

# Standards and Service Limits

## 5. Engine/Cylinder Head, Valve Train (SOHC Engine)

Unit: mm (in.)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min <sup>-1</sup> (rpm) and wide-open throttle	Normal Minimum Maximum variation	— — —	1.275 kPa (13.0 kg/cm <sup>2</sup> , 185 psi) 932 kPa (9.5 kg/cm <sup>2</sup> , 135 psi) 196 kPa (2 kg/cm <sup>2</sup> , 28 psi)
Cylinder head	Warpage Height		94.95-95.05 (3.7381-3.7421)	0.05 (0.002)
Camshaft	End play		0.05-0.15 (0.002-0.006)	0.5 (0.02)
	Oil clearance		0.050-0.089 (0.002-0.004)	0.15 (0.006)
	Runout		0-0.03 (0-0.001) max.	0.06 (0.002)
	Cam lobe height			—
	1.4ℓ (2-Carb.) } 1.5ℓ (PGM-FI) }	IN EX M/T A/T	36.603 (1.4411) 36.747 (1.4467) 36.750 (1.4468)	— — —
1.6ℓ (PGM-FI)	IN EX	36.782 (1.4481) 36.947 (1.4546)	— —	
Valve	Valve clearance	IN EX	0.17-0.22 (0.007-0.009) 0.22-0.27 (0.009-0.011)	— —
	Valve stem O.D.	IN	5.48-5.49 (0.2157-0.2161)	5.45 (0.2146)
		EX	5.45-5.46 (0.2147-0.2150)	5.42 (0.2134)
	Stem-to-guide clearance	IN	0.02-0.05 (0.001-0.002)	0.08 (0.003)
		EX	0.05-0.08 (0.002-0.003)	0.11 (0.004)
	Stem installed height	IN	46.985-47.455 (1.8498-1.8683)	47.705 (1.8781)
EX		48.965-49.435 (1.9278-1.9562)	49.685 (1.9561)	
Valve seat	Width	IN	0.85-1.15 (0.033-0.045)	1.6 (0.06)
		EX	1.25-1.55 (0.049-0.061)	2.0 (0.08)
Valve spring	Free length 1.4ℓ (2-Carb.)	IN	48.58 (1.9126)	47.64 (1.8756)
		EX	48.49 (1.9091)	47.68 (1.8772)
	Others	IN	48.58 (1.9126)	47.64 (1.8756)
		EX	49.19 (1.9366)	48.32 (1.9024)
Valve guide	I.D.	IN and EX	5.51-5.53 (0.2169-0.2177)	5.55 (0.2185)
Rocker arm	Arm-to-shaft clearance	IN	0.017-0.050 (0.0007-0.0020)	0.08 (0.003)
		EX	0.018-0.054 (0.0007-0.0021)	0.08 (0.003)

### 5. Engine/Cylinder Head, Valve Train (DOHC Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min <sup>-1</sup> (rpm) and wide-open throttle	Nominal Minimum Maximum variation	— — —	1,324 kPa (13.5 kg/cm <sup>2</sup> , 192 psi) 932 kPa (9.5 kg/cm <sup>2</sup> , 135 psi) 196 kPa (2 kg/cm <sup>2</sup> , 28 psi)
Cylinder head	Warpage Height		— 131.95—132.05 (5.1949—5.1988)	0.05 (0.002) —
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—0.03 (0—0.001) max. 33.021 (1.3000) 32.382 (1.2749)	0.5 (0.02) 0.15 (0.006) 0.06 (0.002) — —
Valve	Valve clearance Valve stem O.D. Stem-to-guide clearance Stem installed height	IN EX IN EX IN EX	0.12—0.17 (0.005—0.007) 0.14—0.19 (0.006—0.008) 6.58—6.59 (0.2591—0.2595) 6.55—6.56 (0.2579—0.2583) 0.02—0.05 (0.001—0.002) 0.05—0.08 (0.002—0.003) 45.545—46.015 (1.7931—1.8116) 44.735—45.205 (1.7612—1.7797)	— — 6.55 (0.2579) 6.52 (0.2567) 0.08 (0.003) 0.11 (0.005) 46.265 (1.8215) 45.455 (1.7896)
Valve seat	Width	IN and EX	1.25—1.55 (0.049—0.061)	2.0 (0.08)
Valve spring	Free length	IN EX	47.49 (1.8697) 46.89 (1.8461)	46.46 (1.8291) 45.93 (1.8083)
Valve guide	I.D.	IN and EX	6.61—6.63 (0.2602—0.2610)	6.55 (0.2579)

