Standards and Service Limits

5. Engine/Cylinder Head, Valve Train (Fuel-Injected Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide-open throttle		Nominal Minimum Maximum variation	1,226 kpa (12.5 kg/cm^2, 178 psi) 932 kpa (9.5 kg/cm^2, 135 psi) 196 kpa (2 kg/cm^2, 28 psi)
Cylinder head	Warpage Height		– 132 (5.20)	0.05 (0.002) 131.8 (5.19)
Camshaft	End play Oil clearance Runout Cam lobe height	 IN EX	0.05–0.15 (0.002–0.006) 0.050–0.089 (0.002–0.004) 0.015 (0.0006) max. 33.716 (1.3274) 33.932 (1.3359)	0.5 (0.02) 0.15 (0.006) 0.03 (0.001) – –
Valve	Valve clearance	IN EX	0.08–0.12 (0.003–0.005) 0.16–0.20 (0.006–0.008)	– –
	Valve stem O.D.	IN EX	6.58–6.59 (0.2591–0.2594) 6.55–6.56 (0.2579–0.2583)	6.55 (0.258) 6.52 (0.257)
	Stem-to-guide clearance	IN EX	0.02–0.05 (0.001–0.002) 0.05–0.08 (0.002–0.003)	0.08 (0.003) 0.11 (0.04)
	Stem installed height	IN and EX	42.75 (1.683)	43.54 (1.714)
Valve seat	Width	IN and EX	1.25–1.55 (0.049–0.061)	2.0 (0.08)
Valve spring	Free length	Inner Outer	43.50 (1.713) 47.45 (1.868)	42.5 (1.673) 46.45 (1.829)
	Squareness	Inner and Outer	–	1.6 (0.063)
Valve guide	I.D.	IN and EX	6.61–6.63 (0.260–0.261)	6.65 (0.262)

5. Engine/Cylinder Head, Valve Train (Carbureted Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide-open throttle		Nominal Minimum Maximum variation	1,177 kpa (12.0 kg/cm^2, 171 psi) 932 kpa (9.5 kg/cm^2, 135 psi) 196 kpa (2 kg/cm^2, 28 psi)
Cylinder head	Warpage Height		– 90 (3.54)	0.05 (0.002) 89.8 (3.54)
Camshaft	End play Oil clearance Runout Cam lobe height	 No. 1,3 and 5 journals No. 2 and 4 journals IN A IN B EX	0.05–0.15 (0.002–0.006) 0.050–0.089 (0.002–0.004) 0.130–0.169 (0.005–0.007) 0.015 (0.0006) max. 38.604 (1.5198) 38.858 (1.5298) 38.796 (1.5274)	0.5 (0.02) 0.15 (0.006) 0.23 (0.009) 0.03 (0.001) – – –
Valve	Valve clearance	IN EX	0.12–0.17 (0.005–0.007) 0.25–0.30 (0.010–0.012)	– –
	Valve stem O.D.	IN EX	6.58–6.59 (0.2591–0.2594) 6.94–6.95 (0.2732–0.2736)	6.55 (0.258) 6.91 (0.272)
	Stem-to-guide clearance	IN EX	0.02–0.05 (0.001–0.002) 0.06–0.09 (0.002–0.004)	0.08 (0.003) 0.12 (0.005)
	Stem installed height	IN EX	48.59 (1.913) 47.66 (1.876)	49.34 (1.943) 48.41 (1.906)
Valve seat	Width	IN and EX	1.25–1.55 (0.049–0.061)	2.0 (0.08)
Valve spring	Free length	IN EX Inner Outer	48.54 (1.91) 42.42 (1.67) 49.06 (1.93)	47.54 (1.87) 41.42 (1.63) 48.06 (1.89)
	Squareness	Inner and Outer	–	1.75 (0.068)
Valve guide	I.D.	IN EX	6.61–6.63 (0.260–0.261) 7.01–7.03 (0.276–0.277)	6.65 (0.262) 7.05 (0.278)
Rocker arm	Arm-to-shaft clearance		0.008–0.054 (0.0003–0.0021)	0.08 (0.003)

Unit: mm (in.)

5. Engine/Engine Block (Fuel-Injected Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface		0.07 (0.0028) max.	0.10 (0.004)
	Bore diameter	A	81.01 – 81.02 (3.1894–3.1898)	81.05 (3.1909)
		B	81.00–81.01 (3.1890–3.1894)	81.04 (3.1905)
	Bore taper		–	0.05 (0.002)
	Reboring limit		–	0.5 (0.02)
Piston	Skirt O.D (At 21 mm (0.83 in) from bottom of skirt)	A	80.98–80.99 (3.1882–3.1886)	80.97 (3.188)
		B	80.97–80.98 (3.1878–3.1882)	80.96 (3.187)
	Clearance in cylinder		0.02–0.04 (0.0008–0.0016)	0.08 (0.003)
	Piston-to-ring clearance	Top	0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
		2nd	0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
Piston ring	Ring end gap	Top	0.20–0.35 (0.008–0.014)	0.6 (0.02)
		2nd	0.40–0.55 (0.016–0.022)	0.7 (0.03)
		Oil	0.20–0.70 (0.008–0.028)	0.8 (0.03)
Connecting rod	Pin-to-rod interference		0.013–0.032 (0.0005–0.0013)	–
	Large end bore diameter		Nominal 51 (2.01)	–
	End play installed on crankshaft		0.15–0.30 (0.006–0.012)	0.40 (0.016)
Crankshaft	Main journal diameter		54.976–55.000 (2.1644–2.1654)	–
	Taper/out-of-round, main journal		0.005 (0.0002) max.	0.010 (0.0004)
	Rod journal diameter		47.976–48.000 (1.8888–1.8900)	–
	Taper/out-of-round, rod journal		0.005 (0.0002) max.	0.010 (0.0004)
	End play		0.10–0.35 (0.004–0.014)	0.45 (0.018)
	Runout		0.010 (0.0004) max.	0.015 (0.0006)
Bearings	Main bearing-to-journal	No. 1, 2, 4, and 5		
	Oil clearance	Journals	0.024–0.042 (0.0010–0.0017)	0.05 (0.002)
		No. 3 Journal	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Rod bearing-to-journal oil clearance		0.026–0.044 (0.0010–0.0017)	0.05 (0.002)

