

TECHNICAL DATA

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MEASUREMENTS			
Overall length	4,285 mm (169 in)	Apex seal	
Overall width		Length	
(Without side protector)	1,650 mm (65 in)	12A Engine	69.8 mm (2.7481 in)
(With side protector)	1,875 mm (66 in)	13B Engine	79.8 mm (3.1418 in)
Overall height	1,260 mm (50 in)	Width	3.0 mm (0.1181 in)
Distance between wheel center and fender line		Height	
Front	364 ± 20 mm (14.3 ± 0.8 in)	Standard	8.5 mm (0.3347 in)
Rear	358 ± 20 mm (14.0 ± 0.8 in)	Limit	7.0 mm (0.2756 in)
Wheel base	2,420 mm (95 in)	Clearance of apex seal and rotor groove (ΔG)	
Tread		Standard	0.05 ~ 0.09 mm (0.0020 ~ 0.0035 in)
Front	1,420 mm (56 in)	Limit	0.15 mm (0.0059 in)
Rear	1,400 mm (55 in)	Apex seal spring	
Minimum road clearance	160 mm (6 in)	Free height	
Minimum turning radius	4.8 m (15 ft 9 in)	Standard	12A Engine 6.9 mm (0.2717 in) or more
		Limit	13B Engine 5.7 mm (0.2244 in) or more
		Side seal	
		Thickness	1.0 mm (0.0394 in)
		Height	3.5 mm (0.1378 in)
		Clearance of side seal and rotor groove (ΔW)	
		Standard	0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in)
		Limit	0.10 mm (0.0039 in)
		Clearance of side seal and corner seal (ΔE)	
		Standard	0.05 ~ 0.15 mm (0.0020 ~ 0.0059 in)
		Limit	0.40 mm (0.0157 in)
		Side seal protrusion	More than 0.5 mm (0.0197 in)
		Oil seal	
		Height	5.6 mm (0.2205 in)
		Contact width of oil seal lip	Less than 0.5 mm (0.0197 in)
		Oil seal protrusion	More than 0.5 mm (0.0197 in)
		Corner seal	
		Outer diameter	11.0 mm (0.4331 in)
		Height	7.0 mm (0.2756 in)
		Corner seal protrusion	More than 0.5 mm (0.0197 in)
		Main bearing clearance	
		Standard	0.04 ~ 0.08 mm (0.0016 ~ 0.0031 in)
		Wear limit	0.10 mm (0.0039 in)
		Rotor bearing clearance	
		Standard	0.04 ~ 0.08 mm (0.0016 ~ 0.0031 in)
		Wear limit	0.10 mm (0.0039 in)
		Eccentric shaft	
		Eccentricity of rotor	15.0 mm (0.5906 in)
		Journal	
		Main journal diameter	43 mm (1.6929 in)
		Rotor journal diameter	74 mm (2.9134 in)
		Max. permissible run-out	0.06 mm (0.0024 in)
		End play	
		Standard	0.04 ~ 0.07 mm (0.0016 ~ 0.0028 in)
		Limit	0.09 mm (0.0035 in)
1. ENGINE			
Displacement			
12A Engine	573 CC (35.0 cu-in) X 2 rotors		
13B Engine	654 CC (40.0 cu-in) X 2 rotors		
Compression ratio	9.4 : 1		
Compression pressure	600 kpa (85 lb/in ²)		
Limit	at 250 rpm		
Max. permissible difference between chambers	150 kpa (21 lb/in ²)		
Port timing			
12A Engine			
Intake opens ATDC	32°		
Intake closes ABDC	40°		
Exhaust opens BBDC	75°		
Exhaust closes ATDC	38°		
13B Engine			
Intake opens ATDC	32°(Pr.) 32°(Sec.) 45° (Auxiliary)		
Intake closes ABDC	40°(Pr.) 30°(Sec.) 70°		
Exhaust opens BBDC	71°		
Exhaust closes ATDC	48°		
Side housings (Front, intermediate and rear housings)			
Width standard			
Front	40 mm (1.5748 in)		
Intermediate	50 mm (1.9685 in)		
Rear	60 mm (2.3622 in)		
Limit of distortion	0.04 mm (0.0016 in)		
Limit of wear			
Sliding surface	0.10 mm (0.0039 in)		
Rotor housing			
Width			
12A Engine	70.0 mm (2.7559 in)		
13B Engine	80.0 mm (3.1497 in)		
Max. permissible difference in width	0.06 mm (0.0024 in)		
Rotor			
Width			
12A Engine	69.8 mm (2.7481 in)		
13B Engine	79.85 mm (3.1438 in)		
Clearance of side housing and rotor (ΔR)			
Standard			
12A Engine	0.12 ~ 0.19 mm (0.0047 ~ 0.0075 in)		
13B Engine	0.12 ~ 0.21 mm (0.0047 ~ 0.0083 in)		
Limit	0.10 mm (0.0039 in)		

