

DIFFERENTIAL

SERVICE DATA

SS Front differential carrier assembly (1GR-FE (4WD))	Differential drive pinion preload (at starting)	New bearing Reused bearing	0.98 to 1.57 N*m (10 to 16 kgf*cm, 8.7 to 13.9 in.*lbf) 0.49 to 0.78 N*m (5.0 to 8.0 kgf*cm, 4.3 to 6.9 in.*lbf)
	Total preload (at starting)		Drive pinion preload plus 0.22 to 0.88 N*m (2.2 to 8.8 kgf*cm, 2.0 to 7.8 in.*lbf)
	Differential ring gear backlash		0.11 to 0.21 mm (0.0043 to 0.0083 in.)
	Differential side gear backlash		0 to 0.15 mm (0 to 0.0059 in.)
	Front differential carrier oil seal	Oil seal drive in depth	3.9 to 4.8 mm (0.153 to 0.189 in.)
	Front differential side oil seal	Oil seal drive in depth	-0.45 to 0.45 mm (-0.0177 to 0.0177 in.)
	Front differential side tube oil seal	Oil seal drive in depth	4.8 to 5.8 mm (0.189 to 0.2284 in.)
	Front differential side gear needle roller bearing	Bearing press in depth	1.4 to 2.0 mm (0.055 to 0.079 in.)
	Differential clutch sleeve and clutch sleeve hork clearance	Max.	0.35 mm (0.0138 in.)
Front differential carrier assembly (4WD)	Front differential side gear thrust washer thickness		1.50 mm (0.0591 in.) 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.)
	Front differential ring gear thrust washer thickness		1.58 mm (0.0622 in.) 1.60 mm (0.0630 in.) 1.62 mm (0.0638 in.) 1.64 mm (0.0646 in.) 1.66 mm (0.0654 in.) 1.68 mm (0.0661 in.) 1.70 mm (0.0669 in.) 1.72 mm (0.0677 in.) 1.74 mm (0.0685 in.) 1.76 mm (0.0693 in.) 1.78 mm (0.0701 in.) 1.80 mm (0.0709 in.) 1.82 mm (0.0717 in.) 1.84 mm (0.0724 in.) 1.86 mm (0.0732 in.) 1.88 mm (0.0740 in.) 1.90 mm (0.0748 in.) 1.92 mm (0.0756 in.) 1.94 mm (0.0764 in.) 1.96 mm (0.0772 in.) 1.98 mm (0.0780 in.) 2.00 mm (0.0787 in.) 2.02 mm (0.0800 in.) 2.04 mm (0.0803 in.) 2.06 mm (0.0811 in.) 2.08 mm (0.0819 in.) 2.10 mm (0.0827 in.) 2.12 mm (0.0835 in.) 2.14 mm (0.0843 in.) 2.16 mm (0.0850 in.)

