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MEASUREMENTS

Overall length	4,285 mm (169 in)
Overall width	
(Without side protector)	1,650 mm (65 in)
(With side protector)	1,675 mm (66 in)
Overall height	1,260 mm (50 in)
Distance between wheel center and fender line	
Front	364 ± 20 mm (14.3 ± 0.8 in)
Rear	358 ± 20 mm (14.0 ± 0.8 in)
Wheel base	2,420 mm (95 in)
Tread	
Front	1,420 mm (56 in)
Rear	1,400 mm (55 in)
Minimum road clearance	160 mm (6 in)
Minimum turning radius	4.8 m (15 ft 9 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/in²)
Limit	at 250 rpm
Max. permissible difference between chambers	150 kpa (21 lb/in²)
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° (Auxiliary)
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)
Apex seal	
Length	
12A Engine	69.8 mm (2.7481 in)
13B Engine	79.8 mm (3.1418 in)
Width	3.0 mm (0.1181 in)
Height	
Standard	8.5 mm (0.3347 in)
Limit	7.0 mm (0.2756 in)
Clearance of apex seal and rotor groove (ΔG)	
Standard	0.05 ~ 0.09 mm (0.0020 ~ 0.0035 in)
Limit	0.15 mm (0.0059 in)
Apex seal spring	
Free height	
Standard	
12A Engine	6.9 mm (0.2717 in) or more
13B Engine	5.7 mm (0.2244 in) or more
Limit	
12A Engine	5.5 mm (0.2165 in)
13B Engine	3.8 mm (0.1496 in)
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 Journal	15.0 mm (0.5906 in)
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)

Alternator belt tension (slack) (Between alternator and eccentric shaft pulley) Belt deflection	15 ± 2 mm (0.5906 ± 0.0787 in)
Air pump belt tension (slack) (Between air pump and water pump pulley) Belt deflection	12 ± 1 mm (0.4724 ± 0.0394 in)

TIGHTENING TORQUE

	N-m	ft-lb
Oil pump sprocket	32 ~ 47	23 ~ 34
Oil pan	8 ~ 11	6 ~ 8
Inlet manifold	19 ~ 26	14 ~ 19
Exhaust manifold	32 ~ 47	23 ~ 34
Spark plugs	13 ~ 18	9 ~ 11
Eccentric shaft pulley	100 ~ 120	72 ~ 87
Temperature gauge unit	7 ~ 8	5 ~ 6
Tension bolts	32 ~ 38	23 ~ 27
Water temperature switch	35 ~ 45	25 ~ 33

2. LUBRICATING SYSTEM

Oil pump	
Type	Rotor
Feeding capacity at 1,000 rpm of engine	7.0 liters/min. (7.4 U.S. quarts/min., 6.2 Imp. quarts/min.)
Oil pump driven by	Chain and sprocket
Limit of chain slack	12 mm (0.4724 in)
Outer rotor and body Clearance	
Standard	0.20 ~ 0.25 mm (0.0079 ~ 0.0098 in)
Wear limit	0.30 mm (0.0118 in)
Clearance between rotor lobes	
Standard	0.01 ~ 0.09 mm (0.0004 ~ 0.0035 in)
Wear limit	0.15 mm (0.0059 in)
Rotor end float	
Standard	0.03 ~ 0.13 mm (0.0012 ~ 0.0051 in)
Wear limit	0.15 mm (0.0059 in)
Oil pressure at 3,000 rpm of engine	450 ~ 550 kpa (64.0 ~ 78.2 lb/in²)
Oil pressure at idle speed of engine ("D" range for automatic)	90 ~ 270 kpa (12.8 ~ 38.4 lb/in²)
Pressure regulator valve (Rear housing)	
Operating pressure	500 kpa (71.1 lb/in²) at 3,000 rpm of engine
Free length of spring	46.4 mm (1.8268 in)
Pressure control valve (Front cover)	
Operating pressure	800 kpa (113.8 lb/in²)
Free length of spring	69.6 mm (2.7402 in)
By-pass valve (Oil cooler)	
Opening pressure	300 kpa at 60°C (42.7 lb/in² at 140°F)
Oil filter	
Type	Full flow, cartridge
Relief valve opens at	80 ~ 120 kpa (11.4 ~ 17.1 lb/in²)
Oil metering pump	
Feeding capacity of 2,000 rpm of engine	
12A Engine	1.8 ~ 2.2 cc/6 min. (0.110 ~ 0.134 U.S. cu-in/6 min.)
13B Engine	0.8 ~ 1.2 cc/6 min. (0.049 ~ 0.073 U.S. cu-in/6 min.
Lubricant	
Classification	A.P.I. Service SD, SE or SF
Above −10°C (15°F)	SAE 20W-40 or 20W-50
−25°C ~ 30°C (−13°F ~ 86°F)	SAE 10W-30
Above −25°C (−13°F)	SAE 10W-40 or 10W-50
Below −20°C (−4°F)	SAE 5W-20
Below 0°C (32°F)	SAE 5W-30
Oil capacity	
Full capacity	
12A Engine	4.6 liters (4.9 U.S. quarts)
13B Engine	5.8 liters (6.1 U.S. quarts)
Oil pan capacity	
12A Engine	4.2 liters (4.4 U.S. quarts)
13B Engine	4.6 liters (4.9 U.S. quarts)