### 5. Engine/Engine Block

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface Bore diameter Bore taper Reboring limit		— 75.00—75.02 (2.9528—2.9535) — —	0.10 (0.004) 75.07 (2.9555) 0.05 (0.002) 0.5 (0.02)
Piston	Skirt O.D. At 16 mm (0.63 in) from bottom of skirt Clearance in cylinder Piston-to-ring clearance	Top 2nd	74.98—74.99 (2.9520—2.9524) 0.01—0.04 (0.0004—0.0016) 0.03—0.06 (0.0012—0.0024) 0.030—0.055 (0.0012—0.0022)	74.97 (2.9516) 0.05 (0.002) 0.13 (0.005) 0.13 (0.005)
Piston ring	Ring end gap	Top 2nd Oil	0.15—0.30 (0.006—0.012) 0.30—0.45 (0.012—0.018) 0.20—0.80 (0.008—0.031)	0.6 (0.02) 0.6 (0.02) 0.9 (0.04)
Connecting rod	Pin-to-rod interference Large end bore diameter 1.4 ℓ 1.5 ℓ 1.6 ℓ End play installed on crankshaft		0.014—0.040 (0.0006—0.0016) Nominal 43.0 (1.69) Nominal 45.0 (1.77) Nominal 48.0 (1.89) 0.15—0.30 (0.006—0.012)	— — — — 0.40 (0.016)
Crankshaft	Main journal diameter except 1.6 ℓ 1.6 ℓ Taper/out-of-round, main journal Rod journal diameter 1.4 ℓ 1.5 ℓ 1.6 ℓ Taper/out-of-round, rod journal End play Runout		44.976—45.000 (1.7707—1.7718) 54.976—55.000 (2.1644—2.1654) 0.0025 (0.0001) max. 39.976—40.000 (1.5739—1.5748) 41.976—42.000 (1.6526—1.6535) 44.976—45.000 (1.7707—1.7765) 0.0025 (0.0001) max. 0.10—0.35 (0.004—0.014) 0.03 (0.0012) max.	— — 0.010 (0.004) — — — 0.010 (0.004) 0.45 (0.018) 0.06 (0.0024)
Bearings	Main bearing-to-journal oil clearance except 1.6 ℓ (No. 1, 5 journals) (No. 2, 3, 4 journals) 1.6 ℓ (No. 1, 5 journals) (No. 2, 4 journals) (No. 3 journal) Rod bearing-to-journal oil clearance		0.018—0.036 (0.0007—0.0014) 0.024—0.042 (0.0010—0.0017) 0.018—0.036 (0.0007—0.0014) 0.024—0.042 (0.0010—0.0017) 0.030—0.048 (0.0012—0.0019) 0.020—0.038 (0.0008—0.0015)	0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002)

# Standards and Service Limits

Unit: mm (in.)

5. Engine/Engine Lubrication				
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (U S qt, Imp qt) (Includes oil filter 0.5 (0.53, 0.44))	SOHC DOHC	4.0 (4.2, 3.5) for engine disassembly 3.5 (3.7, 3.1) for oil change 4.3 (4.5, 3.8) for engine disassembly 3.8 (4.0, 3.3) for oil change	
Oil pump	Displacement ℓ (US qt, Imp qt) @ min <sup>-1</sup> (rpm)	SOHC DOHC	44 (11.6, 9.7) @ 6,250 62 (16.3, 13.6) @ 6,750	
	Inner-to-outer rotor radial clearance Pump body-to-rotor radial clearance Pump body-to rotor side clearance		0.14 (0.006) 0.100-0.175 (0.004-0.007) 0.03-0.08 (0.001-0.003)	0.2 (0.008) 0.2 (0.008) 0.15 (0.006)
Relief valve	Pressure setting 80°C (176°F) kPa (Kg/cm <sup>2</sup> , psi)	Idle	69 (0.7, 10) min.	
		3,000min <sup>-1</sup> (rpm)	343 (3.5, 50) min.	

5. Engine/Cooling		
	MEASUREMENT	STANDARD (NEW)
Radiator	Capacity (incl. heater) ℓ (US qt, Imp qt) (Includes expansion tank 0.55 (0.58, 0.48)) 1.4 ℓ (2-Carb.), 1.6 ℓ SOHC 1.5 ℓ (PGM-FI), 1.6 ℓ DOHC	M/T 5.4 (5.7, 4.8) M/T 5.5 (5.8, 4.8) A/T 5.3 (5.6, 4.7) A/T 5.4 (5.6, 4.8)
Expansion tank cap	Pressure cap opening pressure kPa (kg/cm <sup>2</sup> , psi)	74-103 (0.75-1.05, 11-15)
Thermostat	Starts to open Full open Valve lift at full open	76-80°C (169-176°F) 90°C (194°F) 8 (0.31) min.
Water pump	Pulley ratio (crankshaft)	1 : 1
	Capacity ℓ (US gal, Imp gal) per min @ min <sup>-1</sup> (rpm) SOHC DOHC	85 (22.4, 18.7) @ 4,000 76 (20.0, 16.7) @ 4,000
Cooling fan	Thermostat "ON" temperature Thermostat "OFF" temperature	91.5-94.5°C (197-202°F) Subtract 3.5 ± 1.5°C (6 ± 2.7°F) from actual "ON" temperature.

