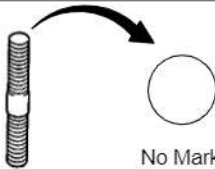
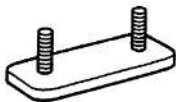


STANDARD BOLT

HOW TO DETERMINE BOLT STRENGTH

SS02S-01

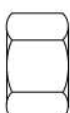
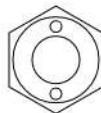
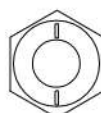
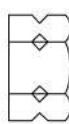
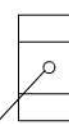
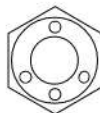
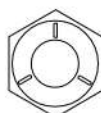
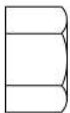
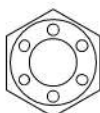
Bolt Type				Class
Hexagon Head Bolt		Stud Bolt	Weld Bolt	
Normal Recess Bolt	Deep Recess Bolt			
4  No Mark	 No Mark	 No Mark		4T
5 				5T
6  w/ Washer	 w/ Washer			6T
7 	 			7T
8 				8T
9 				9T
10 	 			10T
11 	 			11T

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

2002 4RUNNER (RM887U)

MAINTENANCE

TORQUE SPECIFICATION

SS065-01

Part tightened	N·m	kgf·cm	ft·lbf
Front seat mount bolts	37	375	27

ENGINE MECHANICAL (5VZ-FE)

SS000-04

SERVICE DATA

Compression pressure	at 250 rpm STD Minimum Difference of pressure between each cylinder	1,200 kPa (12.2 kgf/cm ² , 174 psi) or more 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	0.13 - 0.23 mm (0.006 - 0.009 in.) 0.27 - 0.37 mm (0.011 - 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
Intake manifold vacuum	at idle speed	60 kPa (450 mmHg, 17.7 in.Hg) or more
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 STD O/S 0.05	0.10 mm (0.039 in.) 30°, 45°, 60° 45° 1.0 - 1.4 mm (0.039 - 0.055 in.) 10.985 - 11.027 mm (0.4325 - 0.4341 in.) 11.050 - 11.077 mm (0.4350 - 0.4361 in.)
Valve guide bushing	Inside diameter Outside diameter for repair part STD O/S 0.05	6.010 - 6.030 mm (0.2366 - 0.2374 in.) 11.033 - 11.044 mm (0.4344 - 0.4348 in.) 11.083 - 11.094 mm (0.4363 - 0.4368 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 Minimum	95.15 mm (3.7461 in.) 94.90 mm (3.7362 in.) 94.60 mm (3.7244 in.) 94.40 mm (3.7165 in.) 44.5° 5.970 - 5.985 mm (0.2350 - 0.2356 in.) 5.965 - 5.980 mm (0.2348 - 0.2354 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.)

Valve spring	Deviation	Maximum	2.0 mm (0.079 in.)
	Free length		44.78 mm (1.7630 in.)
	Installed tension	at 33.3 mm (1.311 in.)	186 - 206 N (19.0 - 21.0 kgf, 41.9 - 46.3 lbf)
Valve lifter	Lifter diameter		30.966 - 30.976 mm (1.2191 - 1.2195 in.)
	Lifter bore diameter		31.000 - 31.018 mm (1.2205 - 1.2212 in.)
	Oil clearance	STD	0.024 - 0.052 mm (0.0009 - 0.0020 in.)
		Maximum	0.08 mm (0.0031 in.)
Camshaft	Thrust clearance	STD	0.033 - 0.080 mm (0.0013 - 0.0031 in.)
		Maximum	0.12 mm (0.0047 in.)
	Journal oil clearance	STD	0.035 - 0.072 mm (0.0014 - 0.0028 in.)
		Maximum	0.10 mm (0.0039 in.)
	Journal diameter		26.949 - 26.965 mm (1.0610 - 1.0616 in.)
	Circle runout	Maximum	0.06 mm (0.0024 in.)
	Cam lobe height	STD Intake	42.31 - 42.41 mm (1.6657 - 1.6697 in.)
		Exhaust	41.96 - 42.06 mm (1.6520 - 1.6559 in.)
		Minimum Intake	42.16 mm (1.6598 in.)
		Exhaust	41.81 mm (1.6461 in.)
	Camshaft gear backlash	STD	0.020 - 0.200 mm (0.0008 - 0.0079 in.)
		Maximum	0.30 mm (0.0188 in.)
	Camshaft gear spring end free distance		18.2 - 18.8 mm (0.712 - 0.740 in.)
Air intake chamber	Warpage	Maximum	0.10 mm (0.0039 in.)
Intake air connector	Warpage	Maximum	0.10 mm (0.0039 in.)
Intake manifold	Warpage	Maximum	0.10 mm (0.0039 in.)
Exhaust manifold	Warpage	Maximum	1.00 mm (0.0394 in.)
Cylinder block	Cylinder head surface warpage	Maximum	0.05 mm (0.0020 in.)
	Cylinder bore diameter	STD Mark 1	93.500 - 93.510 mm (3.6811 - 3.6815 in.)
		Mark 2	93.510 - 93.520 mm (3.6815 - 3.6819 in.)
		Mark 3	93.520 - 93.530 mm (3.6819 - 3.6823 in.)
		Maximum STD	93.730 mm (3.6902 in.)
		O/S 0.50	94.230 mm (3.7098 in.)
Piston and piston ring	Piston diameter	STD Mark 1	93.356 - 93.366 mm (3.6754 - 3.6758 in.)
		Mark 2	93.367 - 93.376 mm (3.6759 - 3.6762 in.)
		Mark 3	93.377 - 93.386 mm (3.6763 - 3.6766 in.)
		O/S 0.50	93.856 - 93.886 mm (3.6951 - 3.6963 in.)
	Piston oil clearance	STD	0.134 - 0.154 mm (0.0053 - 0.0060 in.)
		Maximum	0.174 mm (0.0069 in.)
	Piston ring groove clearance	No.1	0.040 - 0.080 mm (0.0016 - 0.0031 in.)
		No.2	0.030 - 0.070 mm (0.0012 - 0.0028 in.)
	Piston ring end gap	STD No.1	0.300 - 0.500 mm (0.0118 - 0.0197 in.)
		No.2	0.400 - 0.600 mm (0.0157 - 0.0236 in.)
		Oil	0.150 - 0.550 mm (0.0059 - 0.0217 in.)
		Maximum No.1	1.100 mm (0.0433 in.)
		No.2	1.200 mm (0.0472 in.)
		Oil	1.150 mm (0.0453 in.)

SERVICE SPECIFICATIONS - ENGINE MECHANICAL (5VZ-FE)