<p>Front differential carrier assembly (4WD)</p>	<p>Rear differential drive pinion plate washer thickness</p>		<p>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 (0.0847 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 (0.0917 in.)</p>
<p>Rear differential carrier assembly (w/ differential lock)</p>	<p>Companion flange vertical runout</p>	<p>Max</p>	<p>0.10 mm (0.0039 in.)</p>
	<p>Companion flange lateral runout</p>	<p>Max</p>	<p>0.10 mm (0.0039 in.)</p>
	<p>Differential ring gear runout</p>	<p>Max</p>	<p>0.07 mm (0.0028 in.)</p>
	<p>Rear differential case runout</p>	<p>Max</p>	<p>0.07 mm (0.0028 in.)</p>
	<p>Differential drive pinion preload (at starting)</p>	<p>New bearing Reused bearing</p>	<p>1.05 to 1.64 N*m (10.7 to 16.7 kgf*cm, 9.3 to 14.5 in.*lbf) 0.56 to 0.85 N*m (5.7 to 8.7 kgf*cm, 5.0 to 7.5 in.*lbf)</p>
	<p>Total preload (at starting)</p>		<p>Drive pinion preload plus 0.39 to 0.59 N*m (4.0 to 6.0 kgf*cm, 3.5 to 5.2 in.*lbf)</p>
	<p>Differential ring gear backlash</p>		<p>0.13 to 0.18 mm (0.0051 to 0.0071 in.)</p>
	<p>Rear differential case side gear backlash LH</p>		<p>0.05 to 0.20 mm (0.0002 to 0.008 in.)</p>
	<p>Rear differential case side gear backlash RH</p>		<p>0.05 to 0.20 mm (0.0002 to 0.008 in.)</p>
	<p>Rear differential carrier oil seal</p>	<p>Oil seal drive in depth</p>	<p>0.55 to 1.45 mm (0.021 to 0.057 in)</p>
	<p>Rear differential side gear thrust washer thickness</p>		<p>0.9 mm (0.0354 in.) 1.0 mm (0.0394 in.) 1.1 mm (0.0433 in.) 1.2 mm (0.0472 in.) 1.3 mm (0.0512 in.)</p>
	<p>Rear differential lock sleeve clearance</p>		<p>0.15 to 0.35 mm (0.0059 to 0.0138 in.)</p>
<p>Rear differential carrier assembly (w/ differential lock)</p>	<p>Rear differential drive pinion plate washer thickness</p>		<p>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 (0.0847 in.) 2.18 mm (0.0853 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.)</p>

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Rear differential carrier assembly	Companion flange vertical runout	Max	0.10 mm (0.0039 in.)
	Companion flange lateral runout	Max	0.10 mm (0.0039 in.)
	Differential ring gear runout	Max	0.05 mm (0.002 in.)
	Rear differential case runout	Max	0.05 mm (0.002 in.)
	Differential drive pinion preload (at starting)	New bearing Reused bearing	1.27 to 1.86 N*m (113 to 20 kgf*cm, 11 to 16 in.*lbf) 0.786 to 1.07 N*m (8.0 to 11 kgf*cm, 6.9 to 9.3 in.*lbf)
	Total preload (at starting)		Drive pinion preload plus 0.39 to 0.59 N*m (4.0 to 6.0 kgf*cm, 3.5 to 5.2 in.*lbf)
	Differential ring gear backlash		0.13 to 0.18 mm (0.0051 to 0.0071 in.)
	Rear differential case side gear backlash LH		0.05 to 0.20 mm (0.0020 to 0.0079 in.)
	Rear differential case side gear backlash RH		0.05 to 0.20 mm (0.0020 to 0.0079 in.)
	Rear differential carrier oil seal	Oil seal drive in depth	-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)
	Rear differential side gear thrust washer thickness	1.50 mm (0.0590 in.) 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.)	
	Rear differential side gear thrust No. 1 washer standard thickness (LSD)	1.77 to 1.86 mm (0.0697 to 0.0732 in.)	
	Rear differential clutch plate standard thickness (LSD)	1.57 to 1.63 mm (0.0618 to 0.0642 in.)	
	Rear differential lock retainer compression spring free length (LSD)	26.35 mm (1.037in.)	
Rear differential carrier assembly	Rear differential side gear thrust washer thickness (LSD)	0.13 to 0.17 mm (0.0051 to 0.0067 in.) 0.18 to 0.22 mm (0.0071 to 0.0087 in.) 0.23 to 0.27 mm (0.0091 to 0.0106 in.) 0.28 to 0.32 mm (0.0110 to 0.0126 in.) 0.33 to 0.37 mm (0.0130 to 0.0146 in.)	
	Rear differential ring gear	0.05 mm (0.0020 in.)	