<p>Alternator belt tension (slack) (Between alternator and eccentric shaft pulley) Belt deflection</p> <p>Air pump belt tension (slack) (Between air pump and water pump pulley) Belt deflection</p>	<p>15 ± 2 mm (0.5906 ± 0.0787 in)</p> <p>12 ± 1 mm (0.4724 ± 0.0394 in)</p>	<p>Oil metering pump Feeding capacity of 2,000 rpm of engine</p> <p>12A Engine</p> <p>13B Engine</p> <p>Lubricant Classification Above -10°C (15°F) -25°C ~ 30°C (-13°F ~ 86°F) Above -25°C (-13°F) Below -20°C (-4°F) Below 0°C (32°F)</p> <p>Oil capacity Full capacity 12A Engine 13B Engine Oil pan capacity 12A Engine 13B Engine</p>	<p>1.8 ~ 2.2 cc/8 min. (0.110 ~ 0.134 U.S. cu-in/8 min.)</p> <p>0.8 ~ 1.2 cc/6 min. (0.049 ~ 0.073 U.S. cu-in/6 min.)</p> <p>A.P.I. Service SD, SE or SF SAE 20W-40 or 20W-50 SAE 10W-30</p> <p>SAE 10W-40 or 10W-50 SAE 5W-20 SAE 5W-30</p> <p>4.6 liters (4.9 U.S. quarts) 5.8 liters (6.1 U.S. quarts)</p> <p>4.2 liters (4.4 U.S. quarts) 4.6 liters (4.9 U.S. quarts)</p>										
<p>TIGHTENING TORQUE</p>													
	<p>N-m</p>	<p>ft-lb</p>											
<p>Oil pump sprocket</p> <p>Oil pan</p> <p>Inlet manifold</p> <p>Exhaust manifold</p> <p>Spark plugs</p> <p>Eccentric shaft pulley</p> <p>Temperature gauge unit</p> <p>Tension bolts</p> <p>Water temperature switch</p>	<p>32 ~ 47</p> <p>8 ~ 11</p> <p>19 ~ 26</p> <p>32 ~ 47</p> <p>13 ~ 18</p> <p>100 ~ 120</p> <p>7 ~ 8</p> <p>32 ~ 38</p> <p>35 ~ 45</p>	<p>23 ~ 34</p> <p>6 ~ 8</p> <p>14 ~ 19</p> <p>23 ~ 34</p> <p>9 ~ 11</p> <p>72 ~ 87</p> <p>5 ~ 6</p> <p>23 ~ 27</p> <p>25 ~ 33</p>											
<p>2. LUBRICATING SYSTEM</p>													
<p>Oil pump Type</p> <p>Feeding capacity at 1,000 rpm of engine</p> <p>Oil pump driven by</p> <p>Limit of chain slack</p> <p>Outer rotor and body Clearance</p> <p>Standard</p> <p>Wear limit</p> <p>Clearance between rotor lobes</p> <p>Standard</p> <p>Wear limit</p> <p>Rotor end float</p> <p>Standard</p> <p>Wear limit</p> <p>Oil pressure at 3,000 rpm of engine</p> <p>Oil pressure at idle speed of engine ("D" range for automatic)</p> <p>Pressure regulator valve (Rear housing)</p> <p>Operating pressure</p> <p>Free length of spring</p> <p>Pressure control valve (Front cover)</p> <p>Operating pressure</p> <p>Free length of spring</p> <p>By-pass valve (Oil cooler)</p> <p>Opening pressure</p> <p>Oil filter</p> <p>Type</p> <p>Relief valve opens at</p>	<p>Rotor 7.0 liters/min. (7.4 U.S. quarts/min.) (6.2 Imp. quarts/min.)</p> <p>Chain and sprocket 12 mm (0.4724 in)</p> <p>0.20 ~ 0.25 mm (0.0079 ~ 0.0098 in)</p> <p>0.30 mm (0.0118 in)</p> <p>0.01 ~ 0.09 mm (0.0004 ~ 0.0035 in)</p> <p>0.15 mm (0.0059 in)</p> <p>0.03 ~ 0.13 mm (0.0012 ~ 0.0051 in)</p> <p>0.15 mm (0.0059 in)</p> <p>450 ~ 550 kpa (64.0 ~ 78.2 lb/in²)</p> <p>90 ~ 270 kpa (12.8 ~ 38.4 lb/in²)</p> <p>500 kpa (71.1 lb/in²) at 3,000 rpm of engine</p> <p>46.4 mm (1.8268 in)</p> <p>800 kpa (113.8 lb/in²) 69.6 mm (2.7402 in)</p> <p>300 kpa at 80°C (42.7 lb/in² at 140°F)</p> <p>Full flow, cartridge</p> <p>80 ~ 120 kpa (11.4 ~ 17.1 lb/in²)</p>	<p>TIGHTENING TORQUE</p> <table border="1" data-bbox="850 1037 1447 1193"> <tr> <td></td> <td style="text-align: center;">N-m</td> <td style="text-align: center;">ft-lb</td> </tr> <tr> <td>Oil pump sprocket</td> <td style="text-align: center;">32 ~ 47</td> <td style="text-align: center;">23 ~ 34</td> </tr> <tr> <td>Oil pan</td> <td style="text-align: center;">8 ~ 11</td> <td style="text-align: center;">6 ~ 8</td> </tr> </table>				N-m	ft-lb	Oil pump sprocket	32 ~ 47	23 ~ 34	Oil pan	8 ~ 11	6 ~ 8
	N-m	ft-lb											
Oil pump sprocket	32 ~ 47	23 ~ 34											
Oil pan	8 ~ 11	6 ~ 8											
<p>3. COOLING SYSTEM</p>													
		<p>Water pump Type</p> <p>Feeding capacity at 6,500 rpm of engine</p> <p>Pump driven by</p> <p>Pulley ratio of eccentric shaft and pump</p> <p>Fan</p> <p>Fan diameter</p> <p>Number of fan blades</p> <p>Fan drive</p> <p>Standard revolution of fan</p> <p>Thermostat</p> <p>Type</p> <p>Starts to open</p> <p>Fully opens at</p> <p>Lift</p> <p>Radiator</p> <p>Type</p> <p>Pressure cap opens at</p> <p>Cooling capacity</p> <p>With heater</p> <p>Without heater</p>	<p>Centrifugal Impeller 150 ~ 160 liters/min (39.6 ~ 42.3 U.S. gal/min.) (33.0 ~ 35.2 Imp. gal/min.)</p> <p>"V" belt 1 : 1.18</p> <p>390 mm (15.3548 in)</p> <p>8</p> <p>Less than 900 rpm at 3400 rpm of engine</p> <p>Wax pellet 82 ± 1.5°C (180 ± 2.7°F) 95°C (203°F) 8 ~ 10 mm (0.3150 ~ 0.3937 in)</p> <p>Corrugated fin, with expansion tank 90 ~ 15 kpa (12.8 ± 2.0 lb/in²)</p> <p>9.5 liters (10 U.S. quarts) (8.4 Imp. quarts)</p> <p>8.5 liters (9.0 U.S. quarts) (7.5 Imp. quarts)</p>										