Connecting rod	Thrust clearance	STD	0.150 - 0.330 mm (0.0059 - 0.0130 in.)
		Maximum	0.380 mm (0.0150 in.)
	Connecting rod bearing center wall thickness		
	Reference	Mark 1	1.484 - 1.488 mm (0.0584 - 0.0586 in.)
		Mark 2	1.488 - 1.492 mm (0.0586 - 0.0587 in.)
		Mark 3	1.492 - 1.496 mm (0.0587 - 0.0589 in.)
	Connecting rod oil clearance	STD	0.024 - 0.053 mm (0.0009 - 0.0021 in.)
		O/S 0.25	0.023 - 0.069 mm (0.0009 - 0.0027 in.)
		Maximum	0.08 mm (0.0031 in.)
	Rod bend	Maximum per 100 mm (3.94 in.)	0.05 mm (0.0020 in.)
	Rod twist	Maximum per 100 mm (3.94 in.)	0.15 mm (0.0059 in.)
	Bushing inside diameter		22.005 - 22.017 mm (0.8663 - 0.8668 in.)
	Piston pin diameter		21.997 - 22.009 mm (0.8660 - 0.8665 in.)
Crankshaft	Bushing oil clearance	STD	0.005 - 0.011 mm (0.0002 - 0.0004 in.)
		Maximum	0.05 mm (0.0020 in.)
	Connecting rod bolt outer diameter	STD	7.860 - 8.000 mm (0.3094 - 0.3150 in.)
		Minimum	7.600 mm (0.2992 in.)
	Thrust clearance	STD	0.020 - 0.220 mm (0.0008 - 0.0087 in.)
		Maximum	0.300 mm (0.0118 in.)
	Thrust washer thickness		2.440 - 2.490 mm (0.0961 - 0.0980 in.)
	Main journal oil clearance	No.1 STD	0.020 - 0.038 mm (0.0008 - 0.0015 in.)
		U/S 0.25	0.019 - 0.059 mm (0.0007 - 0.0023 in.)
		Others STD	0.024 - 0.042 mm (0.0009 - 0.0017 in.)
		U/S 0.25	0.023 - 0.063 mm (0.0009 - 0.0025 in.)
		Maximum	0.08 mm (0.0031 in.)
	Main journal diameter	STD	63.985 - 64.000 mm (2.5191 - 2.5197 in.)
		U/S 0.25	63.745 - 63.755 mm (2.5096 - 2.5100 in.)
	Main bearing center wall thickness		
	Reference	No.1 Mark 1	1.991 - 1.994 mm (0.0784 - 0.0785 in.)
		Mark 2	1.994 - 1.997 mm (0.0785 - 0.0786 in.)
		Mark 3	1.997 - 2.000 mm (0.0786 - 0.0787 in.)
		Mark 4	2.000 - 2.003 mm (0.0787 - 0.0789 in.)
		Mark 5	2.003 - 2.006 mm (0.0789 - 0.0790 in.)
		Others Mark 1	1.989 - 1.992 mm (0.0783 - 0.0784 in.)
		Mark 2	1.992 - 1.995 mm (0.0784 - 0.0785 in.)
		Mark 3	1.995 - 1.998 mm (0.0785 - 0.0787 in.)
		Mark 4	1.998 - 2.001 mm (0.0787 - 0.0788 in.)
		Mark 5	2.001 - 2.004 mm (0.0788 - 0.0789 in.)
	Crank pin diameter	STD	54.987 - 55.000 mm (2.1648 - 2.1654 in.)
		U/S 0.25	54.745 - 54.755 mm (2.1553 - 2.1557 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
No.1 idler pulley x Oil pump	35	350	26
No.2 idler pulley x No.2 idler pulley bracket	40	400	30
No.1 timing belt cover x Oil pump	9	90	80 in.·lbf
Crankshaft pulley x Crankshaft	295	2,950	213
Camshaft timing pulley x Camshaft	110	1,100	81
Timing belt tensioner x Oil pump	27	280	20
No.2 timing belt cover x No.3 timing belt cover	9	90	80 in.·lbf
Oil dipstick guide x Generator bracket	8	80	71 in.·lbf
Fluid coupling x Fan bracket	5.4	54	48 in.·lbf
A/C compressor bracket x Cylinder block	47	479	35
A/C compressor x A/C compressor bracket	25	250	18
PS pump x PS pump bracket	43	440	31
Camshaft bearing cap x Cylinder head	16	160	12
Rear plate x Cylinder head	8	80	71 in.·lbf
Cylinder head x Cylinder block	12 pointed head 1st 2nd 3rd Recessed head	34 Turn 90° Turn 90° 18	350 Turn 90° Turn 90° 185
Cylinder head cover x Cylinder head	6	60	53 in.·lbf
Exhaust manifold x Cylinder head	40	400	30
Exhaust crossover pipe x Exhaust manifold	45	450	33
Generator bracket x LH cylinder head	18.5	185	14
PS pump bracket x RH cylinder head	18.5	185	14
Intake manifold, Intake manifold stay x Cylinder head	18	180	13
No.3 timing belt cover x Cylinder head	9	90	80 in.·lbf
Camshaft position sensor x RH cylinder head	8	80	71 in.·lbf
Intake air connector x Intake manifold	18	180	13
Air intake chamber x Intake air connector	18	180	13
Air intake chamber stay x LH cylinder head	40	408	30
Air intake chamber stay x Air intake chamber	18	184	13
Engine hanger No.2 x RH cylinder head	45	459	33
Frame crossmember x Engine rear mounting bracket	58	590	43
Engine rear mounting bracket x Engine rear mounting insulator	18	183	13
Engine front mounting insulator x Frame	38	387	28
Connecting rod cap x Connecting rod	1st 2nd	25 Turn 90°	250 Turn 90°
Main bearing cap x Cylinder block	1st 2nd	61 Turn 90°	625 Turn 90°
Rear oil seal retainer x Cylinder block	8	80	71 in.·lbf
Engine coolant drain cock x Cylinder block	39	400	29
Engine mounting bracket x Cylinder block	44	440	32
Oil filter union x Cylinder block	25	250	18
Oil pressure switch x Cylinder block	15	150	11
Generator adjusting bar x Cylinder block	42	420	31
No.2 idler pulley bracket x Cylinder block	38	380	28

2002 4RUNNER (RM887U)

SERVICE SPECIFICATIONS - ENGINE MECHANICAL (5VZ-FE)

Water bypass pipe x Cylinder block		8.5	85	75 in.-lbf
Rear end plate x Cylinder block		7.5	75	66 in.-lbf
Drive plate x Crankshaft	A/T	83	850	61
Flywheel x Crankshaft	M/T	85	850	63
No.2 support bracket x Body		19	195	14
No.3 support bracket x Body		19	195	14
No.1 front exhaust pipe x Exhaust manifold		62	630	41
No.1 front exhaust pipe x No.2 front exhaust manifold		48	495	35
A/F sensor x No.1 front exhaust pipe		20	200	14
Heated oxygen sensor (Bank 1 sensor 2) x No.2 front exhaust pipe		44	449	32

EMISSION CONTROL (5VZ-FE)

TORQUE SPECIFICATION

SS00R-08

Part tightened	N·m	kgf·cm	ft·lbf
No. 1 front exhaust pipe x Exhaust crossover pipe	62	630	46
No. 1 front exhaust pipe x No. 2 front exhaust pipe	48	495	35
No.2 Front exhaust pipe x Center exhaust pipe	48	495	35
A/F sensor x No. 1 front exhaust pipe	20	200	14
Support bracket x Body	19	195	14

SFI (5VZ-FE)

SERVICE DATA

SS00U-09

Fuel pressure regulator	Fuel pressure at no vacuum	265 - 304 kPa (2.7 - 3.1 kgf/cm ² , 38 - 44 psi)
Fuel pump	Resistance at 20°C (68°F)	0.2 - 3.0 Ω
Injector	Resistance Injection volume Difference between each cylinder Fuel leakage	Approx. 13.8 Ω 60 - 73 cm ³ (3.4 - 4.5 cu in.) per 15 sec. 13 cm ³ (0.8 cu in.) or less 1 drop or less per 12 minutes
MAF meter	Resistance (THA - E2) at -20°C (-4°F) at 20°C (68°F) at 60°C (140°F)	13.6 - 18.4 kΩ 2.2 - 2.7 kΩ 0.5 - 0.7 kΩ
Throttle control motor	Motor resistance at 20°C (68°F) Clutch resistance at 20°C (68°F)	0.3 - 100 Ω 4.2 - 5.2 Ω
Throttle position sensor	Resistance at 20°C (68°F)	1.2 - 3.2 Ω
Accelerator pedal position sensor	Resistance at 20°C (68°F) Standard throttle valve opening percentage Sensor lever full-open position	1.2 - 3.2 Ω 60 % or more
VSV for EVAP	Resistance at 20°C (68°F)	30 - 34 Ω
VSV for CCV	Resistance at 20°C (68°F) at 120°C (248°F)	25 - 30 Ω 33 - 42 Ω
VSV for pressure switching valve	Resistance at 20°C (68°F) at 120°C (248°F)	37 - 44 Ω 51 - 62 Ω
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
Vapor pressure sensor	Power source voltage (VC - E2) Power output voltage (PTNK - E2)	4.5 - 5.5 V 3.0 - 3.6 V
A/F sensor	Heater Resistance at 20°C (68°F) at 800°C (1,472°F)	0.8 - 1.4 Ω 1.8 - 3.2 Ω
Heated oxygen sensor	Heater resistance at 20°C (68°F) at 800°C (1,472°F)	11 - 16 Ω 23 - 32 Ω
Fuel cut rpm	Fuel return rpm	1,500 rpm