5. Engine/Engine Block (Carbureted Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface		0.07 (0.0028) max.	0.10 (0.004)
	Bore diameter	A	81.01–81.02 (3.1894–3.1898)	81.05 (3.1909)
		B	81.00–81.01 (3.1890–3.1894)	81.04 (3.1905)
	Bore taper		–	0.05 (0.002)
	Reboring limit		–	0.5 (0.02)
Piston	Skirt O.D (At 21 mm (0.83 in) from bottom of skirt)	A	80.98–80.99 (3.1882–3.1886)	80.97 (3.1878)
		B	80.97–80.98 (3.1878–3.1882)	80.96 (3.1874)
	Clearance in cylinder		0.02–0.04 (0.0008–0.0016)	0.08 (0.003)
	Piston-to-ring clearance (top and 2nd)		0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
Piston ring	Ring end gap	Top	0.20–0.35 (0.008–0.014)	0.6 (0.02)
		2nd	0.40–0.55 (0.016–0.022)	0.7 (0.03)
		Oil	0.20–0.70 (0.008–0.020)	0.8 (0.03)
Connecting rod	Pin-to-rod interference		0.013–0.032 (0.0005–0.0013)	–
	Large end bore diameter		Nominal 48 (1.89)	–
	End play installed on crankshaft		0.15–0.30 (0.006–0.012)	0.40 (0.016)
Crankshaft	Main journal diameter		54.976–55.000 (2.1644–2.1654)	–
	Taper/out-of-round, main journal		0.005 (0.0002) max.	0.010 (0.0004)
	Rod journal diameter		44.976–45.000 (1.7707–1.7717)	–
	Taper/out-of-round, rod journal		0.005 (0.0002) max.	0.010 (0.0004)
	End play		0.10–0.35 (0.004–0.014)	0.45 (0.018)
	Runout		0.010 (0.0004) max.	0.015 (0.0006)
Bearings	Main bearing-to-journal	No. 1, 2, 4, and 5		
	Oil clearance	journals	0.024–0.042 (0.0010–0.0017)	0.05 (0.002)
		No. 3 Journal	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Rod bearing-to-journal oil clearance		0.026–0.044 (0.0010–0.0017)	0.05 (0.002)

(cont'd)

Standards and Service Limits (cont'd)

O : Fuel-Injected Engine ● : Carbureted Engine

5. Engine/Engine Lubrication

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (U.S. qt., Imp. qt.)		4.8 (5.1, 4.2) After engine disassembly 3.9 (4.1, 3.4) After oil change, including oil filter 3.4 (3.6, 3.0) After oil change, without oil filter	
Oil pump	Displacement		O 54 ℓ (14.3 U.S. gal., 11.9 Imp. gal.) 5,000 min^{-1} (rpm) ● 54 ℓ (14.3 U.S. gal., 11.9 Imp. gal.) 5,500 min^{-1} (rpm)	
	Inner-to-outer rotor radial clearance Pump body-to-rotor radial clearance Pump body-to-rotor side clearance		0.04—0.16 (0.002—0.006) 0.10—0.19 (0.004—0.007) 0.02—0.07 (0.001—0.003)	0.2 (0.008) 0.21 (0.008) 0.12 (0.005)
Relief valve	Pressure setting 80°C (176°F)	Idle	147 kPa (1.5 kg/cm^2, 21 psi) min.	
		3,000 min^{-1} (rpm)	520—598 kPa (5.3—6.1 kg/cm^2, 75—87 psi)	

5. Engine/Cooling

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
O Radiator	Capacity (includes heater) ℓ (U.S. qt., Imp. qt.) (Includes resvoir tank 0.75 (0.79, 0.66)	7.8 (8.2, 6.9)	
● Radiator	Capacity (Includes heater) ℓ (U.S. qt., Imp. qt.) (Includes reservoir tank 0.75 (0.79, 0.66)	Manual 6.8 (7.2, 6.0) Automatic 7.5 (7.9, 6.6)	
Radiator cap	Pressure cap opening pressure	74—103 kPa (0.75—1.05 kg/cm^2, 11—15 psi)	
Thermostat	Starts to open Full open Valve lift at full open	82°C ± 2 (180°F ± 3) 95°C (203°F) 8 (0.31) max.	86—90°C (187—194°F) 100°C (212°F) OPTIONAL 8 (0.31) max.
O Water pump	Gear ratio (crankshaft) Capacity: ℓ per min/at min^{-1} (rpm)	0.89 158 (41.7 U.S. gal., 34.8 Imp. gal.)/6,000	
● Water pump	Gear ratio (crankshaft) Capacity: ℓ per min/at min^{-1} (rpm)	1.00 145 (38.3 U.S. gal., 31.9 Imp. gal.)/6,000	
Cooling fan	Fan-to-core clearance Thermoswitch "ON" temperature Thermoswitch "OFF" temperature	26.0 (1.02) 87°—93°C (188°—199°F) 83° (181°F) or more (hysteresis 2°C (35°F) or more).	

