SUSPENSION AND AXLE

Specifications

Cold tire inflation pressure kg/cm² (psi, kPa)	Destination	Model	Tire size	Front	Rear
	Europe	HZJ70, 73 PZJ70, 73	215/80R16	1.8 (26, 180)	2.0 (29, 200)
			265/75R15	1.8 (26, 180)	2.0 (29, 200)
		PZJ75	7.50-16-8PRLT	2.4 (35, 240)	3.5 (51, 350)
			205R16C8PR	2.2 (32, 220)	4.5 (65, 450)
		LJ70, 73 RJ70, 73	7.00-16-6PRLT	1.8 (26, 180)	2.4 (35, 240)
			215/80R16	1.6 (23, 160)	2.0 (29, 200)
			265/75R15	1.8 (26, 180)	2.0 (29, 200)
	Australia	FJ70, 73 HZJ70, 73 PZJ70, 73	7.50R16-6PRLT	2.0 (29, 200)	3.5 (51, 350)
			265/75R15	1.8 (26, 180)	2.0 (29, 200)
		FJ75, HZJ75	7.50R16-8PRLT	2.2 (32, 220)	3.9 (57, 390)
		LJ70 RJ70	205R16C6PR	1.7 (24, 170)	2.2 (32, 220)
			265/75R15	1.8 (26, 180)	2.0 (29, 200)
	Middle East	FJ70, 73	7.50-16-8PRLT	1.8 (26, 180)	2.0 (29, 200)
			7.50R16-8PRLT	2.0 (29, 200)	2.25 (33, 225)
			31 × 10.50R15-6PRLT	1.8 (26, 180)	2.5 (36, 250)
		FJ75 HZJ75	7.50-16-8PRLT	2.4 (35, 240)	4.25 (61, 425)
			7.50R16-8PRLT	2.25 (33, 225)	3.75 (54, 375)
		FJ75 HZJ75 PZJ75	9.00-15-6PRLT (Sand)	2.1 (30, 210)	2.8 (41, 280)
		FJ75, 73 PZJ70, 73	7.50R16-8PRLT	2.1 (30, 210)	2.7 (39, 270)
		FJ75 HZJ75 PZJ75	7.50R16C-8PR (Sahara)	2.1 (30, 210)	4.0 (58, 400)
	Others	FJ70, 73 PZJ70, 73	7.00-15-6PRLT	1.8 (26, 180)	2.6 (38, 260)
			7.00-16-6PRLT	1.8 (26, 180)	2.4 (35, 240)
			7.50-16-6PRLT	1.8 (26, 180)	2.0 (29, 200)
			7.50R16-8PRLT	2.0 (29, 200)	2.25 (33, 225)
			31 × 10.50R15-6PRLT	1.8 (26, 180)	2.5 (36, 250)
		FJ75 HZJ75 PZJ75	7.00-16-8PRLT	2.4 (35, 240)	3.5 (51, 350)
			7.50-16-6PRLT	1.8 (26, 180)	–
			7.50-16-8PRLT	–	3.5 (51, 350)
			7.50-16-8PRLT	2.4 (35, 240)	4.25 (62, 425)
			7.50R16-8PRLT	2.25 (32, 225)	3.75 (54, 375)
		LJ70, 72 RJ70	7.00-15-6PRLT	1.8 (26, 180)	2.2 (32, 220)
			7.00-16-6PRLT	1.8 (26, 180)	2.0 (29, 200)
			7.50-16-6PRLT	1.8 (26, 180)	1.8 (26, 180)
			205R16C 6PR	1.7 (25, 170)	2.0 (29, 200)
			31 × 10.50R15-6PRLT	1.8 (26, 180)	2.1 (32, 210)
		FJ70, 73 PZJ70, 73	7.50R16-8PRLT	2.1 (32, 210)	2.7 (41, 270)
		FJ75 HZJ75 PZJ75	7.50R16C 8PR (Sahara)	2.1 (32, 210)	4.0 (60, 400)