TIGHTENING TORQUE

	N-m	ft-lb
Oil pump sprocket	32 ~ 47	23 ~ 34
Oil pan	8 ~ 11	6 ~ 8

3. COOLING SYSTEM

Water pump	
Type	Centrifugal impeller
Feeding capacity at 6,500 rpm of engine	150 ~ 160 liters/min (39.6 ~ 42.3 U.S. gal/min., 33.0 ~ 35.2 Imp. gal/min.)
Pump driven by	"V" belt
Pulley ratio of eccentric shaft and pump	1 : 1.18
Fan	
Fan diameter	390 mm (15.3546 in)
Number of fan blades	8
Fan drive	
Standard revolution of fan	Less than 900 rpm at 3400 rpm of engine
Thermostat	
Type	Wax pellet
Starts to open	82 ± 1.5°C (180 ± 2.7°F)
Fully opens at	95°C (203°F)
Lift	8 ~ 10 mm (0.3150 ~ 0.3937 in)
Radiator	
Type	Corrugated fin, with expansion tank
Pressure cap opens at	90 ~ 15 kpa (12.8 ± 2.0 lb/in²)
Cooling capacity	
With heater	9.5 liters (10 U.S. quarts, 8.4 Imp. quarts)
Without heater	8.5 liters (9.0 U.S. quarts, 7.5 Imp. quarts)

TIGHTENING TORQUE

	N-m	ft-lb
Temperature gauge unit	7 ~ 8	5 ~ 6
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	
Type	Motor
Outlet pressure	20 ~ 25 kpa (2.84 ~ 3.55 lb/in²)
Feeding capacity	More than 1,400 cc/min. (1.48 U.S. quarts/min., 1.23 Imp. quarts/min.)
Fuel filter	Cartridge, paper element
Carburetor	
Type	Down draft, 2 stage 4 barrel
Throat diameter	
Primary	28 mm (1.10 in)
Secondary	34 mm (1.34 in)
Venturi diameter	
Primary	20 X 13 X 6.5 mm (0.79 X 0.51 X 0.26 in)
Secondary	28 X 10 mm (1.10 X 0.39 in)

	Manual transmission	Automatic transmission
Main jet		
Primary	#92	#91
Secondary	#160	#160
Main air bleed		
Primary No.1	#70	#60
No. 2	#70	#70
Secondary	#140	#140
Slow jet		
Primary	#46	#46
Secondary	#110	#110
Slow air bleed		
Primary No. 1	#70	#70
No. 2	#170	#150
Secondary No. 1	#160	#160
No. 2	#60	#60
Richer jet	#40	–
Richer air bleed	#130	–

Vacuum jet	
Primary	1.8 mm (0.0709 in)
Fast idle adjustment	
(Clearance between primary throttle valve and bore when choke knob is fully pulled)	1.0 ~ 1.2 mm (0.039 ~ 0.047 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
Air cleaner element	Long life dry
Sub-zero starting assist fluid	Anti-freeze 90% Water 10%