6. Fuel and Emissions

	MEASUREMENT	STANDARD (NEW)
O Fuel pump	Delivery pressure Displacement Relief valve opening pressure	250 kPa (2.55 kg/cm^2, 36 psi) 230 cm^3/min in 10 seconds 441—588 kPa (4.5—6.0 kg/cm^2, 64—85 psi)
● Fuel pump	Delivery pressure Displacement	8.8—14.7 kPa (0.09—0.15 kg/cm^2, 1.3—2.1 psi) 600 cm^2/min at 12 V (37 cu. in./12 V)
O Pressure regulator	Pressure	230—270kPa (2.35—2.75 kg/cm^2, 33—39 psi)
Fuel Tank	Capacity	60 ℓ (15.9 U.S. gal., 13.2 Imp. gal.)

6. Fuel and Emissions

O : Fuel-Injected Engine ● : Carbureted Engine Unit: mm (in.)

	MEASUREMENT	STANDARD (NEW)	
Throttle valve body or carburetor	Fast idle min^{-1} (rpm)	Manual O 1,000–1,800 ● 1,000–2,000 Automatic O 1,000–1,800 ● 1,000–2,000	
	Idle speed min^{-1} (rpm) with headlights and cooling fan off	O Manual Automatic (in gear)	750 ± 50 (with catalytic converter) 800 ± 50 (without catalytic converter)
		● Manual Automatic (in gear)	M/T: 800 ± 50 A/T: 750 ± 50
	Idle CO	0.1%	
	Float level (from gasket)	15–17 (0.59–0.67)	

7. Clutch

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height Stroke Pedal play Disengagement height	207 (8.1) to floor 135–140 (5.3–5.5) 9–15 (0.4–0.6) 92 (3.6) min. to floor	— — — —
Flywheel	Clutch surface runout	0.05 (0.002) max.	0.15 (0.006)
Clutch disc	Rivet head depth Surface runout Thickness	1.3 (0.05) min. 0.8 (0.03) max. 8.5–9.2 (0.33–0.36)	0.2 (0.008) 1.0 (0.04) 6.1 (0.24)
Clutch release bearing holder	I.D. Holder-to-guide sleeve clearance	35.00–35.059 (1.378–1.380) 0.05–0.15 (0.002–0.006)	35.09 (1.381) 0.22 (0.009)
Clutch cover	Unevenness of diaphragm spring	0.6 (0.02) max.	0.8 (0.03)

8. Manual Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (U.S. qt., Imp. qt.)	1.9 (2.0, 1.7) at oil change 2.0 (2.1, 1.8) at assembly	
Mainshaft	End play Diameter of needle bearing contact area Diameter of third gear contact area Diameter of ball bearing contact area Runout	0.10–0.16 (0.004–0.006) 27.987–28.000 (1.1018–1.1024) 37.984–38.000 (1.4954–1.4961) 27.977–27.990 (1.1015–1.1020) 0.04 (0.0016) max.	Adjust with a shim. 27.94 (1.100) 37.93 (1.493) 27.94 (1.100) 0.10 (0.004)
Mainshaft third and fourth gears	I.D. End play Thickness 3rd 4th	43.009–43.025 (1.6933–1.6939) 0.06–0.21 (0.0024–0.0083) 32.42–32.47 (1.2764–1.2783) 30.92–30.97 (1.2173–1.2193)	43.08 (1.696) 0.3 (0.012) 32.3 (1.272) 30.8 (1.213)
Mainshaft fifth gear	I.D. End play Thickness	43.009–43.025 (1.6933–1.6939) 0.06–0.21 (0.0024–0.0083) 30.42–30.47 (1.1976–1.1996)	43.08 (1.696) 0.3 (0.012) 30.3 (1.193)
Countershaft	End play Diameter of needle bearing contact area Diameter of ball bearing contact are Diameter of low gear contact area Runout	0.10–0.35 (0.004–0.014) 33.000–33.015 (1.2992–1.2998) 24.987–25.000 (0.9837–0.9843) 39.984–40.000 (1.5742–1.5748) 0.04 (0.0016)	0.5 (0.02) 32.95 (1.297) 24.94 (0.982) 33.93 (1.336) 0.10 (0.004)
Cuntershaft low gear	I.D. End play	46.009–46.025 (1.8114–1.8120) 0.04–0.06 (0.0016–0.0028)	46.08 (1.814) 0.18 (0.007)
Countershaft second gear	I.D. End play Thickness	50.009–50.025 (1.9689–1.9695) 0.03–0.07 (0.0012–0.0028) 32.92–32.97 (1.2961–1.2980)	50.08 (1.972) Adjust with a collar. 32.8 (1.291)
Spacer collar (Countershaft second gear)	I.D. O.D. Length A B C D E	36.48–36.49 (1.4362–1.4366) 43.989–44.000 (1.7318–1.7323) 29.03–29.05 (1.1429–1.1437) 29.01–29.03 (1.1421–1.1429) 28.99–29.01 (1.1413–1.1421) 28.97–28.99 (1.1405–1.1413) 28.95–28.97 (1.1398–1.1405)	36.5 (1.437) 43.94 (1.730) — — — — —

(cont'd)

Standards and Service Limits (cont'd)