6. Fuel and Emission (PGM-FI)		
	MEASUREMENT	STANDARD (NEW)
Fuel pump	Delivery pressure kPa (kg/cm <sup>2</sup> , psi)	250 (2.55, 36)
	Displacement cc/10 seconds	236 min.
	Relief valve opening pressure kPa (kg/cm <sup>2</sup> , psi)	441-588 (4.5-6.0, 64-85)
Pressure regulator	Pressure kPa (kg/cm <sup>2</sup> , psi)	245-255 (2.5-2.6, 36-37)
Fuel Tank	Capacity ℓ (US gal, Imp gal)	55 (14.5, 12.1)
Fast idle	min <sup>-1</sup> (rpm)	M/T 1,000-2,000 A/T 1,000-2,000
Idle speed min <sup>-1</sup> (rpm)	with headlights and cooling fan off	
	1.5 ℓ	800 ± 50
	1.6 ℓ 1.6 ℓ DOHC	780 ± 50 M/T: 800 ± 50 A/T without CATA: 750 ± 50
Idle CO %	With CATA	below 0.1
	Without CATA	0.5 +0.5 -0.3

## 6. Fuel and Emissions (Carbureted Engine)

	MEASUREMENT	STANDARD (NEW)
Fuel pump	Delivery pressure kPa (kg/cm <sup>2</sup> , psi) Displacement cc/minutes	6.8-22.6 (0.07-0.23, 1.0-3.2) 833.3 min.
Fuel Tank	Capacity ℓ (US gal, Imp gal)	55 (14.5, 12.1)
Fast idle		See section 6
Idle speed	With headlights and cooling fan off min <sup>-1</sup> (rpm)	750 ± 50 700 ± 50
Idle CO	%	below 1.0

## 7. Clutch

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	from floor from carpet	208 (8.19) 194 (7.64)
	Stroke		135-145 (5.31-5.71)
	Disengagement height	from floor from carpet	52 (2.01) 25 (0.98)
	Pedal play		15-20 (0.59-0.79)
Clutch release arm	Free play at arm		3.5-4.5 (0.14-0.18)
Flywheel	Clutch surface runout		0.05 (0.002) max. 0.15 (0.006)
Clutch disc	Rivet head depth		1.3 (0.05) min. 0.8 (0.03) max.
	Surface runout		0.1-0.5 (0.004-0.020)
	Radial play in spline at circumference (200φ)		8.4-8.9 (0.331-0.350)
	Thickness		6.2 (0.244)
Clutch release bearing holder	I.D.		31.00-31.15 (1.220-1.226)
	Holder-to-guide sleeve clearance		0.05-0.23 (0.002-0.009)
Clutch cover	Unevenness of diaphragm spring		0.8 (0.03) max. 0.03 (0.0012) max.
	Pressure disc parallelism		1.0 (0.04) 0.15 (0.006)

## 8. Manual Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (US qt, Imp qt)		1.8 (1.9, 1.6) at oil change 1.9 (2.0, 1.7) at assembly
Mainshaft	End play		0.11-0.18 (0.004-0.007)
	Diameter of ball bearing contact area		25.977-25.990 (1.0227-1.0232)
	Diameter of third gear contact area		33.984-34.000 (1.3380-1.3386)
	Diameter of 4th, 5th gear contact area		26.980-26.993 (1.0622-1.0627)
	Diameter of ball bearing contact area		21.987-22.000 (0.8656-0.8661)
Mainshaft third and fourth gears	Runout		0.02 (0.0008) max.
	I.D.		39.009-39.025 (1.5358-1.5364)
	End play	3rd 4th	0.06-0.21 (0.0024-0.008) 0.06-0.19 (0.0024-0.0075)
	Thickness	3rd 4th	30.22-30.27 (1.1898-1.1917) 30.12-30.17 (1.1858-1.1878)
	I.D.		37.009-37.025 (1.4570-1.4577)
Mainshaft fifth gear	End play		0.06-0.19 (0.0024-0.0075)
	Thickness		28.42-28.47 (1.1189-1.1209)
Countershaft	End play		0.17-0.38 (0.0067-0.0150)
	Diameter of needle bearing contact area		30.000-30.015 (1.1811-1.1817)
	Diameter of ball bearing contact area		24.980-24.993 (0.9835-0.9840)
	Diameter of low gear contact area		35.984-36.000 (1.4167-1.4173)
	Runout		0.02 (0.0008) max.
Countershaft low gear	I.D.		41.009-41.025 (1.6145-1.6152)
	End play, after tightening with specified torque		0.03-0.10 (0.0012-0.0039)
	Thickness		29.41-29.44 (1.1579-1.1591)
Countershaft low gear	End play		0.53 (0.021) 29.95 (1.179)
	Diameter of needle bearing contact area		24.93 (0.981)
	Diameter of ball bearing contact area		35.93 (1.415)
	Diameter of low gear contact area		0.05 (0.002)
	Runout		41.07 (1.617) 0.22 (0.009) 29.36 (1.156)

# Standards and Service Limits

Unit: mm (in.)

