

SUSPENSION AND AXLE

SS00J-11

SERVICE DATA

Cold tire inflation pressure	Tire size P275/70R16	Front	200 kPa (2.0 kgf/cm ² , 29 psi)
		Rear	*220 kPa (2.2 kgf/cm ² , 32 psi) 220 kPa (2.2 kgf/cm ² , 32 psi) *240 kPa (2.4 kgf/cm ² , 35 psi)
Front wheel alignment	Vehicle height		
	Front	A – B	82.7 mm (3.256 in.)
	Rear	C – D	71.2 mm (2.803 in.)
	Camber		0° 00' ± 45' (0° ± 0.75°)
		Left-right error	30' (0.5°) or less
	Caster		3° 05' ± 45' (3.08° ± 0.75°)
		Left-right error	30' (0.5°) or less
Steering axis inclination			12° 15' ± 45' (12.25° ± 0.75°)
		Left-right error	30' (0.5°) or less
	Toe-in (total)		0° 00' ± 12' (0° ± 0.2°, 0 ± 2 mm, 0 ± 0.08 in.)
		Rack end length difference	3.0 mm (0.118 in.) or less
Wheel angle		Inside wheel	36° 42' (33° 42' – 36° 42')
			36.7° (33.7° – 36.7°)
		Outside wheel: Reference	32° 36' 32.6°
Front axle	Front axle hub preload (at starting)		42 – 67 N (4.3 – 6.8 kgf, 9.5 – 15.0 lbf)
	Snap ring thickness		1.8 mm (0.0709 in.) 2.0 mm (0.0787 in.) 2.2 mm (0.0866 in.) 2.4 mm (0.0945 in.) 2.6 mm (0.1024 in.) 2.8 mm (0.1102 in.)
Front drive shaft	Front drive shaft length		573.9 ± 5 mm (22.594 ± 0.197 in.)
Front suspension	Upper suspension arm ball joint turning torque		1.0 – 4.4 N·m (10 – 45 kgf·cm, 8.7 – 39 in.·lbf)
	Lower suspension arm ball joint turning torque		0.29 – 2.94 N·m (3 – 30 kgf·cm, 2.6 – 26 in.·lbf)
Rear axle shaft	Bearing backlash	Max.	0.6 mm (0.024 in.)
	Axle shaft deviation	Max.	0.05 mm (0.0020 in.)
	Axle shaft runout	Max.	2.0 mm (0.079 in.)
	Axle shaft flange runout	Max.	0.05 mm (0.0020 in.)

*: Trailer towing

A: Ground clearance of spindle center

B: Ground clearance of lower suspension arm front bolt center

C: Ground clearance of rear axle shaft center

D: Ground clearance of lower control arm front bolt center

SERVICE SPECIFICATIONS – SUSPENSION AND AXLE

Front differential	Companion flange vertical runout	Max.	0.09 mm (0.0035 in.)
	Companion flange lateral runout	Max.	0.09 mm (0.0035 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing	1.0 – 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)
	Ring gear runout		0.07 mm (0.0028 in.)
	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.)
	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.)

Front differential	Side bearing adjusting washer thickness	2.58 mm (0.1016 in.) 2.60 mm (0.1024 in.) 2.62 mm (0.1031 in.) 2.64 mm (0.1039 in.) 2.66 mm (0.1047 in.) 2.68 mm (0.1055 in.) 2.70 mm (0.1063 in.) 2.72 mm (0.1071 in.) 2.74 mm (0.1079 in.) 2.76 mm (0.1087 in.) 2.78 mm (0.1094 in.) 2.80 mm (0.1102 in.) 2.82 mm (0.1110 in.) 2.84 mm (0.1118 in.) 2.86 mm (0.1126 in.) 2.88 mm (0.1134 in.) 2.90 mm (0.1142 in.) 2.92 mm (0.1150 in.) 2.94 mm (0.1157 in.) 2.96 mm (0.1165 in.) 2.98 mm (0.1173 in.) 3.00 mm (0.1181 in.) 3.02 mm (0.1189 in.) 3.04 mm (0.1197 in.) 3.06 mm (0.1205 in.) 3.08 mm (0.1213 in.) 3.10 mm (0.1220 in.) 3.12 mm (0.1228 in.) 3.14 mm (0.1236 in.) 3.16 mm (0.1244 in.) 3.18 mm (0.1252 in.) 3.20 mm (0.1260 in.) 3.22 mm (0.1268 in.) 3.24 mm (0.1276 in.) 3.26 mm (0.1283 in.) 3.28 mm (0.1291 in.) 3.30 mm (0.1299 in.) 3.32 mm (0.1307 in.) 3.34 mm (0.1315 in.) 3.36 mm (0.1323 in.) 3.38 mm (0.1331 in.) 3.40 mm (0.1339 in.) 3.42 mm (0.1346 in.) 3.44 mm (0.1354 in.) 3.46 mm (0.1362 in.) 3.48 mm (0.1370 in.)
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SERVICE SPECIFICATIONS – SUSPENSION AND AXLE

