

SUSPENSION AND AXLE

Specifications (Front/2WD)

Cold tire inflation pressure	Tire size		Pressure							
			Front	Rear						
			kPa (kgf/cm ² , psi)							
	P195/75R14 P205/75R14 P215/65R15		200 (2.0, 29)	240 (2.4, 35)						
	185R14LT-6PR		220 (2.2, 32)	220 (2.2, 32)						
	185R14LT-8PR		200 (2.0, 29)	450 (4.5, 65)						
Chassis ground clearance	Model	Tire size	Clearance							
			Front	Rear						
		mm (in.)								
	RN80L - TRMDEA RN80L - TRMDEK	P195/75R14	257 (10.12)	263 (10.35)						
	RN80L - TRSDEA RN80L - TRSDEK	P195/75R14	257 (10.12)	263 (10.35)						
	RN80L - TRMREA RN80L - TRMREK	P195/75R14	260 (10.23)	268 (10.55)						
	RN85L - TRMDEA RN85L - TRMDEK	P195/75R14	263 (10.35)	261 (10.28)						
	RN85L - TRSDEA RN85L - TRSDEK	P195/75R14	262 (10.31)	261 (10.28)						
	RN90L - CRMDEA RN90L - CRMDEK	P205/75R14	278 (10.94)	264 (10.39)						
	RN90L - CRSDEA RN90L - CRSDEK	P205/75R14	278 (10.94)	264 (10.39)						
	VZN85L - THMDEA	185R14LT - 8PR	260 (10.24)	284 (11.18)						
	VZN85L - THSDEA	185R14LT - 8PR	258 (10.16)	283 (11.14)						
	VZN85L - TWMREA6	185R14LT - 6PR	259 (10.20)	234 (9.21)						
	VZN85L - TINSREA6	185R14LT - 6PR	259 (10.24)	235 (9.25)						
	VZN90L - CRMDEA VZN90L - CRMDEK	P205/75R14	277 (10.91)	266 (10.47)						
	VZN90L - CRSDEA VZN90L - CRSDEK	P205/75R14	277 (10.91)	265 (10.43)						
	VZN90L - CRMGEA	P205/75R14	273 (10.75)	262 (10.31)						
	VZN90L - CRPGEA	P205/75R14	273 (10.75)	262 (10.31)						
		P215/75R15	274 (10.79)	263 (10.35)						
	VZN95L - TWMREA6	185R14LT - 6PR	259 (10.20)	232 (9.13)						
	VZN95L - TWSREA6 VZN95L - TWSREK6	185R14LT - 6PR	259 (10.20)	232 (9.13)						
	Front wheel alignment	Model	Camber	Caster	Steering axis inclination	Toe-in mm (in.)				
RN80L - TRSDEA RN80L - TRSDEK							0°30' ± 45'	0°43' ± 45'	10°00' ± 45'	1.32 ± 2 (0.0520 ± 0.08)
RN80L - TRMDEA RN80L - TRMDEK							0°30' ± 45'	0°44' ± 45'	10°00' ± 45'	1.32 ± 2 (0.0520 ± 0.08)
RN80L - TRMREA RN80L - TRMREK							0°28' ± 45'	0°40' ± 45'	10°01' ± 45'	1.74 ± 2 (0.0685 ± 0.08)

Specifications (Front/2WD) (Cont'd)