## 8. Manual Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Countershaft second gear	I.D. End play, after tightening with specified torque Thickness	44.009–44.025 (1.7326–1.7333) 0.03–0.11 (0.0012–0.0043) 29.92–29.97 (1.1780–1.1799)	44.07 (1.735) 0.23 (0.009) 29.85 (1.175)
Spacer collar (Countershaft second gear)	I.D. O.D. Length	32.975–32.985 (1.2932–1.2986) 38.989–39.000 (1.5350–1.5354) 30.03–30.06 (1.1823–1.1835)	33.03 (1.300) 38.93 (1.533) 30.01 (1.181)
Spacer collar (Mainshaft fourth and fifth gears)	I.D. O.D. Length	27.002–27.012 (1.0631–1.0635) 33.989–34.000 (1.3381–1.3386) 31.989–32.000 (1.2594–1.2598) 27.43–27.46 (1.0799–1.0811) 23.53–23.56 (0.9264–0.9276)	27.06 (1.065) 33.93 (1.336) 31.93 (1.257) 27.41 (1.079) 23.51 (0.926)
Reverse idler gear	I.D. Gear-to-reverse gear shaft clearance	15.016–15.043 (0.5911–0.5922) 0.032–0.077 (0.0013–0.0030)	15.08 (0.594) 0.14 (0.006)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)	0.73–1.18 (0.029–0.046)	0.4 (0.016)
Shift fork	Shift fork finger thickness Fork-to-synchro sleeve clearance	6.4–6.5 (0.252–0.255) 0.25–0.45 (0.0098–0.0177)	— 0.8 (0.03)
Reverse shift fork	Shift fork pawl groove width Fork-to-reverse idler gear clearance Groove width Fork-to-fifth/reverse shift piece pin clearance	12.7–13.0 (0.500–0.512) 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 A	Diameter of shift rod contact area Shift arm A-to-shift rod clearance	13.005–13.130 (0.5120–0.5169) 0.005–0.230 (0.0002–0.0091)	— 0.35 (0.0138)
Shift arm B	Diameter of shift arm shaft contact area Shift arm B-to-shift arm shaft clearance Shift arm B-to-shift piece clearance Shift piece diameter of shift fork shaft contact area	13.973–14.000 (0.5501–0.5512) 0.013–0.070 (0.0005–0.0028) 0.2–0.5 (0.0079–0.0197) 12.9–13.0 (0.5079–0.5118)	— 0.16 (0.0063) 0.62 (0.0244) 12.78 (0.5031)
Ring gear	Backlash	0.070–0.130 (0.0028–0.0051)	0.18 (0.007)
Differential carrier	Pinionshaft bore diameter Carrier-to-pinionshaft clearance Driveshaft bore diameter 1.4 ℓ (2-Carb.), 1.5 ℓ (PGM-FI), 1.6 ℓ SOHC, 1.6 ℓ DOHC Carrier-to-driveshaft clearance Carrier-to-intermediate shaft clearance 1.6 ℓ SOHC, 1.6 ℓ DOHC only Side clearance	18.000–18.018 (0.7087–0.7094) 0.017–0.047 (0.0007–0.0019) 26.025–26.045 (1.0246–1.0254) 28.025–28.045 (1.1033–1.1041) 0.045–0.086 (0.0017–0.0034) 0.075–0.111 (0.0030–0.0044) 0.15 max.	— 0.095 (0.004) — — 0.14 (0.006) 0.16 (0.006) —
Differential pinion gear	Backlash Pinion gear bore diameter Pinion gear-to-pinionshaft clearance	0.05–0.15 (0.002–0.006) 18.042–18.066 (0.7103–0.7113) 0.059–0.095 (0.0023–0.0037)	Adjust with a washer — 0.15 (0.006)