Front differential	Drive pinion bearing adjusting washer thickness	1.70 mm (0.0669 in.) 1.73 mm (0.0681 in.) 1.76 mm (0.0693 in.) 1.79 mm (0.0704 in.) 1.82 mm (0.0717 in.) 1.85 mm (0.0729 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 (0.0822 in.) 2.12 mm (0.0835 in.) 2.15 mm (0.0847 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 (0.0918 in.)
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Rear differential	Companion flange vertical runout	0.10 mm (0.0039 in.)
	Companion flange lateral runout	0.10 mm (0.0039 in.)
	Drive pinion preload (at starting) New bearing Reused bearing	1.3 – 1.8 N·m (13 – 19 kgf·cm, 11.3 – 16.4 in.·lbf) 0.64 – 0.92 N·m (6.5 – 9.4 kgf·cm, 5.6 – 8.2 in.·lbf)
	Total preload (at starting)	Drive pinion preload plus 0.38 – 0.63 N·m (3.9 – 6.5 kgf·cm, 3.4 – 5.6 in.·lbf)
	Ring gear runout	0.05 mm (0.0020 in.)
	Ring gear backlash	0.13 – 0.18 mm (0.0051 – 0.0071 in.)
	Side gear backlash	0.02 – 0.15 mm (0.0008 – 0.0059 in.)
	Differential case runout	0.04 mm (0.0016 in.)
	Side gear thrust washer thickness	1.55 mm (0.0610 in.) 1.60 mm (0.0630 in.) 1.65 mm (0.0650 in.) 1.70 mm (0.0669 in.) 1.75 mm (0.0689 in.) 1.80 mm (0.0709 in.) 1.85 mm (0.0728 in.) 1.90 mm (0.0748 in.) 1.95 mm (0.0768 in.) 2.00 mm (0.0787 in.) 2.05 mm (0.0807 in.) 2.10 mm (0.0827 in.)
	Tooth contact pattern adjusting washer thickness	1.050 mm (0.04134 in.) 1.075 mm (0.04232 in.) 1.100 mm (0.04331 in.) 1.125 mm (0.04429 in.) 1.150 mm (0.04528 in.) 1.175 mm (0.04626 in.) 1.200 mm (0.04724 in.) 1.225 mm (0.04823 in.) 1.250 mm (0.04921 in.) 1.275 mm (0.05020 in.) 1.300 mm (0.05118 in.) 1.325 mm (0.05217 in.) 1.350 mm (0.05315 in.) 1.375 mm (0.05413 in.) 1.400 mm (0.05512 in.) 1.425 mm (0.05610 in.) 1.450 mm (0.05709 in.) 1.475 mm (0.05807 in.) 1.500 mm (0.05906 in.) 1.525 mm (0.06004 in.) 1.550 mm (0.06102 in.)

SERVICE SPECIFICATIONS – SUSPENSION AND AXLE

Rear differential (w/ Diff. Lock)	Companion flange vertical runout		0.10 mm (0.0039 in.)
	Companion flange lateral runout		0.10 mm (0.0039 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing	1.3 – 1.8 N·m (13 – 19 kgf·cm, 11.3 – 16.4 in.·lbf) 0.64 – 0.92 N·m (6.5 – 9.4 kgf·cm, 5.6 – 8.2 in.·lbf)
	Total preload (at starting)		Drive pinion preload plus 0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)
	Ring gear runout		0.05 mm (0.0020 in.)
	Ring gear backlash		0.13 – 0.18 mm (0.0051 – 0.0071 in.)
	Side gear backlash		0.02 – 0.15 mm (0.0008 – 0.0059 in.)
	Differential case runout		0.04 mm (0.0016 in.)
	Side gear thrust washer thickness		1.55 mm (0.0610 in.) 1.60 mm (0.0630 in.) 1.65 mm (0.0650 in.) 1.70 mm (0.0669 in.) 1.75 mm (0.0689 in.) 1.80 mm (0.0709 in.) 1.85 mm (0.0728 in.) 1.90 mm (0.0748 in.) 1.95 mm (0.0768 in.) 2.00 mm (0.0787 in.) 2.05 mm (0.0807 in.) 2.10 mm (0.0827 in.)
	Ring gear backlash adjusting washer thickness	Mark	
		1	2.67 mm (0.1051 in.)
		2	2.70 mm (0.1063 in.)
		3	2.73 mm (0.1075 in.)
		4	2.76 mm (0.1087 in.)
		5	2.79 mm (0.1098 in.)
		6	2.82 mm (0.1110 in.)
		7	2.85 mm (0.1122 in.)
		8	2.88 mm (0.1134 in.)
		9	2.91 mm (0.1146 in.)
		10	2.94 mm (0.1157 in.)
		11	2.97 mm (0.1169 in.)
		12	3.00 mm (0.1181 in.)
		13	3.03 mm (0.1193 in.)
		14	3.06 mm (0.1205 in.)
		15	3.09 mm (0.1217 in.)
		16	3.12 mm (0.1228 in.)
		17	3.15 mm (0.1240 in.)
		18	3.18 mm (0.1252 in.)
		19	3.21 mm (0.1264 in.)
		20	3.24 mm (0.1276 in.)
		21	3.27 mm (0.1287 in.)
		22	3.30 mm (0.1299 in.)
		23	3.33 mm (0.1311 in.)

