

**Manual Transmission — Section 13**

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (US qt, Imp qt)	2.6 (2.7, 2.3) for overhaul including oil cooler 2.5 (2.6, 2.2) for oil change including oil cooler 2.3 (2.4, 2.0) for oil change excluding oil cooler	
Mainshaft	End play Diameter of bearing contact area Clutch housing side Transmission housing side Transmission cover side 3rd gear (needle bearing) Runout	0.183–0.375 (0.007–0.015) 27.977–27.990 (1.101–1.102) 30.987–31.000 (1.2200–1.2205) 27.987–28.000 (1.1018–1.1024) 37.989–38.000 (1.4956–1.4961) 0.02 (0.0008) max.	0.525 (0.021) 27.93 (1.100) 30.94 (1.218) 27.937 (1.100) 37.935 (1.494) 0.05 (0.002)
Countershaft	End play Diameter of bearing contact area Clutch housing side Transmission housing side Transmission cover side Runout	0.173–0.340 (0.007–0.013) 33.000–33.015 (1.299–1.300) 31.975–31.988 (1.2589–1.2594) 27.987–28.000 (1.1018–1.1024) 0.02 (0.0008) max.	0.490 (0.019) 32.95 (1.297) 31.928 (1.257) 27.937 (1.100) 0.05 (0.002)
Reverse idle shaft	Diameter bearing contact area	19.989–20.000 (0.7870–0.7874)	19.93 (0.785)
Reverse drive gear	I.D. Thickness	25.007–25.020 (0.9845–0.9850) 26.45–26.50 (1.041–1.043)	25.078 (0.987) 26.38 (1.039)
Mainshaft 3rd gear	I.D. Thickness End play (when tightened by specified torque)	44.009–44.025 (1.7326–1.7333) 31.39–31.47 (1.236–1.239) 0.06–0.19 (0.002–0.007)	44.080 (1.735) 31.32 (1.233) 0.3 (0.012)
Mainshaft 4th gear	I.D. Thickness End play (when tightening by specified torque)	44.009–44.025 (1.7326–1.7333) 29.39–29.47 (1.157–1.160) 0.06–0.19 (0.002–0.007)	44.080 (1.735) 29.32 (1.154) 0.3 (0.012)
Mainshaft 5th gear	I.D. Thickness End play (when tightening by specified torque)	44.009–44.025 (1.7326–1.7333) 29.39–29.47 (1.157–1.160) 0.06–0.19 (0.002–0.007)	44.080 (1.735) 29.32 (1.154) 0.3 (0.012)
Distance collar	I.D. Diameter of needle bearing contact area Thickness of needle bearing contact area	31.002–31.012 (1.2205–1.2209) 37.989–38.000 (1.4956–1.4961) 29.56–29.61 (1.164–1.166)	31.060 (1.223) 37.940 (1.494) 29.54 (1.163)
Countershaft 1st gear	I.D. Thickness End play (when tightening by specified torque)	53.010–53.029 (2.087–2.088) 35.92–36.001 (1.414–1.417) 0.04–0.10 (0.02–0.04)	53.081 (2.090) 35.85 (1.411) Adjust with a shim
Countershaft 2nd gear	I.D. Thickness End play (when tightening by specified torque)	53.010–53.029 (2.087–2.088) 35.92–36.00 (1.414–1.417) 0.04–0.10 (0.02–0.04)	53.081 (2.090) 35.85 (1.411) Adjust with a shim

# Standards and Service Limits

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	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Distance collar (countershaft 2nd gear)	I.D.	37.950–37.960 (1.4941–1.4945)	38.008 (1.496)
	O.D.	46.989–47.000 (1.8500–1.8504)	46.940 (1.848)
	Thickness	A	Adjust with a collar
		B	
Countershaft reverse gear	O.D. Thickness	46.989–47.000 (1.8500–1.8504) 50.45–50.55 (1.986–1.990)	46.94 (1.848) 50.38 (1.983)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)	0.85–1.10 (0.033–0.043)	0.4 (0.016)
Double cone synchro ring	Clearance (ring pushed against gear)		
	Outer synchro ring-to-gear	0.95–1.68 (0.037–0.066)	0.6 (0.024)
	Inner synchro ring-to-gear	0.5–1.0 (0.02–0.04)	0.3 (0.01)
	Outer synchro ring-to-synchro cone	0.5–1.0 (0.02–0.04)	0.3 (0.01)
Shift fork 1st/2nd 3rd/4th and 5th	Finger thickness	7.4–7.6 (0.291–0.299)	—
	finger-to-synchro sleeve clearance	0.35–0.65 (0.014–0.026)	1.00 (0.039)
Reverse shift fork	Finger thickness	6.4–6.6 (0.252–0.260)	—
	Finger-to-synchro sleeve clearance	0.35–0.65 (0.014–0.026)	1.00 (0.039)
	Groove width	13.2–13.3 (0.520–0.524)	—
	Fork-to-reverse shift arm clearance	0.2–0.5 (0.008–0.020)	0.8 (0.031)
Shift fork shaft	Shaft-to-shift piece clearance	0.25–0.55 (0.010–0.022)	0.85 (0.033)
	Groove width of the shift piece contact point	12.2–1.24 (0.480–0.488)	—
Shift arm	Diameter (at the contact point with the change piece)	7.9–8.0 (0.311–0.315)	—
	Arm-to-change piece clearance	0.1–0.3 (0.004–0.012)	0.55 (0.022)
	Diameter (at the contact point with the shift piece)	7.9–8.0 (0.311–0.315)	—
	Arm-to-shift piece clearance	0.1–0.3 (0.004–0.012)	0.55 (0.022)
Change piece	Groove width of the shift arm contact point	8.1–8.2 (0.319–0.323)	—
Shift piece	Groove width of the shift arm contact point	8.1–8.2 (0.319–0.323)	—
	Diameter (at the contact point with the shift fork shaft)	11.85–11.95 (0.467–0.470)	—
Reverse shift arm	Diameter (at the contact point with the reverse shift fork)	12.8–13.0 (0.504–0.512)	—
	Diameter (at the contact point with the 5th shift fork shaft)	12.8–13.0 (0.503–0.512)	—
Secondary gear	Backlash	0.061–0.721 (0.002–0.005)	—
	Preload N·m (kg·cm, lb·in)	1.4–2.6 (14–26, 12.2–22.5)	Adjust with a shim
	Diameter of bearing contact area		
	Clutch housing side	55.002–55.021 (2.165–2.166)	—
	Transmission housing side	45.002–45.018 (1.7717–1.7724)	—
	Diameter of oil seal contact area		
Extension shaft	Clutch housing side	54.894–54.940 (2.161–2.163)	—
	Transmission housing side	44.911–44.950 (1.768–1.770)	—
Oil pump	Diameter of oil seal contact area	37.438–37.500 (1.474–1.476)	—
	Clutch housing-to-rotor axially clearance	0.03–0.13 (0.001–0.005)	0.18 (0.007)
	Inner-to-outer rotor clearance	0.14 (0.006)	0.2 (0.008)
	Clutch housing-to-outer rotor clearance	0.10–0.20 (0.004–0.008)	0.22 (0.009)