8665 in.)
	Mark B	22.009 to 22.011 mm (0.8665 to 0.8666 in.)
	Mark C	22.012 to 22.014 mm (0.8666 to 0.8667 in.)
Standard oil clearance		0.005 to 0.011 mm (0.0002 to 0.0004 in.)
Maximum oil clearance		0.011 mm (0.0004 in.)
Maximum rod out-of alignment per 100 mm (3.94 in.)		0.05 mm (0.0020 in.)
Maximum rod twist per 100 mm (3.94 in.)		0.15 mm (0.0059 in.)
Cylinder block	Maximum warpage	0.05 mm (0.0020 in.)
	Standard cylinder bore diameter	88.500 to 88.513 mm (3.4843 to 3.4847 in.)
	Maximum cylinder bore diameter	88.633 mm (3.4894 in.)
Piston		
Standard piston diameter		88.469 to 88.479 mm (3.4830 to 3.4834 in.)
Standard piston oil clearance		0.021 to 0.044 mm (0.0008 to 0.0017 in.)
Maximum piston oil clearance		0.10 mm (0.0039 in.)
Piston pin bore diameter		22.001 to 22.010 mm (0.8662 to 0.8665 in.)
Piston pin bore diameter (Reference)	Mark A	22.001 to 22.004 mm (0.8662 to 0.8663 in.)
	Mark B	22.005 to 22.007 mm (0.8663 to 0.8664 in.)
	Mark C	22.008 to 22.010 mm (0.8664 to 0.8665 in.)

SS

SS-8

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

Piston ring		
Ring groove clearance	No. 1 Ring	0.020 to 0.070 mm (0.0008 to 0.0028 in.)
	No. 2 Ring	0.020 to 0.060 mm (0.0008 to 0.0024 in.)
	Oil Ring	0.020 to 0.070 mm (0.0008 to 0.0028 in.)
Standard end gap	No. 1 Ring	0.24 to 0.31 mm (0.0094 to 0.0122 in.)
	No. 2 Ring	0.33 to 0.43 mm (0.0130 to 0.0169 in.)
	Oil Ring	0.10 to 0.30 mm (0.0040 to 0.0119 in.)
Maximum end gap	No. 1 Ring	0.89 mm (0.0350 in.)
	No. 2 Ring	1.37 mm (0.0539 in.)
	Oil Ring	0.73 mm (0.0287 in.)
Piston pin		
Standard piston pin diameter		21.997 to 22.006 mm (0.8660 to 0.8664 in.)
Piston pin diameter (Reference)	Mark A	21.997 to 22.000 mm (0.8660 to 0.8661 in.)
	Mark B	22.001 to 22.003 mm (0.8662 to 0.8663 in.)
	Mark C	22.004 to 22.006 mm (0.8663 to 0.8664 in.)
	Mark A	21.997 to 22.000 mm (0.8660 to 0.8661 in.)
	Mark B	22.001 to 22.003 mm (0.8662 to 0.8663 in.)
	Mark C	22.004 to 22.006 mm (0.8663 to 0.8664 in.)
Standard oil clearance		0.001 to 0.007 mm (0.0004 to 0.0003 in.)
Maximum oil clearance		0.010 mm (0.0004 in.)
Connecting rod bolt	Standard diameter	7.0 to 7.3 mm (0.276 to 0.287 in.)
	Maximum diameter	7.0 mm (0.276 in.)
Crankshaft		
Standard thrust clearance		0.040 to 0.240 mm (0.0016 to 0.0095 in.)
Maximum thrust clearance		0.30 mm (0.0118 in.)
Thrust washer thickness		1.930 to 1.980 mm (0.0760 to 0.0780 in.)
Cylinder block main journal bore diameter (Reference)	Mark 0	59.000 to 59.002 mm (2.3228 to 2.3229 in.)
	Mark 1	59.003 to 59.004 mm (2.3230 to 2.3230 in.)
	Mark 2	59.005 to 59.006 mm (2.3230 to 2.3231 in.)
	Mark 3	59.007 to 59.009 mm (2.3231 to 2.3232 in.)
	Mark 4	59.010 to 59.011 mm (2.3232 to 2.3233 in.)
	Mark 5	59.012 to 59.013 mm (2.3233 to 2.3234 in.)
	Mark 6	59.014 to 59.016 mm (2.3234 to 2.3235 in.)
Main journal diameter		54.988 to 55.000 mm (2.1648 to 2.1654 in.)
Main journal diameter (Reference)	Mark 0	54.999 to 55.000 mm (2.1653 to 2.1654 in.)
	Mark 1	54.997 to 54.998 mm (2.1652 to 2.1653 in.)
	Mark 2	54.995 to 54.996 mm (2.1652 to 2.1652 in.)
	Mark 3	54.993 to 54.994 mm (2.1651 to 2.1651 in.)
	Mark 4	54.991 to 54.992 mm (2.1650 to 2.1650 in.)
	Mark 5	54.988 to 54.990 mm (2.1649 to 2.1650 in.)
Standard main bearing center wall thickness (Reference)	Mark 1	1.993 to 1.996 mm (0.0785 to 0.0786 in.)
	Mark 2	1.997 to 1.999 mm (0.0786 to 0.0787 in.)
	Mark 3	2.000 to 2.002 mm (0.0787 to 0.0788 in.)
	Mark 4	2.003 to 2.005 mm (0.0789 to 0.0789 in.)
Maximum circle runout		0.03 mm (0.0012 in.)
Standard oil clearance		0.017 to 0.040 mm (0.0007 to 0.0016 in.)
Maximum oil clearance		0.060 mm (0.0024 in.)
Maximum main journal taper and out-of-round		0.003 mm (0.0001 in.)
Maximum crank pin taper and out-of round		0.003 mm (0.0001 in.)
Crank pin diameter		47.990 to 48.000 mm (1.8894 to 1.8898 in.)

SERVICE SPECIFICATIONS – 2AZ-FXE ENGINE MECHANICAL

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Crankshaft bearing cap set bolt	Standard diameter	7.3 to 7.5 mm (0.287 to 0.295 in.)
	Minimum diameter	7.2 mm (0.284 in.)

