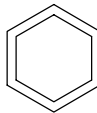
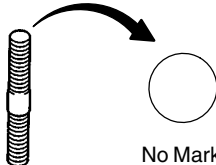
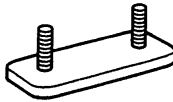
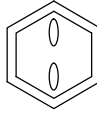
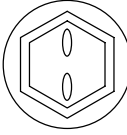
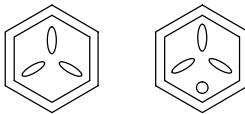
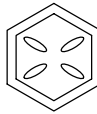
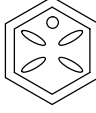
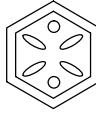

SERVICE SPECIFICATIONS

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STANDARD BOLT

HOW TO DETERMINE BOLT STRENGTH

SS02S-01

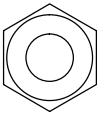
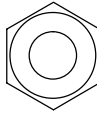
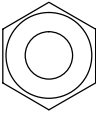
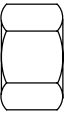
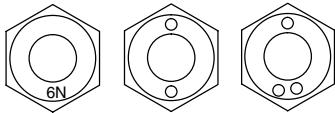
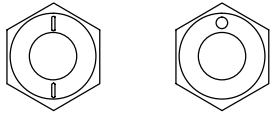
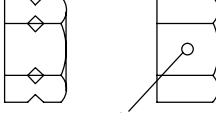
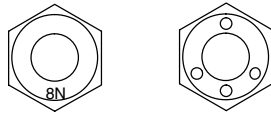
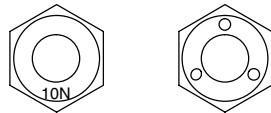
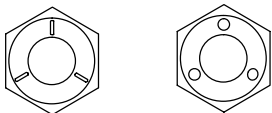
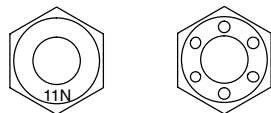
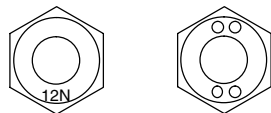
Bolt Type				Class
Hexagon Head Bolt		Stud Bolt	Weld Bolt	
Normal Recess Bolt	Deep Recess Bolt			
 No Mark	 No Mark	 No Mark		4T
 No Mark	 No Mark			5T
 w/ Washer	 w/ Washer			6T
 No Mark	 No Mark			7T
 No Mark	 No Mark	 		8T
 No Mark	 No Mark			9T
 No Mark	  No Mark			10T
 No Mark	  No Mark			11T

B06431

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

HOW TO DETERMINE NUT STRENGTH

Nut Type			Class
Present Standard Hexagon Nut	Old Standard Hexagon Nut		
	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

*: Nut with 1 or more marks on one side surface of the nut.

B06432

HINT:

Use the nut with the same number of the nut strength classification or the greater than the bolt strength classification number when tightening parts with a bolt and nut.

Example: Bolt = 4T

Nut = 4N or more

LEXUS RX300 (RM785E)

ENGINE MECHANICAL

SERVICE DATA

SS03K-03

Compression pressure	at 250 rpm STD Minimum Difference of pressure between each cylinder	1,500 kPa (15.3 kgf/cm ² , 218 psi) 1,000 kPa (10.2 kgf/cm ² , 145 psi) 100 kPa (1.0 kgf/cm ² , 15 psi) or less
Valve clearance	at cold Intake Exhaust Adjusting shim for repair part Mark 2.500 Mark 2.550 Mark 2.600 Mark 2.650 Mark 2.700 Mark 2.750 Mark 2.800 Mark 2.850 Mark 2.900 Mark 2.950 Mark 3.000 Mark 3.050 Mark 3.100 Mark 3.150 Mark 3.200 Mark 3.250 Mark 3.300	0.15 – 0.25 mm (0.006 – 0.010 in.) 0.25 – 0.35 mm (0.010 – 0.014 in.) 2.500 mm (0.0984 in.) 2.550 mm (0.1004 in.) 2.600 mm (0.1024 in.) 2.650 mm (0.1043 in.) 2.700 mm (0.1063 in.) 2.750 mm (0.1083 in.) 2.800 mm (0.1102 in.) 2.850 mm (0.1122 in.) 2.900 mm (0.1142 in.) 2.950 mm (0.1161 in.) 3.000 mm (0.1181 in.) 3.050 mm (0.1201 in.) 3.100 mm (0.1220 in.) 3.150 mm (0.1240 in.) 3.200 mm (0.1260 in.) 3.250 mm (0.1280 in.) 3.300 mm (0.1299 in.)
Ignition timing	w/ Terminals TE1 and E1 connected of DLC1	8 – 12° BTDC @ idle
Idle speed	–	700 ± 50 rpm
Timing belt tensioner	Protrusion from housing side	10.0 – 10.8 mm (0.394 – 0.425 in.)
Cylinder head	Warpage Valve seat Refacing angle Contacting angle Contacting width Valve guide bushing bore diameter 12 pointed head cylinder head bolt diameter at tension portion STD Minimum	Maximum 0.10 mm (0.039 in.) 30°, 45°, 75° 45° 1.0 – 1.4 mm (0.039 – 0.055 in.) STD 10.295 – 10.313 mm (0.4053 – 0.4080 in.) O/S 0.05 10.345 – 10.363 mm (0.4073 – 0.4080 in.) 8.95 – 9.05 mm (0.3524 – 0.3563 in.) 8.75 mm (0.3445 in.)
Valve guide bushing	Inside diameter Outside diameter for repair part STD O/S 0.05	5.510 – 5.530 mm (0.2169 – 0.2177 in.) 10.333 – 10.344 mm (0.4068 – 0.4072 in.) 10.383 – 10.394 mm (0.4088 – 0.4092 in.)
Valve	Valve overall length STD Intake Exhaust Minimum Intake Exhaust Valve face angle Stem diameter Intake Exhaust Stem oil clearance STD Intake Exhaust Maximum Intake Exhaust Margin thickness STD Maximum	95.45 mm (3.5779 in.) 95.40 mm (3.7559 in.) 94.95 mm (3.7382 in.) 94.90 mm (3.7362 in.) 44.5° 5.470 – 5.485 mm (0.2154 – 0.2159 in.) 5.465 – 5.480 mm (0.2152 – 0.2157 in.) 0.025 – 0.060 mm (0.0010 – 0.0024 in.) 0.030 – 0.065 mm (0.0012 – 0.0026 in.) 0.08 mm (0.0031 in.) 0.10 mm (0.0039 in.) 1.0 mm (0.039 in.) 0.5 mm (0.020 in.)