13B Engine

Fuel tank capacity	63 liters (16.4 U.S. gal, 13.9 Imp. gal)
Fuel pump	
Type	Motor
Outlet pressure	350 ~ 500 kpa (49.8 ~ 71.1 lb/in²)
Feeding capacity	More than 1,700 cc/min. (1.80 U.S. quarts/min., 1.50 Imp. quarts/min.)
Fuel filter	Nylon 6 – 150 mesh
Pressure regulator	
Type	Diaphragm
Fuel pressure	200 ~ 260 kpa (28.4 ~ 37.0 lb/in²)
Throttle chamber	
Type	Horizontal – draft (2 stage, 3 barrel)
Throat diameter	
Primary	40 mm (1.6 in)
Secondary	36 mm (1.4 in) X 2
Idling speed	800 rpm
Air cleaner element	Long life dry
Sub-zero starting assist fluid	Anti-freeze 90% Water 10%

TIGHTENING TORQUE

	N-m	ft-lb
Intake manifold	19 ~ 26	14 ~ 19
Exhust manifold	32 ~ 47	23 ~ 34

5. ENGINE ELECTRICAL SYSTEM

Battery	
Type	
California	50 D20R
Except for California	
Manual transmission	50D20R, 65D23R
Automatic transmission	65D23R
Capacity (20 hours Rate)	55 amp. 65D23R 50 amp. 50D20R
Voltage	12 Volt
Terminal ground	Negative
Specific gravity at 20°C (68°F)	50D20R, 65D23R
Fully charged	1.280
Recharged at	1.220
Distributor	
Air gap	0.5 ~ 0.9 mm (0.020 ~ 0.035 in)

Centrifugal advance	
12A Engine	
Leading	Starts: 0° at 500 rpm Maximum: 12.5° at 2,063 rpm
Trailing	Starts: 0° at 500 rpm Maximum: 12.5° at 2,063 rpm
13B Engine	
Leading	Starts: 0° at 500 rpm Mixiumum: 13.75° at 2,000 rpm
Trailing	Starts: 0° at 500 rpm Mixiumum: 13.75° at 2,000 rpm
Vacuum advance	
12A Engine	
Leading	Starts: 0° at 100 mm-Hg (3.9 in-Hg) Maximum: 4.5° at −190 mm-Hg (7.5 in-Hg)
Trailing	Start: 0° at −100 mm-Hg (3.9 in-Hg) Maximum: 15° at −400 mm-Hg (15.7 in-Hg)
13B Engine	
Leading	Starts: 0° at −100 mm-Hg (3.9 in-Hg) Maximum: 5° at −250 mm-Hg (9.8 in-Hg)
Trailing	Start: 0° at −100 mm-Hg (3.9 in-Hg) Maximum: 12.5° −350 mm-Hg (13.8 in-Hg)
Condenser capacity	0.24 ~ 0.30 μF
Ignition timing	
Leading	
12A Engine	0°ATDC
13B Engine	5°ATDC
Trailing	20°ATDC
Timing mark location	Eccentric shaft pulley
Spark plug	
Type	NGK: BR7EQ14, BR8EQ14 BR9EQ14 NIPPON DENSO W22EDR14 W25EDR14 W27EDR14
Initial gap	1.4 ± 0.05 mm (0.055 ± 0.002 in)
Alternator	
Ground	Negative
Rated output	
12A Engine	12V 50A
13B Engine	12V 55A

Load test	
Voltage	13.5V
Current	
12A Engine	More 26 amp.
13B Engine	More 21 amp.
Revolution	Less than 1300 rpm
Number of brushers	2
Brush length	16.5 mm (0.650 in)
Wear limit	8 mm (0.315 in)
Brush spring pressure	0.3 ~ 0.44 kg (10.6 ~ 15.5 oz)
Pulley ratio of eccentric shaft and alternator	1 : 2.08
Ignition coil (Leading)	
Type	LB-84 or FTC-3
Primary resistance	0.9 ± 0.09 Ω at 20°C (68°F)
Ignition coil (Trailing)	
Type	LB-84 or FTC-3
Primary resistance	0.9 ± 0.09 Ω at 20°C (68°F)