TIGHTENING TORQUE			Air cleaner element Sub-zero starting assist fluid	Long life dry Anti-freeze 90% Water 10%
	N-m	ft-lb		
Temperature gauge unit	7 ~ 8	5 ~ 6	13B Engine Fuel tank capacity	63 liters (16.4 U.S. gal.) (13.9 Imp. gal.)
Water temperature switch	35 ~ 45	25 ~ 33		
Water pump	18 ~ 27	13 ~ 20		
4. FUEL SYSTEM				
12A Engine Fuel tank capacity	63 liters (16.4 U.S. gal.) (13.9 Imp. gal.)		Fuel pump	Motor
Fuel pump	Motor		Type	350 ~ 500 kpa
Type	20 ~ 25 kpa (2.84 ~ 3.55 lb/in ²)		Outlet pressure	(49.8 ~ 71.1 lb/in ²)
Outlet pressure	More than 1,400 cc/min. (1.48 U.S. quarts/min.) (1.23 Imp. quarts/min.)		Feeding capacity	More than 1,700 cc/min. (1.80 U.S. quarts/min.) (1.50 Imp. quarts/min.)
Feeding capacity	Cartridge, paper element		Fuel filter	Nylon 6 - 150 mesh
Fuel filter	Cartridge, paper element		Pressure regulator	Diaphragm
Carburetor	Down draft, 2 stage 4 barrel		Type	200 ~ 260 kpa (28.4 ~ 37.0 lb/in ²)
Type	Down draft, 2 stage 4 barrel		Fuel pressure	
Throat diameter	28 mm (1.10 in)		Throttle chamber	Horizontal - draft (2 stage, 3 barrel)
Primary	34 mm (1.34 in)		Type	
Secondary			Throat diameter	40 mm (1.6 in)
Venturi diameter	20 X 13 X 6.5 mm (0.79 X 0.51 X 0.26 in)		Primary	38 mm (1.4 in) X 2
Primary	28 X 10 mm (1.10 X 0.39 in)		Secondary	800 rpm
Secondary			Idling speed	Long life dry
	Manual transmission	Automatic transmission	Air cleaner element	Anti-freeze 90%
Main jet	#92	#91	Sub-zero starting assist fluid	Water 10%
Primary	#160	#160	TIGHTENING TORQUE	
Secondary				
Main air bleed				
Primary No. 1	#70	#60	Intake manifold	N-m
No. 2	#70	#70	Exhaust manifold	ft-lb
Secondary	#140	#140		
Slow jet				
Primary	#46	#46	5. ENGINE ELECTRICAL SYSTEM	
Secondary	#110	#110	Battery	
Slow air bleed			Type	50 D20R
Primary No. 1	#70	#70	California	
No. 2	#170	#150	Except for California	
Secondary No. 1	#160	#160	Manual transmission	50D20R, 65D23R
No. 2	#60	#60	Automatic transmission	65D23R
Richer jet	#40	-	Capacity (20 hours Rate)	55 amp. 65D23R 50 amp. 50D20R
Richer air bleed	#130	-	Voltage	12 Volt
			Terminal ground	Negative
Vacuum jet			Specific gravity at 20°C (68°F)	50D20R, 65D23R
Primary	1.8 mm (0.0709 in)		Fully charged	1.280
			Recharged at	1.220
Fast idle adjustment	1.0 ~ 1.2 mm (0.039 ~ 0.047 in)		Distributor	
(Clearance between primary throttle valve and bore when choke knob is fully pulled)			Air gap	0.5 ~ 0.9 mm (0.020 ~ 0.035 in)
Float level (from surface of gasket)	16.0 ± 0.5 mm (0.63 ± 0.020 in)			
Float drop (from surface of gasket)	51 ± 0.5 mm (2.0 ± 0.02 in)			
Idling speed				
Manual transmission	750 rpm			
Automatic transmission ("D" range)	750 rpm			