SERVICE SPECIFICATIONS – ENGINE MECHANICAL

Valve spring	Deviation Free length Installed tension at 33.8 mm (1.331 in.)	Maximum	2.0 mm (0.079 in.) 45.50 mm (1.7913 in.) 186 – 206 N (19.0 – 21.0 kgf, 41.9 – 46.3 lbf)
Valve lifter	Lifter diameter Lifter bore diameter Oil clearance	STD Maximum	30.966 – 30.976 mm (1.2191 – 2.2195 in.) 31.000 – 31.016 mm (1.2205 – 1.2211 in.) 0.024 – 0.050 mm (0.0009 – 0.0020 in.) 0.07 mm (0.0028 in.)
Camshaft	Thrust clearance Journal oil clearance Journal diameter Circle runout Cam lobe height Camshaft gear backlash Camshaft gear spring end free distance	STD Maximum STD Intake Exhaust Maximum Intake Exhaust STD Intake Exhaust Minimum Intake Exhaust STD Maximum	0.040 – 0.090 mm (0.0016 – 0.0035 in.) 0.12 mm (0.0047 in.) 0.035 – 0.072 mm (0.0014 – 0.0028 in.) 0.025 – 0.062 mm (0.0010 – 0.0024 in.) 0.10 mm (0.0039 in.) 0.09 mm (0.0035 in.) 26.959 – 26.975 mm (1.0614 – 1.0620 in.) 0.06 mm (0.0024 in.) 42.932 – 43.032 mm (1.6902 – 1.6942 in.) 42.764 – 42.864 mm (1.6836 – 1.6876 in.) 42.78 mm (1.6842 in.) 42.61 mm (1.6776 in.) 0.020 – 0.200 mm (0.0008 – 0.0079 in.) 0.30 mm (0.0188 in.) 18.2 – 18.8 mm (0.712 – 0.740 in.)
Air intake chamber	Warpage	Maximum	0.10 mm (0.0039 in.)
Intake manifold	Warpage Air intake chamber side Cylinder head side	Maximum Maximum	0.15 mm (0.0059 in.) 0.08 mm (0.0031 in.)
Exhaust manifold	Warpage	Maximum	0.50 mm (0.0196 in.)
VSV for Active Control Engine Mount	Resistance	at 20°C (68°F)	18 – 22 Ω
Cylinder block	Cylinder head surface warpage Cylinder bore diameter 12 pointed head main bearing cap bolt diameter at tension portion	Maximum Maximum STD Minimum	0.07 mm (0.0028 in.) 87.500 – 87.512 mm (3.4449 – 3.4453 in.) 87.52 mm (3.4457 in.) 7.500 – 7.600 mm (0.2953 – 0.2992 in.) 7.20 mm (0.2835 in.)
Piston and piston ring	Piston diameter at 23.2 mm (0.913 in.) from the piston head Piston oil clearance Piston ring groove clearance Piston ring end gap	Maximum STD Maximum No.1 No.2 STD No.1 No.2 Oil Maximum No.1 No.2 Oil	87.406 – 87.416 mm (3.4412 – 3.4416 in.) 0.084 – 0.106 mm (0.0033 – 0.0042) 0.13 mm (0.0051 in.) 0.020 – 0.070 mm (0.0008 – 0.0028 in.) 0.020 – 0.060 mm (0.0008 – 0.0024 in.) 0.25 – 0.35 mm (0.0098 – 0.0138 in.) 0.35 – 0.45 mm (0.0138 – 0.0177 in.) 0.15 – 0.40 mm (0.0059 – 0.0157 in.) 0.95 mm (0.0374 in.) 1.05 mm (0.0413 in.) 1.00 mm (0.0394 in.)

Connecting rod	Thrust clearance	STD	0.15 – 0.30 mm (0.0059 – 0.0118 in.)
		Maximum	0.35 mm (0.0138 in.)
	Connecting rod thickness		20.80 – 20.85 mm (0.8189 – 0.8209 in.)
	Connecting rod bearing center wall thickness		
	Reference	Mark 1	1.484 – 1.487 mm (0.0584 – 0.0585 in.)
		Mark 2	1.487 – 1.490 mm (0.0585 – 0.0587 in.)
		Mark 3	1.490 – 1.493 mm (0.0587 – 0.0588 in.)
		Mark 4	1.493 – 1.496 mm (0.0588 – 0.0589 in.)
	Connecting rod oil clearance	STD	0.038 – 0.064 mm (0.0015 – 0.0025 in.)
		Maximum	0.08 mm (0.0031 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.)
	Bushing inside diameter		22.005 – 22.014 mm (0.8663 – 0.8667 in.)
	Piston pin diameter		21.997 – 22.006 mm (0.8660 – 0.8664 in.)
	Bushing oil clearance	STD	0.005 – 0.011 mm (0.0002 – 0.0004 in.)
Crankshaft		Maximum	0.05 mm (0.0020 in.)
	Connecting rod bolt diameter		
		at tension portion STD	7.2 – 7.3 mm (0.284 – 0.287 in.)
		Minimum	7.0 mm (0.276 in.)
	Thrust clearance	STD	0.04 – 0.24 mm (0.0016 – 0.0095 in.)
		Maximum	0.30 mm (0.0118 in.)
	Thrust washer thickness		1.930 – 1.980 mm (0.0760 – 0.0780 in.)
	Main journal oil clearance	STD No.1 and No.4	0.014 – 0.034 mm (0.0006 – 0.0013 in.)
		No.2 and No.3	0.026 – 0.046 mm (0.0010 – 0.0018 in.)
		Maximum No.1 and No.4	0.05 mm (0.0020 in.)
		No.2 and No.3	0.06 mm (0.0024 in.)
	Main journal diameter		60.988 – 61.000 mm (2.4011 – 2.4016 in.)
	Main bearing center wall thickness		
	Reference	Mark 1	2.486 – 2.489 mm (0.0979 – 0.0980 in.)
		Mark 2	2.489 – 2.492 mm (0.0980 – 0.0981 in.)
		Mark 3	2.492 – 2.495 mm (0.0981 – 0.0982 in.)
		Mark 4	2.495 – 2.498 mm (0.0982 – 0.0983 in.)
		Mark 5	2.498 – 2.501 mm (0.0983 – 0.0985 in.)
		Mark 6	2.501 – 2.504 mm (0.0985 – 0.0986 in.)
		Mark 7	2.504 – 2.507 mm (0.0986 – 0.0987 in.)
	Crank pin diameter		52.992 – 53.000 mm (2.0863 – 2.0866 in.)
	Circle runout	Maximum	0.06 mm (0.0024 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.)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Timing belt plate x Oil pump	8.0	80	69 in.·lbf
No.1 idler pulley x Oil pump	34	350	25
No.2 idler pulley x No.2 idler pulley bracket	43	440	32
Camshaft timing pulley x Camshaft	125	1,300	94
for SST	88	900	65
Timing belt tensioner x Oil pump	27	280	20
RH engine mounting bracket x Cylinder block	28	290	21
No.2 timing belt cover x No.3 timing belt cover	8.5	85	74 in.·lbf
No.1 timing belt cover x Oil pump	8.5	85	74 in.·lbf
Crankshaft pulley x Crankshaft	215	2,200	159
No.2 generator bracket x Engine RH mounting bracket	28	290	21
Camshaft timing gear (VVT-i) x Camshaft	150	1,530	110
Oil Control Valve Filter x Cylinder Head	45	460	33
Cylinder Head Rear Cover x Cylinder Head	10	100	7.3
Cylinder head x Cylinder block	12 pointed head 1st	54	550
2nd	Turn 90°	Turn 90°	Turn 90°
Recessed head	18.5	185	13
Camshaft bearing cap x Cylinder head	16	160	12
Cylinder head cover x Cylinder head	8.0	80	69 in.·lbf
Exhaust manifold x Cylinder head	49	500	36
Exhaust manifold stay x Exhaust manifold	20	200	14
Exhaust manifold stay x Transmission housing	20	200	14
PS pump bracket x RH cylinder head	43	440	32
Oil dipstick guide x LH cylinder head	8.0	80	69 in.·lbf
Water inlet pipe x LH cylinder head	19.5	200	14
Cylinder head rear plate x LH cylinder head	8.0	80	69 in.·lbf
No.3 timing belt cover x Cylinder head	8.5	85	74 in.·lbf
Water outlet x Intake manifold	15	150	11
Fuel inlet hose x Fuel filter	29	300	21
Intake manifold x Cylinder head	15	150	11
Air intake chamber x Intake manifold	43	440	32
No.1 engine hanger x Air intake chamber	39	400	29
No.1 engine hanger x RH cylinder head	39	400	29
Air intake chamber stay x Air intake chamber	19.5	200	14
Air intake chamber stay x RH cylinder head	19.5	200	14
Rear engine mounting bracket x Cylinder block	64	650	47
Front engine mounting insulator x Cylinder block	64	650	47
Rear engine mounting bracket x Rear engine insulator	87	890	64
LH engine mounting insulator x Transaxle	64	650	47
Engine mounting absorber x Front suspension member	48	490	35
Engine mounting absorber x Transaxle	48	490	35
Front engine mounting insulator x Front frame assembly	80	820	59
PS gear assembly x Front frame assembly	181	1,850	134
Front stabilizer x Front frame assembly	19	195	14