	Manual transmission	Automatic transmission
Starting motor		
Capacity	1.2 KW	2.0 KW
Lock test		
Voltage	5.0 volt	4.0 volt
Current	Less than 420 amp.	Less than 1,100 amp.
Torque	9.6 N-m (6.9 ft-lb)	31 N-m (22.4 ft-lb)
Free running test		
Voltage	11.5 volt	11.5 volt
Current	Less than 60 amp.	Less than 100 amp.
Speed	More than 6,500 rpm	More than 3,500 rpm
Number of brushes	4	4
Brush length	17 mm (0.67 in)	17 mm (0.67 in)
Wear limit	11.5 mm (0.45 in)	11.5 mm (0.45 in)
Standard spring tension	1.4 ~ 2.6 kg (49 ~ 92 oz)	1.4 ~ 2.6 kg (49 ~ 92 oz)
Control switch	Solenoid	Solenoid
Voltage required to close solenoid contacts	Less than 8 volt	Less than 8 volt
Undercutting mica	0.5 ~ 0.8 mm (0.020 ~ 0.031 in)	0.5 ~ 0.8 mm (0.020 ~ 0.031 in)
Clearance between armature shaft and bush	Less than 0.2 mm (0.008 in)	—
Armature shaft end play	0.1 ~ 0.5 mm (0.004 ~ 0.02 in)	0.1 ~ 0.5 mm (0.004 ~ 0.02 in)
Clearance between pinion and stop collar	0.5 ~ 2.0 mm (0.020 ~ 0.079 in)	0.5 ~ 2.0 mm (0.020 ~ 0.079 in)

6. CLUTCH

Clutch pedal	
Free play (at pedal pad)	0.6 ~ 3.1 mm (0.0236 ~ 0.1220 in)
Engagement height (from floor)	More than 75 mm (2.9528 in)
Master cylinder	
Bore	15.87 mm (0.6248 in)
Clearance between piston and bore	
Standard	0.032 ~ 0.102 mm (0.0013 ~ 0.0040 in)
Limit	0.15 mm (0.0059 in)
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)
Limit	0.15 mm (0.0059 in)
Clutch disc	
Thickness limit	7.0 mm (0.2756 in)
Rivet depth limit	0.3 mm (0.0118 in)
Lateral run-out limit	1.0 mm (0.0394 in)
Diaphragm	
Finger out of alignment	
Limit	1.0 mm (0.0394 in)
Finger groove wear depth	
Limit	1.0 mm (0.0394 in)

TIGHTENING TORQUE

	N-m	ft-lb
Flywheel	400 ~ 500	289 ~ 362
Clutch cover	18 ~ 27	13 ~ 20

7A. MANUAL TRANSMISSION

Gear ratio	12A Engine	13B Engine
First	3.622	←
Second	2.186	←
Third	1.419	←
Fourth	1.000	←
Reverse	3.493	←
Fifth	0.807	0.758

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)
Clearance between shift rod gate and control lever	
Wear limit	0.8 mm (0.0315 in)
Synchronizer ring	
Clearance between synchronizer ring and side of gear when fitted	
Standard	1.5 mm (0.0591 in)
Wear limit	0.8 mm (0.0315 in)
Lubricant	
Above −18°C (0°F)	A.P.I. Service GL-4 or GL-5 SAE90
Below −18°C (0°F)	A.P.I. Service GL-4 or GL-5 SAE80W

TIGHTENING TORQUE

	N-m	ft-lb
Plug for interlock pin hole	10 ~ 15	7 ~ 11
Control lever to control rod end	8 ~ 12	6 ~ 9
Shift fork set bolts	12 ~ 16	9 ~ 12
Shift rod end	8 ~ 12	6 ~ 9
Main shaft lock nut	130 ~ 210	94 ~ 152
Top switch	25 ~ 35	18 ~ 25
Overdrive switch	25 ~ 35	18 ~ 25
Back-up light switch	25 ~ 25	18 ~ 25
Speedometer driven gear	8 ~ 11	6 ~ 8
Bearing cover		
6T bolts	16 ~ 23	12 ~ 17
8T bolts	18 ~ 27	13 ~ 20