Rear differential (w/ Diff. Lock)	Tooth contact pattern adjusting washer thickness	1.050 mm (0.04134 in.) 1.075 mm (0.04232 in.) 1.100 mm (0.04331 in.) 1.125 mm (0.04429 in.) 1.150 mm (0.04528 in.) 1.175 mm (0.04626 in.) 1.200 mm (0.04724 in.) 1.225 mm (0.04823 in.) 1.250 mm (0.04921 in.) 1.275 mm (0.05020 in.) 1.300 mm (0.05118 in.) 1.325 mm (0.05217 in.) 1.350 mm (0.05315 in.) 1.375 mm (0.05413 in.) 1.400 mm (0.05512 in.) 1.425 mm (0.05610 in.) 1.450 mm (0.05709 in.) 1.475 mm (0.05807 in.) 1.500 mm (0.05906 in.) 1.525 mm (0.06004 in.) 1.550 mm (0.06102 in.)
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Rear differential (w/ LSD)	Companion flange vertical runout		0.10 mm (0.0039 in.)
	Companion flange lateral runout		0.10 mm (0.0039 in.)
	Drive pinion preload (at starting)	New bearing Reused bearing	1.3 – 1.8 N·m (13 – 19 kgf·cm, 11.3 – 16.4 in.·lbf) 0.64 – 0.92 N·m (6.5 – 9.4 kgf·cm, 5.6 – 8.2 in.·lbf)
	Total preload (at starting)		Drive pinion preload plus 0.38 – 0.63 N·m (3.9 – 6.5 kgf·cm, 3.4 – 5.6 in.·lbf)
	Ring gear runout		0.05 mm (0.0020 in.)
	Ring gear backlash		0.13 – 0.18 mm (0.0051 – 0.0070 in.)
	Side gear backlash		0.02 – 0.15 mm (0.0008 – 0.0059 in.)
	Differential case runout		0.04 mm (0.0016 in.)
	Side gear thrust washer thickness (Reference)		1.97 – 2.06 mm (0.0776 – 0.0811 in.)
	Clutch plate thickness (Reference)		1.97 – 2.03 mm (0.0776 – 0.0799 in.)
	Compression spring free length (Reference)		32.8 mm (1.291 in.)
	Adjusting shim thickness	Mark	
		A	0.20 mm (0.0079 in.)
		B	0.25 mm (0.0098 in.)
		C	0.30 mm (0.0118 in.)
		D	0.35 mm (0.0138 in.)
	Tooth contact pattern adjusting washer thickness		1.050 mm (0.04134 in.) 1.075 mm (0.04232 in.) 1.100 mm (0.04331 in.) 1.125 mm (0.04429 in.) 1.150 mm (0.04528 in.) 1.175 mm (0.04626 in.) 1.200 mm (0.04724 in.) 1.225 mm (0.04823 in.) 1.250 mm (0.04921 in.) 1.275 mm (0.05020 in.) 1.300 mm (0.05118 in.) 1.325 mm (0.05217 in.) 1.350 mm (0.05315 in.) 1.375 mm (0.05413 in.) 1.400 mm (0.05512 in.) 1.425 mm (0.05610 in.) 1.450 mm (0.05709 in.) 1.475 mm (0.05807 in.) 1.500 mm (0.05906 in.) 1.525 mm (0.06004 in.) 1.550 mm (0.06102 in.)