Centrifugal advance 12A Engine Leading	Starts: 0° at 500 rpm	Load test Voltage Current 12A Engine 13B Engine Revolution Number of brushers Brush length Wear limit Brush spring pressure Pulley ratio of eccentric shaft and alternator Ignition coil (Leading) Type Primary resistance Ignition coil (Trailing) Type Primary resistance	13.5V	
	Maximum: 12.5° at 2,063 rpm		More 26 amp. More 21 amp. Less than 1300 rpm	
Trailing	Starts: 0° at 500 rpm	2	8 mm (0.315 in)	
	Maximum: 12.5° at 2,063 rpm		0.3 ~ 0.44 kg (10.6 ~ 15.5 oz)	
13B Engine Leading	Starts: 0° at 500 rpm	1 : 2.08	LB-84 or FTC-3	
	Maximum: 13.75° at 2,000 rpm		0.9 ± 0.09 Ω at 20°C (68°F)	
Trailing	Starts: 0° at 500 rpm	LB-84 or FTC-3	0.9 ± 0.09 Ω at 20°C (68°F)	
	Maximum: 13.75° at 2,000 rpm			
Vacuum advance 12A Engine Leading	Starts: 0° at 100 mm-Hg (3.9 in-Hg)	Starting motor Capacity Lock test Voltage Current Torque Free running test Voltage Current Speed Number of brushes Brush length Wear limit Standard spring tension Control switch Voltage required to close solenoid contacts Undercutting mica	Manual transmission	Automatic transmission
	Maximum: 4.5° at -190 mm-Hg (7.5 in-Hg)		1.2 KW	2.0 KW
Trailing	Start: 0° at -100 mm-Hg (3.9 in-Hg)	9.6 N-m (6.9 ft-lb)	5.0 volt	4.0 volt
	Maximum: 15° at -400 mm-Hg (15.7 in-Hg)		Less than 420 amp.	Less than 1,100 amp.
13B Engine Leading	Starts: 0° at -100 mm-Hg (3.9 in-Hg)	31 N-m (22.4 ft-lb)	11.5 volt	11.5 volt
	Maximum: 5° at -250 mm-Hg (9.8 in-Hg)		60 amp.	100 amp.
Trailing	Start: 0° at -100 mm-Hg (3.9 in-Hg)	4	More than 6,500 rpm	More than 3,500 rpm
	Maximum: 12.5° -350 mm-Hg (13.8 in-Hg)		17 mm (0.67 in)	17 mm (0.67 in)
Condenser capacity Ignition timing Leading 12A Engine 13B Engine Trailing	0.24 ~ 0.30 μF	Clearance between armature shaft and bush	1.4 ~ 2.6 kg (49 ~ 92 oz)	1.4 ~ 2.6 kg (49 ~ 92 oz)
	0° ATDC		Solenoid	Solenoid
Timing mark location Spark plug Type	6° ATDC	0.2 mm (0.008 in)	Less than 8 volt	Less than 8 volt
	20° ATDC		0.5 ~ 0.8 mm (0.020 ~ 0.031 in)	0.5 ~ 0.8 mm (0.020 ~ 0.031 in)
Initial gap	Eccentric shaft pulley	0.1 ~ 0.5 mm (0.004 ~ 0.02 in)	Less than 0.2 mm (0.008 in)	—
	NGK: BR7EQ14, BR8EQ14 BR9EQ14 NIPPON DENSO W22EDR14 W25EDR14 W27EDR14		0.5 ~ 2.0 mm (0.020 ~ 0.079 in)	0.5 ~ 2.0 mm (0.020 ~ 0.079 in)
Alternator Ground Rated output 12A Engine 13B Engine	1.4 ± 0.05 mm (0.055 ± 0.002 in)	Clearance between pinion and stop collar	0.020 ~ 0.031 in	0.020 ~ 0.031 in
	Negative		0.079 in	0.079 in

