

SERVICE SPECIFICATIONS

SERVICE DATA

(Front)

Cold tire inflation pressure	tire size		Pressure		kPa (kgf/cm ² , psi)	
			Front	Rear		
	P225/75R15		180 (1.8, 26)		200 (2.0, 29)	
31 x 10.5R15LT						
Front wheel alignment Set suspension arm in loaded vehicle condition	Difference between the height at center of tip of spindle Front of steering knuckle and the height at center of tip of front side adjusting cam bolt				58.5 mm (2.303 in.)	
	Difference between the height of center of lower Rear control arm front bushing and the height of center off rear axle shaft				36.0 mm (1.417 in.)	
	Camber Left-right error		0°45' ± 45' 30' or less			
	Caster Left-right error		2°30' ± 45' 30' or less			
	Steering axis inclination Left-right error		11°45' ± 45' 30' or less			
	Toe-in		1 ± 2 mm (0.04 ± 0.08 in.)			
	Wheel angle Max. Inside wheel Outside wheel At 20° (outside wheel)		32°00' +1° -2° 31°00' (Reference) 21°10' (Inside wheel)			
Front wheel alignment Set suspension arm in nonloaded vehicle condition	Model	tire size	Height mm (in.)		Caster	toe-in mm (in.)
			* Front	* Rear		
	RN130L -GKLSEA	P225/75R15	283.1 (11.15)	335.2 (13.20)	1°46' ± 45'	1.94 ± 2 (0.0764 ± 0.08)
	VZN 120L -G KPG EA	P225/75R15	283.3 (11.15)	337.3 (13.28)	1°43' ± 45'	1.93 ± 2 (0.0760 ± 0.08)
	VZN 130L -GKMGEA	P225/75R15	280.3 (11.04)	331.6 (13.06)	1°47' ± 45'	1.93 ± 2 (0.0760 ± 0.08)
		31 x 10.5R15	307.2 (12.09)	359.3 (14.15)	1°46' ± 45'	1.93 ± 2 (0.0760 ± 0.08)
	VZN 130L -GKPGEA	P225/75R15	279.9 (11.02)	330.5 (13.01)	1°48' ± 45'	1.94 ± 2 (0.0764 ± 0.08)
		31 x 10.5R15	306.9 (12.08)	358.2 (14.10)	1°47' ± 45'	1.94 ± 2 (0.0764 ± 0.08)
	RN 131L -RKLSEK	P225/75R15	282.1 (11.11)	335.0 (13.19)	1°46' ± 45'	1.86 ± 2 (0.0732 ± 0.08)
	RN131L -RKPSEK	P225/75R15	281.5 (11.08)	333.3 (13.12)	1°47' ± 45'	1.87 ± 2 (0.0736 ± 0.08)
	vzN131 -RKMGEK	P225/75R15	278.9 (10.98)	332.5 (13.09)	1°45' ± 45'	1.87 ± 2 (0.0736 ± 0.08)
		31 x 10.5R15	305.8 (12.04)	360.2 (14.18)	1°44' ± 45'	1.87 ± 2 (0.0736 ± 0.08)
	VZN131L -RKPGEK	P225/75R15	280.2 (11.03)	324.6 (12.78)	1°59' ± 45'	1.87 ± 2 (0.0736 ± 0.08)
		31 x 10.5R15	307.1 (12.09)	352.3 (13.87)	1°57' ± 45'	1.87 ± 2 (0.0736 ± 0.08)
	Camber Camber left-right error Caster left-right error Steering axis inclination Steering axis inclination left-right error Wheel angle Max. Inside wheel Outside wheel At 20° (Outside wheel)				0°43' ± 45' 30' or less 30' or less 11°52' ± 45' 30' or less 32°00' +1° -2° 31°00' (Reference) 21°10' (Inside wheel)	

* Front: Height at center of tip of front side adjusting cam bolt

* Rear: Height at center of lower control arm front bushing

SPECIFICATIONS (Front)