Specifications (Cont'd)

Chassis ground clearance mm (in.)	Tire size		Front	Rear	
	7.00-15-6PRLT		471 (18.54)	473 (18.62)	
	215/80R16		458 (18.03)	460 (18.11)	
	205R16C 6RR		459 (18.07)	461 (18.15)	
	265/75R15		476 (18.74)	478 (18.82)	
	31 × 10.50R15-6PRLT		476 (18.74)	478 (18.82)	
	7.00-16-6PRLT		483 (19.01)	485 (19.09)	
	7.50-16-6PRLT		499 (19.66)	501 (19.72)	
Front wheel alignment	Suspension type				
	Leaf spring type	Camber Left-right error		1°00′ ± 45′ (1° ± 0.75°) 30′ (0.5°) or less	
		Steering axis inclination Left-right error		12°00′ ± 45′ (12° ± 0.75°) 30′ (0.5°) or less	
		Caster (Left-right error)	Series	Angle	
			Short, Middle Semi-long	1°15′ ± 1° (1.25° ± 1°) (30′ (0.5°) or less)	
			Long (Van)	0°50′ ±1° (0.83° ± 1°) (30′ (0.5°) or less)	
			Long (Pickup)	0°30′ ± 1° (0.5° ± 1°) (30′ (0.5°) or less)	
		Toe-in	Tire	Inspection STD	Adjustment STD
			Radial (•31 × 10.50R15 -6PRLT •265/75R15)	−1 ± 2 mm (−0.04 ± 0.08 in.)	−1 ± 1 mm (−0.04 ± 0.04 in.)
			Radial (•Others)	1 ± 2 mm (0.04 ± 0.08 in.)	1 ± 1 mm (0.04 ± 0.04 in.)
			Bias	4 ± 2 mm (0.16 ± 0.08 in.)	4 ± 1 mm (0.16 ± 0.04 in.)
		Wheel angle (Max.)	Tire size	Inside wheel	Outside wheel
			7.50-16-8PRLT 7.50R16-8PRLT 9.00-16-6PRLT 7.50-16-6PRLT	30° +0° −3°	28°
			Others	32° +0° −3°	30°
		Side side (Reference only)		Less than 3.0 mm/m (0.118 in./3.3 ft)	
	Coil spring type	Camber Left-right error		1° ± 1° 30′ (0.5°) or less	
		Steering axis inclination Left-right error		9°30′ ± 1° (9.5° ± 1°) 30′ (0.5°) or less	
		Caster Left-right error		4°05′ ± 1° (4.08° ± 1°) 30′ (0.5°) or less	
		Toe-in	Tire size	Inspection STD	Adjustment STD
			7.00-15-6PRLT 7.00-16-6PRLT 7.50-16-6PRLT	4 ± 2 mm (0.16 ± 0.08 in.)	4 ± 1 mm (0.16 ± 0.04 in.)
			215/80R16 20516C 6PR	1 ± 2 mm (0.04 ± 0.08 in.)	1 ± 1 mm (0.04 ± 0.04 in.)
			265/75R15 31 × 10.50R15 -6PRLT	−1 ± 2 mm (−0.04 ± 0.08 in.)	−1 ± 1 mm (−0.04 ± 0.04 in.)
		Wheel angle	Max.	Inside wheel	Outside wheel
				32°00′ +0° −3°	30°00′
		Side slip (Reference only)		Less than 3.0 mm/m (0.118 in./3.3 ft)	

Specifications (Cont'd)