8. Manual Transmission (cont'd)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Spacer collar (Mainshaft fourth and fifth gears)	I.D. O.D. Length	 A B	28.002–28.012 (1.1024–1.1028) 34.989–35.000 (1.3775–1.3780) 55.95–56.05 (2.2028–2.2067) 26.03–26.08 (1.0248–1.0268)	28.06 (1.105) 34.94 (1.376) —
Reverse Idler gear	I.D. Gear-to-reverse gear shaft clearance		20.016–20.043 (0.7880–0.7891) 0.036–0.084 (0.0014–0.0033)	20.09 (0.791) 0.16 (0.006)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.85–1.10 (0.033–0.043)	0.4 (0.016)
Shift fork	Synchro sleeve gear Fork-to-synchro sleeve 	1,2,3 and 4th 5th 1,2,3 and 4th 5th	7.95–8.05 (0.313–0.317) 5.75–5.85 (0.226–0.230) 0.45–0.65 (0.018–0.026) 0.45–0.50 (0.018–0.020)	— — 1.0 (0.04) 0.8 (0.03)
Reverse shift fork	End gap Fork-to-reverse idler gear clearance *Groove width* Fork-to-fifth/reverse shift piece pin clearance		13.0–13.3 (0.512–0.524) 0.5–1.1 (0.020–0.043) 7.05–7.25 (0.278–0.285) 0.05–0.35 (0.002–0.014)	— 1.8 (0.071) — 0.5 (0.02)
Shift arm	I.D. Shift shaft clearance Shift fork diameter of contact area Shift fork clearance	 	15.973–16.000 (0.629–0.630) 0.005–0.059 (0.000197–0.00232) 12.9–13.0 (0.508–0.512) 0.2–0.3 (0.0079–0.012)	— — — 0.6 (0.024)
Select lever	Pin size of contact area Shaft outer diameter Shift arm cover clearance		8.7–8.8 (0.34–0.35) 15.41–15.68 (0.607–0.617) 0.032–0.102 (0.00126–0.00402)	— — —
Shift arm lever	O.D. Transmission housing clearance		15.41–15.68 (0.607–0.617) 0.027–0.139 (0.00106–0.0055)	— —
Inter lock	Bore diameter Shift arm lever clearance		16.0–16.05 (0.630–0.632) 0.032–0.19 (0.00126–0.0075)	— —

9. Automatic Transmission

○ : Fuel-Injected Engine ● : Carbureted Engine

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (U.S. qt., Imp. qt.)		2.8 (3.0, 2.5) at oil change 6.2 (6.6, 5.5) at assembly	
Hydraulic pressure	[N] or [P] Line pressure at 2,000 min^{-1} (rpm)		○ 834–883 kpa (8.5–9.0 kg/cm^2, 121–128 psi) ● 785–834 kpa (8.0–8.5 kg/cm^2, 14–121 psi)	○ 785 kpa (8.0 kg/cm^2, 114 psi) ● 736 kpa (7.5 kg/cm^2, 107 psi)
	[S] or [D] 4th, 3rd, 2nd clutch pressure at 2,000 min^{-1} (rpm)		○ 569–883 kpa (5.8–9.0 kg/cm^2, 82.5–128 psi) ● 569–834 kpa (5.8–8.5 kg/cm^2, 82.5–121 psi)	○ 785 kpa (8.0 kg/cm^2, 114 psi) ● 736 kpa (7.5 kg/cm^2, 107 psi)
	[S] or [D] 1st clutch pressure at 2,000 min^{-1} (rpm) [2] 2nd clutch pressure at 2,000 min^{-1} (rpm)		○ 834–883 kpa (8.5–9.0 kg/cm^2, 121–128 psi) ● 785–834 kpa (8.0–8.5 kg/cm^2, 114–121 psi)	○ 785 kpa (8.0 kg/cm^2, 114 psi) ● 736 kpa (7.5 kg/cm^2, 107 psi)
	[S] or [D] Throttle pressure B	Fully closed	0	—
		Fully opend	○ 834–883 kpa (8.5–9.0 kg/cm^2, 121–128 psi) ● 785–834 kpa (8.0–8.5 kg/cm^2, 114–121 psi)	○ 785 kpa (8.0 kg/cm^2, 114 psi) ● 736 kpa (7.5 kg/cm^2, 107 psi)
Stall speed	Check with car on lever ground		○ 2,600–2,900 min^{-1} (rpm) ● 2,550–2,850 min^{-1} (rpm)	— —
Clutch	Clutch inital clearance Clutch return spring free length Clutch disc thickness	1st 2nd, 3rd, 4th	0.65–0.85 (0.026–0.033) 0.40–0.60 (0.016–0.024) 31.0 (1.22) 1.88–2.00 (0.074–0.079)	— — 29.0 (1.14) Until grooves worn out

Unit: mm (in.)