Tire runout	Maximum	3.0 mm	0.118 in.	
Wheel balance		Unbalance after adjustment 15.0 g (0.033 lb) or less		
Wheel bearing preload (starting) (rotating load at hub bolt)		28 – 56 N	2.9 – 5.7 kgf 6.4 – 12.6 lbf	
Free wheeling hub ring oil clearance		0.3 mm	0.012 in.	
Front drive shaft thrust clearance	Maximum	0.075 – 0.690 mm 1.0 mm	0.0030 – 0.0272 in. 0.039 in.	
Front drive shaft thrust clearance adjusting shim thickness		1.80 mm 2.25 mm	0.0709 in. 0.0886 in.	
Front drive shaft grease capacity	Outboard joint (black) Inboard joint (brown)	176 – 186 g 270 – 280 g	0.39 – 0.41 lb 0.60 – 0.62 lb	
Front drive shaft length		393.9 – 403.9 mm	15.508 – 15.902 in.	
Front differential drive pinion bearing preload (starting)	New bearing Reused bearing	1.2 – 1.9 N·m 0.6 – 1.0 N·m	12 – 19 kgf·cm 6 – 10 kgf·cm	10.4 – 16.5 in.-lbf 5.2 – 8.7 in.-lbf
Front differential companion flange deviation	Maximum vertical runout Maximum lateral runout	0.10 mm 0.10 mm	0.0039 in. 0.0039 in.	
Front differential ring gear runout	Maximum	0.07 mm	0.0028 in.	
Front differential ring gear backlash		0.13 – 0.18 mm	0.0051 – 0.0071 in.	
Front differential preload (starting)	Total preload	Add drive pinion preload 0.4 – 0.6 N·m 4 – 6 kgf·cm	3.5 – 5.2 in.-lbf	
Front differential side gear backlash		0.05 – 0.20 mm	0.0020 – 0.0079 in.	
Front differential side gear backlash adjusting washer thickness		0.96 – 1.04 mm 1.06 – 1.14 mm 1.16 – 1.24 mm 1.26 – 1.34 mm	0.0378 – 0.0409 in. 0.0417 – 0.0449 in. 0.0457 – 0.0488 in. 0.0496 – 0.0528 in.	
Front differential backlash or side bearing preload thrust washer thickness		2.57 – 2.59 mm 2.60 – 2.62 mm 2.63 – 2.65 mm 2.66 – 2.68 mm 2.69 – 2.71 mm 2.72 – 2.74 mm 2.75 – 2.77 mm 2.78 – 2.80 mm 2.81 – 2.83 mm 2.84 – 2.86 mm 2.87 – 2.89 mm 2.90 – 2.92 mm 2.93 – 2.95 mm 2.96 – 2.98 mm 2.99 – 3.01 mm 3.02 – 3.04 mm 3.05 – 3.07 mm 3.08 – 3.10 mm	0.1012 – 0.1020 in. 0.1024 – 0.1031 in. 0.1035 – 0.1043 in. 0.1047 – 0.1055 in. 0.1059 – 0.1067 in. 0.1071 – 0.1079 in. 0.1083 – 0.1091 in. 0.1094 – 0.1102 in. 0.1106 – 0.1114 in. 0.1118 – 0.1126 in. 0.1130 – 0.1138 in. 0.1142 – 0.1150 in. 0.1154 – 0.1161 in. 0.1165 – 0.1173 in. 0.1177 – 0.1185 in. 0.1189 – 0.1197 in. 0.1201 – 0.1209 in. 0.1213 – 0.1220 in.	

Front differential backlash or side bearing preload thrust washer thickness (cont'd)	3.11 – 3.13 mm	0.1224 – 0.1232 in.
	3.14 – 3.16 mm	0.1236 – 0.1244 in.
	3.17 – 3.19 mm	0.1248 – 0.1256 in.
	3.20 – 3.22 mm	0.1260 – 0.1268 in.
	3.23 – 3.25 mm	0.1272 – 0.1280 in.
Front differential drive pinion plate washer thickness	2.24 mm	0.0882 in.
	2.27 mm	0.0894 in.
	2.30 mm	0.0906 in.
	2.33 mm	0.0917 in.
	2.36 mm	0.0929 in.
	2.39 mm	0.0941 in.
	2.42 mm	0.0953 in.
	2.45 mm	0.0965 in.
	2.48 mm	0.0976 in.
	2.51 mm	0.0988 in.
	2.54 mm	0.1000 in.
	2.57 mm	0.1012 in.
	2.60 mm	0.1024 in.
	2.63 mm	0.1035 in.
	2.66 mm	0.1047 in.
	2.69 mm	0.1059 in.
	2.72 mm	0.1071 in.
Front differential rear oil seal drive in depth	1.5 mm	0.059 in.
Clutch sleeve clearance (A.D.D.) Maximum	0.35 mm	0.0138 in.
Lower ball joint turning torque	3.0 – 5.9 N·m 30 – 60 kgf·cm 26 – 52 in.·lbf	

SPECIFICATIONS (Rear)