PS vane pump x PS pump bracket		43	440	31
Front lower brace x Body	Bolt	181	1,850	134
Rear lower brace x Body	19 mm head bolt	181	1,850	134
	14 mm head bolt	32	330	24
Engine moving control rod x RH engine mounting bracket		64	650	47
Engine moving control rod x RH fender apron		64	650	47
Engine moving control rod x Water outlet		32	320	23
Front Upper Suspension Brace x Body		80	810	59
Wiper arm x Wiper link		24	245	18
Main bearing cap x Cylinder block	12 pointed head 1st	22	225	16
	2nd	Turn 90°	Turn 90°	Turn 90°
	6 pointed head	27	275	20
Connecting rod cap x Connecting rod	1st	24.5	250	18
	2nd	Turn 90°	Turn 90°	Turn 90°
Rear oil seal retainer x Cylinder block		8.0	80	69 in.·lbf
Cylinder block side cover x Cylinder block		9.0	90	78 in.·lbf
Engine coolant drain union x Cylinder block		39	400	29
Water seal plate x Cylinder block		18	180	13
Oil filter union x Cylinder block		30	310	22
Water inlet housing x Cylinder block		8.0	80	69 in.·lbf
Knock sensor x Cylinder block		39	400	29
No.2 idler pulley bracket x Cylinder block		28	290	21
A/C compressor housing bracket x Cylinder block		25	250	18
Alternator bracket x Cylinder block		43	440	32
Drive plate x Crankshaft		83	850	61
Front exhaust pipe x RH exhaust manifold		62	630	46
Front exhaust pipe x Center exhaust pipe		62	630	46
No.2 front exhaust pipe x TWC		56	560	41
No.2 front exhaust pipe x Front exhaust pipe		56	560	41
Center exhaust pipe x Tailpipe		62	630	46

EMISSION CONTROL

TORQUE SPECIFICATION

SS03N-05

Part tightened	N·m	kgf·cm	ft·lbf
Front exhaust pipe x RH exhaust manifold	62	630	46
Front exhaust pipe x Center exhaust pipe	48	490	36
WU-TWC (for bank 1) x LH exhaust manifold	62	630	46
WU-TWC (for bank 1) x Front exhaust pipe	56	570	41

ELECTRONIC FUEL INJECTION

SS1HU-01

SERVICE DATA

Fuel pressure regulator	Fuel pressure at no vacuum	301 – 347 kPa (3.1 – 3.5 kgf/cm ² , 44 – 50 psi)
Fuel pump	Resistance at 20°C (68°F)	0.2 – 3.0 Ω
Injector	Resistance Injection volume Difference between each cylinder Fuel leakage	13.4 – 14.2 Ω 60 – 73 cm ³ (3.7 – 4.5 cu in.) per 15 sec. 13 cm ³ (0.8 cu in.) or less 1 drop or less per minute
Air flow meter	Resistance (THA – E2) at –20°C (–4°F) at 20°C (68°F) at 60°C (140°F)	14.6 – 17.8 kΩ 2.21 – 2.69 kΩ 0.29 – 0.35 kΩ
Throttle body	Throttle opener setting speed	900 – 1,950 rpm
Throttle position sensor	Resistance Throttle valve fully closed Throttle valve fully open –	VTA – E2 VTA – E2 VC – E2 0.2 – 6.3 kΩ 2.0 – 10.2 kΩ 2.5 – 5.9 kΩ
ISC valve	Resistance (+B – RSO or RSC) at cold at hot	17.0 – 24.5 Ω 21.5 – 28.5 Ω
Camshaft timing oil control valve	Resistance at 20°C (68°F)	6.9 – 7.9 Ω
VSV for EVAP	Resistance at 20°C (68°F)	27 – 33 Ω
VSV for ACIS NO.1, NO.2	Resistance at 20°C (68°F)	33 – 39 Ω
VSV for Vapor Pressure Sensor	Resistance at 20°C (68°F)	33 – 39 Ω
Vapor Pressure Sensor	Power source voltage	4.5 – 5.5 V
ECT sensor	Resistance at –20°C (–4°F) at 0°C (32°F) at 20°C (68°F) at 40°C (104°F) at 60°C (140°F) at 80°C (176°F)	10 – 20 kΩ 4 – 7 kΩ 2 – 3 kΩ 0.9 – 1.3 kΩ 0.4 – 0.7 kΩ 0.2 – 0.4 kΩ
Air fuel ratio (A/F) sensor	Heater coil resistance at 20°C (68°F)	11 – 16 Ω
Heated oxygen sensor	Heater coil resistance at 20°C (68°F)	11 – 16 Ω
Fuel cut rpm	Fuel return rpm	1,200 rpm

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Fuel pump assembly x Fuel tank	4	40	35 in.·lbf
Fuel filter x Fuel pump bracket	2	20	17 in.·lbf
Delivery pipe x Intake manifold	10	100	7
No.1 fuel pipe x Intake manifold	19.5	200	14
Fuel tank band x Body	39	400	29
Throttle body x Air intake chamber	19.5	200	14
Intake air control valve x Air intake chamber	14.5	145	10
ECT sensor x Water outlet	20	200	14
Knock sensor x Cylinder block	39	400	29
Air–fuel ratio (A/F) sensor (Bank 1, 2 sensor 1) x Exhaust manifold	44	440	31
Heated oxygen sensor (Bank 1 sensor 2) x Exhaust pipe	44	440	31
LH Rear Seat x Body	37	375	27

COOLING

SS03Q-07

SERVICE DATA

Thermostat	Valve opening pressure Valve lift at 95°C (203°F)	80 – 84°C (176 – 183°F) 10.0 mm (0.394 in.) or more
Radiator cap	Relief valve opening pressure STD Minimum	93 – 122 kPa (0.95 – 1.25 kgf/cm ² , 13.4 – 17.6 psi) 78 kPa (0.8 kgf/cm ² , 11.2 psi)
Cooling fan	Rotating amperage at 20°C (68°F)	8.5 – 11.5 A

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
RH engine drain plug x Cylinder block side cover (2WD)	7	70	61 in.·lbf
RH engine drain plug x Union cylinder block (4WD)	13	130	9
LH engine drain plug x Union on cylinder block	13	130	9
Water pump x Cylinder block	8	80	69 in.·lbf
Water inlet x Water inlet housing	8	80	69 in.·lbf
Water inlet pipe x LH cylinder head	19.5	200	14
Radiator support x Body	12.8	130	9
Cooling fan shroud x Radiator	5.0	50	44 in.·lbf
No.2 cooling fan shroud x Radiator	5.0	50	44 in.·lbf
Radiator oil cooler x Radiator lower tank	8.3	85	74 in.·lbf
Radiator inlet pipe x Radiator lower tank	14.7	150	11

LUBRICATION

SERVICE DATA

SS03S-02

Oil pressure		at idle speed at 3,000 rpm	29 kPa (0.3 kgf/cm ² , 43 psi) or more 294 – 539 kPa (3.0 – 5.5 kgf/cm ² , 43 – 78 psi)
Oil pump	Side clearance	STD	0.030 – 0.090 mm (0.0012 – 0.0035 in.)
		Maximum	0.15 mm (0.0059 in.)
	Body clearance	STD	0.250 – 0.325 mm (0.0098 – 0.0128 in.)
		Maximum	0.30 mm (0.0118 in.)
	Tip clearance	STD	0.110 – 0.240 mm (0.0043 – 0.0094 in.)
		Maximum	0.35 mm (0.0138 in.)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Oil pressure switch x Cylinder block	13	130	9
No.2 oil pan x Drain plug	45	460	33
Oil pump x Relief valve plug	49.1	500	36
Oil pump x Cylinder block	10 mm head	8	69 in.·lbf
	12 mm head	19.5	14
Crankshaft position sensor x Oil pump	8	80	69 in.·lbf
Oil pan baffle plate x No. 1 oil pan	8	80	69 in.·lbf
No.1 oil pan x Cylinder block	19.5	200	14
No.1 oil pan x Oil pump	10 mm head	8	69 in.·lbf
	12 mm head	19.5	14
No.1 oil pan x Rear oil seal retainer	8	80	69 in.·lbf
No.1 oil pan x Transaxle	37.2	380	27
Oil strainer x Main bearing cap	8	80	69 in.·lbf
Oil strainer x Oil pump	8	80	69 in.·lbf
No.2 oil pan x No. 1 oil pan	8	80	69 in.·lbf
Flywheel housing under cover x Transaxle	7.8	80	69 in.·lbf
A/C compressor housing bracket x Cylinder block	25	250	18
PS pump x PS pump bracket	43.1	440	32
PS pump drive belt adjusting strut x PS pump	43.1	440	32
PS pump drive belt adjusting strut x Oil pump	43.1	440	32
WU-TWC x LH exhaust manifold	62	630	46
No.2 front exhaust pipe x WU-TWC	56	560	41
No.2 front exhaust pipe x Front exhaust pipe	56	560	41