SS

SS-12

SERVICE SPECIFICATIONS – 2AZ-FXE FUEL

2AZ-FXE FUEL

SERVICE DATA

Fuel pressure		304 to 343 kPa (3.1 to 3.5 kgf/cm ² , 44.1 to 49.7 psi)
Fuel pressure : at fuel pressure remains for 5 minutes after engine has stopped		147 kPa (1.5 kgf/cm ² , 21 psi) or more
Fuel injector		
Resistance	at 20°C (68°F)	11.6 to 12.4 Ω
Injection volume		76 to 92 cm ³ (4.6 to 5.6 cu in.) per 15 seconds
Difference between each injector		16 cm ³ (0.98 cu in.) or less
Fuel drop		1 drop or less per 12 minutes
Fuel pump		
Resistance	at 20°C (68°F)	0.2 to 3.0 Ω

SS

SERVICE SPECIFICATIONS – 2AZ-FXE FUEL

SS-13

TORQUE SPECIFICATIONS

Part Tightened		N*m	kgf*cm	ft.*lbf
Fuel delivery pipe x Cylinder head		20	204	15
Fuel pressure pulsation damper x Fuel delivery pipe		9.0	92	80 in.*lbf
Fuel tank bent tube set plate x Fuel tank assembly		5.9	60	52 in.*lbf
Fuel main tube support x Fuel tank assembly		5.4	55	48 in.*lbf
Fuel tank band sub-assembly No. 1 x Body		39	400	29
Fuel tank filler pipe support x Body		18	185	13
Fuel tank protector lower center x Fuel tank assembly		5.4	55	48 in.*lbf
Parking brake cable assembly No. 2 x Body	Bolt	6.0	61	53 in.*lbf
	Nut	8.5	87	75 in.*lbf
Parking brake cable assembly No. 3 x Body	Bolt	6.0	61	53 in.*lbf
	Nut	8.5	87	75 in.*lbf
Stabilizer bar bracket x Suspension member		31	316	23

SS

SERVICE SPECIFICATIONS – 2AZ-FXE EMISSION CONTROL

SS-13

2AZ-FXE EMISSION CONTROL**SERVICE DATA**

VSV for EVAP		
Standard resistance	1 - 2	23 to 28 Ω at 20°C (68°F)
	1 - Body ground	10 M Ω or higher
	2 - Body ground	10 M Ω or higher
Air fuel ratio sensor		
Standard resistance	1 (HT) - 2 (+B)	1.8 to 3.4 Ω at 20°C (68°F)
Oxygen sensor		
Standard resistance	1 (HT) - 2 (+B)	11 to 16 Ω at 20°C (68°F)
Fuel vapor containment valve		
Standard resistance	1 - 2	25 to 30 Ω at 20°C (68°F)

SS

SS-14

SERVICE SPECIFICATIONS – 2AZ-FXE EMISSION CONTROL

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Charcoal canister assembly x Body	39	398	29
Charcoal canister assembly x Charcoal canister bracket	5.4	55	48 in.*lbf
Air fuel ratio sensor x Front pipe assembly	44	449	32
Oxygen sensor x Front pipe assembly	44	449	32
Fuel vapor containment valve x Fuel solenoid valve return bracket	8.0	82	71 in.*lbf
Fuel solenoid valve return bracket x Fuel tank assembly	5.4	55	48 in.*lbf

SS

SS-14

SERVICE SPECIFICATIONS – 2AZ-FXE EXHAUST

2AZ-FXE EXHAUST
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Center exhaust pipe assembly x Tail pipe assembly	43	438	32
Front exhaust pipe assembly x Exhaust manifold	62	632	46
Front exhaust pipe assembly x Center exhaust pipe assembly	56	571	41
Front exhaust pipe No. 1 support bracket x Body	33	337	24
Rear exhaust pipe No. 1 support bracket x Body	33	337	24
Heated oxygen sensor x Front exhaust pipe assembly	44	449	32

SS

SERVICE SPECIFICATIONS – 2AZ-FXE COOLING

SS-15

2AZ-FXE COOLING

SERVICE DATA

THERMOSTAT

Condition	Specified Condition
Standard valve opening temperature	80 to 84 °C (176 to 183 °F)
Standard valve lift	10 mm (0.39 in.) or more at 95 °C (203 °F)

COOLING FAN MOTOR

Item	Condition	Specified Condition
Cooling fan motor	at 20°C (68 °F)	7.4 to 10.9 A
No. 2 cooling fan motor	at 20°C (68 °F)	7.4 to 10.9 A

SS

COOLING FAN RELAY

Item	Tester Connection	Specified Condition
No. 1 fan relay	3 - 5	10 Ω or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
No. 2 fan relay	3 - 4	Below 1 Ω
	3 - 5	10 Ω or higher
	3 - 4	10 Ω or higher (when battery voltage is applied to terminals 1 and 2)
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
No. 3 fan relay	3 - 5	10 Ω or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

RADIATOR

Item	Condition	Specified Condition
Radiator reservoir cap	For brand-new cap	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm ² , 13.5 to 17.8 psi)
	After using cap	78.5 kPa (0.8 kgf/cm ² , 11.4 psi)

SS-16

SERVICE SPECIFICATIONS – 2AZ-FXE COOLING

TORQUE SPECIFICATIONS

COOLANT

Part Tightened	N [*] m	kgf [*] cm	ft. [*] lbf
Cylinder block drain cock plug x Cylinder block	13	130	9

WATER PUMP

Part Tightened	N [*] m	kgf [*] cm	ft. [*] lbf
Water pump x Cylinder block	9.0	92	80 in. [*] lbf
Water pump pulley x Water pump	26	265	19

THERMOSTAT

Part Tightened	N [*] m	kgf [*] cm	ft. [*] lbf
Water inlet x Cylinder block	9.0	92	80 in. [*] lbf

RADIATOR

Part Tightened	N [*] m	kgf [*] cm	ft. [*] lbf
Condenser assembly x Radiator assembly	5.0	51	44 in. [*] lbf
Upper radiator support x Radiator support LH and RH	7.0	71	62 in. [*] lbf
Upper radiator support x Hood lock assembly	7.5	77	66 in. [*] lbf

SS

SERVICE SPECIFICATIONS – 2AZ-FXE LUBRICATION

SS-17

2AZ-FXE LUBRICATION

SERVICE DATA

OIL PRESSURE

Condition	Specified Condition
Idle	29 kPa (0.3 kgf/cm ² , 4.3 psi) or more
2,500 rpm	145 to 280 kPa (1.5 to 2.9 kgf/cm ² , 18 to 34 psi)

OIL PUMP

Item	Condition	Specified Condition
Oil pump rotor	Standard side clearance	0.030 to 0.085 mm (0.0012 to 0.0033 in.)
	Maximum side clearance	0.16 mm (0.0063 in.)
	Standard tip clearance	0.080 to 0.160 mm (0.0031 to 0.0063 in.)
	Maximum tip clearance	0.35 mm (0.0138 in.)
	Standard body clearance	0.100 to 0.170 mm (0.0039 to 0.0067 in.)
	Maximum body clearance	0.325 mm (0.0128 in.)
Oil pump drive chain	Maximum chain elongation	52.4 mm (2.063 in.)
Oil pump sprocket	Minimum crankshaft sprocket diameter (with chain)	48.2 mm (1.898 in.)
	Minimum oil pump drive shaft sprocket	48.2 mm (1.898 in.)
Chain tensioner plate	Maximum wear	0.5 mm (0.020 in.)