Front wheel alignment (cont'd)	Model	Camber	Caster	Steering axis inclination	Toe-in mm (in.)
	RN85L – TRMDEA RN85L – TRMDEK	0°27' ± 45'	0°59' ± 45'	10°02' ± 45'	2.09±2 (0.0822±0.08)
	RN85L – TRSDEA RN85L – TRSDEK	0°27' ± 45'	0°58' ± 45'	10°02' ± 45'	2.09±2 (0.0822±0.08)
	RN90L – CRSDEA RN90L – CRSDEK	0°23' ± 45'	1°15' ± 45'	10°06' ± 45'	3.27±2 (0.1287±0.08)
	RN90L – CRMDEA RN90L – CRMDEK	0°23' ± 45'	1°15' ± 45'	10°06' ± 45'	3.27±2 (0.1287±0.08)
	VZN85L – THMDEA	0°29' ± 45'	0°34' ± 45'	10°00' ± 45'	5.61±2 (0.2209±0.08)
	VZN85L – THSDEA	0°30' ± 45'	0°33' ± 45'	10°00' ± 45'	4.85±2 (0.1909±0.08)
	VZN85L – TWMREA6	0°29' ± 45'	1°46' ± 45'	10°00' ± 45'	5.73±2 (0.2256±0.08)
	VZN85L – TWSREA6	0°29' ± 45'	1°45' ± 45'	10°00' ± 45'	5.73±2 (0.2256±0.08)
	VZN90L – CRMDEA VZN90L – CRMDEK	0°23' ± 45'	1°11' ± 45'	10°06' ± 45'	3.27±2 (0.1287±0.08)
	VZN90L – CRSDEA VZN90L – CRSDEK	0°23' ± 45'	1°12' ± 45'	10°06' ± 45'	3.27±2 (0.1287±0.08)
	VZN90L – CRMGEA	0°25' ± 45'	1°13' ± 45'	10°04' ± 45'	2.82±2 (0.1110±0.08)
	VZN90L – CRPGEA	0°25' ± 45'	1°12' ± 45'	10°04' ± 45'	2.82±2 (0.1110±0.08)
	VZN95L – T1IVMREA6	0°29' ± 45'	1°47' ± 45'	10°00' ± 45'	5.73±2 (0.2256±0.08)
	VZN95L – TWSREA6 VZN95L – TWSREK6	0°29' ± 45'	1°46' ± 45'	10°00' ± 45'	5.73±2 (0.2256±0.08)
	Wheel angle	Max. Inside wheel Outside wheel At 20° (outside wheel)	34° +1° -2° 30° 22°15' (Inside wheel)		
Disc wheel lateral runout	Limit	1.2 mm 0.047 in.			
Wheel bearing preload (starting) (rotating load at hub bolt)	Limit	5.9 – 17.7 N 0.6 – 1.8 kgf 1.3 – 4.0 lbf Add oil seal frictional force			
Hub axial play	Limit	0.05 mm 0.0020 in. 0 mm 0 in.			
Lower ball joint vertical play	Limit	2.3 mm 0.091 in.			
Upper ball joint vertical play	Lower ball joint	0.1–4.9 N·m 1–50 kgf·cm 1–43 in.·lbf			
Ball joint rotation condition	Upper ball joint	2.0–3.9 N·m 20–40 kgf·cm 17–35 in.·lbf			

Specifications (Front/4WD)