7B. AUTOMATIC TRANSMISSION

Gear ratio	
Low	2.458
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)
Drive plate run-out	
Limit	0.5 mm (0.0197 in)
Oil pump	
Side play of inner gear and outer gear	
Limit	0.08 mm (0.0031 in)
Clearance between outer gear and crescent	
Limit	0.25 mm (0.0098 in)
Clearance between outer gear and housing	
Limit	0.25 mm (0.0098 in)
Side clearance between oil seal ring and groove on oil pump cover	0.4 ~ 0.16 mm (0.0016 ~ 0.0063 in)
Direct clutch	
Thickness of drive plate	
Limit	
Total clearance measured between retaining plate and snap ring	1.6 ~ 1.8 mm (0.0630 ~ 0.0709 in)
End play	0.5 ~ 0.8 mm (0.0197 ~ 0.0315 in)
OD gear train	
End play	0.25 ~ 0.50 mm (0.0098 ~ 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)	$D_1 \rightarrow D_2$	34 ~ 41
	$D_2 \rightarrow D_3$	63 ~ 70
	$D_3 \rightarrow D_2$	58 ~ 65
	$D_2 \rightarrow D_1$	29 ~ 36
Half throttle (200 ± 10 mm-Hg / 7.87 ± 0.39 in-Hg)	$D_1 \rightarrow D_2$	7 ~ 11
	$D_2 \rightarrow D_3$	19 ~ 22
	$D_3 \rightarrow D_4$	59 ~ 70
Fully closed throttle	$D_3 \rightarrow D_1$	7 ~ 11
Manual 1	$1_2 \rightarrow 1_1$	27 ~ 34
Lock up on	D_4	42 ~ 48

Governor pressure

Driving speed	Governor pressure	
mph	Kpa	lb/in²
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/in²	Kpa	lb/in²
R	400 ~ 700	57 ~ 100	1600 ~ 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	6 ~ 8	4.3 ~ 5.8
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

Max. permissible runout	0.4 mm (0.016 in)
Max. permissible unbalance at 4,000 rpm	
At front	15 cm-gr (0.21 in-oz)
At rear	15 cm-gr (0.21 in-oz)
Universal joint	
Journal swinging torque	0.3 ~ 0.8 N-m (2.6 ~ 6.9 in-lb)

TIGHTENING TORQUE

	N-m	ft-lb
Yoke to rear axle companion flange	35 ~ 38	25 ~ 27

9. REAR AXLE

Reduction ratio	
12A engine powered vehicle	3.909
13B engine powered vehicle	4.076
Backlash of ring gear and pinion	0.09 ~ 0.11 mm (0.0035 ~ 0.0043 in)
Pinion bearing preload (Without pinion oil seal)	0.9 ~ 1.4 N-m (7.8 ~ 12.2 in-lb)
Differential side bearing preload (Without pinion)	0.6 ~ 2.1 N-m (5.2 ~ 18.2 in-lb)
Backlash of side gear and pinion gear	0 ~ 0.1 mm (0 ~ 0.0039 in)
Rear wheel bearing end play	0 ~ 0.1 mm (0 ~ 0.0039 in)
Lubricant	
Standard diff.	
Above −18°C (0°F)	A.P.I. Service GL-5 SAE90
Below −18°C (0°F)	A.P.I. Service GL-5 SAE80W
Limited slip diff.	A.P.I. Service GL-5 SAE90 (Special Lubricant For Limited Slip Differentials)
Oil capacity	
Standard diff.	1.2 liters (1.3 U.S. quarts, 1.1 Imp. quarts)
Limited slip diff.	1.6 liters (1.7 U.S. quarts, 1.4 Imp. quarts)
"L" (Case spread)	185.428 ~ 185.500 mm (7.3004 ~ 7.3033 in)

TIGHTENING TORQUE

	N-m	ft-lb
Ring gear	70 ~ 85	51 ~ 61
Differential side bearing caps	38 ~ 53	27 ~ 38
Companion flange to pinion	13 ~ 18	94 ~ 130

