

Standards and Service Limits

Manual Transmission — Section 13

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT	
Transmission oil	Capacity ℓ (US qt, Imp qt)	2.8 (3.0, 2.5) for overhaul 2.7 (2.9, 2.4) for oil change		
Mainshaft	Diameter of ball bearing contact area (transmission housing side)	30.984-31.000 (1.220-1.221)	30.93 (1.2177)	
	Diameter of needle bearing contact area	42.984-43.000 (1.692-1.693)	42.93 (1.690)	
	Diameter of ball bearing contact area (clutch housing side)	32.002-32.018 (1.260-1.261)	31.95 (1.258)	
	Runout End play	0.02 (0.001) max. 0.14-0.21 (0.006-0.008)	0.05 (0.002) Adjust with a shim.	
Mainshaft 3rd gear	I.D.	49.009-49.025 (1.9295-1.9301)	49.08 (1.9323)	
	End play	0.06-0.21 (0.002-0.008)	0.3 (0.012)	
	Thickness	35.92-35.97 (1.414-1.416)	35.80 (1.409)	
Mainshaft 4th gear	I.D.	49.009-49.025 (1.9295-1.9301)	49.08 (1.9323)	
	End play	0.06-0.21 (0.002-0.008)	0.3 (0.012)	
	Thickness	35.92-35.97 (1.414-1.416)	35.80 (1.409)	
Mainshaft 5th gear	I.D.	47.009-47.025 (1.8507-1.8514)	47.08 (1.8535)	
	End play	0.06-0.21 (0.002-0.008)	0.3 (0.012)	
	Thickness	34.92-34.97 (1.375-1.377)	34.80 (1.370)	
Spacer collar (Mainshaft)	I.D.	36.002-36.012 (1.417-1.418)	36.06 (1.420)	
	O.D.	4th gear side	42.989-43.000 (1.692-1.693)	42.94 (1.691)
		5th gear side	41.989-42.000 (1.653-1.654)	41.94 (1.651)
	Length	4th gear side	29.53-29.58 (1.163-1.165)	29.51 (1.162)
5th gear side		28.53-28.58 (1.123-1.125)	28.51 (1.122)	
Countershaft	Diameter of needle bearing contact area (clutch housing side)	43.974-43.990 (1.731-1.732)	43.92 (1.729)	
	Diameter of needle and ball bearing contact area (transmission housing side)	33.984-34.000 (1.338-1.339)	33.93 (1.336)	
	Runout	0.02 (0.001) max.	0.05 (0.002)	
Countershaft 1st gear	I.D.	60.510-60.529 (2.382-2.383)	60.58 (2.385)	
	End play (when tightened by the specified torque)	0.04-0.10 (0.002-0.004)	Adjust with a washer.	
Countershaft 2nd gear	I.D.	57.010-57.029 (2.244-2.245)	57.08 (2.247)	
	End play (when tightened by the specified torque)	0.04-0.10 (0.002-0.004)	Adjust with a collar.	
Countershaft reverse gear	Diameter of needle bearing contact area	54.487-54.500 (2.145-2.146)	54.43 (2.143)	
Spacer collar (Countershaft)	I.D.	43.046-43.056 (1.6947-1.6951)	43.10 (1.697)	
	O.D.	51.987-52.000 (2.0467-2.0472)	51.94 (2.045)	
Reverse idler gear shaft	O.D.	21.987-22.000 (0.8656-0.8661)	21.93 (0.8634)	
Reverse driven gear and reverse drive gear	I.D.	28.007-28.020 (1.1026-1.1031)	28.07 (1.1051)	

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Oil pump	Driven gear boss-to-transmission housing clearance	0.3-0.8 (0.01-0.03)	0.9 (0.04)	
	Driven gear thickness	17.0-17.1 (0.669-0.673)	16.9 (0.665)	
	Inner-to-outer rotor radial clearance	0.14 (0.006) max.	0.20 (0.008)	
	Pump body-to-outer rotor radial clearance	0.1-0.2 (0.004-0.008)	0.22 (0.009)	
	Pump body-to-outer rotor side clearance	0.03-0.10 (0.001-0.004)	0.15 (0.006)	
Synchro ring	Ring-to-gear clearance (ring pushed against gear)	0.85-1.10 (0.033-0.043)	0.4 (0.016)	
Dual cone synchro ring	Clearance (ring pushed against gear)	0.95-1.68 (0.037-0.066)	0.6 (0.024)	
	Outer synchro ring-to-gear	0.5-1.0 (0.020-0.039)	0.3 (0.012)	
	Synchro cone-to-gear	0.5-1.0 (0.020-0.039)	0.3 (0.012)	
	Outer synchro ring-to-synchro cone	0.5-1.0 (0.020-0.039)	0.3 (0.012)	
Shift fork	Finger thickness	1st/2nd shift fork	8.9-9.0 (0.350-0.354)	—
		3rd/4th shift fork	7.4-7.5 (0.291-0.295)	—
		5th shift fork	6.4-6.5 (0.252-0.256)	—
		Reverse shift fork	6.4-6.5 (0.252-0.256)	—
	Finger-to-synchro sleeve clearance	0.45-0.65 (0.018-0.026)	1.0 (0.039)	
Reverse shift arm	Arm-to-5th/reverse shift piece clearance	0.05-0.30 (0.002-0.012)	0.5 (0.02)	
	Groove width	7.05-7.20 (0.278-0.283)	—	
	Arm-to-reverse shift fork clearance	0.05-0.35 (0.002-0.014)	0.5 (0.02)	
	Diameter (at the contact point with the reverse shift fork)	12.8-13.0 (0.504-0.512)	—	
	Shift arm	Arm-to-shift piece clearance	0.05-0.25 (0.002-0.010)	0.5 (0.02)
	Diameter (at the contact point with the shift piece)	12.9-13.0 (0.508-0.512)	—	
Interlock	Interlock-to-select arm clearance	0.03-0.15 (0.001-0.006)	—	
	Diameter (at the contact point with the select arm)	11.95-12.00 (0.470-0.472)	—	
Shift piece	Shift piece-to-shift forks and 5th/reverse shift piece clearance	0.2-0.5 (0.008-0.020)	0.6 (0.024)	
	Diameter (at the contact point with the shift forks and 5th/reverse shift piece)	11.9-12.0 (0.469-0.472)	—	