9. Automatic Transmission

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Clutch plate thickness		1.95–2.05 (0.077–0.079)	Discoloration
	Clutch end plate thickness	Mark 1	2.05–2.10 (0.081–0.083)	
		Mark 2	2.15–2.20 (0.085–0.087)	
		Mark 3	2.25–2.30 (0.089–0.091)	
		Mark 4	2.35–2.40 (0.093–0.094)	
		Mark 5	2.45–2.50 (0.096–0.098)	
		Mark 6	2.55–2.60 (0.100–0.102)	
		Mark 7	2.65–2.70 (0.104–0.106)	
		Mark 8	2.75–2.80 (0.108–0.110)	
		Mark 9	2.85–2.90 (0.112–0.114)	
		Mark 10	2.95–3.00 (0.116–0.118)	
		Mark 11	3.05–3.10 (0.120–0.122)	
		Mark 12	3.15–3.20 (0.124–0.126)	
		Mark 13	3.25–3.30 (0.128–0.130)	
		Mark 14	3.35–3.40 (0.132–0.134)	Discoloration
Transmission	Diameter of needle bearing contact area on main and stator shaft		22.980–22.993 (0.9047–0.9052)	Wear or damage
	Diameter of needle bearing contact area on mainshaft 2nd gear		35.975–35.991 (1.4163–1.4169)	
	Diameter of needle bearing contact area on mainshaft 4th gear collar		31.975–31.991 (1.2588–1.2594)	
	Diameter of needle bearing contact area on mainshaft 1st gear collar		30.975–30.991 (1.2195–1.2201)	
	Diameter of needle bearing contact area on countershaft (R side)		38.505–38.515 (1.5159–1.5163)	
	Diameter of needle bearing contact area on countershaft 3rd gear		31.975–31.991 (1.2589–1.2595)	
	Diameter of needle bearing contact area on countershaft 4th gear		27.980–27.993 (1.1016–1.1021)	
	Diameter of needle bearing contact area on countershaft reverse gear collar		31.975–31.991 (1.2589–1.2595)	
	Diameter of needle bearing contact area on countershaft 1st gear collar		31.975–31.991 (1.2589–1.2595)	
	Diameter of needle bearing contact area on reverse idle gear		13.990–14.000 (0.5508–0.5512)	
	Reverse idler shaft holder I.D.		14.416–14.434 (0.5676–0.5683)	
	Mainshaft 2nd gear I.D.		41.000–41.016 (1.6142–1.6148)	
	Mainshaft 1st gear I.D.		36.000–36.016 (1.4173–1.4180)	
	Countershaft 4th gear I.D.		33.000–33.016 (1.2992–1.2998)	
	Countershaft 3rd gear I.D.		38.000–38.016 (1.4961–1.4967)	
	Countershaft 2rd gear I.D.		31.000–31.016 (1.2205–1.2211)	
	Countershaft 1st gear I.D.		38.000–38.016 (1.4961–1.4967)	
	Countershaft reverse gear I.D.		38.000–38.016 (1.4961–1.4967)	
	Reverse idle gear I.D.		18.007–18.020 (0.7089–0.7094)	Wear or damage
	Mainshaft 4th gear end play		0.10–0.22 (0.0039–0.0087)	—
	Mainshaft 2nd gear end play		0.07–0.15 (0.0028–0.0059)	—
	Mainshaft 1st gear end play		0.08–0.24 (0.0031–0.0094)	—
	Countershaft 3rd gear end play		0.07–0.15 (0.0028–0.0059)	—
	Countershaft 2nd gear end play		0.07–0.15 (0.0028–0.0059)	—
	Reverse idler gear end play		0.05–0.18 (0.0020–0.0071)	—
	Countershaft reverse gear end play		0.10–0.25 (0.0039–0.0098)	—
	Reverse gear selector hub O.D.		51.87–51.90 (2.0421–2.0433)	Wear or damage
	Thrust washer thickness Mainshaft 2nd gear	A	3.97–4.00 (0.1563–0.1575)	—
		B	4.02–4.05 (0.1583–0.1594)	—
		C	4.07–4.10 (0.1602–0.1614)	—
		D	4.12–4.15 (0.1622–0.1634)	—
		E	4.17–4.20 (0.1642–0.1654)	—
		F	4.22–4.25 (0.1661–0.1673)	—
		G	4.27–4.30 (0.1681–0.1693)	—
		H	4.32–4.35 (0.1701–0.1713)	—
		I	4.37–4.40 (0.1720–0.1732)	—
	Mainshaft right side bearing		2.95–3.05 (0.1161–0.1201)	Wear or damage
	Mainshaft 1st gear		2.43–2.50 (0.0957–0.0984)	Wear or damage
	Countershaft 3rd gear	A	2.97–3.00 (0.1169–0.1181)	—
		B	3.02–3.05 (0.1189–0.1201)	—
		C	3.07–3.10 (0.1209–0.1220)	—
		D	3.12–3.15 (0.1228–0.1240)	—
		E	3.17–3.20 (0.1248–0.1260)	—
		F	3.22–3.25 (0.1268–0.1280)	—
		G	3.27–3.30 (0.1287–0.1299)	—
		H	3.32–3.35 (0.1307–0.1319)	—
		I	3.37–3.40 (0.1327–0.1339)	—
	Countershaft 4th gear collar thickness	A	38.97–39.00 (1.5343–1.5354)	—
		B	39.02–39.05 (1.5362–1.5374)	—
		C	39.07–39.10 (1.5382–1.5394)	—
		D	39.12–39.15 (1.5402–1.5413)	—
		E	39.17–39.20 (1.5421–1.5433)	—
		F	39.22–39.25 (1.5441–1.5453)	—
		G	39.27–39.30 (1.5461–1.5472)	—

(cont'd)

Standards and Service Limits (cont'd)