IGNITION

SS03U-08

SERVICE DATA

Firing order	–	1 – 2 – 3 – 4 – 5 – 6
Spark plug	Recommended spark plug Correct electrode gap for new plug Maximum electrode gap for used plug	DENSO NGK SK20R11 IFR6A11 1.0 – 1.1 mm (0.039 – 0.043 in.) 1.2 mm (0.047 in.)
Camshaft position sensor	Resistance	at cold at hot 835 – 1,400 Ω 1,060 – 1,645 Ω
Crankshaft position sensor	Resistance	at cold at hot 1,630 – 2,740 Ω 2,065 – 3,225 Ω

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Spark plug x Cylinder head	18	180	13
Ignition coil x Cylinder head	8	80	69 in.·lbf
Camshaft position sensor x Cylinder head	8	80	69 in.·lbf
Crankshaft position sensor x Oil pump	8	80	69 in.·lbf

STARTING

SERVICE DATA

SS0PO-02

Starter	Rated voltage and output power		12 V 1.4 kW
	No-load characteristics	Current	90 A or less at 11.5 V
		rpm	3,000 rpm or more
	Brush length	STD	15.5 mm (0.610 in.)
		Minimum	8.5 mm (0.335 in.)
	Spring installed load	STD	17.6 – 23.5 N (1.8 – 2.4 kgf, 3.9 – 5.3 lbf)
		Minimum	11.8 N (1.2 kgf, 2.6 lbf)
	Commutator Diameter	STD	30.0 mm (1.181 in.)
		Minimum	29.0 mm (1.142 in.)
	Undercut depth	STD	0.6 mm (0.024 in.)
		Minimum	0.2 mm (0.008 in.)
	Circle runout	Maximum	0.05 mm (0.0020 in.)
	Magnetic switch		
	Contact plate for wear	Maximum	0.9 mm (0.035 in.)

TORQUE SPECIFICATION

Parttightened	N·m	kgf·cm	ft·lbf
Air cleaner case mounting bolt	5.0	50	44 in·lbf
Starter mounting bolt	37	380	27
End cover x Field frame	1.5	15	13 in·lbf
Starter housing x Magnetic switch	5.9	60	52 in·lbf
Field frame x Armature assembly	5.9	60	52 in·lbf
Lead wire x Terminal C of starter	5.9	60	52 in·lbf
Terminal nut x Terminal C of starter	17	170	12
Terminal nut x Terminal 30 of starter	17	170	12
Magnetic switch end cover x Magnetic switch housing	2.5	26	23 in·lbf

CHARGING
SERVICE DATA

SS0PQ-02

Battery	Voltage	at 20°C (68°F)	12.5 – 12.9 V
Drive belt	Tension		
	New belt		756 – 801 N (77 – 82 kgf)
	Used belt		422 – 601 N (43 – 61 kgf)
Alternator	Rated output		12 V 120 A
	Slip ring diameter	STD	14.2 – 14.4 mm (0.559 – 0.567 in.)
		Limit	14.0 mm (0.551 in.)
	Brush exposed length	STD	10.5 mm (0.413 in.)
		Limit	4.5 mm (0.177059 in.)
Voltage regulator	Regulating voltage		13.2 – 14.0 V

TORQUE SPECIFICATION

Parttightened	N·m	kgf·cm	ft·lbf
Bearing retainer x Drive end frame	2.6	27	23 in·lbf
Coil assembly x Drive end frame	5.8	59	51 in·lbf
Alternator pulley x Rotor	110.5	1,125	81
Brush holder x Coil assembly	1.8	18	16 in·lbf
Rear end cover x Coil assembly	4.6	47	41 in·lbf
Alternator x Alternator bracket	56	570	41
Alternator x Adjusting bar	18	180	13

AUTOMATIC TRANSAXLE

SERVICE DATA

SS0EB-09

Line pressure (Wheel locked)	Engine idling	
	D range	372 – 412 kPa (3.8 – 4.2 kgf/cm ² , 54 – 59 psi)
	R range	672 – 742 kPa (6.9 – 7.6 kgf/cm ² , 97 – 107 psi)
	AT stall (Throttle valve fully opened)	
	D range	931 – 1,031 kPa (9.5 – 10.5 kgf/cm ² , 134 – 149 psi)
	R range	1,768 – 1,968 kPa (18.0 – 20.1 kgf/cm ² , 255 – 284 psi)
Engine stall revolution	D range	2,325 – 2,775 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N range	700 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter runout	Max.	0.30 mm (0.0118 in.)
Torque converter installation distance		More than 12.75 mm (0.5020 in.)
Differential oil seal drive in depth	(LH side, RH side)	1 ± 0.3 mm (0.039 ± 0.012 in.)
Extension housing oil seal drive in depth		1.5 ± 0.4 mm (0.059 ± 0.016 in.)
Shift schedule (LHD)		
D range (Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	2 → 3	101 – 106 km/h (63 – 66 mph)
	3 → 4	161 – 170 km/h (100 – 106 mph)
	4 → 3	128 – 137 km/h (79 – 85 mph)
	3 → 2	67 – 72 km/h (42 – 45 mph)
	2 → 1	26 – 31 km/h (16 – 19 mph)
	3 → 4	30 – 35 km/h (19 – 22 mph)
	4 → 3	17 – 22 km/h (11 – 14 mph)
(Throttle valve fully closed)		
2 range (Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	3 → 2	101 – 106 km/h (63 – 66 mph)
	2 → 1	26 – 31 km/h (16 – 19 mph)
L range (Throttle valve fully opened)	3 → 2	103 – 108 km/h (64 – 67 mph)
	2 → 1	47 – 52 km/h (29 – 32 mph)
Shift schedule (LHD) Kick-down switch ON		
D position (Throttle valve fully opened)	4 → 3	154 – 163 km/h (95 – 101 mph)
	3 → 2	94 – 99 km/h (58 – 61 mph)
	2 → 1	42 – 47 km/h (26 – 29 mph)
2 position (Throttle valve fully opened)	2 → 1	42 – 47 km/h (26 – 29 mph)

SERVICE SPECIFICATIONS – AUTOMATIC TRANSAXLE

Shift schedule (RHD)		
D position		
(Throttle valve fully opened)	1 → 2	53 – 60 km/h (33 – 37 mph)
	2 → 3	101 – 107 km/h (63 – 66 mph)
	3 → 4	161 – 172 km/h (100 – 107 mph)
	4 → 3	154 – 165 km/h (95 – 103 mph)
	3 → 2	94 – 100 km/h (58 – 62 mph)
	2 → 1	42 – 47 km/h (26 – 29 mph)
(Throttle valve fully closed)	3 → 4	30 – 36 km/h (19 – 22 mph)
	4 → 3	17 – 22 km/h (11 – 14 mph)
2 position		
(Throttle valve fully opened)	1 → 2	53 – 60 km/h (33 – 37 mph)
	3 → 2	103 – 110 km/h (64 – 68 mph)
	2 → 1	42 – 47 km/h (26 – 29 mph)
L position		
(Throttle valve fully opened)	3 → 2	103 – 110 km/h (64 – 68 mph)
	2 → 1	47 – 52 km/h (26 – 32 mph)
Lock-up point (LHD)		
O/D gear	Throttle valve opening 5 %	
	Lock-up ON	75 – 79 km/h (47 – 49 mph)
	Lock-up OFF	70 – 75 km/h (43 – 47 mph)
Lock-up point (RHD)		
O/D gear	Throttle valve opening 5 %	
	Lock-up ON	75 – 80 km/h (47 – 50 mph)
	Lock-up OFF	70 – 76 km/h (43 – 47 mph)