SS

SS-18

SERVICE SPECIFICATIONS – 2AZ-FXE LUBRICATION

TORQUE SPECIFICATIONS

Part Tightened		N*m	kgf*cm	ft.*lbf
Oil filter x Stiffening crankcase		13	133	10
Oil drain plug x Oil pan		25	255	18
Oil pump cover x Oil pump		8.8	90	78 in.*lbf
Oil pump relief valve x Oil pump		49	500	36
Oil pump strainer x Oil pump		8.8	90	78 in.*lbf
Oil pump X Cylinder block		19	194	14
Oil pressure switch x Cylinder block		15	153	11
Timing chain cover x Cylinder block, Cylinder head	Bolt A	9.0	92	80 in.*lbf
	Bolt B	25	255	18
	Bolt C	55	561	41
	Nut	11	112	8
Stud bolt x Cylinder block		22	220	16
Oil cooler x Cylinder block	Union bolt	79	800	58
	Nut	9.0	92	80 in.*lbf

SS

SS-18

SERVICE SPECIFICATIONS – 2AZ-FXE IGNITION

2AZ-FXE IGNITION
SERVICE DATA

Spark Plug	Standard electrode gap	1.0 to 1.1 mm (0.039 to 0.043 in.) for new spark plug
	Maximum electrode gap	1.3 mm (0.051 in.) for used spark plug

SS

SERVICE SPECIFICATIONS – 2AZ-FXE IGNITION

SS-19

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Spark plug x Cylinder head subassembly	19	194	14
Ignition coil assembly x Cylinder head cover	9.0	92	80 in.*lbf

SS

2AZ-FXE STARTING
SERVICE DATA

Power switch	Resistance	Pushed: 7 (SS1) - 5 (GND)	Below 1Ω
		Pushed: 2 (SS2) - 5 (GND)	
		Not pushed: 7 (SS1) - 5 (GND)	10 kΩ or higher
		Not pushed: 2 (SS2) - 5 (GND)	

SS

SS-20

SERVICE SPECIFICATIONS – P311 HYBRID VEHICLE CONTROL

P311 HYBRID VEHICLE CONTROL

SERVICE DATA

Inverter radiator cap

Item	Specified Condition
Standard valve (for brand-new cap)	15 to 44 kPa (0.15 to 0.45 kgf/cm ² , 2.1 to 6.4 psi)
Minimum standard valve (after using cap)	12 kPa (0.12 kgf/cm ² , 1.7 psi)

SS

Relay

Item	Tester Connection	Specified Condition
IGCT relay Resistance	3 - 5	10 kΩ or more
	3 - 5	Below 1Ω When battery voltage applied to terminals 1 and 2)

Item	Tester Connection	Specified Condition
No. 1 circuit breaker sensor Resistance	1 - 2	0.65 to 1.0 kΩ at 20°C (68°F)

SERVICE SPECIFICATIONS – P311 HYBRID VEHICLE CONTROL

SS-21

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Drain plug x Hybrid transaxle assembly	39	398	29
High voltage fuse x Inverter with converter assembly	4.0	41	35in.*lbf
Inverter with converter assembly x Inverter bracket	12	122	9
No. 6 inverter bracket x Inverter with converter assembly	10	102	7
No. 6 inverter bracket x Body	10	102	7
Frame wire x Inverter with converter assembly	8.0	82	71in.*lbf
Connector cover x Inverter with converter assembly	8.0	82	71in.*lbf
No. 2 inverter bracket x Inverter with converter assembly	10	102	7
No. 2 inverter bracket x Body	10	102	7
Inverter reserve tank sub-assembly x Inverter with converter assembly	10	102	7
Generator cable x Inverter with converter assembly	8.0	82	71in.*lbf
Motor cable x Inverter with converter assembly	8.0	82	71in.*lbf
ECM bracket x Hybrid vehicle control ECU	3.0	31	27in.*lbf
ECU cover x Hybrid vehicle control ECU	3.0	31	27in.*lbf
Hybrid vehicle control ECU x Body	5.5	56	49in.*lbf
Water with motor and bracket pump assembly x Body	10	102	7
Water with motor and bracket pump assembly x Inverter bracket	10	102	7
Radiator assembly (for inverter) x Radiator assembly (for engine)	5.0	51	44in.*lbf
Radiator assembly (for inverter) x Cooler condenser assembly	9.0	92	80in.*lbf
Frame wire x Body	8.4	85	74in.*lbf
Frame wire (AMD cable) x Inverter terminal	9.0	92	80in.*lbf
Frame wire (high voltage cable) x HV relay assembly	9.0	92	80in.*lbf
Accelerator pedal rod x Body	5.4	55	48in.*lbf
No. 1 circuit breaker sensor x Inverter with converter assembly	8.5	87	75in.*lbf

SS

SERVICE SPECIFICATIONS – HYBRID BATTERY CONTROL

SS-21

HYBRID BATTERY CONTROL

SERVICE DATA

SMRB (HV relay assembly) Resistance	h4-1 - s1-1	10 k Ω or more
	h4-1 - s1-1	Below 1 Ω (When battery voltage applied to terminals n3-2 and n3-3)
	CON2 (n3-3) - GND (n3-2)	18.8 to 32.1 Ω at -35 to 80°C (-31 to 176°F)
SMRG (HV relay assembly) Resistance	h3-1 - t1-1	10 k Ω or more
	h3-1 - t1-1	Below 1 Ω (When battery voltage applied to terminals n3-1 and n3-2)
	CON3 (n3-1) - GND (n3-2)	18.8 to 32.1 Ω at -35 to 80°C (-31 to 176°F)
Battery blower relay Resistance	3 - 5	10 k Ω or more
	3 - 5	Below 1 Ω When battery voltage applied to terminals 1 and 2)

SS

SS-22

SERVICE SPECIFICATIONS – HYBRID BATTERY CONTROL

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Battery carrier bracket x HV Battery	8.0	82	71in.*lbf
Inverter terminal x HV Battery	8.0	82	71in.*lbf
HV Battery x Body	19	194	14
Frame wire (AMD cable) x Inverter terminal	9.0	92	80in.*lbf
Battery smart unit x HV Battery	8.0	82	71in.*lbf
High voltage fuse x HV relay assembly	4.5	46	40in.*lbf
HV relay assembly x HV Battery	8.0	82	71in.*lbf
Ground cable x HV Battery	8.0	82	71in.*lbf
Filter noise capacitor x HV relay assembly	8.0	82	71in.*lbf
No. 5 battery carrier panel x HV Battery	8.0	82	71in.*lbf
No. 1 battery cover lid x No. 5 battery carrier panel	8.0	82	71in.*lbf
No. 1 battery cover lid x HV Battery	8.0	82	71in.*lbf
Frame wire (high voltage cable) x HV relay assembly	9.0	92	80in.*lbf
Upper battery carrier sub-assembly x HV Battery	8.0	82	71in.*lbf
Ground cable x HV Battery	8.0	82	71in.*lbf
Ground cable x Upper battery carrier sub-assembly	8.0	82	71in.*lbf
Wire harness clamp bracket x Upper battery carrier sub-assembly	8.0	82	71in.*lbf
Battery cooling blower assembly x HV Battery	8.0	82	71in.*lbf
No. 2 HV battery intake duct x Body	8.0	82	71in.*lbf
Hybrid vehicle converter x HV Battery	8.0	82	71in.*lbf
AMD cable x Hybrid vehicle converter	8.0	82	71in.*lbf
High voltage cable x Hybrid vehicle converter	8.0	82	71in.*lbf
No. 2 battery exhaust duct x Body	8.0	82	71in.*lbf

SS-22

SERVICE SPECIFICATIONS – DRIVE SHAFT

DRIVE SHAFT
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Front wheel set nut	103	1,050	76
Lower ball joint x Front suspension lower No. 1 arm	75	765	55
Tie rod end x Steering knuckle	49	500	36
Axle assembly x Front drive shaft	294	3,000	217
Front drive shaft center bearing set bolt	32	330	24
Front speed sensor set bolt	8.0	82	71 in.*lbf
Front flexible hose and speed sensor wire harness x Shock absorber	19	192	14
Front stabilizer link x Front shock absorber	74	755	55

SS

AXLE

SERVICE DATA

Front axle hub bearing for looseness	Maximum: 0.05 mm (0.0020 in.)
Front axle hub for runout	Maximum: 0.05 mm (0.0020 in.)
Rear axle hub bearing for looseness	Maximum: 0.05 mm (0.0020 in.)
Rear axle hub for runout	Maximum: 0.07 mm (0.0027 in.)