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Fuel line (Union bolt type)	34.3	350	25
Fuel line (Flare nut type) using SST	24	245	18
SST (Pressure gauge) x RH delivery pipe	34.3	350	25
No.2 timing belt cover x No.3 timing belt cover	9	90	80 in.·lbf
Fuel pump and sender gauge assembly x Fuel tank	3.5	35	30 in.·lbf
Air intake chamber x Intake air connector	18	180	13
Intake air connector x Intake manifold	18	180	13
Fuel pressure regulator x LH delivery pipe	8	80	71 in.·lbf
Fuel inlet pipe x RH delivery pipe	34.3	350	25
Delivery pipe x Intake manifold	13	130	10
Fuel inlet pipe x Intake manifold	8	80	71 in.·lbf
Fuel evaporation vent tube x Fuel tank	1.5	15	13 in.·lbf
Fuel pipe x Body	20	200	14
Fuel tank band x Body	40	410	30
Fuel tank protector x Fuel tank, Body	30	310	22
Fuel tube clamp bracket x Fuel tank	5.5	55	48 in.·lbf
Throttle body x Air intake chamber	18	180	13
Emission control valve assembly x Body	7.5	77	66 in.·lbf
Charcoal canister assembly x Body	20	204	15
VSV for pressure switching valve x Charcoal canister assembly	2.0	12.2	18 in.·lbf
Charcoal canister assembly x No. 2 charcoal canister bracket	5.4	55	48 in.·lbf
No. 2 charcoal canister bracket x Body	20	204	15
ECT sensor x Intake manifold	20	200	14
Fuel pipe x RH and LH delivery pipe	34.3	350	25
Intake manifold, Intake manifold stay x Cylinder head	18	180	13
Air intake chamber stay x LH cylinder head	40	408	30
Air intake chamber stay x Air intake chamber	18	184	13
Knock sensor x Cylinder block	39	400	29
A/F sensor x No.1 front exhaust pipe	20	200	14
Heated oxygen sensor x No.2 front exhaust pipe	20	200	14

COOLING (5VZ-FE)

SS00Y-01

SERVICE DATA

Thermostat	Valve opening pressure	80 - 84°C (176 - 183°F)
	Valve lift at 95°C (203°F)	8.5 mm (0.335 in .) or more
Radiator cap	Relief valve opening pressure	74 - 103 kPa (0.75 - 1.05 kgf/cm ² , 10.7 - 14.9 psi)
	STD Minimum	59 kPa (0.6 kgf/cm ² , 8.8 psi)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Fan x Fluid coupling	7.4	75	65 in·lbf
Water pump x Cylinder block	20	200	14
Water inlet x Water pump	20	200	14
Radiator support x Body	12	120	9
Radiator support x Radiator	12.7	130	9

LUBRICATION (5VZ-FE)

SS012-02

SERVICE DATA

Oil pressure	At idle speed (normal operating temperature)	29 kPa (0.3 kgf/cm ² , 4.3 psi) or more
	At 3,000 rpm (normal operating temperature)	245 - 520 kPa (2.5 - 5.3 kgf/cm ² , 36 - 75 psi)
Oil pump	Body clearance	STD 0.10 - 0.18 mm (0.0039 - 0.0069 in.)
		Maximum 0.30 mm (0.0118 in.)
	Tip clearance	STD 0.11 - 0.24 mm (0.0043 - 0.0094 in.)
		Maximum 0.35 mm (0.0138 in.)
	Side clearance	STD 0.03 - 0.09 mm (0.0012 - 0.0035 in.)
		Maximum 0.15 mm (0.0059 in.)

TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Oil pressure switch x Cylinder block		15	150	11
Oil pump x Oil pump body cover		10	105	8
Oil pump x Cylinder block	A	20	200	15
	B	42	420	31
Oil strainer x Cylinder block		7.5	76	66 in.·lbf
Oil pan x Cylinder block		7.6	78	67 in.·lbf
Oil cooler x Cylinder block		59	600	43

IGNITION (5VZ-FE)

SS016-02

SERVICE DATA

High-tension cord	Resistance	Maximum	25 k Ω per cord
Spark plug	Recommended spark plug	ND NGK	K16TR11 BKR5EKB-11
	Correct electrode gap		1.1 mm (0.043 in.)
Ignition coil	Resistance	Primary at cold	0.67 - 1.05 Ω
		at hot	0.85 - 1.23 Ω
		Secondary at cold	9.3 - 16.0 k Ω
		at hot	11.7 - 18.8 k Ω
Camshaft position sensor	Resistance	at cold	835 - 1,400 Ω
		at hot	1,060 - 1,645 Ω
Crankshaft position sensor	Resistance	at cold	1,630 - 2,740 Ω
		at hot	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	7.8	80	69 in·lbf
Camshaft position sensor x Cylinder head	7.8	80	69 in·lbf
Crankshaft position sensor x Oil pump	7.8	80	69 in·lbf

STARTING (5VZ-FE)

SERVICE DATA

SS01A-02

Starter (1.4 kW type)	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	10.0 mm (0.394 in.)
	Spring installed load	STD	17.6 - 23.5 N (1.80 - 2.40 kgf, 4.0 - 5.3 lbf)
		Minimum	11.8 N (1.20 kgf, 2.6 lbf)
	Commutator		
	Diameter	STD	30 mm (1.180 in.)
		Minimum	29 mm (1.140 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.)
Starter (1.8 kW type)	Magnetic switch		
	Contact plate for wear	Maximum	0.9 mm (0.035 in.)
	Rated voltage and output power		12 V 1.8 kW
	No-load characteristics	Current	100 A or less at 11.5 V
		rpm	2,500 rpm or more
	Shunt coil resistance	at 20°C (68°F)	1.4 - 1.9 Ω
	Brush length	STD	15.0 mm (0.591 in.)
		Minimum	9.0 mm (0.354 in.)
	Spring installed load	STD	21.5 - 27.5 N (2.20 - 2.80 kgf, 4.9 - 6.2 lbf)
		Minimum	12.7 N (1.30 kgf, 2.7 lbf)
	Commutator		
	Diameter	STD	35 mm (1.378 in.)
		Minimum	34 mm (1.339 in.)
	Undercut depth	STD	0.7 mm (0.028 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

Part tightened		N·m	kgf·cm	ft·lbf
Starter wire x Starter		8.8	90	78 in·lbf
Starter x Transaxle		39	400	29
Lead wire x Terminal C of starter		5.9	60	52 in·lbf
Field frame, Magnetic switch x Starter housing	1.4 kW type	5.9	60	52 in·lbf
	1.8 kW type	9.3	95	82 in·lbf
End cover x Field frame	1.4 kW type	1.5	15	13 in·lbf
	1.8 kW type	3.8	39	34 in·lbf
Terminal nut x Terminal C of starter, Terminal 30 of starter		17	170	12
Magnetic switch end cover x Magnetic switch	1.4 kW type	2.5	26	23 in·lbf
	1.8 kW type	3.6	37	32 in·lbf

CHARGING (5VZ-FE)

SS01E-02

SERVICE DATA

Battery	Voltage	at 20°C (68°F)	12.7 - 12.9 V
Drive belt	Tension	New belt	160 ± 20 lbf
		Used belt	100 ± 20 lbf
Generator	Rated output ampere		12 V 60 A
	Rotor coil resistance	at 20°C (68°F)	2.1 - 2.5 Ω
	Slip ring diameter	STD	14.2 - 14.4 mm (0.559 - 0.567 in.)
		Minimum	12.8 mm (0.504 in.)
	Brush exposed length	STD	10.5 mm (0.413 in.)
		Minimum	1.5 mm (0.059 in.)
Generator regulator	Regulating voltage	at 25°C (77°F)	13.7 - 14.7 V
		at 115°C (239°F)	13.2 - 14.0 V

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Generator x Generator bracket	51	520	38
Generator x Adjusting lever	18.5	189	25
Rectifier end frame x Drive end frame	4.5	45	39 in·lbf
Generator pulley x Rotor	110	1,125	81
Drive end frame x Voltage regulator	2.0	20	17 in·lbf
Generator rear end cover x Rectifier end frame	4.5	45	39 in·lbf
Terminal insulator x Rectifier Holder	4.1	42	36 in·lbf