Rear differential carrier assembly	Rear differential side bearing preload washer thickness	Mark58	2.58 mm (0.1016 in.)
		60	2.60 mm (0.1024 in.)
		62	2.62 mm (0.1032 in.)
		64	2.64 mm (0.1039 in.)
		66	2.66 mm (0.1047 in.)
		68	2.68 mm (0.1055 in.)
		70	2.70 mm (0.1063 in.)
		72	2.72 mm (0.1071 in.)
		74	2.74 mm (0.1079 in.)
		76	2.76 mm (0.1087 in.)
		78	2.78 mm (0.1095 in.)
		80	2.80 mm (0.1102 in.)
		82	2.82 mm (0.1110 in.)
		84	2.84 mm (0.1118 in.)
		86	2.86 mm (0.1126 in.)
		88	2.88 mm (0.1134 in.)
		90	2.90 mm (0.1142 in.)
		92	2.92 mm (0.1150 in.)
		94	2.94 mm (0.1158 in.)
		96	2.96 mm (0.1165 in.)
		98	2.98 mm (0.1173 in.)
		00	3.00 mm (0.1181 in.)
		02	3.02 mm (0.1189 in.)
		04	3.04 mm (0.1197 in.)
		06	3.06 mm (0.1205 in.)
		08	3.08 mm (0.1213 in.)
		10	3.10 mm (0.1221 in.)
		12	3.12 mm (0.1228 in.)
		14	3.14 mm (0.1236 in.)
		16	3.16 mm (0.1244 in.)
		18	3.18 mm (0.1257 in.)
20	3.20 mm (0.1260 in.)		
22	3.22 mm (0.1268 in.)		
24	3.24 mm (0.1276 in.)		
26	3.26 mm (0.1284 in.)		
28	3.28 mm (0.1291 in.)		
30	3.30 mm (0.1299 in.)		
32	3.32 mm (0.1307 in.)		
34	3.34 mm (0.1315 in.)		
36	3.36 mm (0.1323 in.)		
38	3.38 mm (0.1331 in.)		
40	3.40 mm (0.1339 in.)		
42	3.42 mm (0.1347 in.)		
44	3.44 mm (0.1354 in.)		
46	3.46 mm (0.1362 in.)		
48	3.48 mm (0.1370 in.)		

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Rear differential carrier assembly	Rear differential drive pinion thrust washer thickness	Mark 87	1.87 mm (0.0736 in.)
		88	1.88 mm (0.0740 in.)
		89	1.89 mm (0.0744 in.)
		90	1.90 mm (0.0748 in.)
		91	1.91 mm (0.0752 in.)
		92	1.92 mm (0.0756 in.)
		93	1.93 mm (0.0760 in.)
		94	1.94 mm (0.0764 in.)
		95	1.95 mm (0.0768 in.)
		96	1.96 mm (0.0772 in.)
		97	1.97 mm (0.0776 in.)
		98	1.98 mm (0.0780 in.)
		99	1.99 mm (0.0784 in.)
		00	2.00 mm (0.0787 in.)
		01	2.01 mm (0.0791 in.)
		02	2.02 mm (0.0795 in.)
		03	2.03 mm (0.0799 in.)
		04	2.04 mm (0.0803 in.)
		05	2.05 mm (0.0807 in.)
		06	2.06 mm (0.0811 in.)
		07	2.07 mm (0.0815 in.)
		08	2.08 mm (0.0819 in.)
		09	2.09 mm (0.0823 in.)
		10	2.10 mm (0.0827 in.)
		11	2.11 mm (0.0831 in.)
		12	2.12 mm (0.0835 in.)
		13	2.13 mm (0.0839 in.)
		14	2.14 mm (0.0843 in.)
15	2.15 mm (0.0847 in.)		
16	2.16 mm (0.0850 in.)		
17	2.17 mm (0.0854 in.)		
18	2.18 mm (0.0858 in.)		
19	2.19 mm (0.0862 in.)		
20	2.20 mm (0.0866 in.)		
21	2.21 mm (0.0870 in.)		
22	2.22 mm (0.0874 in.)		
23	2.23 mm (0.0878 in.)		
24	2.24 mm (0.0882 in.)		
25	2.25 mm (0.0886 in.)		
26	2.26 mm (0.0890 in.)		
27	2.27 mm (0.0894 in.)		
28	2.28 mm (0.0898 in.)		