SS

TORQUE SPECIFICATIONS

Part Tightened	N ^o m	kgf ^o cm	ft. ^o lbf
Front wheel set nut	103	1,050	76
Front disc brake caliper x Steering knuckle	107	1,090	79
Front axle assembly x Front shock absorber	210	2,140	155
Axle assembly x Front drive shaft	294	3,000	217
Front disc brake dust cover x Steering knuckle	8.3	85	73 in. ^o lbf
Rear wheel set nut	103	1,050	76
Rear axle carrier x Rear disc brake caliper	62	630	46
Rear flexible hose x Rear shock absorber	19	192	14
Rear shock absorber x Rear axle carrier	180	1,836	133
Rear axle hub and bearing set bolt	80	816	59
Rear strut rod x Rear axle carrier	113	1,150	83
Rear No. 2 suspension arm x Rear axle carrier	100	1,020	74
Rear No. 1 suspension arm x Rear axle carrier	100	1,020	74

SS-24

SERVICE SPECIFICATIONS – SUSPENSION

SUSPENSION

SERVICE DATA

Front wheel alignment	Toe-in (total)	
	A - B	0 +- 2 mm (0 - 0.08 in.)
	Rack end length difference	1.5 mm (0.06 in.) or less

SS

Front wheel alignment	Vehicle height	
	Front A - B	129 mm (5.08 in.)
	Rear C - D	56 mm (2.20 in.)

Front wheel alignment	Wheel turning angle	
	Inside wheel	38°22'±2° (38.37°±2°)
	Outside wheel reference	33°33' (33.55°)

Front wheel alignment	Camber	
	Camber	-0°40'±45' (-0.67°±0.75°)
	Right-left difference	45' (0.75°) or less

Front wheel alignment	Caster	
	Caster	2°55'±45' (2.92°±0.75°)
	Right-left difference	45' (0.75°) or less

Front wheel alignment	Steering axis inclination	
	Steering axis inclination	12°15'±45' (12.25°±0.75°)
	Right-left difference	45' (0.75°) or less

front lower ball joint	Lower ball joint turning torque	1.0 to 3.4 N*m (10 to 35 kgf*cm, 9 to 30 in.*lbf)
front stabilizer link assembly	Stabilizer link ball joint turning torque	0.05 to 2.0 N*m (0.5 to 20 kgf*cm, 0.4 to 18 in.*lbf)

Rear wheel alignment	Toe-in (total)	
	A +B	0° +- 24' (0° +- 0.4°)
	C - D	4 +- 2mm (0.16 +- 0.08 in.)
	Rack end length difference	1.5 mm (0.06 in.) or less

Rear wheel alignment	Camber	
	Camber	-1°20'±45' (-1.33°±0.75°)
	Right-left difference	45' (0.75°) or less

Rear stabilizer link assembly	Stabilizer link ball joint turning torque	0.05 to 1.0 N*m (0.5 to 10 kgf*cm, 0.4 to 8.9 in.*lbf)
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SERVICE SPECIFICATIONS – SUSPENSION

SS-25

TORQUE SPECIFICATIONS

FRONT:

Part tighten	N*m	kgf*cm	ft.*lbf
Suspension support x Body	85	867	63
Shock absorber x Axle	210	2,141	155
Speed sensor wire harness x Shock absorber	19	194	14
Piston rod x Suspension support	70	714	52
Stabilizer link x Shock absorber	74	755	55
Suspension lower No. 1 arm x Member	A 200 B 206	A 2,040 B 2,100	A 148 B 152
Engine mounting insulator x Member	87	887	64
Lower ball joint x Steering knuckle	123	1,250	91
Stabilizer bracket x Member	27	275	20
Stabilizer link x Stabilizer bar	74	755	55
Front wheel set nut	103	1,050	76
Tie rod end lock nut	74	755	55

SS

REAR:

Part tighten	N*m	kgf*cm	ft.*lbf
Suspension support x Body	39	398	29
Shock absorber x Axle carrier	180	1,840	133
Piston rod x Suspension support	55	561	41
Speed sensor wire harness x Shock absorber	5.0	51	44 in.*lbf
Flexible hose x Shock absorber	19	194	14
Stabilizer link x Shock absorber	39	398	29
Strut rod x Axle carrier	113	1,152	83
Strut rod x Body	113	1,152	83
Parking brake No. 3 cable x Body	6.0	61	53 in.*lbf
Suspension No. 1 arm x Suspension member	100	1,020	74
Suspension No. 1 arm x Axle carrier	100	1,020	74
Suspension No. 2 arm x Suspension member	100	1,020	74
Suspension No. 2 arm x Axle carrier	100	1,020	74
Stabilizer bracket x Suspension member	31	316	23
Stabilizer link x Stabilizer bar	39	398	29
Suspension member x Suspension member lower stopper	A 55 B 38	A 561 B 388	A 41 B 28
Suspension member x Body	56	571	41
Rear wheel set nut	103	1,050	76
No. 2 Suspension arm lock nut	56	571	41

TIRE AND WHEEL
SERVICE DATA

Cold tire inflation pressure

Tire size	Front	Rear
P215/60R16 94V	220 kPa (2.2 kgf/cm ² , 32 psi)	220 kPa (2.2 kgf/cm ² , 32 psi)

SS

When driving under the above vehicle conditions at sustained high speeds above 160 km/h (100 mph), in countries where such speeds are permitted by law, inflate the front and rear tires to 240 kPa (2.4 kgf*cm², 35 psi) provided that it does not exceed the maximum cold tire inflation pressure molded on the tire sidewall.