Cold tire inflation pressure	Tire size		Pressure		kPa (kgf/cm ² , psi)
			Front	Rear	
		P225/75R15		180 (1.8, 26)	
	31X10.5 R15LT		180 (1.8, 26)		200 (2.0, 29)
Front wheel alignment Specifications with vehicle height set to standard height	Standard vehicle height for alignment inspection	Difference between the height at center of tip of drive shaft 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 rear leaf spring front bushing and the height of center of rear axle shaft			61.0 mm (2.402 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°50' ± 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° 21°10' (inside wheel)	
Front wheel alignment (Specifications at vehicle height of non-loaded vehicle)	Vehicle height of non-loaded vehicle	Model	Tire size	Height mm (in.)	
				Front Height at center of tip of front side adjusting cam bolt	Rear Height of center of rear leaf spring front bushing
		RN101 L - TRMDEA RN101 L - TRMDEK	P225/75R15	281.6 (11.087)	426.9 (16.807)
		RN101 L - TRMDEA	P225/75R15	281.8 (11.095)	426.9 (16.807)
		RN101 L - TRPDEA	P225/75R15	281.4 (11.079)	424.9 (16.728)
		RN106L - TRMDEA	P225/75R15	285.9 (11.256)	427.5 (16.831)
		RN106L - TRMDEA RN106L - TRLDEK	P225/75R15	285.6 (11.244)	427.5 (16.831)
		RN110L - CRMDEA	P225/75R15	292.0 (11.496)	423.2 (16.661)
		RN110L - CRPDEA	P225/75R15	291.4 (11.472)	420.2 (16.543)
		RN110L - CRLDEA	P225/75R15	291.3 (11.468)	423.1 (16.657)
		RN110L - CRLDEK	P225/75R15	291.1 (11.461)	426.4 (16.787)
		VZN100L - TRMDEA VZN100L - TRMDEK	P225/75R15 31X10.5R15LT	279.5 (11.003) 311.0 (12.244)	422.5 (16.634) 454.1 (17.878)
		VZN105L - TRMDEA VZN105L - TRMDEK	P225/75R15 31X10.5R15LT	283.6 (11.165) 315.1 (12.405)	422.6 (16.638) 454.3 (17.886)
		VZN110L - CRMDEA	P225/75R15 31X10.5R15LT	289.8 (11.409) 321.3 (12.650)	418.8 (16.448) 450.4 (17.732)
		VZN110L - CRMDEK	P225/75R15 31X10.5R15LT	289.8 (11.409) 321.3 (12.650)	422.1 (16.618) 453.4 (17.850)
		VZN110L - CRPDEA	P225/75R15 31X10.5R15LT	289.4 (11.394) 321.0 (12.638)	417.4 (16.433) 449.0 (17.677)

Specifications (Front/4WD) (Cont'd)

Front wheel alignment	Vehicle height of non-loaded vehicle	Model	Tire size	Height mm (in.)				
				Front Height at center of tip of front side adjusting cam bolt	Rear Height of center of rear leaf spring front bushing			
Specifications at vehicle height of non-loaded vehicle		VZN110L - CRPDEK	P225/75R15	289.2 (11.386)	420.6 (16.559)			
			31X10.5R15LT	320.7 (12.626)	452.3 (17.807)			
		VZN110L - CRMGEA	P225/75R15	283.1 (11.146)	415.6 (16.362)			
			10.5R15LT	314.7 (12.390)	447.3 (17.610)			
		VZN110L - CRMGEK	P225/75R15	282.9 (11.138)	418.8 (16.488)			
			31X10.5R15LT	314.4 (12.378)	450.5 (17.736)			
		VZN110L - CRPGEA VZN110L - CRPGEK	P225/75R15	282.7 (11.130)	413.9 (16.296)			
			31X10.5R15LT	314.3 (12.374)	445.6 (17.543)			
		Alignment		Model	Camber	Caster	Steering axis inclination	Toe-in mm (in.)
				RN106L series	0°42' ± 45'	1°41' ± 45'	11°53' ± 45'	2.22 ± 2 (0.0874 ± 0.08)
				VZN100L series	0°43' ± 45'	1°41' ± 45'	11°52' ± 45'	1.91 ± 2 (0.0751 ± 0.08)
				VZN105L series	0°42' ± 45'	1°45' ± 45'	11°53' ± 45'	2.22 ± 2 (0.0874 ± 0.08)
				RN101L - TRMDEA	0°43' ± 45'	1°38' ± 45'	11°52' ± 45'	1.92 ± 2 (0.0756 ± 0.08)
				RN101L - TRLDEA	0°43' ± 45'	1°38' ± 45'	11°52' ± 45'	1.92 ± 2 (0.0756 ± 0.08)
RN101L - TRLDEK	0°43' ± 45'			1°37' ± 45'	11°52' ± 45'	1.92 ± 2 (0.0756 ± 0.08)		
RN101L - TRPDEA	0°43' ± 45'			1°41' ± 45'	11°52' ± 45'	1.91 ± 2 (0.0752 ± 0.08)		
RN110L - CRMDEA	0°40' ± 45'			1°49' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
RN110L - CRPDEA	0°40' ± 45'			1°52' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
RN110L - CRLDEA	0°40' ± 45'			1°49' ± 45'	11°55' ± 45'	2.68 ± 2 (0.1055 ± 0.08)		
RN110L - CRLDEK	0°40' ± 45'			1°44' ± 45'	11°55' ± 45'	2.68 ± 2 (0.1055 ± 0.08)		
VZN110L - CRMDEA	0°40' ± 45'			1°52' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
VZN110L - CRMDEK	0°40' ± 45'			1°48' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
VZN110L - CRPDEA	0°40' ± 45'			1°53' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
VZN110L - CRPDEK	0°40' ± 45'			1°49' ± 45'	11°55' ± 45'	2.69 ± 2 (0.1059 ± 0.08)		
VZN110L - CRMGEA	0°42' ± 45'			1°55' ± 45'	11°53' ± 45'	2.25 ± 2 (0.0886 ± 0.08)		
VZN110L - CRMGEK	0°42' ± 45'			1°50' ± 45'	11°53' ± 45'	2.25 ± 2 (0.0886 ± 0.08)		
VZN110L - CRPGEA	0°42' ± 45'			1°56' ± 45'	11°53' ± 45'	2.25 ± 2 (0.0886 ± 0.08)		
Camber left-right error			30' or less					
Caster left-right error			30' or less					
Steering axis inclination left-right error			30' or less					
Wheel angle Max. Inside wheel			32°00' + 1°					
Outside wheel			- 2°					
At 200 (outside wheel)			21°10' (inside wheel)					
Disc wheel lateral runout Limit		1.2 mm		0.047 in.				
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.				
Automatic locking hub brake shoe thickness		1.5 mm		0.059 in.				
Front drive shaft thrust clearance		Minimum 0.075 - 0.690 mm		0.0030 - 0.0272 in.				
		Maximum 1.0 mm		0.039 in.				