6. CLUTCH			Clearance between shift rod gate and control lever Wear limit		
Clutch pedal Free play (at pedal pad)	0,6 ~ 3,1 mm (0,0236 ~ 0,1220 in)		Synchronizer ring Clearance between synchronizer ring and side of gear when fitted	Standard	1,5 mm (0,0591 in)
Engagement height (from floor)	More than 75 mm (2,9528 in)		Wear limit		0,8 mm (0,0315 in)
Master cylinder Bore	15,87 mm (0,6248 in)		Lubricant	Above -18°C (0°F)	A.P.I. Service GL-4 or GL-5 SAE90
Clearance between piston and bore Standard	0,032 ~ 0,102 mm (0,0013 ~ 0,0040 in)		Below -18°C (0°F)		A.P.I. Service GL-4 or GL-5 SAE80
Limit	0,15 mm (0,0059 in)		TIGHTENING TORQUE		
Release cylinder Bore	19,05 mm (0,7500 in)				
Clearance between piston and bore Standard	0,040 ~ 0,125 mm (0,0016 ~ 0,0049 in)		Plug for interlock pin hole	N-m	ft-lb
Limit	0,15 mm (0,0059 in)		Control lever to control rod end	10 ~ 15	7 ~ 11
Clutch disc Thickness limit	7,0 mm (0,2756 in)		Shift fork set bolts	8 ~ 12	6 ~ 9
Rivet depth limit	0,3 mm (0,0118 in)		Shift rod end	12 ~ 16	9 ~ 12
Lateral run-out limit	1,0 mm (0,0394 in)		Main shaft lock nut	8 ~ 12	6 ~ 9
Diaphragm Finger out of alignment Limit	1,0 mm (0,0394 in)		Top switch	130 ~ 210	94 ~ 152
Finger groove wear depth Limit	1,0 mm (0,0394 in)		Overdrive switch	25 ~ 35	18 ~ 25
			Back-up light switch	25 ~ 35	18 ~ 25
			Speedometer driven gear	25 ~ 25	18 ~ 25
				8 ~ 11	6 ~ 8
TIGHTENING TORQUE			7B. AUTOMATIC TRANSMISSION		
	N-m	ft-lb	Gear ratio		
Flywheel	400 ~ 500	289 ~ 362	Low	2,458	
Clutch cover	18 ~ 27	13 ~ 20	Second	1,458	
			Third	1,000	
			OD (Fourth)	0,720	
			Reverse	2,181	
			Fluid type	M2C33F (Type F)	
			Fluid capacity	7,5 liters (7,9 U.S. quarts) (6,6 Imp. quarts)	
7A. MANUAL TRANSMISSION			Drive plate run-out Limit		0,5 mm (0,0197 in)
Gear ratio			Oil pump Side play of inner gear and outer gear Limit		0,06 mm (0,0031 in)
	12A Engine	13B Engine	Clearance between outer gear and crescent Limit		0,25 mm (0,0098 in)
First	3,622	←	Clearance between outer gear and housing Limit		0,25 mm (0,0098 in)
Second	2,186	←	Side clearance between oil seal ring and groove on oil pump cover		0,4 ~ 0,16 mm (0,0016 ~ 0,0063 in)
Third	1,419	←	Direct clutch Thickness of drive plate Limit		1,6 ~ 1,8 mm (0,0630 ~ 0,0709 in)
Fourth	1,000	←	Total clearance measured between retaining plate and snap ring		0,5 ~ 0,8 mm (0,0197 ~ 0,0315 in)
Reverse	3,493	←	End play		
Fifth	0,807	0,758	OD gear train End play		0,25 ~ 0,50 mm (0,0098 ~ 0,0197 in)
Oil capacity	2,0 liters (2,1 U.S. quarts) (1,8 Imp. quarts)				
Main shaft Max. permissible run-out	0,03 mm (0,0012 in)				
Clearance between main shaft and gear (or bush) Wear limit	0,15 mm (0,0059 in)				
Reverse idle gear Clearance between reverse idle gear bush and shaft Wear limit	0,15 mm (0,0059 in)				
Shift fork and rod Clearance between shift fork and clutch sleeve Wear limit	0,5 mm (0,0197 in)				

Front clutch Total clearance measured between retaining plate and snap ring	1.6 ~ 1.8 mm (0.0630 ~ 0.0709 in)
End play of front clutch drum	0.5 ~ 0.8 mm (0.0197 ~ 0.0315 in)
Rear clutch Total clearance measured between retaining plate and snap ring	0.8 ~ 1.5 mm (0.0315 ~ 0.0591 in)
Low and reverse brake Total clearance measured between retaining plate and snap ring	0.8 ~ 1.05 mm (0.0315 ~ 0.413 in)
Gear assembly Total end play	0.25 ~ 0.50 mm (0.0098 ~ 0.0197 in)
Planetary gear side play Limit	0.8 mm (0.0315 in)
Engine stall speed	2,400 ~ 2,650 rpm

Valve body spring	Wire diameter	Free length
Pressure regulator valve	11.7 ± 0.2 mm (0.4606 ± 0.0079 in)	43.0 ± 1.0 mm (1.6929 ± 0.0394 in)
1st-2nd shift valve	6.6 ± 0.2 mm (0.2598 ± 0.0079 in)	32.0 ± 1.0 mm (1.2599 ± 0.0394 in)
2nd-3rd shift valve	6.9 ± 0.2 mm (0.2717 ± 0.0079 in)	41.0 ± 1.0 mm (1.6142 ± 0.0394 in)
3rd-4th shift valve	7.3 ± 0.2 mm (0.2874 ± 0.0079 in)	25.8 mm (1.0158 in)
Throttle back-up valve	7.3 ± 0.2 mm (0.2874 ± 0.0079 in)	31.8 mm (1.2520 in)
Solenoid down shift valve	5.55 ± 0.2 mm (0.2185 ± 0.0079 in)	22.0 ± 1.0 mm (0.8662 ± 0.0394 in)
2nd lock valve	5.55 ± 0.2 mm (0.2185 ± 0.0079 in)	33.5 ± 1.0 mm (1.3189 ± 0.0394 in)
Throttle relief valve	6.5 ± 0.2 mm (0.2559 ± 0.0079 in)	26.8 ± 1.0 mm (1.0551 ± 0.0394 in)
Orifice check valve	5.0 ± 0.2 mm (0.1969 ± 0.0079 in)	15.5 ± 2.0 mm (0.6102 ± 0.0079 in)