Tire runout	1.4 mm (0.055 in.) or less
Imbalance after adjustment	8.0 g (0.018 lb) or less

SERVICE SPECIFICATIONS – TIRE AND WHEEL

SS-27

TORQUE SPECIFICATIONS

TIRE PRESSURE WARNING RECEIVER

Part tightened	N*m	kgf*cm	ft.*lbf
Tire pressure warning receiver set bolt	7.5	77	66 in.*lbf

TIRE PRESSURE WARNING VALVE AND TRANSMITTER

Part tightened	N*m	kgf*cm	ft.*lbf
Tire pressure warning valve and transmitter set nut	4.0	41	35 in.*lbf
Front wheel set nuts	103	1,050	76
Rear wheel set nuts	103	1,050	76

SS

TIRE PRESSURE WARNING ECU

Part tightened	N*m	kgf*cm	ft.*lbf
Tire pressure warning ECU set nut	7.5	77	66 in.*lbf

SERVICE SPECIFICATIONS – BRAKE CONTROL

SS-27

BRAKE CONTROL

SERVICE DATA

Brake actuator assembly operation	FR system solenoids	Sensor	10 to 20 sec. after check start (V)	35 sec. or more after check start (V)
		MAS CYL PRESS 1	0.3 to 0.7	0.3 to 0.7
		MAS CYL PRESS 2	0.3 to 0.7	0.3 to 0.7
		FR PRESS SENS	2.5 to 4.5	0.3 to 0.7
		FL PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RL PRESS SENS	0.3 to 0.7	0.3 to 0.7
	FL system solenoids	Sensor	10 to 20 sec. after check start (V)	35 sec. or more after check start (V)
		MAS CYL PRESS 1	0.3 to 0.7	0.3 to 0.7
		MAS CYL PRESS 2	0.3 to 0.7	0.3 to 0.7
		FR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		FL PRESS SENS	2.5 to 4.5	0.3 to 0.7
		RR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RL PRESS SENS	0.3 to 0.7	0.3 to 0.7
	RR system solenoids	Sensor	10 to 20 sec. after check start (V)	35 sec. or more after check start (V)
		MAS CYL PRESS 1	0.3 to 0.7	0.3 to 0.7
		MAS CYL PRESS 2	0.3 to 0.7	0.3 to 0.7
		FR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		FL PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RR PRESS SENS	2.5 to 4.5	0.3 to 0.7
		RL PRESS SENS	0.3 to 0.7	0.3 to 0.7
	RL system solenoids	Sensor	10 to 20 sec. after check start (V)	35 sec. or more after check start (V)
		MAS CYL PRESS 1	0.3 to 0.7	0.3 to 0.7
		MAS CYL PRESS 2	0.3 to 0.7	0.3 to 0.7
		FR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		FL PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RR PRESS SENS	0.3 to 0.7	0.3 to 0.7
		RL PRESS SENS	2.5 to 4.5	0.3 to 0.7

SS

PRESSURE SENSOR OPERATION	Brake effort {N (kgf, lbf)}	MAS CYL PRS 1 (V)	MAS CYL PRS 2 (V)
	200 (20.4, 45)	0.85 to 1.15	0.85 to 1.15
	500 (51, 112)	1.85 to 2.15	1.85 to 2.15

SS-28

SERVICE SPECIFICATIONS – BRAKE CONTROL

SS

PRESSURE SENSOR OPERATION	Front right side	Brake effort {N (kgf, lbf)}	Front right wheel hydraulic pressure {MPa (kgf/cm ² , psi)}	FR PRESS SENS (V)
		50 (5.1, 11)	2.4 (24.5, 348)	0.85 to 1.15
		100 (10.2, 22)	5.0 (51.0, 725)	1.35 to 1.65
		150 (15.3, 34)	5.0 (51.0, 725)	1.35 to 1.65
		200 (20.4, 45)	5.1 (52.0, 740)	1.4 to 1.7
	Front left side	Brake effort {N (kgf, lbf)}	Front left wheel hydraulic pressure {MPa (kgf/cm ² , psi)}	FL PRESS SENS (V)
		50 (5.1, 11)	2.4 (24.5, 348)	0.85 to 1.15
		100 (10.2, 22)	5.0 (51.0, 725)	1.35 to 1.65
		150 (15.3, 34)	5.0 (51.0, 725)	1.35 to 1.65
		200 (20.4, 45)	5.1 (52.0, 740)	1.4 to 1.7
	Rear right side	Brake effort {N (kgf, lbf)}	Rear right wheel hydraulic pressure {MPa (kgf/cm ² , psi)}	RR PRESS SENS (V)
		50 (5.1, 11)	2.4 (24.5, 348)	0.85 to 1.15
		100 (10.2, 22)	5.0 (51.0, 725)	1.35 to 1.65
		150 (15.3, 34)	5.0 (51.0, 725)	1.35 to 1.65
		200 (20.4, 45)	5.0 (51.0, 725)	1.35 to 1.65
	Rear left side	Brake effort {N (kgf, lbf)}	Rear left wheel hydraulic pressure {MPa (kgf/cm ² , psi)}	RL PRESS SENS (V)
		50 (5.1, 11)	2.4 (24.5, 348)	0.85 to 1.15
		100 (10.2, 22)	5.0 (51.0, 725)	1.35 to 1.65
		150 (15.3, 34)	5.0 (51.0, 725)	1.35 to 1.65
		200 (20.4, 45)	5.0 (51.0, 725)	1.35 to 1.65

Brake actuator assembly	Tester connection	Condition	Specified Condition
	31 (BM1) - 1 (GND1)	Always	Below 10 Ω
	32 (BM2) - 1 (GND1)	Always	Below 10 Ω
	31 (BM1) - 32 (BM2)	Always	Below 1 Ω
	1 (GND1) - 2 (GND2)	Always	Below 1 Ω
	31 (BM1) - 3 (MTT)	Always	950 to 1,050 Ω
	32 (BM2) - 3 (MTT)	Always	950 to 1,050 Ω

Front speed sensor	LH	1 (FL+) - 2 (FL-)	Always	1.4 to 1.8 kΩ at 20°C (68 °F)
		1 (FL+) - Body ground	Always	10 kΩ or higher
		2 (FL-) - Body ground	Always	10 kΩ or higher
	RH	1 (FR+) - 2 (FR-)	Always	1.4 to 1.8 kΩ at 20°C (68 °F)
		1 (FR+) - Body ground	Always	10 kΩ or higher
		2 (FR-) - Body ground	Always	10 kΩ or higher
Skid control sensor	LH	1 (RR+) - 2 (RR-)	Always	1.45 kΩ at 20°C (68 °F)
		1 (RR+) - Body ground	Always	10 kΩ or higher
		2 (RR-) - Body ground	Always	10 kΩ or higher
	RH	1 (RL+) - 2 (RL-) Below	Always	1.45 kΩ at 20°C (68 °F)
		1 (RL+) - Body ground 10	Always	10 kΩ or higher
		2 (RL-) - Body ground	Always	10 kΩ or higher
ABS MAIN relay		Resistance 3 - 5	Always	10 kΩ or higher
		Resistance 3 - 5	Apply B+ between terminals 1 and 2	Below 1 Ω

SERVICE SPECIFICATIONS – BRAKE CONTROL

SS-29

ABS MOTOR relay		Resistance 3 - 5	Always	10 kΩ or higher
		Resistance 3 - 5	Apply B+ between terminals 1 and 2	Below 1 Ω

SS

SS-30**SERVICE SPECIFICATIONS – BRAKE****BRAKE****SERVICE DATA**

Brake pedal height		129.9 to 139.9 mm(5.114 to 5.508 in.)
Standard stop light switch clearance		1.5 to 2.5 mm (0.059 to 0.098 in.)
Brake pedal free play		1.0 to 2.0 mm (0.039 to 0.079 in.)
Brake pedal reserve distance from dash panel at 490 N (50 kgf, 110 lbf)		80 mm (3.15 in.)
Front brake pad lining thickness	Standard	12.0 mm (0.472 in.)
	Minimum	1.0 mm (0.039 in.)
Front brake disc thickness	Standard	28.0 mm (1.102 in.)
	Minimum	25.0 mm (0.983 in.)
Front brake disc runout	Maximum	0.05 mm (0.0020in.)
Rear disc brake pad lining thickness	Standard	11.0 mm (0.433 in.)
	Minimum	1.0 mm (0.039 in.)
Rear brake disc thickness	Standard	10.0 mm (0.390 in.)
	Minimum	8.5 mm (0.334 in.)
Rear brake disc runout	Maximum	0.15 mm (0.0059 in.)