## 9. Automatic Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT	
Transmission oil	Capacity ℓ (US qt, Imp qt)	2.4 (2.5, 2.1) at oil change 5.4 (5.7, 4.8) at assembly		
Hydraulic pressure	Line pressure at 2,000 min <sup>-1</sup> (rpm)	785-834 kPa (8.0-8.5 kg/cm <sup>2</sup> , 114-121 psi)	736 kPa (7.5 kg/cm <sup>2</sup> , 107 psi)	
	2nd, 3rd, 4th clutch pressure at 2,000 min <sup>-1</sup> (rpm) in <span style="border: 1px solid black; padding: 0 2px;">D</span> and <span style="border: 1px solid black; padding: 0 2px;">D</span>	412 kPa (4.2 kg/cm <sup>2</sup> , 60 psi) Throttle control lever full closed	363 kPa (3.7 kg/cm <sup>2</sup> , 53 psi) (closed)	
		785-834 kPa (8.0-8.5 kg/cm <sup>2</sup> , 114-121 psi) Throttle control lever open 2/8 or more	736 kPa (7.5 kg/cm <sup>2</sup> , 107 psi) (2/8 open)	
	2nd clutch pressure at 2,000 min <sup>-1</sup> (rpm) in <span style="border: 1px solid black; padding: 0 2px;">Z</span>	785-834 kPa (8.0-8.5 kg/cm <sup>2</sup> , 114-121 psi)	736 kPa (7.5 kg/cm <sup>2</sup> , 107 psi)	
	1st clutch pressure at 2,000 min <sup>-1</sup> (rpm)			
	Governor pressure at 60 km/h (37.5 mph)	1.4 ℓ (2-Carb.)	151-161 kPa (1.54-1.64 kg/cm <sup>2</sup> , 22-23 psi)	146 kPa (1.49 kg/cm <sup>2</sup> , 21 psi)
		1.6 ℓ (2-Carb.)	148-158 kPa (1.51-1.61 kg/cm <sup>2</sup> , 21-23 psi)	143 kPa (1.46 kg/cm <sup>2</sup> , 21 psi)
1.5 ℓ (PGM-FI), 1.6 ℓ (PGM-FI)		161-171 kPa (1.64-1.75 kg/cm <sup>2</sup> , 23-25 psi)	156 kPa (1.59 kg/cm <sup>2</sup> , 23 psi)	
1.6 ℓ DOHC		165-176 kPa (1.68-1.78 kg/cm <sup>2</sup> , 24-25 psi)	160 kPa (1.63 kg/cm <sup>2</sup> , 23 psi)	
Throttle pressure B	Full closed	0	—	
	Full open	785-834 kPa (8.0-8.5 kg/cm <sup>2</sup> , 114-121 psi)	736 kPa (7.5 kg/cm <sup>2</sup> , 107 psi)	
Throttle pressure A	Full closed	0-4.9 kPa (0-0.05 kg/cm <sup>2</sup> , 0-0.7 psi)	—	
	Full open	1.4 ℓ (2-Carb.)	505-520 kPa (5.15-5.30 kg/cm <sup>2</sup> , 73-75 psi)	500 kPa (5.1 kg/cm <sup>2</sup> , 73 psi)
		1.5 ℓ (PGM-FI)	456-471 kPa (4.65-4.80 kg/cm <sup>2</sup> , 66-68 psi)	451 kPa (4.6 kg/cm <sup>2</sup> , 65 psi)
		1.6 ℓ SOHC 1.6 ℓ DOHC	477-490 kPa (4.85-5.00 kg/cm <sup>2</sup> , 69-71 psi)	471 kPa (4.8 kg/cm <sup>2</sup> , 68 psi)
Stall speed	min <sup>-1</sup> (rpm)	2,300-2,900	—	
Clutch	Clutch initial clearance	1 st	0.65-0.85 (0.026-0.033)	<div style="text-align: center;"> <span style="border-top: 1px solid black; width: 20px; margin: 0 auto;"></span>  <span style="border-top: 1px solid black; width: 20px; margin: 0 auto;"></span>  <span style="border-top: 1px solid black; width: 20px; margin: 0 auto;"></span>                      29.0 (1.14)                      28.5 (1.12)                      Until grooves worn out                      Discoloration  <span style="font-size: 2em;">↑</span>  <span style="font-size: 2em;">↓</span>                      Discoloration                 </div>
		2 nd	0.65-0.85 (0.026-0.033)	
		3 rd, 4 th	0.40-0.60 (0.016-0.024)	
	Clutch return spring free length	1 st	31.0 (1.22)	
		except 1 st	30.5 (1.20)	
	Clutch disc thickness		1.88-2.0 (0.074-0.079)	
	Clutch plate thickness	1 st	1.55-1.65 (0.061-0.065)	
	Clutch plate thickness	except 1 st	1.95-2.05 (0.077-0.081)	
	Clutch end plate thickness	1.4 ℓ (2-Carb.)		
		Mark 1	2.05-2.15 (0.081-0.085)	
		Mark 2	2.20-2.30 (0.087-0.091)	
		Mark 3	2.35-2.45 (0.093-0.096)	
		Mark 4	2.50-2.60 (0.098-0.102)	
		Mark 5	2.65-2.75 (0.104-0.108)	
		Mark 11	2.80-2.90 (0.110-0.114)	
		Mark 12	2.95-3.05 (0.116-0.120)	
Mark 13		3.10-3.20 (0.122-0.126)		
Mark 14		3.25-3.35 (0.128-0.132)		
Mark 15	3.40-3.50 (0.134-0.138)			
Mark 16	3.55-3.65 (0.140-0.144)			

(cont'd)

# Standards and Service Limits

Unit: mm (in)

## 9. Automatic Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Clutch end plate thickness except 1.4 ℓ (2-Carb.) Mark 1 Mark 2 Mark 3 Mark 4 Mark 5 Mark 6 Mark 7 Mark 8 Mark 9 Mark 10 Mark 11 Mark 12 Mark 13	2.3-2.4 (0.091-0.094) 2.4-2.5 (0.094-0.098) 2.5-2.6 (0.098-0.102) 2.6-2.7 (0.102-0.106) 2.7-2.8 (0.106-0.110) 2.8-2.9 (0.110-0.114) 2.9-3.0 (0.114-0.118) 3.0-3.1 (0.118-0.122) 3.1-3.2 (0.122-0.126) 3.2-3.3 (0.126-0.130) 2.0-2.1 (0.079-0.083) 2.1-2.2 (0.083-0.087) 2.2-2.3 (0.087-0.091)	Discoloration ↑ ↓ Discoloration
Transmission	Diameter of needle bearing contact area on main and stator shaft Diameter of needle bearing contact area on mainshaft 2nd gear Diameter of needle bearing contact area on mainshaft 4th gear collar Diameter of needle bearing contact area on mainshaft 1st gear collar Diameter of needle bearing contact area on countershaft (L side) Diameter of needle bearing contact area on countershaft 3rd gear Diameter of needle bearing contact area on countershaft 4th gear Diameter of needle bearing contact area on countershaft reverse gear collar Diameter of needle bearing contact area on countershaft 1st gear collar Diameter of needle bearing contact area on reverse idler gear Mainshaft 2nd gear I.D. Mainshaft 1st gear I.D. Mainshaft 4th gear I.D. Countershaft 4th gear I.D. Countershaft 3rd gear I.D. Countershaft 1st gear I.D. Countershaft reverse gear I.D. Reverse idler gear I.D. Stator shaft (R side) ID of needle bearing contact area Stator shaft (Stator side) ID of needle bearing contact area Reverse idler shaft holder I.D.	19.980-19.993 (0.7866-0.7871) 35.975-35.991 (1.4163-1.4169) 31.975-31.991 (1.2589-1.2595) 27.975-27.995 (1.1014-1.1022) 36.004-36.017 (1.4175-1.4180) 31.975-31.991 (1.2589-1.2595) 27.980-27.993 (1.1016-1.1021) 29.980-29.993 (1.1803-1.1808) 29.980-29.993 (1.1803-1.1808) 13.990-14.000 (0.5508-0.5512) 41.000-41.016 (1.6142-1.6148) 33.000-33.016 (1.2992-1.2998) 38.000-38.016 (1.4961-1.4967) 33.000-33.016 (1.2992-1.2998) 38.000-38.016 (1.4961-1.4967) 35.000-35.016 (1.3780-1.3786) 36.000-36.016 (1.4173-1.4179) 18.007-18.020 (0.7089-0.7094) 26.000-26.013 (1.0236-1.0241) 24.000-24.021 (0.9449-0.9457) 14.416-14.434 (0.5676-0.5683)	Wear or damage ↑ ↓ Wear or damage