Shift speed		
Throttle condition (Manifold vacuum)	mph	
Kick-down (0 ~ 100 mm-Hg) (0 ~ 3.94 in-Hg)	D1 → D2	34 ~ 41
	D2 → D3	63 ~ 70
	D3 → D2	58 ~ 65
	D2 → D1	29 ~ 36
Half throttle (200 ± 10 mm-Hg) (7.87 ± 0.39 in-Hg)	D1 → D2	7 ~ 11
	D2 → D3	19 ~ 22
	D3 → D4	59 ~ 70
Fully closed throttle	D3 → D1	7 ~ 11
Manual 1	I2 → I1	27 ~ 34
Lock up on	D4	42 ~ 48

Governor pressure

Driving speed	Governor pressure	
	Kpa	lb/in ²
mph		
20	80 ~ 140	11 ~ 17
35	150 ~ 230	20 ~ 28.4
55	320 ~ 410	46 ~ 58

Line pressure

Manual range	Engine idling condition		Engine stall condition	
	Kpa	lb/in ²	Kpa	lb/in ²
R	400 ~ 700	57 ~ 100	1800 ~ 1900	228 ~ 270
D	300 ~ 400	43 ~ 57	900 ~ 1100	128 ~ 156
2	800 ~ 1200	114 ~ 171	800 ~ 1200	114 ~ 171
1	300 ~ 400	43 ~ 57	900 ~ 1100	128 ~ 156

TIGHTENING TORQUE

	N-m	ft-lb
Drive plate to converter weight	83 ~ 95	60 ~ 69
Drive plate to torque converter	35 ~ 50	25 ~ 36
Converter housing to engine	32 ~ 47	23 ~ 34
Converter housing to transmission case	45 ~ 55	33 ~ 40
Extension housing to transmission case	20 ~ 25	14 ~ 18
Oil pan	5 ~ 7	36 ~ 51
Piston stem (when adjusting band brake)	12 ~ 15	9 ~ 11
Piston stem lock nut	15 ~ 40	11 ~ 29
Servo piston retainer	7 ~ 9	5 ~ 7
One-way clutch inner race	13 ~ 18	9 ~ 13
Control valve body to transmission case	5.5 ~ 7.5	4.0 ~ 5.4
Lower valve body to upper valve body	2.5 ~ 3.5	1.8 ~ 2.5
Side plate to control valve body	2.5 ~ 3.5	1.8 ~ 2.5
Reamer bolt of control valve body	5 ~ 7	3.6 ~ 5.1
Oil strainer	3 ~ 4	2.2 ~ 2.9
Governor valve body to oil distributor	5 ~ 7	3.6 ~ 5.1
Oil pump cover	6 ~ 9	4.3 ~ 6.5
Drum support	6 ~ 9	4.3 ~ 6.5
Inhibitor switch	5 ~ 7	3.6 ~ 5.1
Manual shaft lock nut	30 ~ 40	22 ~ 29
Oil cooler pipe set bolt	24 ~ 36	17 ~ 26
Oil pressure test plug	5 ~ 10	3.6 ~ 7.2
Actuator for parking rod to extension housing	8 ~ 11	5.8 ~ 8.0