9. Automatic Transmission (cont'd)

O : Fuel-Injected Engine ● : Carbureted Engine

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Thrust washer thickness (mainshaft 1st gear L side)	1.45–1.50 (0.0571–0.0591)	1.40 (0.0551)
	Mainshaft 1st gear collar length	24.50–24.55 (0.9646–0.9665)	——
	Mainshaft 1st gear collar flange thickness	2.5–2.6 (0.098–0.102)	Wear or damage
	Countershaft reverse gear collar length	12.00–12.10 (0.4724–0.4764)	——
	Countershaft reverse gear collar flange thickness	2.40–2.60 (0.0945–0.1024)	Wear or damage
	Countershaft 1st gear collar length	12.00–12.10 (0.4724–0.4764)	——
	Countershaft 1st gear collar flange thickness	2.4–2.6 (0.095–0.102)	Wear or damage
	Diameter of countershaft one-way clutch contact area	83.339–83.365 (3.2811–3.2821)	Wear or damage
	Diameter of parking gear one-way clutch contact area	66.685–66.698 (2.6254–2.6259)	Wear or damage
	Mainshaft feed pipe A O.D.	8.97–8.98 (0.353–0.354)	8.95 (0.3524)
	Mainshaft feed pipe B O.D.	5.97–5.98 (0.2351–0.2354)	5.95 (0.2343)
	Countershaft feed pipe C O.D.	7.97–7.98 (0.3138–0.3142)	7.95 (0.3130)
	Mainshaft sealing ring 35 mm thickness	1.980–1.995 (0.0780–0.0785)	1.800 (0.0709)
	Mainshaft sealing ring 29 mm thickness	1.980–1.995 (0.0780–0.0785)	1.800 (0.0709)
	Mainshaft bushing I.D.	6.018–6.030 (0.2369–0.2374)	6.045 (0.2380)
	Mainshaft bushing I.D.	9.000–9.015 (0.3543–0.3549)	9.030 (0.3555)
	Countershaft bushing I.D.	8.000–8.015 (0.3150–0.3156)	8.030 (0.3161)
	Mainshaft sealing ring groove width (35 mm and 29 mm)	2.025–2.060 (0.0797–0.0811)	2.080 (0.0819)
Regulator valve body	Sealing ring contact area diameter	35.000–35.025 (1.3780–1.3789)	35.050 (1.3799)
Stator shaft	Sealing ring contact area diameter	29.000–29.013 (1.1417–1.1422)	29.05 (1.1437)
Shifting device and parking brake control	Reverse shift fork thickness	5.90–6.00 (0.2323–0.2362)	5.40 (0.2126)
	Parking brake ratchet pawl	——	Wear or other defect
	Parking gear	——	Wear or other defect
	Throttle cam stopper	19.5–19.6 (0.768–0.772)	——
Servo body	Shift fork shaft bore I.D. A	14.000–14.005 (0.5512–0.5514)	——
	B	14.006–14.010 (0.5514–0.5516)	——
	C	14.011–14.015 (0.5516–0.5518)	——
	Shift fork shaft valve bore I.D.	37.000–37.039 (1.4567–1.4582)	37.045 (1.4585)
Valve body	Oil pump gear side clearance	0.03–0.05 (0.0012–0.0020)	0.07 (0.0028)
	Oil pump gear-to-body clearance	Drive: 0.21–0.265 (0.0083–0.0104)	——
		Driven: 0.07–0.125 (0.0028–0.0049)	——
	Stator camshaft needle bearing contact area I.D. (torque converter side)	27.000–27.021 (1.0630–1.0638)	Wear or damage
	Stator camshaft needle bearing contact area I.D. (oil pump side)	29.000–29.013 (1.1417–1.1422)	——
	Oil pump driven gear I.D.	14.016–14.034 (0.5518–0.5525)	Wear or damage
	Oil pump shaft O.D.	13.980–13.990 (0.5504–0.5508)	Wear or damage

Spring		STANDARD (NEW)			
		Wire Diameter	Outer Diameter	Free Length	Number of Coils
	Low one-way ball spring	0.29 (0.01)	4.0 (0.16)	14 (0.55)	13
	Regulator valve spring A	1.58 x 2.00 (0.06 x 0.08)	14.7 (0.58)	O88.6 (3.49) ●86.5 (3.41)	20.9
	Regulator valve spring B	1.6 (0.06)	9.6 (0.38)	44.0 (1.73)	7.5
	Stator reaction spring	6.0 (0.24)	38.4 (1.51)	30.3 (1.19)	2
	Torque converter check valve spring	1.1 (0.04)	8.4 (0.33)	34.5 (1.36)	12.5
	Relief valve spring	0.8 (0.03)	8.4 (0.33)	47.7 (1.88)	15
	Cooler check valve spring	1.1 (0.04)	8.4 (0.33)	46.8 (1.84)	17
	2nd orifice control spring	0.8 (0.03)	6.6 (0.26)	50.7 (2.00)	35.1
	2nd kick down spring	0.8 (0.03)	6.1 (0.24)	37.7 (1.48)	24.3
	Servo orifice control spring	0.8 (0.03)	6.1 (0.24)	44.8 (1.76)	24.3
	Throttle spring A	0.8 (0.03)	8.6 (0.34)	21.6 (0.85)	6.9
	Throttle adjust spring A (Throttle pressure B)	0.8 (0.03)	6.2 (0.24)	30.0 (1.18)	8
	Throttle spring B	1.4 (0.06)	8.5 (0.33)	41.4 (1.63)	8.4
	1–2 shift spring	1.0 (0.04)	9.6 (0.38)	41.5 (1.63)	14
	1–2 shift ball spring	0.45 (0.02)	4.5 (0.18)	12.7 (0.50)	11
	2–3 shift spring	0.9 (0.04)	9.6 (0.38)	39.6 (1.56)	12
	Low accumulator spring A	2.8 (0.11)	21.5 (0.85)	56.2 (2.21)	8.9
	Low accumulator spring B	2.3 (0.09)	9.8 (0.39)	42 (1.65)	9.2
	4th accumulator spring	3.2 (0.13)	18.6 (0.73)	78 (3.07)	10.8
	2nd accumulator spring	2.7 (0.11)	16.5 (0.65)	87.7 (3.45)	17.5
	3rd accumulator spring	2.8 (0.11)	16.0 (0.63)	78.3 (3.08)	16

O: Fuel-Injected Engine ●: Carbureted Engine Unit: mm (in.)