## 9. Automatic Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	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 4th gear end play	0.07-0.15 (0.0028-0.0059)	---
	Countershaft 3rd gear end play	0.07-0.15 (0.0028-0.0059)	---
	Countershaft 1st gear end play	0.10-0.45 (0.0039-0.0177)	---
	Reverse idler gear end play	0.05-0.18 (0.0020-0.0071)	---
	Countershaft reverse gear end play	0.10-0.45 (0.0039-0.0177)	---
	Selector hub O.D.	51.87-51.90 (2.0421-2.0433)	Wear or damage
	Thrust washer thickness		Wear or damage
	Mainshaft 2nd gear A	3.47-3.50 (0.1366-0.1378)	Wear or damage
	B	3.52-3.55 (0.1386-0.1398)	
	C	3.57-3.60 (0.1406-0.1417)	
	D	3.62-3.65 (0.1425-0.1437)	
	E	3.67-3.70 (0.1445-0.1457)	
	F	3.72-3.75 (0.1465-0.1476)	
	G	3.77-3.80 (0.1484-0.1496)	
	H	3.82-3.85 (0.1504-0.1516)	
	I	3.87-3.90 (0.1524-0.1535)	
	Mainshaft L side bearing	2.95-3.05 (0.1161-0.1201)	
	Mainshaft 4th gear	4.45-4.55 (0.1752-0.1791)	Wear or damage
	Mainshaft R side 1st gear	2.43-2.50 (0.0957-0.0984)	
	Mainshaft L side 1st gear	1.45-1.50 (0.0571-0.0591)	
	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)	Wear or damage
	I	3.37-3.40 (0.1327-0.1339)	
	Countershaft distance collar length	38.97-39.00 (1.5342-1.5354)	
		39.02-39.05 (1.5362-1.5374)	
		39.07-39.10 (1.5382-1.5394)	
		39.12-39.15 (1.5402-1.5413)	
		39.17-39.20 (1.5421-1.5433)	
		39.22-39.25 (1.5441-1.5453)	
		39.27-39.30 (1.5461-1.5472)	
		40.00-40.05 (1.5748-1.5768)	
	Mainshaft 4th gear collar length	25.00-25.15 (0.9843-0.9902)	Wear or damage
	Mainshaft 1st gear collar length	2.5-2.6 (0.098-0.102)	
	Mainshaft 1st gear collar flange thickness	14.50-14.55 (0.5709-0.5728)	Wear or damage
	Countershaft reverse gear collar length	2.45-2.55 (0.0965-0.1004)	Wear or damage
	Countershaft reverse gear collar flange thickness	14.50-14.55 (0.5709-0.5728)	Wear or damage
Countershaft 1st gear collar length	2.45-2.55 (0.0965-0.1004)	Wear or damage	
Countershaft 1st gear collar flange thickness	2.45-2.55 (0.0965-0.1004)	Wear or damage	
Diameter of countershaft one-way clutch contact area	74.414-74.440 (2.9297-2.9307)	Wear or damage	
Diameter of parking gear one-way clutch contact area	57.755-57.768 (2.2738-2.2743)	Wear or damage	
Mainshaft feed pipe A O.D. (at 15 mm from end)	8.97-8.98 (0.353-0.354)	8.95 (0.3524)	
Mainshaft feed pipe B O.D. (at 12 mm from end)	5.97-5.98 (0.2350-0.2354)	5.95 (0.2343)	
Countershaft feed pipe O.D. (at 20 mm from end)	7.97-7.98 (0.3138-0.3142)	7.95 (0.3130)	
Mainshaft sealing ring 32 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	2.025-2.060 (0.0797-0.0811)	2.080 (0.0819)	
Statorshaft distance collar 20 mm I.D.	26.000-26.013 (1.0236-1.0241)	26.030 (1.0248)	
Regulator valve body	Sealing ring contact area diameter	32.000-32.025 (1.2598-1.2608)	32.050 (1.2618)
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 Throttle cam stopper	18.5-18.6 (0.728-0.732)	Wear or other defect
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: 0.240-0.266	---
		(0.0094-0.0105)	---
		Driven: 0.063-0.088	---
	(0.0025-0.0035)	---	
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	