Front suspension	Wheel lateral runout		1.2 mm	0.047 in.	
	Free wheeling hub ring oil clearance		0.3 mm	0.012 in.	
	Power locking hub brush height				
	Standard height	A	6.5 mm	0.256 in.	
		B	4.7 mm	0.186 in.	
	Minimum height	A	4.2 mm	0.165 in.	
		B	3.1 mm	0.122 in.	
	Wheel bearing preload (rotating load at hub bolt)		2.8 – 5.7 kg	6.2 – 12.6 lb	27 – 56 N
	Steering knuckle bearing preload (rotating load at knuckle arm end, before installing dust seal)		3.0 – 6.0 kg	6.6 – 13.2 lb	29 – 59 N
	Steering knuckle preload adjusting shim thickness		0.1 mm	0.004 in.	
			0.2 mm	0.008 in.	
			0.3 mm	0.012 in.	
			0.5 mm	0.020 in.	
			1.0 mm	0.039 in.	
	Steering knuckle bearing preload (rotating load at knuckle arm end, after installing dust seal)		2.5 – 5.0 kg	5.6 – 11.0 lb	25 – 49 N
Front differential	Drive pinion bearing preload (at starting)				
	RJ and LJ series				
	New bearing		19 – 26 kg-cm	16.5 – 22.6 in.-lb	1.9 – 2.5 N·m
	Reused bearing		9 – 13 kg-cm	7.8 – 11.3 in.-lb	0.9 – 1.3 N·m
	FJ, PZJ and HZJ series				
	New bearing		10 – 16 kg-cm	8.7 – 13.9 in.-lb	1.0 – 1.6 N·m
	Reused bearing		5 – 8 kg-cm	4.3 – 6.9 in.-lb	0.5 – 0.8 N·m
	Total preload (at starting)		Add drive pinion bearing preload		
			4 – 6 kg-cm	3.5 – 5.2 in.-lb	0.4 – 0.6 N·m
	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	Limit			
	Radial		0.10 mm	0.0039 in.	
	Lateral		0.10 mm	0.0039 in.	
	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 (include w/ Differential lock)		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.	

Specifications (Cont'd)

Front differential (cont'd)	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.
	Rear oil seal drive in depth		1.0 mm	0.039 in.
Rear suspension	Rear axle shaft	Maximum runout	0.8 mm	0.031 in.
	Hub axial play		Less than 0.1 mm (0.004 in.)	
	Wheel bearing preload (at starting)		0.4 – 3.3 kg	0.9 – 7.3 lb 4 – 32 N
	Axle housing and lock nut distance		−0.2 – 0.9 kg	−0.008 – 0.035 in.
Rear differential (8 in. type)	Drive pinion preload (at starting)			
		New bearing	10 – 16 kg-cm	8.7 – 13.9 in.-lb 1.0 – 1.6 N·m
		Reused bearing	5 – 8 kg-cm	4.3 – 6.9 in.-lb 0.5 – 0.8 N·m
	Total preload (at starting)		Add drive pinion bearing preload	
			4 – 6 kg-cm	3.5 – 5.2 in.-lb 0.4 – 0.6 N·m
	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	Limit		
		Radial	0.10 mm	0.0039 in.
		Leteral	0.10 mm	0.0039 in.
	Side gear thrust washer thickness			
	4 pinion type (include w/ Differential lock)		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.
	LSD type	Mark		
		A	0.15 mm	0.0059 in.
		B	0.20 mm	0.0079 in.
		C	0.25 mm	0.0098 in.
		D	0.30 mm	0.0118 in.
		E	0.35 mm	0.0138 in.

Specifications (Cont'd)