AUTOMATIC TRANSMISSION

SERVICE DATA

SS01M-03

(A340E)		
Line pressure (wheel locked)	Engine idling	
	D position	382 - 441 kPa (3.9 - 4.5 kgf/cm ² , 55 - 64 psi)
	R position	598 - 696 kPa (6.1 - 7.1 kgf/cm ² , 87 - 101 psi)
	AT stall (Throttle valve fully opened)	
	D position	1,196 - 1,334 kPa (12.2 - 13.6 kgf/cm ² , 174 - 193 psi)
	R position	1,598 - 1,942 kPa (16.3 - 19.8 kgf/cm ² , 232 - 282 psi)
Engine stall revolution	D and R positions	2,250 ± 150 rpm
Time lag	N → D position	Less than 1.2 seconds
	N → R position	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N position	700 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0.30 mm (0.0118 in.)
Torque converter clutch installation distance		More than 17.95 mm (More than 0.7067 in.)
Shift point		
D position		
(Throttle valve fully opened)	1→2	59 - 67 km/h (37 - 42 mph)
	2→3	112 - 122 km/h (70 - 76 mph)
	3→O/D	151 - 159 km/h (94 - 99 mph)
	O/D→3	144 - 152 km/h (89 - 94 mph)
	3→2	103 - 113 km/h (64 - 70 mph)
	2→1	47 - 54 km/h (29 - 34 mph)
(Throttle valve fully closed)	3→O/D	44 - 48 km/h (27 - 30 mph)
	O/D→3	23 - 28 km/h (14 - 17 mph)
2 position		
(Throttle valve fully opened)	1→2	59 - 67 km/h (37 - 42 mph)
	3→2	119 - 127 km/h (74 - 79 mph)
	2→1	47 - 54 km/h (29 - 34 mph)
L position		
(Throttle valve fully opened)	2→1	58 - 62 km/h (36 - 39 mph)
Lock-up point	(Throttle valve opening 5%)	
O/D gear (NORM and PWR)	Lock-up ON	75 - 80 km/h (47 - 50 mph)
	Lock-up OFF	68 - 73 km/h (42 - 45 mph)
(A340F)		
Line pressure (wheel locked)	Engine idling	
	D position	382 - 441 kPa (3.9 - 4.5 kgf/cm ² , 55 - 64 psi)
	R position	598 - 696 kPa (6.1 - 7.1 kgf/cm ² , 87 - 101 psi)
	AT stall (Throttle valve fully opened)	
	D position	1,196 - 1,334 kPa (12.2 - 13.6 kgf/cm ² , 174 - 193 psi)
	R position	1,598 - 1,942 kPa (16.3 - 19.8 kgf/cm ² , 232 - 282 psi)
Engine stall revolution	D and R positions	2,250 ± 150 rpm
Time lag	N → D position	Less than 1.2 seconds
	N → R position	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N position	700 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0.30 mm (0.0118 in.)
Torque converter clutch installation distance		More than 17.95 mm (More than 0.7067 in.)

Shift point		
D position		
(Throttle valve fully opened)	1→2	57 - 65 km/h (35 - 40 mph)
	2→3	107 - 120 km/h (66 - 75 mph)
	3→O/D	144 - 156 km/h (89 - 97 mph)
	O/D→3	137 - 149 km/h (85 - 93 mph)
	3→2	98 - 111 km/h (61 - 69 mph)
	2→1	45 - 53 km/h (28 - 33 mph)
(Throttle valve fully closed)	3→O/D	41 - 47 km/h (25 - 29 mph)
	O/D→3	22 - 27 km/h (14 - 17 mph)
2 position		
(Throttle valve fully opened)	1→2	57 - 65 km/h (35 - 40 mph)
	3→2	114 - 125 km/h (71 - 78 mph)
	2→1	45 - 53 km/h (28 - 33 mph)
L position		
(Throttle valve fully opened)	2→1	55 - 61 km/h (34 - 38 mph)
Lock-up point	(Throttle valve opening 5%)	
O/D gear (NORM and PWR)	Lock-up ON	72 - 78 km/h (45 - 48 mph)
	Lock-up OFF	65 - 71 km/h (40 - 44 mph)

TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Shift solenoid valve x Valve body		10	100	7
Valve body x Transmission case		10	100	7
Oil strainer x Valve body		10	100	7
Oil pan x Transmission case		7.4	75	65 in.·lbf
Drain plug		20	205	15
Parking lock pawl bracket x Transmission case		7.4	75	65 in.·lbf
Extension housing x Transmission case (A340E)		36	370	27
Transmission shift lever assembly		5.9	60	52
Transmission control rod x Shift lever		13	130	10
Rear mounting insulator x Transmission (A340E)		65	660	48
Rear mounting insulator x Transfer (A340F)		65	660	48
Rear mounting insulator x Rear mounting bracket (A340E)		18	185	13
Rear mounting insulator x Crossmember (A340F)		18	185	13
Frame x No. 3 Crossmember		72	730	53
Frame x No. 4 Crossmember		72	730	53
Drive plate x Crankshaft		83	850	61
Torque converter clutch x Drive plate		41	420	30
Oil filler pipe		12	120	9
Oil cooler pipe clamp	10 mm head bolt	5.0	51	44 in.·lbf
	12 mm head bolt	12	120	9
Oil cooler pipe union nut		34	350	25
Transmission x Engine		71	730	53
Transmission x Starter		39	400	29
Rear end plate x Transmission		18	185	13
Front exhaust pipe x Exhaust manifold		62	630	46
Front exhaust pipe x Tail pipe		48	490	35
Stabilizer bar bracket x Frame		25	260	19
Stabilizer bar link x Lower suspension arm		69	700	51
Exhaust pipe support bracket x Transmission		44	450	33
Exhaust pipe support bracket x Exhaust pipe		44	450	33
Propeller shaft x Differential (A340E)		74	750	54
Front differential x Front propeller shaft (A340F)		74	750	54
Front propeller shaft x Transfer (A340F)		74	750	54
Rear propeller shaft x Rear differential (A340F)		74	750	54
Rear propeller shaft x Transfer (A340F)		74	750	54
Park/neutral position switch	Nut	3.9	40	35 in.·lbf
	Bolt	13	130	10
No. 2 vehicle speed sensor		5.4	55	48 in.·lbf
ATF temperature sensor x Transmission case		15	150	11

TRANSFER (VF3AM)

SS08E-03

SERVICE DATA

Transfer unit		
Hose insertion depth		13 mm (0.51 in.) or more
Oil pump body		
Body clearance	STD	0.09 - 0.16 mm (0.0035 - 0.0063 in.)
	Max.	0.16 mm (0.0063 in.)
Tip clearance	STD	0.05 - 0.15 mm (0.0020 - 0.0059 in.)
	Max.	0.15 mm (0.0059 in.)
Side clearance	STD	0.03 - 0.10 mm (0.0012 - 0.0039 in.)
	Max.	0.10 mm (0.0039 in.)
Rear output shaft		
Drive sprocket thrust clearance	STD	0.10 - 0.25 mm (0.0039 - 0.0098 in.)
	Max.	0.25 mm (0.0098 in.)
Drive sprocket radial clearance	STD	0.01 - 0.06 mm (0.0004 - 0.0024 in.)
	Max.	0.06 mm (0.0024 in.)
No. 2 shift fork claw thickness		11.85 mm (0.4665 in.)
High and low clutch sleeve groove distance		12.00 mm (0.4724 in.)
No. 2 shift fork to high and low clutch sleeve clearance	STD	0.15 - 0.35 mm (0.0059 - 0.138 in.)
	Max.	0.35 mm (0.138 in.)
Center differential lock fork claw thickness		10.2 mm (0.4016 in.)
Center differential lock sleeve groove distance		10.5 mm (0.4134 in.)
Center differential lock fork to center differential lock sleeve clearance	STD	0.26 - 0.84 mm (0.0102 - 0.0331 in.)
	Max.	0.84 mm (0.0331 in.)
No. 1 gear shift fork claw thickness		11.85 mm (0.4665 in.)
Front drive clutch sleeve groove distance		12.00 mm (0.4724 in.)
No. 1 gear shift fork to front drive clutch sleeve clearance	STD	0.15 - 0.35 mm (0.0059 - 0.0138 in.)
	Max.	0.35 mm (0.0138 in.)
Rear output shaft journal outer diameter		
Part A	STD	36.98 - 37.00 mm (1.4559 - 1.4567 in.)
	Min.	36.98 mm (1.4559 in.)
Part B	STD	27.98 - 27.99 mm (1.1016 - 1.1020 in.)
	Min.	27.98 mm (1.1016 in.)
Center differential planetary gear radial clearance	STD	0.01 - 0.04 mm (0.0004 - 0.0016 in.)
	Max.	0.04 mm (0.0016 in.)
Center differential planetary gear backlash	STD	0.01 - 0.04 mm (0.0004 - 0.0016 in.)
Center differential planetary gear thrust clearance	STD	0.15 - 0.70 mm (0.0059 - 0.0276 in.)
	Max.	0.70 mm (0.0276 in.)
Clutch hub snap ring thickness	Mark	
	K	2.00 - 2.05 mm (0.0787 - 0.0807 in.)
	L	2.05 - 2.10 mm (0.0807 - 0.0827 in.)
	A	2.10 - 2.15 mm (0.0827 - 0.0846 in.)
	B	2.15 - 2.20 mm (0.0846 - 0.0866 in.)
	C	2.20 - 2.25 mm (0.0866 - 0.0886 in.)
	D	2.25 - 2.30 mm (0.0886 - 0.0906 in.)
	E	2.30 - 2.35 mm (0.0906 - 0.0925 in.)
	F	2.35 - 2.40 mm (0.0925 - 0.0945 in.)
	G	2.40 - 2.45 mm (0.0945 - 0.0965 in.)
	H	2.45 - 2.50 mm (0.0965 - 0.0984 in.)
	J	2.50 - 2.55 mm (0.0984 - 0.1004 in.)