10A. MANUAL STEERING

Reduction ratio	17.0 ~ 20.0 : 1
Free play of steering wheel (Turning direction)	
Standard	5 ~ 20 mm (0.2 ~ 0.8 in)
Limit	40 mm (1.57 in)
Backlash between rack and sector gear	Adjust to 0 mm
Worm bearing preload	
Without sector shaft and column bush	0.2 ~ 0.5 N-m (1.7 ~ 4.3 in-lb)
With sector shaft and column bush	0.6 ~ 1.2 N-m (5.2 ~ 10.4 in-lb)
Clearance between sector shaft and housing bush	
Wear limit	0.1 mm (0.004 in)
End clearance of adjusting screw and sector shaft	0 ~ 0.1 mm (0 ~ 0.004 in)
Lubricant	A.P.I. Service GL-4 SAE90
Oil capacity	290 cc (0.31 U.S. quarts, 0.26 Imp. quarts)
Max. Wheel angle on full lock	
Wheel on inside of curve	39°40′ ± 2°
Wheel on outside of curve	32°14′ ± 2°
Idler arm revolving torque	2 ~ 6 kg/135 mm (4.4 ~ 13.2 lb/5.315 in)
Kuckle arm ball stud revolving torque	More than 0.4 kg (14 oz)
Steering geometry	
King-pin inclination	
13 inch tire vehicles	10°44′
14 inch tire vehicles	11°20′
Camber	
13 inch tire vehicles	1°00′ ± 30′
14 inch tire vehicles	0°35′ ± 30′
Max. permissible difference in camber between sides	±30′
Camber offset	38 mm (1.50 in)
Caster	Right-hand side 4°10′ ± 30′ Left-hand side 3°40′ ± 30′
Max. permissible difference in caster between sides	±30′
Caster trail	20 mm (0.79 in)
Toe-in	0 ~ 6 mm (0 ~ 0.24 in)

10B. POWER STEERING

Type	Integral ball nut
Reduction ratio	15.83 : 1
Free play of steering wheel (Turning direction)	
Standard	5 ~ 20 mm (0.2 ~ 0.8 in)
Limit	40 mm (1.57 in)
Backlash between rack and sector gear	
Clearance between gear housing and ball nut	
Limit	0.15 mm (0.0059 in)
Clearance between gear housing and sector shaft	
Limit	0.10 mm (0.0039 in)
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

	N-m	ft-lb
Steering wheel nut	40 ~ 50	29 ~ 36
Steering gear housing to frame	44 ~ 55	32 ~ 40
Pitman arm to sector shaft	150 ~ 180	108 ~ 130
Idler arm bracket to frame	44 ~ 55	32 ~ 40
Idler arm to center link	25 ~ 35	18 ~ 25
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. BRAKING SYSTEM

Brake pedal free travel	
Before power brake piston operates	7 ~ 9 mm (0.28 ~ 0.35 in)
Brake pedal height (from floor)	190 ~ 195 mm (7.48 ~ 7.68 in)
Master cylinder	
Bore	20.64 mm (0.813 in)
Clearance between piston and bore	
Standard	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)
Wear limit	0.15 mm (0.006 in)
Power brake unit	
Clearance between piston and push rod	0.1 ~ 0.5 mm (0.004 ~ 0.020 in)
Front disc brake	
Thickness of brake disc	
Standard	18 mm (0.7087 in)
Limit	17 mm (0.6693 in)
Max. allowable lateral run-out of brake disc	0.1 mm (0.0039 in)
Thickness of lining	
Standard	9 mm (0.3543 in)
Thickness limit	1 mm (0.039 in)
Caliper cylinder bore	50.80 mm (2.0 in)
Rear disc brake	
Thickness of brake disc	
Standard	10 mm (0.3937 in)...Solid 22 mm (0.866 in) ...Ventilated
Limit	9 mm (0.3543 in)...Solid 20 mm (0.787 in) ...Ventilated
Max. allowable lateral run-out of brake disc	10 mm (0.3937 in) 9 mm (0.3543 in)
Thickness of lining	
Standard	0.1 mm (0.0039 in)
Thickness limit	
Caliper cylinder bore	6 mm (0.2362 in)
Rear drum brake	1 mm (0.039 in)
Drum diameter	34.93 mm (1.3752 in)
Standard	
Limit	
Thickness of lining	200 mm (7.8741 in)
Standard	201 mm (7.9135 in)
Thickness limit	
Wheel cylinder bore	4.0 mm (0.1575 in)
Clearance between piston and bore	1.0 mm (0.039 in) 19.05 mm (0.750 in)
Standard	0.040 ~ 0.125 mm (0.0016 ~ 0.0049 in)
Limit	0.15 mm (0.006 in)
Remaining pressure	50 ~ 100 kpa (7.1 ~ 14.2 lb/in²)
Clearance between drum and lining	0.1 ~ 0.15 mm (0.004 ~ 0.006 in)
Parking brake	
Lever travel	6 ~ 8 notches at 10 kg (22 lb)