Rear differential (8 in. type) (cont'd)	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.
	Front oil seal drive in depth	1.0 mm	0.039 in.
Rear differential (9.5 in. type)	Drive pinion bearing preload (at starting)		
	New bearing	13 – 20 kg-cm	11.3 – 17.4 in.-lb 1.3 – 2.0 N·m
	Reused bearing	7 – 10 kg-cm	6.1 – 8.7 in.-lb 0.7 – 1.0 N·m
	Total preload (at starting)	Add drive pinion bearing preload	
	2 pinion and LSD types	4 – 6 kg-cm	3.5 – 5.2 in.-lb 0.4 – 0.6 N·m
	w/ Differential lock	3 – 7 kg-cm	2.6 – 6.1 in.-lb 0.3 – 0.7 N·m
	Drive pinion to ring gear backlash	0.15 – 0.20 mm	0.0059 – 0.0079 in.
	Pinion gear to side gear backlash		
	Ex. LSD type	0.02 – 0.20 mm	0.0008 – 0.0079 in.
	LSD type	0.02 – 0.24 mm	0.0008 – 0.0094 in.
	Ring gear runout Limit	0.10 mm	0.0039 in.
	Companion flange deviation Limit		
	Radial	0.10 mm	0.0039 in.
	Leteral	0.10 mm	0.0039 in.
	Side gear thrust washer thickness		
	Ex. LSD type	1.60 mm	0.0630 in.
		1.75 mm	0.0689 in.
		1.90 mm	0.0748 in.
		2.05 mm	0.0807 in.
	LSD type	0.20 mm	0.0079 in.
		0.25 mm	0.0098 in.
		0.30 mm	0.0118 in.
		0.35 mm	0.0138 in.
	Drive pinion adjusting plate washer thickness	1.05 mm	0.0413 in.
		1.10 mm	0.0433 in.
		1.15 mm	0.0453 in.
		1.20 mm	0.0472 in.
		1.25 mm	0.0492 in.
		1.30 mm	0.0512 in.
		1.35 mm	0.0531 in.
		1.40 mm	0.0551 in.
		1.45 mm	0.0571 in.
		1.50 mm	0.0591 in.
		1.55 mm	0.0610 in.

Specifications (Cont'd)

Rear differential (9.5 in. type) (cont'd)	Side bearing adjusting plate thickness (w/ Differential lock only)	2.67 mm	0.1051 in.
		2.70 mm	0.1063 in.
		2.73 mm	0.1075 in.
		2.76 mm	0.1087 in.
		2.79 mm	0.1098 in.
		2.82 mm	0.1110 in.
		2.85 mm	0.1122 in.
		2.88 mm	0.1134 in.
		2.91 mm	0.1146 in.
		2.94 mm	0.1157 in.
		2.97 mm	0.1169 in.
		3.00 mm	0.1181 in.
		3.03 mm	0.1193 in.
		3.06 mm	0.1205 in.
		3.09 mm	0.1217 in.
		3.12 mm	0.1228 in.
		3.15 mm	0.1240 in.
		3.18 mm	0.1252 in.
		3.21 mm	0.1264 in.
		3.24 mm	0.1276 in.
		3.27 mm	0.1287 in.
		3.30 mm	0.1299 in.
		3.33 mm	0.1311 in.
	Front oil seal drive in depth	1.0 mm	0.039 in.

Torque Specifications

	Part tightened	kg-cm	ft-lb	N·m
Front axle and suspension	Free wheeling hub body × Axle hub	315	23	31
	Free wheeling hub body × Free wheeling hub cover	100	7	10
	Electrical locking hub body subassembly × Axle hub	315	23	31
	Electrical locking hub cover subassembly × Electrical locking hub body subassembly	315	23	31
	Electrical locking hub slip ring mounting nut	75	65 in.-lb	7.4
	Axle hub × Flange	315	23	31
	Hub bearing lock nut	650	47	64
	Axle carrier × Disc brake cylinder (w/ Disc brake)	1,250	90	123
	Disc brake cylinder (w/ Disc brake) × Brake tube	155	11	15
	Axle carrier × Dust seal	475	34	47
	Knuckle arm × Tie rod end	925	67	91
	Steering knuckle × Knuckle arm	980	71	96
	Steering knuckle × Bearing cap	980	71	96
	Steering knuckle × Third arm	980	71	96
	Steering knuckle × Oil seal retainer	55	48 in.-lb	5.4
	(Leaf Spring Type)			
	Shock absorber × Frame	320	23	31
	Shock absorber × Axle housing	650	47	64
	Spring bumper × Frame	290	21	28
	Rear spring bracket × Frame	1,250	90	123
	Front spring shackle × Leaf spring	925	67	91
	Spring U bolt × Spring seat	1,450	105	142
	Leaf spring center bolt	360	26	35
	Hanger pin × Frame	240	17	24
	Stabilizer bar bracket × Axle housing	120	9	12
	Stabilizer bar × Frame	250	17	24