(cont'd)



### 9. Automatic Transmission (cont'd)

MEASUREMENT		STANDARD (NEW)			
		Wire Diameter	O. D.	Free Length	No. of Coils
Springs	Shift timing valve spring	0.9 (0.04)	8.6 (0.34)	42.9 (1.69)	21.4
	Kick down valve spring	0.9 (0.04)	10.1 (0.40)	40.8 (1.61)	14.5
	Reverse control spring	0.7 (0.03)	7.6 (0.30)	37.2 (1.46)	15.3
	L/C cut spring	0.7 (0.03)	7.6 (0.30)	29 (1.14)	18
	3-2 timing valve spring	1.2 (0.05)	7.7 (0.30)	45.1 (1.78)	19.8
	Low oneway ball spring	0.29 (0.01)	4.0 (0.16)	14 (0.55)	13
	4th exhaust spring	0.9 (0.04)	6.1 (0.24)	43.7 (1.72)	20.3
	Servo control valve spring	1.0 (0.04)	7.6 (0.30)	44 (1.73)	18.2
	Reverse timing spring	0.7 (0.03)	5.6 (0.22)	43.8 (1.72)	21.7
			STANDARD (NEW)		SERVICE LIMIT
Ring gear	Backlash	0.086-0.143 (0.0034-0.0056)		0.25 (0.01)	
Differential carrier	Pinionshaft bore diameter	18.000-18.018 (0.7087-0.7094)		—	
	Carrier-to-pinionshaft clearance	0.017-0.047 (0.0007-0.0019)		0.095 (0.004)	
	Driveshaft bore diameter	—		—	
	1.4 ℓ, 1.5 ℓ	26.025-26.045 (1.0246-1.0254)		—	
	1.6 ℓ SOHC, 1.6 ℓ DOHC	28.025-26.045 (1.1033-1.1041)		—	
Carrier-to-driveshaft clearance	0.045-0.111 (0.0030-0.0044)		0.14 (0.006)		
Carrier-to-intermediate shaft clearance	—		—		
1.6 ℓ SOHC, 1.6 ℓ DOHC only	0.075-0.111 (0.0030-0.0044)		0.16 (0.006)		
Side clearance	0.15 max.		—		
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 pinionshaft clearance	0.059-0.095 (0.0023-0.0037)		0.15 (0.006)	

### 11. Steering

MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Steering wheel	Play	10 (0.39) max.	—
	Starting torque of power steering wheel N (kg, lb)	27-30 (2.7-3.0, 6.0-6.6)	—
Gear box	Pinion starting torque N·m (kg-m, lb-ft) with P/S	0.49-1.67 (0.05-0.17, 0.36-1.27) 0.98 (0.1, 0.72) max.	—
Pump	Pump pressure with valve closed (Oil temp./speed: 40°C (104°F) min/idle. Do not run for more than 5 seconds) kPa (kg/cm <sup>2</sup> , psi)	6,566-7,154 (67-73, 952-1,038)	
Power steering fluid	Fluid capacity ℓ (US qt, Imp qt)	Reservoir:.....0.4 (0.42, 0.35) At change .....approx. 1.2 (1.3, 1.1)	
Power steering belt	Deflection between pulleys with 98N (10kg, 22lb) force Belt tension between pulleys N (kg, lb) (measured with belt tension gauge)	9-12 (0.35-0.47) for used belt 7-10 (0.28-0.39) for new belt 343-490 (35-50, 77-110) for used belt 441-686 (45-70, 99-154) for new belt	

# Standards and Service Limits

## 12. Suspension

		MEASUREMENT		STANDARD (NEW)	
Wheel alignment	Total toe	( ° )	Front OUT 0°04'±8'	Rear IN 0°13.5'±8'	
	Camber		OUT 0.7±1.4 (0.028±0.055)	IN 2.3±1.4 (0.091±0.055)	
	Side slip		-0°20'±30'	-0°26'±30'	
	Turning angle (max.)		0±3 (0±0.12)		
	Inward wheel		41°30'±2'		
	Outward wheel		33°30'±2'		
				STANDARD (NEW)	SERVICE LIMIT
Wheel	Rim runout	Steel Aluminum	0-1.0 (0-0.039) 0-0.7 (0-0.028)	2.0 (0.08) 1.5 (0.06)	
Wheel bearing	End play	Front Rear	0 0	0.05 0.05	

## 13. Brake

		MEASUREMENT		STANDARD (NEW)		SERVICE LIMIT	
Parking brake lever	Play in stroke	200N (20 kg, 44 lbs)		To be locked when pulled 6-10 notches			
Foot brake pedal	Pedal height			161 (6.3) 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 (0.827)	19.0 (0.748)			
		Rear	10.0 (0.394)	8.0 (0.315)			
	Disc runout	Front	—	0.10 (0.004)			
		Rear	—	0.15 (0.006)			
Disc parallelism			0.015 (0.0006)				
Pad thickness	Front	11.0 (0.433)	1.6 (0.063)				
	Rear	8.0 (0.315)	1.6 (0.063)				
Brake Drum	I.D.	203 (7.99)		204 (8.03)			
	Lining thickness	5.0 (0.20)		2.0 (0.08)			
Brake booster	Characteristics	Vacuum (mm Hg)	Pedal Pressure kg (lbs)		Line Pressure kg/cm <sup>2</sup> (psi)		
					without ALB	with ALB	
		0	20 (44)	13.0 (184) min.	10.0 (142) min.		
300	20 (44)	50.0 (711) min.	56.6 (805) min.				
500	20 (44)	74.0 (1,052) min.	87.7 (1,247) min.				