Specifications (Front/4WD) (Cont'd)

Front drive shaft thrust clearance adjusting shim thickness		1.80 mm	0.0709 in.
		2.25 mm	0.0886 in.
Front drive shaft grease capacity			
	Outboard joint (black)	195 – 205 g	0.43 – 0.45 lb
	Inboard joint (brown)	270 – 280 g	0.60 – 0.62 lb
Front differential drive pinion bearing preload (starting)			
	New bearing	1.2 – 1.9 N·m	12 – 19 kgf·cm 10.4 – 16.5 in.·lbf
	Reused bearing	0.6 – 1.0 N·m	6 – 10 kgf·cm 5.2 – 8.7 in.·lbf
Front differential companion flange deviation			
	Maximum vertical runout	0.10 mm	0.0039 in.
	Maximum lateral runout	0.10 mm	0.0039 in.
Front differential ring gear runout		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 rear oil seal drive in depth		1.5 mm	0.059 in.
Clutch sleeve clearance (A.D.D.)	Limit	0.35 mm	0.0138 in.
Nut tightening limit		70 mm	3.43 in.
Lower ball joint vertical play		2.3 mm	0.091 in.
Upper ball joint vertical play	Limit	0 mm	0 in.
Lower ball joint turning torque		0.1 – 4.9 N·m	1 – 50 kgf·cm 1 – 43 in.·lbf
Upper ball joint turning torque		2.0 – 3.9 N·m	20 – 40 kgf·cm 17 – 35 in.·lbf

Specifications (Rear)

Rear axle shaft (Single tire)	Maximum shaft runout	2.0 mm	0.079 in.
	Maximum flange runout	0.2 mm	0.008 in.
Rear axle shaft and hub (Double tire)	Maximum shaft runout	2.0 mm	0.079 in.
	Preload (starting)	Add oil seal frictional force 1.0 – 14.7 N 0.1 – 1.5 kgf 0.2 – 3.3 lbf	
7.5 in. differential	Drive pinion bearing preload (starting)		
		New bearing	1.2 – 1.9 N·m 12 – 19 kgf·cm 10.4 – 16.5 in.·lbf
		Reused bearing	0.6 – 1.0 N·m 6 – 10 kgf·cm 5.2 – 8.7 in.·lbf
	Total preload (starting)		Add drive pinion bearing preload
		New and reused bearing	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	0.07 mm	0.0028 in.
Companion flange deviation			
	Maximum vertical runout	0.10 mm	0.0039 in.
	Maximum lateral runout	0.10 mm	0.0039 in.
8.0 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	