TORQUE SPECIFICATION

Parttightened		N·m	kgf·cm	ft·lbf
Input turbine speed sensor x Transaxle case		11	115	8
Counter gear speed sensor x Transaxle case		11	115	8
Neutral start switch	Bolt	5.4	55	48 in.·lbf
	Nut	6.9	70	61 in.·lbf
Control shaft lever x Control shaft		13	130	9
Shift control cable x Control shaft lever		15	150	11
Solenoid wire x Transaxle case		5.4	55	48 in.·lbf
Valve body x Transaxle case		11	110	8
ATF temperature sensor x Valve body		6.6	67	58 in.·lbf
Oil strainer x Valve body		11	110	8
Oil pan x Transaxle case		7.8	80	69 in.·lbf
Drain plug		49	500	36
Air cooled oil cooler	Bolt	7.0	71	62 in.·lbf
	Nut	7.0	71	62 in.·lbf
Floor shift lever assembly x Brace		12	120	9
Shift lever anti-rattle cushion x Shift lever plate		1.8	18	16 in.·lbf
Manual detent spring x Shift lever sub-assembly		1.7	17	15 in.·lbf
Shift control unit assembly x Shift lever plate		1.8	18	16 in.·lbf
Lower position indicator housing x Shift lever plate		2.2	23	19 in.·lbf
Shift lever knob cover x Shift lever knob		1.3	14	12 in.·lbf
Shift lever knob x Shift lever sub-assembly		2.2	23	19 in.·lbf
Shift lever plate x Shift lever plate sub-assembly		5.7	58	50 in.·lbf
Starter x Transaxle housing		39	400	29
Exhaust manifold stay (front side) x Exhaust manifold		8	82	71 in.·lbf
Exhaust manifold stay (front side) x Transaxle housing		20	200	15
Exhaust manifold stay (rear side) x Transaxle case		34	350	25
Transaxle housing x Engine block		66	670	48
Flywheel housing under cover x Transaxle housing		8	82	71 in.·lbf
Torque converter x Drive plate		41	420	30
Transaxle housing x Engine block	A bolt	48	490	35
	B bolt	37	380	27
Drive plate x Crankshaft		83	850	61
RH stiffener plate x Engine		37	380	27
RH stiffener plate x Transfer		37	380	27

PROPELLER SHAFT

SERVICE DATA

SS02T-02

Propellershaft runout	Max.	0.8 mm (0.031 in.)
Intermediate shaft runout	Max.	0.8 mm (0.031 in.)
Intermediate shaft front flange runout	Max.	0.1 mm (0.004 in.)
Intermediate shaft rear flange runout (horizontal direction)	Max.	0.1 mm (0.004 in.)
Intermediate shaft rear flange runout (vertical direction)	Max.	0.1 mm (0.004 in.)

TORQUE SPECIFICATION

Parttightened	N·m	kgf·cm	ft·lbf
Intermediate shaft x Front center support bearing			
1st	181	1,850	134
Loosen nut			
2nd	69	700	51
Intermediate shaft x Rear center support bearing			
1st	181	1,850	134
Loosen nut			
2nd	69	700	51
Front propeller shaft x Intermediate shaft	74	750	54
Rear propeller shaft x Rear differential	74	750	54
Intermediate shaft rear flange x Rear propeller shaft cross groove joint	27	275	20
Front center support bearing x Body	37	375	27
Rear center support bearing x Body	37	375	27

SUSPENSION AND AXLE

SERVICE DATA

SS0PV-02

Cold tire inflation pressure	215/70R16	Front	230 kPa (2.3 kgf/cm ² , 33 psi)
		Rear	230 kPa (2.3 kgf/cm ² , 33 psi)
	225/60R17 (LHD only:)	Front	210 kPa (2.1 kgf/cm ² , 30 psi)
		Rear	210 kPa (2.1 kgf/cm ² , 30 psi)
Front wheel alignment	Vehicle height	Front*1 Rear*2	247 mm (9.72 in.) 303 mm (11.93 in.)
	Camber	Left-right error	−0°24' ± 45' (−0.40° ± 0.75°) 45' (0.75°) or less
	Caster	Left-right error	2°09' ± 45' (2.15° ± 0.75°) 45' (0.75°) or less
	Steering axis inclination	Left-right error	12°16' ± 45' (12.27° ± 0.75°) 45' (0.75°) or less
	Toe-in (total)	Rack end length difference	0°06' ± 12' (0.1° ± 0.2°, 1 ± 2 mm, 0.04 ± 0.08 in.) 1.5 mm (0.059 in.) or less
	Wheel angle		
	RHD models:	Inside wheel Reference: Outside wheel	34°17' ± 1°30' (34.28° ± 1.5°) 30°11' (30.18°)
	LHD models:	Inside wheel Reference: Outside wheel	30°53' ± 1°30' (30.88° ± 1.5°) 27°46' (27.77°)
Rear wheel alignment	Camber	Left-right error	−0°42' ± 45' (−0.70° ± 0.75°) 45' (0.75°) or less
	Toe-in (total)	No. 2 lower suspension arm length difference	0°18' ± 12' (0.3° ± 0.2°, 3 ± 2 mm, 0.12 ± 0.08 in.) 3.0 mm (0.118 in.) or less
Front axle	Axle bearing backlash	Maximum	0.05 mm (0.0020 in.)
	Axle hub deviation	Maximum	0.05 mm (0.0020 in.)
Front drive shaft	Drive shaft standard length	LH	563.2 ± 2.0 mm (22.173 ± 0.079 in.)
		RH	914.8 ± 2.0 mm (36.016 ± 0.079 in.)
Front suspension	Lower ball joint turning torque		1.0 – 3.4 N·m (10 – 35 kgf·cm, 8.7 – 30 in.-lbf)
	Stabilizer bar link ball joint turning torque		0.05 – 1.0 N·m (0.5 – 10 kgf·cm, 0.4 – 8.7 in.-lbf)
Rear axle	Axle bearing backlash	Maximum	0.05 mm (0.0020 in.)
	Axle hub deviation	Maximum	0.05 mm (0.0020 in.)
Rear drive shaft	Drive shaft standard length		607.7 ± 5.0 mm (23.93 ± 0.20 in.)
Rear suspension	Stabilizer bar link ball joint turning torque		0.05 – 1.0 N·m (0.5 – 10 kgf·cm, 0.4 – 8.7 in.-lbf)

*1: Front measuring point

Measure the distance from the ground to the center of the front side lower suspension arm mounting bolt.

*2: Rear measuring point

Measure the distance from the ground to the center of the front side strut rod mounting bolt.

Rear differential	Drive pinion oil seal drive in depth	2.0 mm (0.079 in.)
	Side gear shaft oil seal drive in depth	0 mm (0 in.)
	Companion flange vertical runout	0.10 mm (0.0039 in.) or less
	Companion flange horizontal runout	0.10 mm (0.0039 in.) or less
	Ring gear runout	0.07 mm (0.0028 in.) or less
	Side gear backlash	0.05 – 0.20 mm (0.0020 – 0.0079 in.)
	Drive pinion to ring gear backlash	0.13 – 0.18 mm (0.0051 – 0.0071 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing
		1.1 – 1.7 N·m (11 – 17 kgf·cm, 9.6 – 14.8 in.·lbf) 0.6 – 0.9 N·m (6 – 9 kgf·cm, 5.2 – 7.8 in.·lbf)
	Total preload (Drive pinion preload plus)	0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)
	Side gear thrust washer thickness	mm (in.)
		0.93 – 0.97 (0.0366 – 0.0382) 0.98 – 1.02 (0.0386 – 0.0402) 1.03 – 1.07 (0.0406 – 0.0421) 1.08 – 1.12 (0.0425 – 0.0441) 1.13 – 1.17 (0.0445 – 0.0461) 1.18 – 1.22 (0.0465 – 0.0480) 1.23 – 1.27 (0.0484 – 0.0500) 1.28 – 1.32 (0.0504 – 0.0520) 1.33 – 1.37 (0.0524 – 0.0539) 1.38 – 1.42 (0.0543 – 0.0559)
	Side bearing plate washer thickness	mm (in.)
		2.26 – 2.28 (0.0890 – 0.0898) 2.29 – 2.31 (0.0902 – 0.0909) 2.32 – 2.34 (0.0913 – 0.0921) 2.35 – 2.37 (0.0925 – 0.0933) 2.38 – 2.40 (0.0937 – 0.0945) 2.41 – 2.43 (0.0949 – 0.0957) 2.44 – 2.46 (0.0961 – 0.0969) 2.47 – 2.49 (0.0972 – 0.0980) 2.50 – 2.52 (0.0984 – 0.0992) 2.53 – 2.55 (0.0996 – 0.1004) 2.56 – 2.58 (0.1008 – 0.1016) 2.59 – 2.61 (0.1020 – 0.1028) 2.62 – 2.64 (0.1031 – 0.1039) 2.65 – 2.67 (0.1043 – 0.1051) 2.68 – 2.70 (0.1055 – 0.1063)