Torque Specifications (Cont'd)

	Part tightened	kg-cm	ft-lb	N·m
Front axle and suspension (cont'd)	**(Coil Spring Type)**			
	Shock absorber × Frame	1,800	130	177
	Shock absorber × Axle housing	320	23	31
	Lateral control rod × Axle housing	1,460	106	143
	Lateral control rod × Frame	1,000	72	98
	Leading arm × Axle housing	1,750	127	171
	Leading arm × Frame	1,750	127	171
	Stabilizer link × Frame	1,150	83	113
	Stabilizer link × Stabilizer bar bracket	185	13	18
	Stabilizer bar bracket × Axle housing	185	13	18
Rear axle and suspension	**(Semi-Floting Type)**			
	Differential cover × Axle housing	130	9	13
	Differential cover × LSPV shackle bracket	195	14	19
	Differential cover × Parking brake cable clamp	130	9	13
	Pinion shaft pin	275	20	27
	Drain plug	500	36	49
	Axle carrier × Disc brake cylinder (w/ Disc brake)	900	65	88
	(Full-Floating Type)			
	Axle housing × Backing plate	1,250	90	123
	Bearing lock nut	600	43	59
	Axle hub × Axle shaft	175	13	17
	Disc brake cylinder (w/ Disc brake) × Axle carrier	900	65	88
	(Leaf Sping Type)			
	Shock absorber × Frame	650	47	64
	Shock absorber × Axle housing	375	27	37
	Spring bumper × Frame	290	21	28
	Front spring bracket × Hanger pin	1,250	90	123
	Front spring shackle × Leaf spring	925	67	91
	Hanger pin × Frame	240	17	24
	Spring U bolt × Spring seat	1,450	105	142
	Leaf spring center bolt	500	36	49
	(Coil Spring Type)			
	Shock absorber × Frame	650	47	64
	Shock absorber × Axle housing	320	23	31
	Lateral control rod × Frame	1,460	106	143
	Lateral control rod × Axle housing	1,000	72	98
	Trailing arm × Frame	2,500	181	245
	Trailing arm × Axle housing	2,500	181	245
Differential (8 in. type)	Propeller shaft × Companion flange	750	54	74
	Drive pinion × Companion flange	2,000 – 3,500	145 – 253	196 – 343
	Ring gear × Differential case	985	71	97
	Side bearing cap × Differential carrier	800	58	78
	Differential carrier × Axle housing	250	18	25
	Differential LH case × RH case	480	35	47
	Differential lock shaft retainer	240	17	24
	Differential lock straight screw plug	220	16	22
	Differential lock indicator switch	410	30	40
	Differential lock actuator	270	20	26

Torque Specifications (Cont'd)

	Part tightened	kg-cm	ft-lb	N·m
Differential (9.5 in. type)	Propeller shaft × Companion flange	900	65	88
	Drive pinion × Companion flange	2,500 – 4,500	181 – 325	245 – 441
	Ring gear × Differential case	1,125	81	110
	Side bearing cap × Differential carrier			
	(2 pinion and LSD types)	800	58	78
	(w/ Differential lock)	1,150	83	113
	Differential carrier × Axle housing	475	34	47
	Differential LH case × RH case	480	35	47
	Pinion shaft pin (2 pinion type)	275	18	25
	Differential case × Case cover	590	43	58
	Differential lock shift fork set bolt	200	14	20
	Differential lock actuator	240	17	24
	Differential lock cover	185	13	18
	Differential lock indicator switch	410	30	40