SERVICE SPECIFICATIONS - TRANSFER (VF3AM)

Input shaft		
Input shaft journal outer diameter	Min.	47.59 mm (1.8736 in.)
Input shaft bushing diameter	Max.	39.14 mm (1.5409 in.)
Input gear stopper snap ring thickness	Mark	
	A	2.10 - 2.15 mm (0.0827 - 0.0846 in.)
	B	2.15 - 2.20 mm (0.0846 - 0.0866 in.)
	C	2.20 - 2.25 mm (0.0866 - 0.0886 in.)
	D	2.25 - 2.30 mm (0.0886 - 0.0906 in.)
	E	2.30 - 2.35 mm (0.0906 - 0.0925 in.)
	F	2.35 - 2.40 mm (0.0925 - 0.0945 in.)
	G	2.40 - 2.45 mm (0.0945 - 0.0965 in.)
	H	2.45 - 2.50 mm (0.0965 - 0.0984 in.)
	J	2.50 - 2.55 mm (0.0984 - 0.1004 in.)
	K	2.55 - 2.60 mm (0.1004 - 0.1024 in.)
	L	2.60 - 2.65 mm (0.1024 - 0.1043 in.)
	M	2.65 - 2.70 mm (0.1043 - 0.1063 in.)
	N	2.70 - 2.75 mm (0.1063 - 0.1083 in.)
	P	2.75 - 2.80 mm (0.1083 - 0.1102 in.)
	Q	2.80 - 2.85 mm (0.1102 - 0.1122 in.)
	R	2.85 - 2.90 mm (0.1122 - 0.1142 in.)
	S	2.90 - 2.95 mm (0.1142 - 0.1161 in.)
	T	2.95 - 3.00 mm (0.1161 - 0.1181 in.)
	U	3.00 - 3.05 mm (0.1181 - 0.1201 in.)
Planetary gear		
Pinion gear thrust clearance	STD	0.11 - 0.84 mm (0.0043 - 0.0331 in.)
	Max.	0.84 mm (0.0331 in.)
Pinion gear radial clearance	STD	0.009 - 0.038 mm (0.0004 - 0.0015 in.)
	Max.	0.038 mm (0.0015 in.)
Outer bearing snap ring thickness	Mark	
	1	1.45 - 1.50 mm (0.0571 - 0.0591 in.)
	2	1.50 - 1.55 mm (0.0591 - 0.0610 in.)
	3	1.55 - 1.60 mm (0.0610 - 0.0630 in.)
	4	1.60 - 1.65 mm (0.0630 - 0.0650 in.)
	5	1.65 - 1.70 mm (0.0650 - 0.0669 in.)
Inner bearing press in depth		7.7 - 8.3 mm (0.0303 - 0.327 in.)
Oil seal		
Shift fork shaft drive in depth		-0.5 - 0.5 mm (-0.020 - 0.020 in.)
One touch 2-4 selector system		
Motor actuator		
2-3	STD resistance	0.3 - 100 Ω
2 or 3-body ground	STD resistance	More than 0.5 M Ω

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Transfer x Transfer adaptor	24	240	17
No. 4 crossmember x Frame	72	730	53
Engine rear mounting x Transmission	65	650	48
No. 3 crossmember x Frame	72	730	53
Engine rear mounting x No. 3 crossmember	18	185	13
Dynamic damper x Transfer	38	380	28
Drain and filler plugs	37	380	27
Transmission shift lever assembly	5.9	60	52 in.·lbf
Shift control rod x Transmission shift lever assembly	13	130	9
Vehicle speed sensor assembly	11	115	8
L4 position switch x Front case	37	380	27
Neutral position switch x Front case	37	380	27
Straight screw plug x Front case	37	380	27
Front bearing retainer x Front case	11	115	8
Control shift lever retainer x Front case	18	185	13
Front companion flange lock nut	118	1,200	87
Rear companion flange lock nut	118	1,200	87
Extension housing x Rear case	12	120	9
Front case x Rear case	28	285	21
Shift shaft stopper	19	190	14
Straight screw plug x Rear case	19	190	14
Actuator assembly x Rear case	20	200	14
No. 1 and No. 2 4WD position switches	37	380	27
Oil separator x Front case	7.5	80	69 in.·lbf
Oil pump body assembly x Front case	7.5	80	69 in.·lbf
Head screw plug for ring gear	19	190	14
Relief valve x Oil pump body	29	300	21
Oil pump plate x Oil pump body	7.4	75	65 in.·lbf

PROPELLER SHAFT

SERVICE DATA

SS07Q-01

Propeller shaft runout	Max.	0.8 mm (0.031 in.)
Spider bearing axial play		0.05 mm (0.0020 in.)
Spider bearing selection	Mark	
Bearing cup outer diameter	None	29.008 - 29.021 mm (1.1420 - 1.1426 in.)
	Red	29.028 - 29.041 mm (1.1428 - 1.1433 in.)
Bearing hole inner diameter	None	29.000 - 29.020 mm (1.1417 - 1.1425 in.)
	Drill	29.021 - 29.042 mm (1.1426 - 1.1434 in.)
Snap ring thickness	Mark or Color	
	1	2.100 - 2.150 mm (0.0827 - 0.0846 in.)
	2	2.150 - 2.200 mm (0.0846 - 0.0866 in.)
	3	2.200 - 2.250 mm (0.0866 - 0.0886 in.)
	Brown	2.250 - 2.300 mm (0.0886 - 0.0906 in.)
	Blue	2.300 - 2.350 mm (0.0906 - 0.0925 in.)
	6	2.350 - 2.400 mm (0.0925 - 0.0945 in.)
	7	2.400 - 2.450 mm (0.0945 - 0.0965 in.)
	8	2.450 - 2.500 mm (0.0965 - 0.0984 in.)

TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Propeller shaft x Differential	2WD	74	750	54
Front differential x Front propeller shaft	4WD	74	750	54
Front propeller shaft x Transfer	4WD	74	750	54
Propeller shaft x Rear differential	4WD	74	750	54
Propeller shaft x Transfer	4WD	74	750	54

SUSPENSION AND AXLE

SERVICE DATA

SS04N-03

Cold tire inflation pressure	Tire size		
	P225/75R15	Front	200 kPa (2.0 kgf/cm ² , 29 psi)
		Rear	200 kPa (2.0 kgf/cm ² , 29 psi)
	P265/70R16	Front	220 kPa (2.2 kgf/cm ² , 32 psi)
		Rear	220 kPa (2.2 kgf/cm ² , 32 psi)
Wheel alignment	Vehicle height		
	2WD	A*1 - B*2	72.2 mm (2.843 in.)
		C*3 - D*4	52.0 mm (2.047 in.)
	4WD	A*1 - B*2	69.9 mm (2.752 in.)
		C*3 - D*4	50.7 mm (1.996 in.)
	Camber		-0°15' ± 45' (-0.25° ± 0.75°)
		Left-right error	30' (0.5°) or less
	Caster		2WD 3°15' ± 45' (3.25° ± 0.75°)
		4WD 3°05' ± 45' (3.06° ± 0.75°)	
		Left-right error	30' (0.5°) or less
	Steering axis inclination		11°00' ± 45' (11° ± 0.75°)
		Left-right error	30' (0.5°) or less
	Toe-in (total)		0°12' ± 12' (0.2° ± 0.2°, 2 ± 2 mm, 0.08 ± 0.08 in.)
		Tie rod end length difference	1.5 mm (0.059 in.) or less
	Wheel angle (Max.)		
		Inside wheel	35° (33° - 36°)
		Outside wheel	31°
Front drive shaft	Front drive shaft length		530.8 ± 5.0 mm (20.898 ± 0.197 in.)
Front suspension	Upper suspension ball joint turning torque		0.7 - 4.4 N·m (7 - 45 kgf·cm, 6 - 39 in.·lbf)
	Lower suspension ball joint turning torque		0.1 - 2.5 N·m (1 - 25 kgf·cm, 0.8 - 21.7 in.·lbf)
	Stabilizer bar link ball joint turning torque		0.05 - 2.0 N·m (0.5 - 20 kgf·cm, 0.4 - 17 in.·lbf)
	Lower suspension ball joint excessive play	Max.	0.5 mm (0.020 in.)
Rear axle shaft	Shaft runout	Max.	2.0 mm (0.079 in.)
	Flange runout	Max.	0.1 mm (0.004 in.)
	Axle shaft bearing backlash	Max.	0.7 mm (0.027 in.)