9. Automatic Transmission

	MEASUREMENT	STANDARD (NEW)			
		Wire Diameter	Outer Diameter	Free Length	Number of Coils
Spring (cont'd)	L/C shift spring	0.9 (0.04)	7.6 (0.30)	73.7 (2.90)	32
	L/C timing spring	0.8 (0.03)	6.6 (0.26)	61.7 (2.43)	40
	O L/C control spring A	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	O L/C control spring B	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	L/C control spring C	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	● L/C control spring D	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	● L/C control spring E	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	Clutch pressure control valve spring A (Modulator pressure)	1.4 (0.06)	9.4 (0.37)	32.4 (1.26)	10.5
	Clutch pressure control valve spring B (Modulator pressure)	1.4 (0.06)	9.4 (0.37)	32.4 (1.26)	10.5
	Clutch pressure control valve spring A (CPC Pressure)	1.4 (0.06)	9.4 (0.37)	38.5 (1.52)	12.6
	Clutch pressure control valve spring B (CPC pressure)	1.4 (0.06)	9.4 (0.37)	38.5 (1.52)	12.6
	3rd kick down spring	0.8 (0.03)	6.6 (0.26)	51.9 (2.04)	35.7
	Servo return spring	2.6 (0.10)	28.8 (1.13)	40.3 (1.59)	3.3

9. Differential

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Ring gear	Backlash	0.087—0.146 (0.0034—0.0057)	0.2 (0.0079)
Differential carrier	Pinion shaft bore diameter	18.000—18.018 (0.7087—0.7094)	18.1 (0.71)
	Carrier-to-pinion shaft clearance	0.017—0.047 (0.0007—0.0019)	0.1 (0.004)
	Driveshaft bore diameter	28.005—28.025 (1.1025—1.1033)	—
	Carrier-to-driveshaft clearance	0.025—0.066 (0.0010—0.0026)	0.12 (0.005)
Differential pinion gear	Backlash	0.05—0.15 (0.002—0.006)	Adjust with a washer.
	Pinion gear bore diameter	18.042—18.066 (0.7103—0.7113)	—
	Pinion gear-to-pinion shaft clearance	0.059—0.095 (0.0023—0.0037)	0.15 (0.006)
Differential taper *roller bearing*	Preload	2.8—4.0 N·m (28—40 kg-cm, 24—35 lb-in) at new bearing 2.5—3.7 N·m (25—37 kg-cm, 22—32 lb-in) at old bearing	Adjust with a shim.

10. Driveshafts

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Driveshaft	Right boot As installed	496 (19.5)	—
	Left boot As installed	496 (19.5)	—

11. Power Steering

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Steering wheel	Play	10 (0.39) Max.	—
	Pinion starting torque N·m (kg-m, ft-lb)	1.2 (0.12, 0.86)	
Power steering	Angle of rack-guide-screw loosened from locked position	25° ± 5° (2WS), 35° ± 5° (4WS)	
	Pump pressure with valve closed (Oil temp./ speed: 40°C (104°F) min/idle. Do not run for more than 5 seconds) kPa (kg/cm², psi)	7845—8826 (80—90, 1138—1280)	
	Fluid capacity Reservoir	0.5 ℓ (0.53 U.S. qt., 0.44 Imp. qt.)	
	At change	approx 1.7 ℓ (1.8 U.S. qt., 1.5 Imp. qt.)	
Power steering belt	Deflection midway between pulleys/load	11—13 (0.43—0.51)/98N (10 kg/22 lb) for used belt 9—11 (0.35—0.43)/98N (10 kg/22 lb) after replacement of belt	
Tie-rod end	Moving effort (maximum load measured at the pin hole at the tip of tie-rod end) Front	14.6 lbs, (6.6 kg)	
	Rear	14.6 lbs, (6.6 kg)	

Standards and Service Limits (cont'd)

12. Suspension

□: Rear wheel with 4WS

MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Wheel alignment		Front / Rear	
Camber		0°00' ± 1° / −0°20' ± 1° (□−0°20' ± 30')	
Caster		2°20' ± 30'	
Toe-in		0 ± 2 / 2 ± 2	
		(0 ± 0.08) / (0.08 ± 0.08)	
Side slip		0 ± 2 / IN 2 ± 2	
		(0 ± 0.08) / (IN 0.08 ± 0.08)	
Turning angle (MAX.)	Inward wheel	37°20' ± 2° (□5°00' ± 1°)	
	Outward wheel	30°15' ± 2° (□5°20' ± 1°)	
△ Rear wheel turning angle (when steering wheel angle is at 127°)		□1°30' ± 30'	
Ball joint	Moving effort (Maximum load measured at the pin rock at the tip of tie-rod end) Front/Upper	10.4 lbs. (4.7 kg)	
	Front/Lower	7.9 lbs. (3.6 kg)	
	Rear/Upper	7.7 lbs. (3.5 kg)	
	Rear/Lower	13.9 lbs. (6.3 kg)	
Wheel	Rim runout Steel	0−1.0 (0−0.039)	——
	Aluminum	0−0.3 (0−0.012)	——
	Pitch-circle diameter	100 (3.94)	
	Offset	45 (1.77)	
Wheel bearing	End play Front	0	0.05
	Rear	0	0.05

△: Maximum steering angle at which front and rear wheel in place.