## 15. Air Conditioner

		MEASUREMENT		STANDARD (NEW)		
Compressor			MATSUSHITA			
			3,850 kcal/h			
	Cooling capacity		0.9 ± 0.05 kg (1.98 ± 0.11 lb.)			
	Refrigerant quantity		130 cc			
	Lubricant capacity		3.33 ± 0.17 ohm at 20 °C (68 °F)			
Clutch resistance		0.4-0.6				
Clutch clearance						
Compressor belt	Deflection between pulleys with 98N (10kg, 22lb) force	9-11 (0.35-0.43) for used belt 7-9 (0.28-0.35) for new belt				
	Belt tension between pulleys N (kg, lb) (measured with belt tension gauge)	343-441 (35-45, 77-99) for used belt 441-686 (45-70, 99-154) for new belt				

# 16. Electrical

MEASUREMENT		STANDARD (NEW)				
Ignition coil	Rated voltage	12 Volts				
	Primary winding resistance	PGM-FI: 0.3—0.5 ohms		2-Carb: 0.6—0.7 ohms		
	Secondary winding resistance	PGM-FI: 9,440—14,160 ohms		2-Carb: 14,400—21,600 ohms		
Ignition wire	Resistance	25,000 ohms max.				
Spark plug	Type	Engine type	Standard		Optional	
		NGK	1.4 ℓ <sup>*1</sup> , 1.5 ℓ 1.6 ℓ SOHC 1.6 ℓ DOHC <sup>*1</sup>	BCPR6E-11		BCPR7E-11, BCPR6EY-N11 BCPR7EY-N11
	1.4 ℓ <sup>*2</sup>		BCPR6E-11		BCPR7E-11	
	1.6 ℓ DOHC <sup>*2</sup>		BCPR6E-11		BCPR7E-11	
	ND	1.4 ℓ <sup>*1</sup> , 1.5 ℓ 1.6 ℓ SOHC 1.6 ℓ DOHC <sup>*1</sup>	Q20PR-U11		Q22PR-U11	
		1.4 ℓ <sup>*2</sup>	Q20PR-U11		Q22PR-U11	
		1.6 ℓ DOHC <sup>*2</sup>	Q20PR-UL11		Q20PR-U11, Q22PR-U11 Q22PR-UL11	
* 1: with CATA * 2: without CATA						
Gap		1.0—1.1 (0.039—0.043)				
Ignition timing	At idling	PGM-FI engine	SOHC: 18° ± 2° (Red) BTDC			
		Carbureted engine	DOHC: 16° ± 2° (Red) BTDC			
Battery	Lighting capacity (20-hour rate)	47 ampere hours				
	Starting capacity (Voltage after 5 sec.)	8.6 V min. at 300 ampere draw /-15°C				
Alternator			NIPPONDENSO		MITSUBISHI	
	Output		13.5V/60A			
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT
	Coil resistance (rotor)		2.8—3.0 ohm	±0.1 ohm	3.4—3.8 ohm	±0.2 ohm
	Slip ring O.D.		32.5 (1.28)	32.1 (1.26)	22.7 (0.89)	22.2 (0.87)
	Brush length		13.5 (0.53)	4.5 (0.18)	22 (0.87)	8 (0.31)
	Brush Spring tension		300—500 g (10.6—17.6 oz)	—	300—450 g (10.6—15.9 oz)	—
Alternator belt	Deflection between pulleys with 98N (10kg, 22lb) force Belt tension between pulleys N (kg, lb) (measured with belt tension gauge)	9—11 (0.35—0.43) for used belt 7—9 (0.28—0.35) for new belt 294—392 (30—40, 66—88) with used belt 392—588 (40—60, 88—132) with new belt				
Starting motor			NIPPONDENSO 1.0 kw		MITSUBA 1.0 kw, 1.4 kw	
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT
	Mica depth		0.5—0.8 (0.020—0.031)	0.2 (0.008)	0.4—0.5 (0.016—0.020)	0.15 (0.006)
	Commutator		0—0.02 (0.008)	0.05 (0.002)	0—0.02 (0.0008)	0.05 (0.002)
	Commutator O.D.		29.9—30.0 (1.18)	29.0 (1.14)	28.0—28.1 (1.10—1.11)	27.5 (1.08)
	Brush length		12.5—13.5 (0.49—0.53)	8.5 (0.33)	14.3—14.7 (0.56—0.58)	9.3 (0.37)
	Spring pressure (new)		18.1—23.5 N (1.85—2.4 kg, 4.1—5.3 lb)	—	20.1—26.5 N (2.05—2.7 kg, 4.5—6.0 lb)	—