*1: Ground clearance of spindle center

*2: Ground clearance of front adjusting cam bolt center

*3: Ground clearance of rear axle shaft center

*4: Ground clearance of lower control arm front bushing center

Front differential	Companion flange vertical runout	Max.	0.10 mm (0.0039 in.)
	Companion flange lateral runout	Max.	0.10 mm (0.0039 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing	1.2 - 1.9 N·m (12 - 19 kgf·cm, 10.4 - 16.5 in.-lbf) 0.6 - 1.0 N·m (6 - 10 kgf·cm, 5.2 - 8.7 in.-lbf)
	Total preload (at starting)		Drive pinion preload plus 0.4 - 0.6 N·m (4 - 6 kgf·cm, 3.5 - 5.2 in.-lbf)
	Drive pinion to ring gear backlash		0.10 - 0.18 mm (0.0039 - 0.0071 in.)
	Side gear backlash		0 - 0.20 mm (0 - 0.0079 in.)
	Rear oil seal drive in depth		4.5 mm (0.177 in.)
	Side oil seal drive in depth		0 mm (0 in.)
	Side tube oil seal drive in depth		5.5 mm (0.217 in.)
	Side gear thrust washer thickness		0.96 - 1.04 mm (0.0378 - 0.0409 in.)
			1.06 - 1.14 mm (0.0417 - 0.0449 in.)
			1.16 - 1.24 mm (0.0457 - 0.0488 in.)
			1.26 - 1.34 mm (0.0496 - 0.0528 in.)
	Side bearing adjusting washer thickness		2.00 - 2.02 mm (0.0787 - 0.0795 in.)
			2.03 - 2.05 mm (0.0799 - 0.0807 in.)
			2.06 - 2.08 mm (0.0811 - 0.0819 in.)
			2.09 - 2.11 mm (0.0823 - 0.0831 in.)
			2.12 - 2.14 mm (0.0835 - 0.0843 in.)
			2.15 - 2.17 mm (0.0846 - 0.0854 in.)
			2.18 - 2.20 mm (0.0858 - 0.0866 in.)
			2.21 - 2.23 mm (0.0870 - 0.0878 in.)
			2.24 - 2.26 mm (0.0882 - 0.0890 in.)
			2.27 - 2.29 mm (0.0894 - 0.0902 in.)
			2.30 - 2.32 mm (0.0906 - 0.0913 in.)
			2.33 - 2.35 mm (0.0917 - 0.0925 in.)
			2.36 - 2.38 mm (0.0929 - 0.0937 in.)
			2.39 - 2.41 mm (0.0941 - 0.0949 in.)
			2.42 - 2.44 mm (0.0953 - 0.0961 in.)
			2.45 - 2.47 mm (0.0965 - 0.0972 in.)
			2.48 - 2.50 mm (0.0976 - 0.0984 in.)
			2.51 - 2.53 mm (0.0988 - 0.0996 in.)
			2.54 - 2.56 mm (0.1000 - 0.1008 in.)
			2.57 - 2.59 mm (0.1012 - 0.1020 in.)
			2.60 - 2.62 mm (0.1024 - 0.1031 in.)
			2.63 - 2.65 mm (0.1035 - 0.1043 in.)
			2.66 - 2.68 mm (0.1047 - 0.1055 in.)
			2.69 - 2.71 mm (0.1059 - 0.1067 in.)
			2.72 - 2.74 mm (0.1071 - 0.1079 in.)
			2.75 - 2.77 mm (0.1083 - 0.1091 in.)
			2.78 - 2.80 mm (0.1094 - 0.1102 in.)

SERVICE SPECIFICATIONS - SUSPENSION AND AXLE

Front differential (cont'd)	Drive pinion bearing adjusting washer thickness	1.69 - 1.71 mm (0.0665 - 0.0673 in.) 1.72 - 1.74 mm (0.0677 - 0.0685 in.) 1.75 - 1.77 mm (0.0689 - 0.0697 in.) 1.78 - 1.80 mm (0.0701 - 0.0709 in.) 1.81 - 1.83 mm (0.0713 - 0.0720 in.) 1.84 - 1.86 mm (0.0724 - 0.0732 in.) 1.87 - 1.89 mm (0.0736 - 0.0744 in.) 1.90 - 1.92 mm (0.0748 - 0.0756 in.) 1.93 - 1.95 mm (0.0760 - 0.0768 in.) 1.96 - 1.98 mm (0.0772 - 0.0780 in.) 1.99 - 2.01 mm (0.0783 - 0.0791 in.) 2.02 - 2.04 mm (0.0795 - 0.0803 in.) 2.05 - 2.07 mm (0.0807 - 0.0815 in.) 2.08 - 2.10 mm (0.0819 - 0.0827 in.) 2.11 - 2.13 mm (0.0831 - 0.0839 in.) 2.14 - 2.16 mm (0.0843 - 0.0850 in.) 2.17 - 2.19 mm (0.0854 - 0.0862 in.) 2.20 - 2.22 mm (0.0866 - 0.0874 in.) 2.23 - 2.25 mm (0.0878 - 0.0886 in.) 2.26 - 2.28 mm (0.0890 - 0.0898 in.) 2.29 - 2.31 mm (0.0902 - 0.0909 in.) 2.32 - 2.34 mm (0.0913 - 0.0921 in.)
	w/ A.D.D. A.D.D. sleeve fork to clutch sleeve clearance Differential case needle bearing press in depth	0.35 mm (0.0138 in.) 0.3 ± 0.3 mm (0.012 ± 0.012 in.)

Rear differential	Companion flange vertical runout	Max.	0.10 mm (0.0039 in.)
	Companion flange lateral runout	Max.	0.10 mm (0.0039 in.)
	Ring gear runout	Max.	0.07 mm (0.0028 in.)
	Differential case runout	Max.	0.07 mm (0.0028 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing	0.9 - 1.6 N·m (10 - 16 kgf·cm, 8.7 - 13.9 in.·lbf) 0.5 - 0.8 N·m (5 - 8 kgf·cm, 4.3 - 6.9 in.·lbf)
	Total preload (at starting)		Drive pinion preload plus 0.4 - 0.6 N·m (4 - 6 kgf·cm, 3.5 - 5.2 in.·lbf)
	Drive pinion to ring gear backlash		0.13 - 0.18 mm (0.0051 - 0.0071 in.)
	Side gear backlash		0.05 - 0.20 mm (0.0020 - 0.0079 in.)
	Shift fork to sleeve clearance		0.15 - 0.35 mm (0.006 - 0.014 in.)
	Oil seal drive in depth		1.0 mm (0.039 in.)
	Side gear thrust washer thickness		0.9 mm (0.035 in.)
			1.0 mm (0.039 in.)
			1.1 mm (0.043 in.)
			1.2 mm (0.047 in.)
			1.3 mm (0.051 in.)
	Drive pinion preload adjusting shim thickness		1.70 mm (0.0669 in.)
			1.73 mm (0.0681 in.)
			1.76 mm (0.0693 in.)
			1.79 mm (0.0705 in.)
			1.82 mm (0.0717 in.)
			1.85 mm (0.0728 in.)
			1.88 mm (0.0740 in.)
			1.91 mm (0.0752 in.)
			1.94 mm (0.0764 in.)
			1.97 mm (0.0776 in.)
			2.00 mm (0.0787 in.)
			2.03 mm (0.0799 in.)
			2.06 mm (0.0811 in.)
			2.09 mm (0.0823 in.)
			2.12 mm (0.0835 in.)
			2.15 mm (0.0846 in.)
			2.18 mm (0.0858 in.)
			2.21 mm (0.0870 in.)
			2.24 mm (0.0882 in.)
			2.27 mm (0.0894 in.)
			2.30 mm (0.0906 in.)
			2.33 mm (0.0917 in.)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
FRONT			
Hub nut	110	1,150	83
Rack end lock nut	55	560	41
Steering knuckle x Lower ball joint	50	510	37
Tie rod end x Lower ball joint	91	930	67
Steering knuckle x Brake caliper	123	1,250	90
Steering knuckle x Brake line bracket	28	285	21
Steering knuckle x Brake dust cover	18	185	13
Drive shaft lock nut	235	2,400	174
Upper suspension arm x Upper ball joint	105	1,100	80
Lower suspension arm x Frame	130	1,325	96
Upper suspension arm x Frame	115	1,200	87
Lower suspension arm x Lower ball joint	140	1,450	103
Lower suspension arm x No. 1, No.2 spring bumper	23 (31)	235 (316)	17 (23)
Frame x Suspension support	64	650	47
Shock absorber x Suspension support	25	250	18
Lower suspension arm x Shock absorber	135	1,400	101
Lower suspension arm x Stabilizer bar link	69	700	51
Stabilizer bar x Stabilizer bar link	19	190	14
Stabilizer bar bracket x Frame	25	260	19
ABS speed sensor x Steering knuckle	8.0	82	71 in.·lbf
ABS speed sensor wire harness clamp x Steering knuckle	8.0	82	71 in.·lbf
ABS speed sensor wire harness clamp x Upper suspension arm	8.0	82	71 in.·lbf
Differential x Propeller shaft	74	750	54
Drive pinion nut	See page SA-37		
Differential front mounting cushion x Frame	137	1,400	101
Differential rear mounting cushion x Frame	87	890	64
Differential front mounting cushion x Differential	157	1,600	116
Differential rear mounting cushion x Differential	108	1,100	80
Ring gear x differential case	97	985	71
Differential carrier x Differential tube	105	1,070	77
Differential carrier x Side bearing retainer	69	700	51
A.D.D. clutch case x Differential	78	800	58
A.D.D. clutch case x Differential case tube	78	800	58
A.D.D. actuator x A.D.D. clutch case	21	210	15
Screw plug x Clutch case cover	20	200	14
Screw plug x A.D.D. actuator	13	130	9
A.D.D. switch x Clutch case cover	40	410	30
Drain plug	65	660	48
Filler plug	39	400	29