SERVICE SPECIFICATIONS – SUSPENSION AND AXLE

Rear differential	Drive pinion plate washer thickness	mm (in.)	2.21 – 2.23 (0.0870 – 0.0878)
			2.24 – 2.26 (0.0882 – 0.0890)
			2.27 – 2.29 (0.0894 – 0.0902)
			2.30 – 2.32 (0.0906 – 0.0913)
			2.33 – 2.35 (0.0917 – 0.0925)
			2.36 – 2.38 (0.0929 – 0.0937)
			2.39 – 2.41 (0.0941 – 0.0949)
			2.42 – 2.44 (0.0953 – 0.0961)
			2.45 – 2.47 (0.0965 – 0.0972)
			2.48 – 2.50 (0.0976 – 0.0984)
			2.51 – 2.53 (0.0988 – 0.0996)
			2.54 – 2.56 (0.1000 – 0.1008)
			2.57 – 2.59 (0.1012 – 0.1020)
			2.60 – 2.62 (0.1024 – 0.1031)
			2.63 – 2.65 (0.1035 – 0.1043)
			2.66 – 2.68 (0.1047 – 0.1055)
			2.69 – 2.71 (0.1059 – 0.1067)
			2.72 – 2.74 (0.1071 – 0.1079)
			2.75 – 2.77 (0.1083 – 0.1091)
			2.78 – 2.80 (0.1094 – 0.1102)
			2.81 – 2.83 (0.1106 – 0.1114)
			2.84 – 2.86 (0.1118 – 0.1126)
			2.87 – 2.89 (0.1130 – 0.1138)
			2.90 – 2.92 (0.1142 – 0.1150)
			2.93 – 2.95 (0.1154 – 0.1161)
			2.96 – 2.98 (0.1165 – 0.1173)
			2.99 – 3.01 (0.1177 – 0.1185)
			3.02 – 3.04 (0.1189 – 0.1197)
			3.05 – 3.07 (0.1201 – 0.1209)
			3.08 – 3.10 (0.1213 – 0.1220)
			3.11 – 3.13 (0.1224 – 0.1232)
			3.14 – 3.16 (0.1236 – 0.1244)
			3.17 – 3.19 (0.1248 – 0.1256)
			3.20 – 3.22 (0.1260 – 0.1268)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
FRONT:			
Hub nut	103	1,050	76
Tie rod end lock nut	74	750	55
Steering knuckle x Shock absorber	210	2,150	155
Steering knuckle x Brake caliper	107	1,090	79
Steering knuckle x Tie rod end	49	500	36
Axle hub x Front drive shaft	294	3,000	217
Lower ball joint x Lower suspension arm	127	1,300	94
Lower ball joint x Steering knuckle	123	1,250	90
Steering knuckle x Dust cover	8.3	85	74 in.·lbf
Brake reservoir tank set bolt	8.8	90	78 in.·lbf
Suspension support x Body (Front upper suspension brace)	80	820	59
Suspension support x Piston rod	49	500	36
ABS speed sensor set bolt	8.0	82	71 in.·lbf
Flexible hose and ABS speed sensor wire harness x Shock absorber	29	300	21
Lower suspension arm set bolt	206	2,100	152
Stabilizer bar bracket x Suspension member	19	195	14
Stabilizer bar link set nut	39	400	29
REAR:			
Hub nut	103	1,050	76
ABS speed sensor x Rear axle carrier	20	200	14
ABS speed sensor wire harness x Shock absorber	5.0	51	44 in.·lbf
Flexible hose x Shock absorber	29	300	21
Axle hub x Rear drive shaft	216	2,200	159
Backing plate set nut	72	730	53
Parking brake cable x Backing plate	8.0	82	71 in.·lbf
Rear axle carrier x Brake caliper	47	475	34
Shock absorber x Rear axle carrier	255	2,600	188
Drain plug	49	500	36
Filler plug	49	500	36
Breather plug	21	210	15
Companion flange x Drive pinion	SA-69		
Companion flange x Propeller shaft	74	750	54
Rear drive shaft x Side gear shaft	56	570	41
Differential rear mounting bolt	95	970	70
Rear crossmember set bolt	137	1,400	101
Differential carrier x Rear crossmember	103	1,050	76
Rear crossmember x Damper	27	270	20
Differential case x Ring gear	97	985	71
Differential carrier x Side bearing cap	79	800	58
Differential carrier x Differential carrier cover	47	475	34
Oil deflector set bolt	7.4	75	65 in.·lbf
Suspension support x Body	39	400	29

SERVICE SPECIFICATIONS – SUSPENSION AND AXLE

Suspension support x Piston rod		49	500	36
Parking brake cable bracket set bolt		5.0	51	44 in.-lbf
Exhaust front pipe x Exhaust center pipe		62	630	46
Exhaust center pipe x Exhaust tailpipe		62	630	46
Rear suspension member set nut	Front side	83	850	61
	Rear side	181	1,850	134
No. 1, No. 2 lower suspension arm x Rear suspension member		113	1,150	83
No. 1, No. 2 lower suspension arm x Rear axle carrier		177	1,800	131
Strut rod x Body		113	1,150	83
Strut rod x Rear axle carrier		123	1,250	91
Stabilizer bar bracket set bolt		19	195	14
Stabilizer bar link set nut		39	400	29

BRAKE

SERVICE DATA

SS0PZ-02

BRAKE PEDAL		
Brake pedal height (from asphalt sheet)	RHD	199.0 – 209.0 mm (7.834 – 8.228 in.)
	LHD	193.0 – 203.0 mm (7.598 – 7.992 in.)
Brake pedal freeplay		1 – 6 mm (0.04 – 0.24 in.)
Brake pedal reserve distance at 490 N (50 kgf, 110.2 lbf)	RHD	More than 133 mm (5.24 in.)
	LHD	More than 122 mm (4.80 in.)
PARKING BRAKE		
Parking brake lining thickness for rear disc brake	STD	2.0 mm (0.079 in.)
Parking brake lining thickness for rear disc brake	Minimum	1.0 mm (0.039 in.)
Parking brake pedal travel at 294 N (30 kgf, 66 lbf)		5 – 7 clicks
Parking brake clearance between rear shoe and lever		Less than 0.35 mm (0.0138 in.)
Parking brake adjusting shim thickness for rear disc brake		0.3 mm (0.012 in.)
		0.6 mm (0.024 in.)
		0.9 mm (0.035 in.)
BRAKE BOOSTER		
Brake booster push rod to piston clearance (w/ SST)		0 mm (0 in.)
FRONT BRAKE		
Front brake pad thickness	STD	11.0 mm (0.433 in.)
Front brake pad thickness	Minimum	1.0 mm (0.039 in.)
Front brake disc thickness	STD	28.0 mm (1.102 in.)
Front brake disc thickness	Minimum	26.0 mm (1.024 in.)
Front brake disc runout		
Europ	Maximum	0.035 mm (0.0014 in.)
Except Europe	Maximum	0.05 mm (0.0020 in.)
REAR BRAKE		
Rear brake pad thickness	STD	10.0 mm (0.394 in.)
Rear brake pad thickness	Minimum	1.0 mm (0.039 in.)
Rear brake disc thickness	STD	10.0 mm (0.394 in.)
Rear brake disc thickness	Minimum	8.5 mm (0.335 in.)
Rear brake disc runout	Maximum	0.15 mm (0.0059 in.)
Rear brake disc inside diameter	STD	170 mm (6.69 in.)
Rear brake disc inside diameter	Maximum	171 mm (6.73 in.)