13. Brake

○: Fuel-Injected Engine ●: Carbureted Engine

MEASUREMENT			STANDARD (NEW)	SERVICE LIMIT
Parking brake lever	Play in stroke 200N (20 kg, 44 lbs)		To be locked when pulled 7−11 notches	
Foot brake pedal	Pedal height	M/T	178 (7.0)	——
		H/M	183 (7.2) from floor	——
	Free play		1−5 (0.04−0.20)	5 (0.20)
Master cylinder	Piston-to-push rod clearance		0−0.4 (0−0.016)	——
Disc brake	Disc thickness	Front	○ 21.0 (0.83)	19.0 (0.75)
			● 19.0 (0.75)	17.0 (0.67)
		Rear	10.0 (0.39)	8.0 (0.31)
	Disc runout	Front/Rear	——	0.10 (0.004)/0.15 (0.006)
	Disc parallelism		——	0.015 (0.0006)
	Pad thickness	Front	○ 11.5 (0.45)	3.0 (0.12)
			● 9.0 (0.35)	3.0 (0.12)
		Rear	8.0 (0.31)	2.0 (0.08)

Brake booster	Characteristics	Vacuum (mm Hg)	Pedal Pressure kg (lbs)	Line Pressure kg/cm² (psi)
		0	20 (44)	○ 11.4 (162) ● 13.1 (186)
		300	20 (44)	○ 47.8 (680) ● 54.9 (781)
		500	20 (44)	○ 72.3 (1,028) ● 83.0 (1,180)

16. Electrical

○: Fuel-Injected Engine ●: Carbureted Engine Unit: mm (in.)

	MEASUREMENT		STANDARD (NEW)		
Ignition	Rated voltage		12 Volts		
	Primary winding resistance		1.2—1.5 ohms		
	Secondary winding resistance		9,040—13,560 ohms		
Ignition wire	Resistance		25,000 ohms max.		
Spark plug	Type		Fuel-injected engine:		
			KX, KQ, KS, KZ	BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND)	*1
				BCPR5EY-N11 (NGK) BCPR5E-11 (NGK) Q16PR-U11 (ND)	*2
				BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND)	*3
			KG, KE, KB, KF, KT, KW, KY	BCPR6E-11 (NGK) Q20PR-UL11 (ND) Q20PR-U11 (ND)	*1
				BCPR5E-11 (NGK) Q16PR-UL11 (ND) Q16PR-U11 (ND)	*2
				BCPR7E-11 (NGK) Q22PR-UL11 (ND) Q22PR-U11 (ND)	*3
			Carbureted engine:		
			KG, KE, KB, KF, KT, KW, KY	BCPR6E-11 (NGK) Q20PR-U11 (ND) Q20PR-UL11 (ND)	*1
				BCPR5E-11 (NGK) Q16PR-U11 (ND) Q16PR-UL11 (ND)	*2
				BCPR7E-11 (NGK) Q22PR-U11 (ND) Q22PR-UL11 (ND)	*3
			KS, KZ	BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND)	*1
				BCPR5EY-N11 (NGK) BCPR5E-11 (NGK) Q16PR-U11 (ND)	*2
				BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND)	*3
			KX	BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND)	*1
				BCPR5E-11 (NGK) Q16PR-U11 (ND)	*2
				BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND)	*3
	*1 For all normal driving *2 For cold climates *3 For hot climates or continuous high speed driving				
	Gap		1.0—1.1 (0.039—0.043)		
Ignition timing	At idling	○ Manual ○ Automatic (in neutral)	15 ± 2° BTDC 15 ± 2° BTDC		
		● Manual	15 ± 2° BTDC (KT, KY) 16 ± 2° BTDC (KB, KE, KF, KG, KW) 20 ± 2° BTDC (KS, KX, KZ)		
		● Automatic (in neutral)	10 ± 2° BTDC (KT, KY) 15 ± 2° BTDC (KS, KX, KZ) 16 ± 2° BTDC (KB, KE, KF, KG, KW)		
Battery	Lighting capacity (20-hour ratio)		65 Ampere hours (European Models) 50 Ampere hours (General Models)		
	Starting capacity (5-second ratio)		9.2 V minimum at 300 Ampere draw (European Models) 8.5 V minimum at 300 Ampere draw (General Models)		
Alternator	Output		13.5 V/70 A		
	Coil resistance (rotor) Slip ring O.D. Brush length Brush spring tension		2.8—3.0 ohms 14.4 (0.57) 10.5 (0.41) 300—360 g (10.6—12.7 oz)		
Starting motor	MEASUREMENT		1.0 kW (KE, KQ, KT, KY) 1.4 kW (Except KE, KQ, KT, KY)		
			STANDARD (NEW)	SERVICE LIMIT	
	Mica depth		0.4—0.5 (0.016—0.020)	0.15 (0.006)	
	Commutator runout		0—0.02 (0.0008)	0.05 (0.002)	
	Commutator O.D.		28.0—28.1 (1.102—1.106)	27.5 (1.08)	
	Brush length		14.3—14.7 (0.56—0.58)	9.3 (0.37)	
	Spring pressure (new)		18.1—23.0 N (1.85—2.35 kg, 4.08—5.18 lb.)	——	