(): For use without SST

Part tightened	N-m	kgf-cm	ft-lbf
REAR			
Hub nut	110	1,150	83
Axle housing x Backing plate	66	670	48
Brake line	15	155	11
Parking brake bellcrank bracket x Backing plate	13	130	9
Shock absorber x Axle housing	65	650	47
Piston rod set nut	20	200	14
Upper control arm x Frame	86	880	64
Upper control arm x Axle housing	86	880	64
Lower control arm x Frame	145	1,480	107
Lower control arm x Axle housing	145	1,480	107
Lateral control rod x Frame	86	880	64
Lateral control rod x Axle housing	86	880	64
Stabilizer bar x Stabilizer bar link	69	700	51
Stabilizer bar bracket x Axle housing	19	195	14
Stabilizer bar link x Frame	20	200	14
LSP & BV x Lateral control rod	13	130	9
Parking brake cable bracket x Axle housing	13	130	9
ABS speed sensor x Axle housing	8.0	82	71 in.-lbf
Differential x Propeller shaft	74	750	54
Drive pinion nut	Maximum torque	See page SA-103	
Differential carrier x Axle housing	w/o Diff. lock	73	740
	w/ Diff. lock	25	250
Differential carrier x Bearing cap	85	870	63
Differential case x Ring gear	97	985	71
Adjusting nut lock nut x Bearing cap	13	130	9
Differential RH case x Differential LH case	47	480	35
Differential carrier x Diff. lock indicator switch	40	410	31
Differential carrier x Shaft retainer	24	240	17
Differential carrier x Screw plug	22	220	16
Differential carrier x Actuator	26	270	20
Drain plug and filler plug	49	500	36

BRAKE

SERVICE DATA

SS080-02

Brake pedal height (from asphalt sheet)		158.1 - 168.1 mm (6.224 - 6.618 in.)
Brake pedal freeplay		1 - 6 mm (0.12 - 0.24 in.)
Brake pedal reserve distance at 490 N (50 kgf, 110.2 lbf)		More than 75 mm (2.83 in.)
Front brake pad thickness	STD	11.5 mm (0.453 in.)
	Minimum	1.0 mm (0.039 in.)
Disc thickness	STD	22.0 mm (0.866 in.)
	Minimum	20.0 mm (0.787 in.)
Disc runout	Maximum	0.07 mm (0.0028 in.)
Rear brake drum inside diameter	STD	295.0 mm (11.614 in.)
	Maximum	297.0 mm (11.693 in.)
Rear brake shoe lining thickness	STD	6.0 mm (0.236 in.)
	Minimum	1.0 mm (0.039 in.)
Rear brake drum to shoe clearance		0.5 mm (0.020 in.)
Parking brake lever travel at 196 N (20 kgf, 44 lbf)		7 - 9 clicks

TORQUE SPECIFICATION

Part tightened	N-m	kgf-cm	ft-lbf	
Brake line union nut	15	155	11	
Hydraulic brake booster clevis lock nut	25	260	19	
Hydraulic brake booster x Pedal bracket	14	140	10	
Bleeder plug	11	110	8	
Front disc brake caliper x Steering knuckle	123	1,250	90	
Front disc brake caliper x Brake line union nut	15	155	11	
Parking brake bellcrank bracket x Backing plate	13	130	9	
Rear drum brake wheel cylinder x Backing plate	10	100	7	
Reservoir set screw	1.7	18	16 in.-lbf	
Union bolt	32	320	23	
Oil pressure sensor x Hydraulic brake booster	81	830	60	
Accumulator x Booster pump motor	54	550	36	
No. 1 hanger set bolt	7.8	80	69 in.-lbf	
No. 2 hanger set bolt	7.8	80	69 in.-lbf	
Fluid level warning switch connector clamp set bolt	7.8	80	69 in.-lbf	
Speed sensor harness x Steering knuckle and upper arm	8.0	82	71 in.-lbf	
Speed sensor harness x Side rail	12	122	9	
Speed sensor installation bolt	front	8.0	82	71 in.-lbf
	rear	10	100	7

STEERING

SERVICE DATA

SS00J-03

DRIVE BELT		
Drive belt tension	New belt	135-180 lbf
Drive belt tension	Used belt	85-120 lbf
POWER STEERING FLUID		
Oil level rise	Maximum	5 mm (0.20 in.)
Oil pressure at idle speed with valve closed	Minimum	8,336 kPa (85 kgf/cm ² , 1,209 psi)
STEERING WHEEL		
Steering wheel freeplay	Maximum	30 mm (1.18 in.)
Steering effort at idle speed	Reference:	4.9 N·m (50 kgf·cm, 43 in.-lbf)
PS VANE PUMP		
Pump rotating torque	Maximum	0.27 N·m (2.8 kgf·cm, 2.4 in.-lbf) or less
Pump shaft and front housing bushing oil clearance	STD	0.03-0.05 mm (0.0012-0.0020 in.)
Pump shaft and front housing bushing oil clearance	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.)
Vane plate and pump rotor groove clearance	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.)
Flow control valve spring length	Minimum	33.2 mm (1.307 in.)
PS GEAR		
Steering rack runout	Maximum	0.03 mm (0.0118 in.)
Total preload	Turning	0.5 - 1.7 N·m (4.7 - 17.2 kgf·cm, 4.1 - 14.9 in.-lbf)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
NON-TILT AND TILT STEERING COLUMN			
Steering wheel set nut	50	510	37
Steering wheel pad set screw (Torx screw)	8.8	90	78 in.·lbf
Steering column assembly set nut	26	260	19
Main shaft assembly x Universal joint No. 2	35	360	26
Universal joint No. 2 x Intermediate shaft No. 2	35	360	26
Control valve shaft x Intermediate shaft No. 2	35	360	26
Column hole cover No. 2 x Column hole cover x Body	8.0	80	69 in.·lbf
Tilt lever retainer set bolt Tilt steering column	20	200	14
PS VANE PUMP			
Union bolt x Pressure feed tube	47	475	34
Pressure port union x Pump housing	83	850	61
Bracket x Pump assembly	43	440	32
Oil reservoir set bolt Front	13	130	9
Rear	24	240	17
Vane pump pulley set nut	43	440	32
Front housing x Rear housing	24	240	17
Vane pump assembly with bracket set bolt and nut	43	440	32
Oil pressure switch x Pressure feed tube	21	210	15
PS GEAR			
Cylinder end stopper	58 (78)	590 (800)	43 (58)
Bearing guide nut x Control valve housing	25	250	18
Control valve housing set bolt	18	180	13
Rack guide spring cap lock nut	51 (69)	520 (700)	38 (51)
Rack x Rack end	76 (103)	770 (1,050)	56 (76)
Tie rod end lock nut	55	560	41
Turn pressure tube union nut	23 (25)	230 (250)	17 (18)
PS gear assembly set bolt	165	1,700	123
PS gear assembly set bolt and nut	190	1,950	141
Bracket x Body	165	1,700	123
Pressure feed tube x Control valve housing	41 (45)	420 (460)	30 (33)
Return tube x Control valve housing	45 (49)	460 (500)	33 (36)
Universal joint No. 2 x Intermediate shaft No. 2	35	360	26
Control valve shaft x Intermediate shaft No. 2	35	360	26
Steering wheel set nut	34	350	25
Stabilizer bar link set nut Upper	19	190	14
Lower	69	700	51
Stabilizer bar Bracket set bolt and nut	25	260	19
Tie rod end x Lower arm	91	930	67