TORQUE SPECIFICATION

Parttightened	N·m	kgf·cm	ft·lbf
BRAKE PEDAL			
Brake pedal x Pedal bracket	37	377	27
PARKING BRAKE PEDAL			
Parking brake cable adjusting nut	See page BR-8		
Pedal bracket x Reinforcement	19	194	14
Pedal bracket x Body (RHD)	19	194	14
Pedal bracket x Body (LHD)	39	400	29
BRAKE MASTER CYLINDER			
Master cylinder x Brake booster	13	130	9
Reservoir x Bracket	8.8	90	78 in.·lbf
Inlet union set screw (RHD except for Europe)	1.8	18	16 in.·lbf
BRAKE BOOSTER			
Brake booster clevis lock nut	26	265	19
Brake booster x Pedal bracket	13	130	9
FRONT BRAKE			
Front brake caliper installation bolt	34	350	25
Bleeder plug	8.3	85	74 in.·lbf
Front disc brake torque plate x Steering knuckle	107	1,090	79
Front disc brake caliper x Flexible hose	29	300	21
Flexible hose x Front speed sensor harness clamp x Shock absorber	29	300	21
REAR BRAKE			
Rear disc brake caliper installation bolt	20	200	14
Rear disc brake caliper main pin installation bolt	26	270	20
Rear disc brake caliper x Flexible hose	29	300	21
Rear disc brake torque plate x Rear axle carrier	47	475	34
Bleeder plug	8.3	85	74 in.·lbf
BRAKE ACTUATOR			
Brake actuator x Actuator bracket	5.4	55	48 in.·lbf
Brake actuator bracket x Body	19	195	14
SPEED SENSOR			
Front speed sensor installation bolt	8.0	82	71 in.·lbf
Front speed sensor harness clamp x Body	5.0	55	48 in.·lbf
Rear speed sensor harness clamp bolt	5.0	55	48 in.·lbf
Rear speed sensor installation bolt	20	200	14
BRAKE LINE			
Brake line union nut	15	155	11

STEERING

SERVICE DATA

SS05R-06

DRIVE BELT		
Drive belt deflection	New belt	7 – 9 mm (0.28 – 0.35 in.)
	Used belt	10 – 12 mm (0.39 – 0.47 in.)
Drive belt tension	New belt	690 – 780 N (70 – 80 kgf)
	Used belt	350 – 490 N (35 – 50 kgf)
POWER STEERING FLUID		
Fluid level rise	Maximum	5 mm (0.20 in.)
Fluid pressure at idle speed with valve closed	Minimum	7,845 kPa (80 kgf/cm ² , 1,138 psi)
STEERING WHEEL		
Steering wheel freeplay	Maximum	30 mm (1.18 in.)
Steering effort at idle speed	(Reference)	5.9 N·m (60 kgf·cm, 52 in.-lbf)
POWER STEERING VANE PUMP		
Vane pump rotating torque		0.3 N·m (2.8 kgf·cm, 2.4 in.-lbf) or less
Oil clearance between pump shaft and bushing	STD	0.03 – 0.05 mm (0.0012 – 0.0020 in.)
Oil clearance between pump shaft and bushing	Maximum	0.07 mm (0.0028 in.)
Vane plate height	Minimum	8.6 mm (0.339 in.)
Vane plate thickness	Minimum	1.397 mm (0.0550 in.)
Vane plate length	Minimum	14.991 mm (0.5902 in.)
Clearance between the rotor groove and plate	Maximum	0.035 mm (0.0014 in.)
Vane plate length	Pump rotor and cam ring mark	
	NONE	14.999 – 15.001 mm (0.59051 – 0.59059 in.)
	1	14.997 – 14.999 mm (0.59043 – 0.59051 in.)
	2	14.995 – 14.997 mm (0.59035 – 0.59043 in.)
	3	14.993 – 14.995 mm (0.59027 – 0.59035 in.)
	4	14.991 – 14.993 mm (0.59020 – 0.59027 in.)
Spring free length	Minimum	32.3 mm (1.272 in.)
POWER STEERING GEAR		
Steering rack runout	Maximum	0.03 mm (0.0118 in.)
Total preload (Control valve rotating torque)	(Turning)	0.8 – 1.4 N·m (8 – 14 kgf·cm, 6.9 – 12.2 in.-lbf)

*: For use with belt tension gauge

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
STEERING COLUMN			
Column tube support x Column tube	19	190	14
Turn signal bracket x Column Tube	4	40	35 in.·lbf
Universal joint assembly x Main shaft assembly	36	370	27
Steering column assembly set nut	26	260	19
Intermediate shaft sub-assembly x Universal joint assembly	36	370	27
Intermediate shaft sub-assembly x Control valve shaft	36	370	27
Steering wheel set nut	36	370	27
Steering wheel pad set screw (Torx screw)	8.8	90	78 in.·lbf
POWER STEERING VANE PUMP			
Rear housing X Front housing	24	240	17
Pressure port union	83	850	62
Suction port union set bolt	13	130	9
Front bracket x Rear bracket	43	440	32
Vane pump pulley set nut	43	440	32
Pump assembly set bolt	Bolt A	29 (43)	300 (440)
	Bolt B	43	440
Oil pressure switch	21	210	15
PS pump assembly x Pressure feed tube	52	530	38
POWER STEERING GEAR			
Control valve housing set bolt	18	180	13
Self-locking nut	25	250	18
Rack housing cap	59	600	43
Rack guide spring cap lock nut	50 (69)	510 (700)	37 (51)
Rack x Rack end	60 (83)	610 (850)	44 (61)
Tie rod end lock nut	74	750	54
Turn pressure tube union nut	12 (13)	120 (130)	9 (9)
PS gear assembly set bolt and nut	181	1,850	134
Pressure feed and return tubes x Control valve housing	23 (25)	230 (250)	17 (18)
Clamp plate set bolt	7.8	80	69 in.·lbf
Clamp plate set nut	9.8	100	7

(): For use without SST

SUPPLEMENTAL RESTRAINT SYSTEM

TORQUE SPECIFICATION

SS0FC-06

Parttightened	N·m	kgf·cm	ft·lbf
Steering wheel	36	360	26
Steering wheel pad	7.1	72	63 in.·lbf
Front passenger airbag assembly x Instrument panel	5.6	57	50 in.·lbf
Front passenger airbag assembly x Instrument panel reinforcement	20	205	15
Front seat x Body	37	375	27
Front seat cushion assembly x Front seat adjuster	18	183	13
Side airbag assembly x Seatback frame	5.5	56	48 in.·lbf
Airbag sensor assembly	21	210	15
Front airbag sensor	20	205	15
Front seat outer belt retractor Upper Bolt:	7.4	75	65 in.·lbf
Front seat outer belt retractor Lower Bolt:	41	420	30
Side airbag sensor assembly	21	210	15

BODY ELECTRICAL

SERVICE DATA

SSOCN-08

SPEEDOMETER (ON-VEHICLE)	
USA:	
Standard indication (mph)	Allowable range (mph)
20	18 – 24
40	38 – 44
60	56 – 66
80	78 – 88
100	98 – 110
120	118 – 132
CANADA:	
Standard indication (km/h)	Allowable range (km/h)
20	17 – 24
40	38 – 46
60	57.5 – 67
80	77 – 88
100	96 – 109
120	115 – 130
160	134 – 151.5
TACHOMETER (ON-VEHICLE)/ DC 13.5 V 25 °C at (77 °F)	
Standard indication	Allowable range
700	630 – 770
1,000	900 – 1,100
2,000	1,850 – 2,150
3,000	2,800 – 3,200
4,000	3,800 – 4,200
5,000	4,800 – 5,200
6,000	5,750 – 6,250
7,000	6,700 – 7,300
FUEL MAIN SENDER GAUGE	
Float position mm (in.)	Resistance (Ω)
F: Approx. 12.2 (0.480) ± 3 (0.12)	Approx. 2.0 ± 1.0
E: Approx. 110.8 (4.362) ± 3 (0.12)	Approx. 43.3 ± 1.0
FUEL SUB SENDER GAUGE	
Float position mm (in.)	Resistance (Ω)
F: Approx. 11.1 (0.437) ± 3 (0.12)	Approx. 2.0 ± 1.0
E: Approx. 159.6 (6.283) ± 3 (0.12)	Approx. 63.7 ± 1.0