TIGHTENING TORQUE

	N-m	ft-lb
Master cylinder union bolt	10 ~ 16	7 ~ 12
Master cylinder outlet plug	60 ~ 70	43 ~ 50
Brake tube union nut	13 ~ 22	9 ~ 16
Flexible hose union	25 ~ 35	18 ~ 25
Wheel cylinder union bolt	7 ~ 10	5 ~ 7

12. WHEELS AND TIRES

Wheel disc	
Front	5–J x 13 WDC 5½–JJ x 13 WDC (Aluminum)
Rear	5–J x 13 WDC 5½–JJ x 13 WDC (Aluminum)
Front	5½–JJ x 14 WDC
Rear	5½JJ x 14 WDC
Temporary spare tire	4–T x 15
Run-out limit	
Radial	1.0 mm (0.04 in) 0.5 mm (0.020 in) Aluminum
Lateral	1.0 mm (0.04 in) 0.5 mm (0.020 in) Aluminum
Tire	
Front	185/70 HR 13 165HR 13 205/60 VR 14
Rear	185/70 HR 13 165HR 13 205/60 VR 14
Temporary spare tire	T135/70 D 15
Inflation pressure	
Front	190 kpa (27 psi) 200 kpa (28 psi)...14 in only
Rear	190 kpa (27 psi) 200 kpa (28 psi)... 14 in only
Temporary spare tire	420 kpa (60 psi)
Run-out limit (with wheel disc)	
Radial	2.5 mm (0.098 in)
Lateral	3.0 mm (0.118 in)
Front wheel bearing preload (at wheel set bolt)	0.45 ~ 0.65 kg (0.99 ~ 1.43 lb)

TIGHTENING TORQUE

	N-m	ft-lb
Wheel bolts	90 ~ 120	65 ~ 87

13. SUSPENSION

Front coil spring	
Spring constant	2.16 ± 0.15 kg/mm
Free length	
Standard Left	334.5 mm (13.17 in)
Right	32.5 mm (12.80 in)
Front shock absorber	
Fluid capacity	225 $^{+5}_{-0}$ cc
	(0.23 $^{+0.05}_{-0}$ U.S. quarts)
Rear coil spring	
Spring constant	1.8 ± 0.13 kg/mm
Free length	
Standard	323.5 mm (12.74 in)

TIGHTENING TORQUE

	N-m	ft-lb
Suspension arm to cross member	40 ~ 55	29 ~ 40
Knuckle arm to shock absorber	64 ~ 95	46 ~ 69
Suspension arm ball joint to knuckle arm	60 ~ 80	43 ~ 58
Front shock absorber		
Piston rod to mounting block	65 ~ 82	47 ~ 59
Seal cap nut	50 ~ 60	36 ~ 43
Tension rod to lower suspension arm	55 ~ 69	40 ~ 50
Tension rod to bracket	110 ~ 150	80 ~ 108
Tension rod bracket to frame	76 ~ 107	55 ~ 77
Stabilizer bar to suspension lower arm	12 ~ 18	9 ~ 13
Front stabilizer support plate	38 ~ 47	27 ~ 34
Shock absorber to axle housing	65 ~ 82	47 ~ 59
Upper link to axle housing	77 ~ 105	56 ~ 76
Upper link to frame	77 ~ 105	56 ~ 76
Lower link to axle housing	77 ~ 105	56 ~ 76
Lower link to frame	77 ~ 105	56 ~ 76
Shock absorber upper	13 ~ 25	9 ~ 18
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 ~ 16	7 ~ 12

15. BODY ELECTRICAL SYSTEM

Item	Specification (W)
Headlights	
Halogen headlights	50/60 50, 40/55 (Normal)
Rear side marker lights	3.8
Turn-signal lights	27
Front parking lights	8
Rear turn signal lights	27
Tail lights	8
Stop lights	27
Back-up lights	27
License plate lights	6
Interior lights	10
Map lights	6
Luggage compartment lights	5
Indicator and warning lights	
Turn signals	3.4
High beam	3.4
Oil pressure	1.4
Alternator	1.4
Stop lights	1.4
Brake	1.4
Parking brake	1.4
Fuel	3.4
Hazard	3.4
Washer level	1.4
Seat belt	1.4
Illumination lights	
Automatic selector lever	3.4
Heater	3.4
Meter	3.4 & 1.4
Cigarette lighter	3.4
Radio	3.4
Rear window defroster	1.4

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