8. PROPELLER SHAFT			Backlash between rack and sector gear	Adjust to 0 mm
Max. permissible run-out	0,4 mm (0,0157 in)		Worm bearing preload	0,2 ~ 0,5 N-m (1,7 ~ 4,3 in-lb)
Max. permissible unbalance at 4,000 rpm			Without sector shaft and column bush	0,6 ~ 1,2 N-m (5,2 ~ 10,4 in-lb)
At front	15 cm-gr (0,21 in-oz)		With sector shaft and column bush	
At rear	15 cm-gr (0,21 in-oz)		Clearance between sector shaft and housing bush	0,1 mm (0,004 in)
Universal joint			Wear limit	0 ~ 0,1 mm (0 ~ 0,004 in)
Journal swinging torque	0,3 ~ 0,8 N-m (2,6 ~ 6,9 in-lb)		End clearance of adjusting screw and sector shaft	A.P.I. Service GL-4 SAE90 290 cc (0,31 U.S. quarts) (0,26 Imp. quarts)
TIGHTENING TORQUE			Lubricant	
	N-m	ft-lb	Oil capacity	
Yoke to rear axle companion flange	35 ~ 38	25 ~ 27	Max. wheel angle on full lock	39°40' ± 2°
			Wheel on inside of curve	32°14' ± 2°
			Wheel on outside of curve	2 ~ 6 kg/135 mm (4,4 ~ 13,2 lb/5,315 in)
			Idler arm revolving torque	More than 0,4 kg (14 oz)
9. REAR AXLE			Kuckle arm ball stud revolving torque	
Reduction ratio	3,933		Steering geometry	
Standard diff.	4,076		King-pin inclination	
Limited slip diff.	0,09 ~ 0,11 mm (0,0035 ~ 0,0043 in)		13 inch tire vehicles	10°44'
Backlash of ring gear and pinion	0,9 ~ 1,4 N-m (7,8 ~ 12,2 in-lb)		14 inch tire vehicles	11°20'
Pinion bearing preload (Without pinion oil seal)	0,6 ~ 2,1 N-m (5,2 ~ 18,2 in-lb)		Camber	
Differential side bearing preload (Without pinion)	0 ~ 0,1 mm (0 ~ 0,0039 in)		13 inch tire vehicles	1°00' ± 30'
Backlash of side gear and pinion gear	0 ~ 0,1 mm (0 ~ 0,0039 in)		14 inch tire vehicles	0°35' ± 30'
Rear wheel bearing end play	0 ~ 0,1 mm (0 ~ 0,0039 in)		Max. permissible difference in camber between sides	±30'
Lubricant	A.P.I. Service GL-5 SAE90		Camber offset	38 mm (1,50 in)
Standard diff.	A.P.I. Service GL-5 SAE80		Caster	Right-hand side 4°10' ± 30'
Above -18°C (0°F)	A.P.I. Service GL-5 SAE90		Max. permissible difference in caster between sides	Left-hand side 3°40' ± 30'
Below -18°C (0°F)	A.P.I. Service GL-5 SAE90		Caster trail	±30'
Limited slip diff.	(Special Lubricant For Limited Slip Differentials)		Toe-in	20 mm (0,79 in)
Oil capacity	1,2 liters (1,3 U.S. quarts) 1,1 Imp. quarts			0 ~ 6 mm (0 ~ 0,24 in)
Standard diff.	1,8 liters (1,7 U.S. quarts) 1,4 Imp. quarts			
Limited slip diff.	185,428 ~ 185,500 mm (7,3004 ~ 7,3033 in)			
"L" (Case spread)				
TIGHTENING TORQUE			10B. POWER STEERING	
	N-m	ft-lb	Type	Integral ball nut
Ring gear	70 ~ 85	51 ~ 61	Reduction ratio	15,83 : 1
Differential side bearing caps	38 ~ 53	27 ~ 38	Free play of steering wheel (Turning direction)	5 ~ 20 mm (0,2 ~ 0,8 in)
Companion flange to pinion	13 ~ 18	94 ~ 130	Standard	40 mm (1,57 in)
			Limit	
10A. MANUAL STEERING			Backlash between rack and sector gear	
Reduction ratio	17,0 ~ 20,0 : 1		Clearance between gear housing and ball nut	0,15 mm (0,0059 in)
Free play of steering wheel (Turning direction)			Limit	
Standard	5 ~ 20 mm (0,2 ~ 0,8 in)		Clearance between gear housing and sector shaft	0,10 mm (0,0039 in)
Limit	40 mm (1,57 in)		Limit	
			Worm bearing preload	
			Before adjusting backlash	0,4 ~ 0,7 N-m (3,5 ~ 6,1 in-lb)
			After adjusting backlash	0,5 ~ 0,9 N-m (4,3 ~ 7,8 in-lb)
			Max. wheel angle on full lock	
			Wheel on inside of curve	39°14' ± 2°
			Wheel on outside of curve	32°14' ± 2°
			Oil	ATF Type F (M2C33-F)

TIGHTENING TORQUE			Remaining pressure	50 ~ 100 kpa (7.1 ~ 14.2 lb/in ²)	
	N-m	ft-lb			
Steering wheel nut	40 ~ 50	29 ~ 36	Clearance between drum and lining	0.1 ~ 0.15 mm (0.004 ~ 0.006 in)	
Steering gear housing to frame	44 ~ 55	32 ~ 40			
Pitman arm to sector shaft	150 ~ 180	108 ~ 130	Parking brake Lever travel	6 ~ 8 notches at 10 kg (22 lb)	
Idler arm bracket to frame	44 ~ 55	32 ~ 40			
Idler arm to center link	25 ~ 35	18 ~ 25	TIGHTENING TORQUE		
Pitman arm to center link	30 ~ 45	22 ~ 33			
Tie-rod to center link	30 ~ 45	22 ~ 33			
Tie-rod to knuckle arm	30 ~ 45	22 ~ 33			
Tie-rod lock nut	70 ~ 80	51 ~ 58			
Steering gear box end cover lock nut	230 ~ 260	166 ~ 188			
11. BRAKES					
Brake pedal free travel	7 ~ 9 mm (0.28 ~ 0.35 in)		12. WHEELS AND TIRES		
Before power brake piston operates	190 ~ 195 mm (7.48 ~ 7.68 in)				
Brake pedal height (from floor)	190 ~ 195 mm (7.48 ~ 7.68 in)		Wheel disc		
Master cylinder	20.64 mm (0.813 in)		Front		
Bore	20.64 mm (0.813 in)		Rear		
Clearance between piston and bore	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)		Front		
Standard	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)		Rear		
Wear limit	0.15 mm (0.006 in)		Temporary spare tire		
Power brake unit	0.1 ~ 0.5 mm (0.004 ~ 0.020 in)		Run-out limit		
Clearance between piston and push rod	0.1 ~ 0.5 mm (0.004 ~ 0.020 in)		Radial		
Front disc brake			Lateral		
Thickness of brake disc	18 mm (0.7087 in)		Tire		
Standard	17 mm (0.6693 in)		Front		
Limit	0.1 mm (0.0039 in)		Rear		
Max. allowable lateral run-out of brake disc	0.1 mm (0.0039 in)		185/70 HR 13		
Thickness of lining	9 mm (0.3543 in)		165HR 13		
Standard	1 mm (0.039 in)		205/60 VR 14		
Thickness limit	50.80 mm (2.0 in)		185/70 HR 13		
Caliper cylinder bore	9 mm (0.3543 in)		165HR 13		
Rear disc brake	1 mm (0.039 in)		205/60 VR 14		
Thickness of brake disc	10 mm (0.3937 in)		T135/70 D 15		
Standard	9 mm (0.3543 in)		Inflation pressure		
Limit	0.1 mm (0.0039 in)		Front		
Max. allowable lateral run-out of brake disc	0.1 mm (0.0039 in)		200 kpa (28 psi)... 14 in only		
Thickness of lining	6 mm (0.2362 in)		Rear		
Standard	1 mm (0.039 in)		190 kpa (27 psi)		
Thickness limit	34.93 mm (1.3752 in)		200 kpa (28 psi)... 14 in only		
Caliper cylinder bore	9 mm (0.3543 in)		420 kpa (60 psi)		
Rear drum brake	6 mm (0.2362 in)		Run-out limit		
Drum diameter	200 mm (7.8741 in)		(with wheel disc)		
Standard	201 mm (7.9135 in)		Radial		
Limit	4.0 mm (0.1575 in)		Lateral		
Thickness of lining	1.0 mm (0.039 in)		Front wheel bearing preload (at wheel set t)t)		
Standard	1.0 mm (0.039 in)		0.45 ~ 0.65 kg (0.99 ~ 1.43 lb)		
Thickness limit	19.05 mm (0.750 in)				
Wheel cylinder bore	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)		TIGHTENING TORQUE		
Clearance between piston and bore	0.15 mm (0.006 in)				
Standard	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)				
Limit	0.15 mm (0.006 in)				
			N-m	ft-lb	
			90 ~ 120	65 ~ 87	