(): For use without SST

SUPPLEMENTAL RESTRAINT SYSTEM

TORQUE SPECIFICATION

SS01W-08

Part tightened	N·m	kgf·cm	ft·lbf
Steering wheel	34	350	25
Steering wheel pad	9.0	90	78 in·lbf
Front passenger airbag assembly x Instrument panel reinforcement	19	195	14
Front passenger airbag assembly assembly x Instrument panel	5.4	55	48 in·lbf
Airbag sensor assembly	21	210	15

BODY ELECTRICAL

SERVICE DATA

SS075-02

SPEEDOMETER (Using a speedometer tester)	
USA:	
Standard indication (mph)	Allowable range (mph)
20	18 - 24
40	38 - 44
60	58 - 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
140	134 - 151.5
160	153 - 173
TACHOMETER (On-Vehicle)	
Standard indication (rpm)	Allowable range (rpm)
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
ENGINE COOLANT TEMPERATURE SENDER GAUGE	
50°C (122.0°F)	234 - 314 Ω
120°C (248.0°F)	24.0 - 30.5 Ω

BODY

TORQUE SPECIFICATION

SS07X-04

Part tightened	N·m	kgf·cm	ft·lbf
FRONT BUMPER	-	-	-
Front bumper reinforcement set bolt	58	590	43
Front bumper arm set nut	12	120	9
Front bumper arm set bolt	58	590	43
Front bumper x Side mounting bracket	12	120	9
Side mounting bracket x Body	25	250	18
Front balance panel x Front bumper extension (Over fender type)	5.0	50	43 in.·lbf
REAR BUMPER	-	-	-
Rear bumper arm x Body	18	180	13
Rear bumper arm x Rear bumper bar	18	180	13
Rear bumper side bracket set bolt	18	180	13
Rear bumper bar set bolt	18	180	13
Rear bumper extension set bolt	18	180	13
Rear bumper side stay set bolt	18	180	13
HOOD	-	-	-
Hood hinge x Hood	13	130	9
Hood lock x Body	7.8	80	69 in.·lbf
FRONT DOOR	-	-	-
Door hinge x Body	23	230	17
Door hinge x Door panel	23	230	17
Door lock striker x Body	13	130	9
Door lock x Door panel	5.0	50	43 in.·lbf
Window regulator x Door panel	5.0	50	43 in.·lbf
Outside handle x Door panel	5.0	50	43 in.·lbf
REAR DOOR	-	-	-
Door hinge x Body	23	230	17
Door hinge x Door panel	23	230	17
Door lock striker x Body	13	130	9
Door lock x Door panel	5.0	50	43 in.·lbf
Window regulator x Door panel	5.0	50	43 in.·lbf
Outside handle x Door panel	5.0	50	43 in.·lbf
BACK DOOR	-	-	-
Door hinge x Body (Nut)	33	330	25
Door hinge x Door panel (Bolt)	23	230	17
Glass guide rail x Door panel	5.0	50	43 in.·lbf
Door lock x Door panel	7.0	70	61 in.·lbf
Window regulator x Door panel	5.0	50	43 in.·lbf
Damper stay	17.5	170	12
FRONT WIPER AND WASHER	-	-	-
Wiper arm x Wiper link	20	205	15
Wiper link x Body	5.4	55	48 in.·lbf
Wiper motor x Body	5.4	55	48 in.·lbf

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REAR WIPER AND WASHER		-	-	-
Wiper arm x Wiper motor		5.4	55	48 in. lbf
Wiper motor x Body		5.4	55	48 in. lbf
BODY OUTSIDE MOULDING		-	-	-
Over fender type:		-	-	-
Front bumper extension set nut		5.0	50	43 in. lbf
Front wheel opening extension retainer set bolt		5.0	50	43 in. lbf
Rocker panel moulding retainer set nut		5.0	50	43 in. lbf
Rocker panel moulding set bolt		5.0	50	43 in. lbf
Rear door outside moulding x Body		5.0	50	43 in. lbf
Quarter garnish front retainer x Body		5.0	50	43 in. lbf
Wheel arch moulding type:		-	-	-
Front fender wheel opening moulding x Body		5.0	50	43 in. lbf
Quarter wheel opening moulding x Body		5.0	50	43 in. lbf
SLIDING ROOF		-	-	-
Sliding roof housing x Body	Nut	7.4	75	65 in. lbf
	Bolt	7.4	75	65 in. lbf
INSTRUMENT PANEL		-	-	-
Front passenger airbag assembly x Instrument panel reinforcement		19	195	14
Front passenger airbag assembly x Instrument panel		5.4	55	48 in. lbf
SIDE STEP		-	-	-
No. 1 side step bracket x Body		18	184	13
No. 2 side step bracket x Body		18	184	13
No. 3 side step bracket x Body		18	184	13
Step plate x No. 1 side step bracket		5.0	51	44 in. lbf
Step plate x No. 2 side step bracket		5.0	51	44 in. lbf
Step plate x No. 3 side step bracket		5.0	51	44 in. lbf
FRONT SEAT		-	-	-
Seat truck x Seat cushion frame		18	185	13
Seat truck x Seatback frame		43	440	32
Inner belt x Seat truck		42	430	31
Seat truck x Body		37	375	27
w/ Power seat:		-	-	-
Seat support screw x Seat truck		25	260	19
Seat support screw x Slide motor support bracket		4.4	45	39 in. lbf
Slide motor support bracket x Seat truck		19	195	14
REAR NO. 1 SEAT		-	-	-
Seatback lock control x Seatback frame		18	185	13
Seat hinge x Body		18	185	13
REAR NO. 2 SEAT		-	-	-
Seat lock striker x Body	Front side	18	185	13
	Rear side	42	430	31
Reclining adjuster x Seatback frame		29	300	22
Rear No. 2 seat lap belt x Hinge		42	430	31
Hinge x Body		39	400	29

SERVICE SPECIFICATIONS - BODY

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	8.5	85	74 in.-lbf
	Lower bolt	42	430	31
Front seat inner belt x Seat track		42	430	31
Rear No. 1 seat outer belt shoulder anchor x Body		42	430	31
Rear No. 1 seat outer belt floor anchor x Body		42	430	31
Rear No. 1 seat outer belt retractor x Body		42	430	31
Rear seat center belt x Body		42	430	31
Rear No. 2 seat outer belt shoulder anchor x Body		42	430	31
Rear No. 2 seat outer belt floor anchor x Body		42	430	31
Rear No. 2 seat outer belt retractor x Body		42	430	31

AIR CONDITIONING

SERVICE DATA

SS072-01

Refrigerant charge volume	650 ± 50 g (22.92 ± 1.76 oz.)
Drive belt tension	-
New belt	160 ± 25 lbf
Used belt	100 ± 20 lbf
Idle-up speed (3RZ-FE)	-
Magnetic clutch not engaged	700 ± 50 rpm
Magnetic clutch engaged	900 ± 50 rpm
Idle-up speed (5VZ-FE)	-
Magnetic clutch not engaged	700 ± 50 rpm
Magnetic clutch engaged	850 ± 50 rpm
Magnetic clutch clearance	0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Compressor x Compressor bracket	25	250	18
Compressor bracket x Engine	37	375	27
Idle pulley lock nut	39	400	29
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
Cooling unit x Suction tube	32	330	24
Expansion valve x Evaporator	5.4	55	48in.·lbf
Receiver x Liquid tube	5.4	55	48 in.·lbf
Condenser x Liquid tube	10	100	7
Condenser x Discharge hose	10	100	7
Pressure switch x Liquid tube	10	100	7
Pressure plate x Compressor	13.2	135	9