BODY

TORQUE SPECIFICATION

SSQP-02

Parttightened	N·m	kgf·cm	ft·lbf
FRONT BUMPER	–	–	–
Front bumper reinforcement x Body	27	275	20
Reinforcement extension x Body	8.0	82	71 in·lbf
REAR BUMPER	–	–	–
Rear bumper reinforcement x Body	27	275	20
HOOD	–	–	–
Hood support x Hood	22	225	16
Hood support x Body	20	205	15
Hood x Hood hinge	13	133	10
Hood x Auxiliary catch hook	7.0	71	62 in·lbf
Hood lock x Body	8.0	82	71 in·lbf
FRONT DOOR	–	–	–
Door hinge x Body	23	235	17
Door hinge x Door panel	27	275	20
Door lock striker x Body	23	235	17
Door lock x Door panel	5.0	51	44 in·lbf
Outside handle x Door panel	5.5	56	49 in·lbf
Door check x Door panel	5.5	56	49 in·lbf
Door check x Body	27	275	20
Window regulator x Door panel	11	112	8
Door glass x Window regulator	5.5	56	49 in·lbf
REAR DOOR	–	–	–
Door hinge x Body	26	265	19
Door hinge x Door panel	27	275	20
Door lock striker x Body	23	235	17
Outside handle x Door panel	5.5	56	49 in·lbf
Door check x Door panel	5.5	56	49 in·lbf
Door check x Body	27	275	20
Door lock x Door panel	5.0	51	44 in·lbf
Window regulator x Door panel	11	112	8
Door glass x Window regulator	5.5	56	49 in·lbf
BACK DOOR	–	–	–
Door hinge x Door panel	8.0	82	71 in·lbf
Door hinge x Body	12	122	9
Door stay x Door panel	8.0	82	71 in·lbf
Door stay x Body	8.0	82	71 in·lbf
Door lock striker x Body	23	235	17
Back door garnish x Door panel	5.5	56	49 in·lbf
Outside handle x Door panel	5.5	56	49 in·lbf
Door lock x Door panel	13	133	10
Door lock actuator x Door panel	5.5	56	49 in·lbf
Door lock control x Door panel	5.5	56	49 in·lbf

SERVICE SPECIFICATIONS – BODY

Key cylinder x Door panel		5.5	56	49 in.·lbf
Rear wiper motor x Door panel	Inner Side	5.0	51	44 in.·lbf
	Outer Side	12	122	9
Rear wiper arm x Door panel		5.5	56	49 in.·lbf
OUTSIDE REAR VIEW MIRROR		–	–	–
Outside rear view mirror x Door panel		8.0	82	71 in.·lbf
FRONT WIPER AND WASHER		–	–	–
Wiper motor x Wiper link		5.5	56	49 in.·lbf
Wiper link assembly x Body		7.0	71	62 in.·lbf
Wiper arm x Wiper link assembly		24	245	18
REAR WIPER AND WASHER		–	–	–
Wiper motor x Door panel	Inner Side	5.0	51	44 in.·lbf
	Outer Side	12	122	9
Wiper arm x Wiper motor		5.5	56	49 in.·lbf
ROOF DRIP SIDE FINISH MOULDING		–	–	–
Front roof drip side finish moulding x Body		6.9	70	61 in.·lbf
Roof drip side finish moulding x Body		6.9	70	61 in.·lbf
SLIDING ROOF		–	–	–
Sliding roof housing x Body		5.5	56	49 in.·lbf
Bracket x body		8.0	82	71 in.·lbf
Bracket x Sliding roof housing		8.0	82	71 in.·lbf
Sliding roof glass x Drive cable		5.5	56	49 in.·lbf
INSTRUMENT PANEL		–	–	–
Front passenger airbag assembly x Reinforcement		20	205	15
Front passenger airbag assembly x Safety pad		5.6	57	50 in.·lbf
FRONT SEAT		–	–	–
Front seat inner belt x Seat track		42	430	31
Seatback assembly x Seat track		37	375	27
Seat cushion assembly x Seat track		18	184	13
Seat track x Body		37	375	27
Reclining seat adjuster assembly x No. 2 Vertical seat link sub-assembly		29	300	22
vertical seat link sub-assembly x Seat track assembly		26	270	20
Reclining seat adjuster assembly x Seat track assembly		19	200	14
REAR SEAT (LH)		–	–	–
Rear seat inner belt x Seat track		42	430	31
Seatback assembly x Seat track		55	560	41
Seat cushion assembly x Seatback assembly		37	375	27
Seat cushion assembly x Seat track		18	184	13
Seat track x Body		37	375	27
REAR SEAT (RH)		–	–	–
Reclining connecting rod x Seat track		18	184	13
Rear seat inner belt x Reclining connecting rod		42	430	31
Armrest assembly x Seatback frame		18	184	13
Seatback assembly x Seat track		55	560	41
Seat cushion assembly x Seatback assembly		37	375	27
Seat cushion assembly x Seat track		18	184	13

LEXUS RX300 (RM785E)

Seat track x Body	37	375	27
Rear seat outer center belt x Seatback assembly	42	430	31
Rear seat outer center belt x Reclining connecting pipe	42	430	31
SEAT BELT	–	–	–
Adjustable anchor x Body	42	430	31
Front seat outer belt shoulder anchor x Body	42	430	31
Front seat outer belt floor anchor x Body	42	430	31
Front seat outer belt retractor x Body	Upper bolt	7.5	76
	Lower bolt	42	430
Front seat inner belt x Seat track	42	430	31
Rear seat outer belt shoulder anchor x Body	42	430	31
Rear seat outer belt floor anchor x Body	42	430	31
Rear seat outer belt retractor x Body	42	430	31
Rear seat inner belt x Rear seat	42	430	31
Rear seat inner center belt x Floor	42	430	31
Rear center tongue side belt x Floor	42	430	31
Rear seat outer center belt x Seatback assembly	42	430	31
Rear seat outer center belt x Reclining connecting pipe	42	430	31

AIR CONDITIONING

SERVICE DATA

SS005-01

Refrigerant charge volume		650 ± 50 g (21.16 ± 1.76 oz.)
Drive belt tension	New belt	165 ± 26 lbf
	Used belt	88 ± 11 lbf
Idle-up speed	Magnetic clutch not engaged	700 ± 50 rpm
	Magnetic clutch engaged (at cooling fan running "LO" mode)	700 ± 50 rpm
	Magnetic clutch engaged (at cooling fan running "HI" mode)	730 ± 50 rpm
Magnetic clutch clearance		0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

TORQUE SPECIFICATION

Parttightened	N·m	kgf·cm	ft·lbf
Alternator x Engine (Pivot bolt)	56	570	41
Alternator x Engine (Adjusting lock bolt)	18	185	13
Drive belt adjusting bar bracket x Adjusting bar	18	185	13
Drive belt adjusting bar bracket x Compressor	25	250	18
Compressor x Engine	25	250	18
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
Pressure plate x Compressor	13.2	135	9
Condenser x Discharge hose	10	100	7
Condenser x Liquid tube	10	100	7
Wiper motor and link assembly x Body	7.0	71	62 in.·lbf
Wiper arm x Wiper motor and link assembly	20	205	15
A/C unit x Liquid and suction tube	10	100	7
Expansion valve x Tube and accessory	4.1	42	36 in.·lbf
Tube and accessory x Evaporator	4.1	42	36 in.·lbf
Front passenger air bag x Reinforcement	20	205	15
Pressure switch x Liquid tube	10	100	7
Suction line (Piping joint)	32	330	24