13. SUSPENSION			15. BODY ELECTRICAL SYSTEM		
Front coil spring	2.16 ± 0.15 kg/mm		Item	Specification (W)	
Spring constant			Headlights		
Free length			Halogen headlights	50/60 50, 40/66 (Normal)	
Standard	Left	334,5 mm (13.17 in)	Rear side marker lights	3,8	
	Right	32,5 mm (12.80 in)	Turn-signal lights	27	
Front shock absorber			Front parking lights	8	
Fluid capacity	225 ⁺⁵ / ₋₀ cc (0,23 ^{+0,05} / ₋₀ U.S. quarts)		Rear turn signal lights	27	
Rear coil spring			Tail lights	8	
Spring constant	1,8 ± 0,13 kg/mm		Stop lights	27	
Free length	323,5 mm (12,74 in)		Back-up lights	27	
Standard			License plate lights	6	
			Interior lights	10	
			Map lights	6	
			Luggage compartment lights	5	
TIGHTENING TORQUE			Indicator and warning lights		
	N-m	ft-lb	Turn signals	3,4	
Suspension arm to cross member	40 ~ 55	29 ~ 40	High beam	3,4	
Knuckle arm to shock absorber	64 ~ 95	46 ~ 69	Oil pressure	1,4	
Suspension arm ball joint to knuckle arm	60 ~ 80	43 ~ 58	Alternator	1,4	
Front shock absorber			Stop lights	1,4	
Piston rod to mounting block	65 ~ 82	47 ~ 59	Brake	1,4	
Seal cap nut	50 ~ 60	36 ~ 43	Parking brake	1,4	
Tension rod to lower suspension arm	55 ~ 69	40 ~ 50	Fuel	3,4	
Tension rod to bracket	110 ~ 150	80 ~ 108	Hazard	3,4	
Tension rod bracket to frame	76 ~ 107	55 ~ 77	Washer level	1,4	
Stabilizer bar to suspension lower arm	12 ~ 18	9 ~ 13	Seat belt	1,4	
Front stabilizer support plate	38 ~ 47	27 ~ 34	Illumination lights		
Shock absorber to axle housing	65 ~ 82	47 ~ 59	Automatic selector lever	3,4	
Upper link to axle housing	77 ~ 105	56 ~ 76	Heater	3,4	
Upper link to frame	77 ~ 105	56 ~ 76	Meter	3,4 & 1,4	
Lower link to axle housing	77 ~ 105	56 ~ 76	Cigarette lighter	3,4	
Lower link to frame	77 ~ 105	56 ~ 76	Radio	3,4	
Shock absorber upper	13 ~ 25	9 ~ 18	Rear window defroster	1,4	
Watt link bracket	77 ~ 105	56 ~ 76			
Watt link to axle housing	65 ~ 82	47 ~ 59			
Watt link to bracket	65 ~ 82	47 ~ 59			
Rear stabilizer support plate	32 ~ 47	23 ~ 34			
Stabilizer lock nut	10 ~ 18	7 ~ 12			
			TIGHTENING TORQUE		
				N-m	ft-lb
			Unless otherwise specified		
			6T		
			6 mm bolt/nut	7 ~ 10	5 ~ 7
			8 mm bolt/nut	16 ~ 23	12 ~ 17
			10 mm bolt/nut	32 ~ 47	23 ~ 34
			12 mm bolt/nut	56 ~ 82	41 ~ 59
			14 mm bolt/nut	77 ~ 105	56 ~ 76
			8T		
			6 mm bolt/nut	8 ~ 12	6 ~ 9
			8 mm bolt/nut	18 ~ 17	13 ~ 20
			10 mm bolt/nut	37 ~ 55	27 ~ 40
			12 mm bolt/nut	64 ~ 95	46 ~ 69
			14 mm bolt/nut	104 ~ 140	75 ~ 101