SS

SERVICE SPECIFICATIONS – BRAKE

SS-31

TORQUE SPECIFICATIONS

Parts tightened	N*m	kgf*cm	ft.*lbf
Brake booster clevis lock nut	26	265	19
Brake pedal stroke sensor	8.5	87	75 in.*lbf
Brake light switch	1.5	15	13 in.*lbf
Brake pedal sub-assembly set bolt	37	377	27
Brake pedal assembly x Body	19	194	14
Brake pedal assembly x Brake master cylinder with simulator assembly	13	133	10
Master cylinder union x Brake master cylinder sub-assembly	1.8	18	16 in.*lbf
Brake master cylinder sub-assembly x Body	13	133	10
Brake master cylinder sub-assembly x Brake line	15 (14)	155 (143)	11 (10)
Brake master cylinder sub-assembly x Brake stroke simulator line	15 (14)	155 (143)	11 (10)
Brake stroke simulator cylinder sub-assembly x Brake stroke simulator line	15 (14)	155 (143)	11 (10)
Brake master cylinder reservoir sub-assembly x Body	5.0	51	44 in.*lbf
Brake stroke simulator cylinder sub-assembly x Brake stroke simulator bracket	8.0	82	71 in.*lbf
Brake stroke simulator cylinder sub-assembly x Brake line	15 (14)	155 (143)	11 (10)
Heater water pump assembly x body	9.8	100	87 in.*lbf
Front brake cylinder mounting x Steering knuckle	107	1,090	79
Bleeder plug	8.3	85	74 in.*lbf
Front disc brake cylinder mounting x Front disc brake cylinder assembly	34	350	25
Front disc brake cylinder assembly x Flexible hose	29	300	21
Flexible hose x Brake line	15 (14)	155 (143)	11 (10)
Front flexible hose x Absorber	19	194	14
Rear disc brake cylinder mounting set bolt	62	632	46
Rear disc brake cylinder mounting x Rear disc brake cylinder assembly	27	275	20
Rear disc brake cylinder assembly x Flexible hose	33	337	24
Rear flexible hose x Absorber	19	194	14

(): For use with SST

SS

PARKING BRAKE
SERVICE DATA

Parking brake pedal travel at 300 N (31 kgf, 68 lbf)		7 to 10 notches
Brake disc inside diameter	Standard	170 mm (6.69 in.)
	Maximum	171 mm (6.73 in.)
Parking brake shoe lining thickness	Standard	2.0 mm (0.079 in.)
	Maximum	1.0 mm (0.039 in.)
Clearance between parking brake shoe and parking brake she lever		Less than 0.35 mm (0.014 in.)

SS

SS-32

SERVICE SPECIFICATIONS – PARKING BRAKE

TORQUE SPECIFICATIONS

Parts tightened		N*m	kgf*cm	ft.*lbf
Wheel nut		103	1050	76
No. 1 wire adjusting nut x Lock nut		5.4	55	48 in.*lbf
Parking brake pedal assembly x Body		39	398	29
No. 1 parking brake cable assembly x Body	Bolt	15	153	11
	Nut	5.4	55	48 in.*lbf
No. 1 parking brake cable assembly x No. 4 parking brake cable assembly		5.0 (5.4)	51 (55)	44 in.*lbf (48 in.*lbf)
Floor shift lever assembly x Body		12	122	9
No. 3 parking brake cable assembly x Body	Bolt (A)	8.5	87	75 in.*lbf
	Bolt (B)	6.0	61	53 in.*lbf
	Nut (C)	6.0	61	53 in.*lbf
No. 3 parking brake assembly x Backing plate		8.0	82	71 in.*lbf
Rear disc brake caliper set bolt		62	632	46
Parking brake shoe guide plate set bolt		18	184	13
No. 2 front floor heat lower insulator x Body		4.9	50	43 in.*lbf
Cross member floor No. 4 reinforcement sub-assembly x Body		19	194	14

(): for use without SST

SS-32

SERVICE SPECIFICATIONS – STEERING COLUMN

STEERING COLUMN
SERVICE DATA

Steering free play (Maximum)	30 mm (1.18 in.)
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SS

TORQUE SPECIFICATIONS

Part tightened	N ^o m	kgf ^o cm	ft. ^o lbf
Steering intermediate shaft assembly x Steering column assembly	35	360	26
Steering column assembly set nuts	21	214	15
Steering column assembly set bolt	21	214	15
Steering intermediate shaft assembly x Power steering link assembly	35	360	26
Steering wheel assembly set nut	50	510	37
Front wheel LH set nuts	103	1,050	76

SS

POWER STEERING
SERVICE DATA

STEERING WHEEL

Steering effort (Reference)	6.0 N*m (60 kgf*cm, 53 in.*lbf)
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POWER STEERING LINK

Tie rod end sub-assembly stud bolt turning torque	0.98 to 3.92 N*m (10 to 40 kgf*cm, 8.7 to 34.7 in.*lbf)
Total preload	1.0 to 2.0 N*m (10 to 20 kgf*cm, 8.9 to 17.7 in.*lbf)

SS

SS-34

SERVICE SPECIFICATIONS – POWER STEERING

TORQUE SPECIFICATIONS

POWER STEERING LINK

Part tightened	N*m	kgf*cm	ft.*lbf
Steering rack end sub-assembly	74 (103)	755 (1,050)	55 (76)
Power steering link assembly set bolts	70	714	52
Tie rod assembly x Steering knuckle	49	500	36
No. 1 front stabilizer bracket LH set bolts	27	275	20
No. 1 front stabilizer bracket RH set bolts	27	275	20
Steering intermediate shaft assembly x Power steering link assembly	35	360	26
Front wheels set nuts	103	1,050	76

(): For use without SST

POWER STEERING ECU

Part tightened	N*m	kgf*cm	ft.*lbf
Power steering ECU assembly set nuts	8.5	87	75 in.*lbf
Power steering ECU assembly set bolt	8.5	87	75 in.*lbf

SS

SS-34

SERVICE SPECIFICATIONS – AIR CONDITIONING

AIR CONDITIONING
SERVICE DATA

Refrigerant charge volume (Standard:)	480 to 580g (16.9 to 20.5 oz.)
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SS