Rear axle shaft	Maximum shift runout	2.0 mm	0.079 in.
	Maximum flange runout	0.2 mm	0.008 in.
Differential	Drive pinion bearing preload (starting)		
	2 pinion type New bearing	1.9 – 2.5 N·m 19 – 26 kgf·cm 16.5 – 22.6 in.·lbf	
	Reused bearing	0.9 – 1.3 N·m 9 – 13 kgf·cm 7.8 – 11.3 in.·lbf	
	4 pinion type New bearing	1.0 – 1.6 N·m 10 – 16 kgf·cm 8.7 – 13.9 in.·lbf	
	Reused bearing	0.5 – 0.8 N·m 5 – 8 kgf·cm 4.3 – 6.9 in.·lbf	
	Total preload (starting)	Add drive pinion bearing preload	
		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.
	Pinion gear to side gear backlash	0.05 – 0.20 mm	0.0020 – 0.0079 in.
	Ring gear runout Maximum	0.10 mm	0.0039 in.
	Companion flange deviation		
	Maximum vertical runout	0.10 mm	0.0039 in.
	Maximum lateral runout	0.10 mm	0.0039 in.
	Ring gear installing temperature	100°C	212°F

Differential (cont'd)	Side gear thrust washer thickness 2 pinion type	1.6 mm	0.063 in.
		1.7 mm	0.067 in.
		1.8 mm	0.071 in.
	4 pinion type	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 adjusting plate washer 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.
	Oil seal drive in depth	1.0 mm	0.039 in.

TORQUE SPECIFICATION (Front)

Part tightened	N-m	kgf-cm	ft-lbf
Knuckle stopper bolt look nut	47	480	35
Free wheeling hub body x Axle hub	31	315	23
Free wheeling hub body x Front drive shaft	18	185	13
Free wheeling hub body x Cover	10	100	7
Axle hub bearing look nut	47	480	35
Flange x Axle hub 4WD w/o free wheeling hub	31	315	23
Hub grease cap x Axle hub 2WD	12	120	9
Upper suspension arm x Upper ball joint	33	340	25
Upper ball joint x Steering knuckle	142	1,450	105
Steering knuckle arm x Steering knuckle	183	1,870	135
Lower suspension arm x Shock absorber	137	1,400	101
Lower suspension arm x Stabilizer bar	25	260	19
Lower suspension arm x Lower ball joint	142	1,450	105
Front drive shaft x Side gear shaft	83	845	61
Front differential front mounting bolt	147	1,500	108
Front differential rear left mounting bolt	167	1,700	123
Front differential rear right mounting bolt	167	1,700	123
Differential tube x Bracket	78	800	58
Front differential x Bracket	78	800	58
Ring gear x Differential case	97	985	71
Drive pinion x Companion flange	See page SA-75,100		
Differential carrier x Differential tube w/o A.D.D.	85	900	65
Differential carrier x Side bearing cap	78	800	58
Differential carrier x Carrier cover	47	475	34
A.D.D clutch case x Differential carrier	78	800	58
A.D.D clutch case x Differential tube	78	800	58
A.D.D clutch case cover x A.D.D.clutch case	21	210	15
Lower suspension arm x Frame	198	2,000	145
Upper suspension arm shaft x Frame	178	1,810	131
Upper suspension arm shaft lock nut	226	2,300	166
Upper suspension arm x Torque arm	87	890	64
Upper suspension arm x Upper bell joint	33	340	25
Shock absorber x Frame	25	250	18
Stabilizer bar bracket x Frame	29	300	22
Tie rod end clamp	22	225	16
ABS speed sensor x Steering knuckle w/ 4 Wheel ABS	7.8	80	69 in.-lbf
A6S speed sensor wire x Upper suspension arm w/ 4 Wheel ABS	5.4	55	48 in.-lbf

TORQUE SPECIFICATION (Rear)

Differential

Part tightened	N-m	kgf-cm	ft-lbf
Propeller shaft x Companion flange	74	750	54
Drive pinion x Companion flange	See Page SA-157		
LH differential case x RH differential case 4 pinion type	47	480	35
Ring gear x Differential case	97	985	71
Bearing cap x Differential carrier	78	800	58
Differential carrier x Axle housing	25	250	18
ABS speed sensor x Differential carrier w/ Rear wheel ABS	19	195	14

Rear axle and suspension

Part tightened	N-m	kgf-cm	ft-lbf
Rear axle housing x Backing plate	69	700	51
Shock absorber x Frame	25	250	18
Shock absorber x Rear axle housing	64	650	47
Stabilizer bar bracket x Rear axle housing	13	130	9
Lateral control rod x Frame	137	1,400	101
Lateral control rod x Rear axle housing	113	1,150	83
Upper control arm x Frame	201	2,050	148
Upper control arm x Rear axle housing	201	2,050	148
Lower control arm x Frame	201	2,050	148
Lower control arm x Rear axle housing	201	2,050	148
Stabilizer bar link x Bracket	17	175	13
Stabilizer bar link x Stabilizer bar	95	970	70
ABS speed sensor x Rear axle housing w/ 4 Wheel ABS	7.8	80	69 in.-lbf
ABS speed sensor wire x Lower control arm w/ 4 Wheel ABS	13	130	9