Specifications (Rear) (Cont'd)

8.0 in. differential (cont'd)	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	Limit	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.	

Torque Specifications (Front/2WD)

Part tightened	N·m	kgf·cm	ft·lbf
Knuckle stopper bolt lock nut	34	350	25
Tie rod clump bolt	22	225	16
Steering knuckle x Upper ball joint	108	1,100	80
Steering knuckle x Lower ball joint	142	1,450	105
Steering knuckle x Tie rod	90	920	67
Upper suspension arm x Upper ball joint	31	320	23
Lower suspension arm x Lower ball joint	127	1,300	94
Torsion bar spring lock nut	83	850	61
Lower suspension arm x Strut bar	95	970	70
Lower suspension arm x Stabilizer bar	13	130	9
Lower suspension arm x Shock absorber	18	185	13
Shock absorber x Frame	25	250	18
Lower arm shaft nut	226	2,300	166
Upper arm shaft x Frame	96	980	71
Upper suspension arm set bolt	126	1,280	93
Strut bar x Frame	123	1,250	90
Stabilizer bar bracket x Frame	29	300	22
Hub nut	103	1,050	76

Torque Specifications (Front/4WD)

Part tightened	N·m	kgf·cm	ft·lbf
Knuckle stopper bolt lock 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 lock nut	47	480	35
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

Torque Specifications (Front/4WD) (Cont'd)

Part tightened	N·m	kgf·cm	ft·lbf
Front differential rear right mounting bolt	167	1,700	123
Differential tube x Bracket	127	1,300	94
Front differential x Bracket	78	800	58
Ring gear x Differential case	97	985	71
Differential carrier x Differential tube (w/o A.D.D.) Differential carrier x Side bearing cap	85	900	65
Differential carrier x Carrier cover	78	800	58
Differential carrier x Carrier cover	47	475	34
Lower suspension arm x Frame	196	2,000	145
Upper suspension arm shaft x Frame	178	1,810	131
A.D.D. clutch case x Differential carrier	78	800	58
A.D.D. clutch case x Differential to be	78	800	58
A.D.D. clutch case cover x A.D.D. clutch case	21	210	15
Upper suspension arm shaft lock nut	226	2,300	166
Upper suspension arm x Torque arm	87	890	64
Shock absorber x Frame	25	250	18
Stabilizer bar bracket x Frame	29	300	22
Hub nut	103	1,050	76

Torque Specifications (Rear)

Part tightened	N·m	kgf·cm	ft·lbf
Ring gear x Differential case	97	985	71
Bearing cap x Differential carrier	78	800	58
Differential carrier x Axle housing	25	250	18
	31	315	23
	69	700	51
Rear axle housing x Bearing retainer	69	700	51
Spring center bolt	44	450	33
Front spring bracket x Hanger pin			
Rubber bushing type	91	930	67
Press-installed bushing type	157	1,600	116
Rear spring shackle x Leaf spring	91	930	67
Rear shock absorber x U-bolt seat	25	260	19
	72	730	53
Rear shock absorber x Body	25	260	19
	72	730	53
U-bolt x U-bolt seat			
2WD	147	1,500	108
0.5 ton	123	1,250	90
1 ton, C & C	123	1,250	90
4WD	147	1,500	108
Xtra cab	147	1,500	108
Regular cab	147	1,500	108
Stabilizer bar x Stabilizer bar link	36	365	26
Stabilizer bar bracket x Axle housing	13	130	9
Hub nut	103	1,050	76