SERVICE SPECIFICATIONS – AIR CONDITIONING

SS-35

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
AIR CONDITIONING UNIT			
Air conditioning unit assembly x Body	9.8	100	87 in.*lbf
Instrument panel reinforcement assembly x Body (Collar)	6.0	61	53 in.*lbf
Instrument panel reinforcement assembly x Body (Passenger seat)	20	204	15
Instrument panel reinforcement assembly x Body (Driver seat)	17	175	13
Air conditioning tube assembly x Cooler expansion valve	3.5	35	30 in.*lbf
Suction pipe sub-assembly x Air conditioning tube assembly	9.8	100	87 in.*lbf
BLOWER UNIT			
Blower assembly x Instrument panel reinforcement assembly	9.8	100	87 in.*lbf
ELECTRIC INVERTER COMPRESSOR			
Electric inverter compressor x Engine	25	255	18
No. 1 cooler refrigerant discharge hose x Electric inverter compressor	9.8	100	87 in.*lbf
No. 1 cooler refrigerant suction hose x Electric inverter compressor	9.8	100	87 in.*lbf
CONDENSER			
Cooler condenser assembly x Radiator assembly	5.0	51	44 in.*lbf
Cooler refrigerant discharge pipe x Cooler condenser assembly	9.8	100	87 in.*lbf
Air conditioner tube and accessory x Cooler condenser assembly	9.8	100	87 in.*lbf
Cap x cooler condenser assembly	2.9	30	26 in.*lbf
HEATER WATER PUMP			
Heater water pump x Body	9.8	100	87 in.*lbf

SS

SERVICE SPECIFICATIONS – SUPPLEMENTAL RESTRAINT SYSTEM**SS-35****SUPPLEMENTAL RESTRAINT
SYSTEM****TORQUE SPECIFICATIONS**

Part Tightened	N*m	kgf*cm	ft.*lbf
Steering pad x Steering wheel assembly	8.8	90	78 in.*lbf
Driver side knee airbag assembly x Instrument panel reinforcement	10	102	7
Curtain shield airbag assembly x Body	11	112	8
Center airbag sensor assembly x Body	17.5	179	13
Front airbag sensor x Body	17.5	179	13
Side airbag sensor x Body	9.0	92	80 in.*lbf
Rear airbag sensor x Body	9.0	92	80 in.*lbf
Seat position sensor x Front seat assembly	8.0	82	71 in.*lbf

SS

SS-36

SERVICE SPECIFICATIONS – SEAT BELT

SEAT BELT

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
FRONT SEAT INNER BELT ASSEMBLY			
Front seat inner belt assembly x Front seat assembly	42	428	31
FRONT SEAT OUTER BELT ASSEMBLY			
Front seat outer belt assembly (Floor anchor) x Body	42	428	31
Front seat outer belt assembly (Shoulder anchor) x Front shoulder belt anchor adjuster assembly	42	428	31
Front shoulder belt anchor adjuster assembly x Body	42	428	31
Front seat outer belt assembly (for Upper bolt) x Body	7.5	77	66 in.*lbf
Front seat outer belt assembly (for Lower bolt) x Body	42	428	31
REAR SEAT INNER BELT ASSEMBLY			
Rear seat inner with center belt assembly RH x Body	42	428	31
Rear seat inner with center belt assembly LH floor anchor x Body	42	428	31
Rear seat inner with center belt assembly LH x Body	42	428	31
REAR SEAT OUTER BELT ASSEMBLY			
Rear seat outer belt assembly floor anchor (For LH side) x Body	42	428	31
Rear seat outer belt assembly floor anchor (For RH side) x Body	42	428	31
Rear seat outer belt assembly x Body	42	428	31
CHILD RESTRAINT SEAT TETHER ANCHOR			
Child restraint seat tether anchor bracket x Body	21	214	16
CHILD RESTRAINT SEAT ANCHOR BRACKET			
Child restraint seat anchor bracket subassembly x Body	18	184	13

CRUISE CONTROL
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Cruise control main switch x Steering wheel	2.4	24	21 in.*lbf

SS

SS-38**SERVICE SPECIFICATIONS – LIGHTING****LIGHTING****TORQUE SPECIFICATIONS**

Part Tightened	N*m	kgf*cm	ft.*lbf
HEADLIGHT ASSEMBLY			
Headlight assembly x Body	5.4	55	48 in.*lbf
REAR COMBINATION LIGHT ASSEMBLY			
Rear combination assembly x Body	5.4	55	48 in.*lbf
Rear light assembly x Body	5.4	55	48 in.*lbf
HIGH MOUNTED STOP LIGHT ASSEMBLY			
High mounted stop light assembly x Package tray trim panel assembly	1.6	16	14 in.*lbf
FRONT DOOR COURTESY SWITCH			
Front door courtesy switch assembly x Body	8.0	82	71 in.*lbf
REAR DOOR COURTESY SWITCH			
Rear door courtesy switch assembly x Body	8.0	82	71 in.*lbf

SS

WIPER AND WASHER

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
FRONT WIPER MOTOR			
Front wiper arm and blade assembly LH x Windshield wiper motor and link assembly	20	204	15
Front wiper arm and blade assembly RH x Windshield wiper motor and link assembly	20	204	15
Windshield wiper motor and link assembly x Body	7.5	77	66 in.*lbf
Windshield wiper link assembly x Windshield wiper motor assembly	5.4	55	48 in.*lbf

SS

SS-40

SERVICE SPECIFICATIONS – DOOR LOCK

DOOR LOCK

TORQUE SPECIFICATIONS

FRONT DOOR LOCK

Part Tightened	N*m	kgf*cm	ft*lb
Front door lock assembly x Door panel	5.0	51	44 in.*lb

REAR DOOR LOCK

Part Tightened	N*m	kgf*cm	ft*lb
Rear door lock assembly x Door panel	5.0	51	44 in.*lb

SS

SERVICE SPECIFICATIONS – METER

SS-41

METER

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Steering pad switch x Steering wheel	2.4	24	21 in.*lbf
Upper steering column cover x Lower steering column cover	2.0	20	18 in.*lbf

SS

SS-42

SERVICE SPECIFICATIONS – AUDIO / VISUAL

AUDIO / VISUAL
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Steering pad switch x Steering wheel	2.4	24	21 in.*lbf

SS

HORN

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Low pitched horn x Body	20	204	15
High pitched horn x Body	20	204	15

SS

SS-44

SERVICE SPECIFICATIONS – WINDSHIELD / WINDOWGLASS

WINDSHIELD / WINDOWGLASS

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
POWER WINDOW REGULATOR MOTOR			
Front power window regulator motor assembly x Front door window regulator sub-assembly	5.4	55	48 in.*lbf
Front door window regulator sub-assembly x Front door	8.0	82	71 in.*lbf
Front door glass sub-assembly x Front door window regulator sub-assembly	5.5	56	49 in.*lbf
Rear power window regulator motor assembly x Rear door window regulator sub-assembly	5.4	55	48 in.*lbf
Rear door window regulator sub-assembly x Rear door	8.0	82	71 in.*lbf
WINDSHIELD GLASS			
Inner rear view mirror assembly x Windshield glass	1.8	18	16 in.*lbf
Front wiper arm and blade assembly x Windshield wiper motor and link assembly	20	204	15
BACK WINDOW GLASS			
Rear seat inner with center belt assembly LH x Body	42	428	31
Rear restraint seat anchor bracket sub-assembly LH x Body	18	184	13
Rear seat outer belt assembly x Body	42	428	31
Rear side seatback assembly x Body	18	184	13
Separate type rear seatback assembly x Body	18	184	13

MIRROR

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Inner rear view mirror x Windshield glass	1.8	18	16 in.*lbf
Outer rear view mirror assembly x Door panel	5.5	56	49 in.*lbf

SS

SS-46

SERVICE SPECIFICATIONS – INSTRUMENT PANEL

INSTRUMENT PANEL
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Instrument panel reinforcement x Passenger airbag	20	204	15
Upper steering column cover x Lower steering column cover	2.0	20	18 in.*lbf
Instrument panel safety pad x No. 2 antenna cord sub-assembly	7.0	71	62 in.*lbf

SS

SEAT

TORQUE SPECIFICATIONS

FRONT SEAT

Part Tightened	N*m	kgf*cm	ft.*lbf
Front seat back cover bracket x Front seat frame	5.5	56	49 in.*lbf
Front seat x Body	37	377	27

REAR SEAT

Part Tightened	N*m	kgf*cm	ft.*lbf
Separate type rear seat back assembly x Body	18	184	13
Rear side seat back assembly x Body	18	184	13

SS

SS-48**SERVICE SPECIFICATIONS – ENGINE HOOD / DOOR**

ENGINE HOOD / DOOR

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
HOOD			
Hood hinge x Hood panel	13	133	10
Hood lock x Body	7.5	77	66 in.*lbf
FRONT DOOR			
Door check x Body	26	265	19
Door check x Door panel	8.0	82	71 in.*lbf
Door hinge x Body	26	265	19
Door hinge x Door panel	26	265	19
Door lock x Door panel	5.0	51	44 in.*lbf
Door lock striker x Body	23	235	17
Power window regulator motor x Window regulator	5.4	55	48 in.*lbf
Window regulator x Door panel	8.0	82	71 in.*lbf
Door glass x Window regulator	5.5	56	49 in.*lbf
Outer rear view mirror x Door panel	5.5	56	49 in.*lbf
Door outside handle frame x Door panel	4.0	41	35 in.*lbf
REAR DOOR			
Door check x Body	26	265	19
Door check x Door panel	8.0	82	71 in.*lbf
Door hinge x Body	26	265	19
Door hinge x Door panel	26	265	19
Door lock x Door panel	5.0	51	44 in.*lbf
Door lock striker x Body	23	235	17
Power window regulator motor x Window regulator	5.4	55	48 in.*lbf
Window regulator x Door panel	8.0	82	71 in.*lbf
Door outside handle frame x Door panel	4.0	41	35 in.*lbf
LUGGAGE DOOR			
Luggage door hinge x Door panel	7.5	77	66 in.*lbf
Luggage lock striker x Body	5.5	56	49 in.*lbf
Luggage lock x Door panel	5.5	56	49 in.*lbf
Luggage lock cylinder x Door panel	5.5	56	49 in.*lbf

EXTERIOR
TORQUE SPECIFICATIONS

Part tightened	N*m	kgf*cm	ft.*lbf
Front bumper reinforcement sub-assembly x Body	34	347	25
Rear bumper reinforcement sub-assembly x Body	68	693	50
Luggage compartment door lock cylinder assembly x Luggage compartment door outside garnish	5.5	56	49 in.*lbf

SS

SS-50

SERVICE SPECIFICATIONS – INTERIOR

INTERIOR
TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Front seat outer belt assembly LH floor anchor x Body	42	428	31
Front seat outer belt assembly RH floor anchor x Body	42	428	31

SS

SLIDING ROOF

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Sliding roof glass sub-assembly x Sliding roof housing sub-assembly	4.0	41	35 in.*lbf
Sliding roof housing sub-assembly (Bolt) x Body	5.5	56	49 in.*lbf
Sliding roof housing sub-assembly (Nut) x Body	5.5	56	49 in.*lbf
Sliding roof drive gear sub-assembly x Sliding roof housing sub-assembly	5.4	55	48 in.*lbf
Sliding roof piece sub-assembly LH x Sliding roof housing sub-assembly	2.0	20	18 in.*lbf
Sliding roof piece sub-assembly RH x Sliding roof housing sub-assembly	2.0	20	18 in.*lbf
Sliding roof side stopper x Sliding roof housing sub-assembly	2.0	20	18 in.*lbf

SS

SS-52

SERVICE SPECIFICATIONS – P311 HYBRID TRANSMISSION / TRANSAXLE

P311 HYBRID TRANSMISSION /
TRANSAXLE
SERVICE DATA

Oil pressure		9.8 kpa (0.1 kgf/cm ² , 1.4 psi)
Bolt length A		55 mm (2.17 in.)
Bolt length B		65 mm (2.56 in.)
Bolt length C		38 mm (1.47 in.)
Bolt length D		32 mm (1.26 in.)
Bolt diameter A		12 mm (0.47 in.)
Bolt diameter B		10 mm (0.39 in.)
Bolt diameter C		8 mm (0.32 in.)
Bolt diameter D		10 mm (0.39 in.)
Hybrid vehicle transaxle oil seal depth	LH side	-0.5 to 0.5 mm (-0.020 to 0.020 in.)
	RH side	-0.5 to 0.5 mm (-0.020 to 0.020 in.)

SERVICE SPECIFICATIONS – P311 HYBRID TRANSMISSION / TRANSAXLE

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TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Hybrid transaxle x Pump cover plug	8.0	82	71 in.*lbf
Shift lever position sensor x Hybrid vehicle transaxle	13	133	10
Shift lever position sensor x Lock nut	6.9	70	61 in.*lbf
Shift lever position sensor x Control shaft lever	13	133	10
Transaxle control cable end x Control shaft lever	15	150	11
Transaxle control cable assembly x Body	5.0	51	44 in.*lbf
Air cleaner inlet assembly x Vehicle	5.0	51	44 in.*lbf
Engine x Transaxle (Bolt A)	64	653	47
Engine x Transaxle (Bolt B)	46	469	34
Engine x Transaxle (Bolt C)	28	286	21
Engine x Transaxle (Bolt D)	44	450	33
Front engine mounting bracket x Hybrid vehicle transaxle	64	653	47
Transmission oil pump cover plug x Hybrid vehicle transaxle	27	275	20
HV transaxle mass damper x Hybrid vehicle transaxle	39	398	29
Automatic transmission case cover x Hybrid vehicle transaxle	7.0	71	62 in.*lbf
Hybrid vehicle transaxle x Drain plug (Fluid)	39	398	29
Hybrid vehicle transaxle x Filler plug (Fluid)	39	398	29
Hybrid vehicle transaxle x Drain plug (Coolant)	39	398	29
Hybrid vehicle transaxle x Bracket	8.0	82	71 in.*lbf
Hybrid vehicle transaxle x Hybrid inverter protector	10	102	7
Hybrid vehicle transaxle x No. 3 transmission control cable bracket	14	143	10
Hybrid vehicle transaxle x No. 2 transmission control cable bracket	12	120	9
Hybrid vehicle transaxle x No. 1 transmission control cable bracket	12	120	9
Hybrid vehicle transaxle x Wire harness bracket	8.4	86	74 in.*lbf
Hybrid vehicle transaxle x Ground wire	12	120	9
No. 2 shift cable grommet retainer x Vehicle	5.0	51	44 in.*lbf

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