

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity ℓ (US qt, Imp qt)	7.0 (7.4, 6.2) for overhaul 2.9 (3.1, 2.6) for fluid change	
Hydraulic pressure kPa (kgf/cm ² , psi)	Line pressure at 2,000 rpm in [D] or [1] position	830 – 880 (8.5 – 9.0, 121 – 128)	785 (8.0, 114)
	1st clutch pressure at 2,000 rpm in [D] or [1] position		
	2nd clutch pressure at 2,000 rpm in [D] position	490 (5.0, 71)	440 (4.5, 64)
	3rd clutch pressure at 2,000 rpm in [D] position	Fully closed throttle 880 (9.0, 128)	Fully closed throttle 780 (8.0, 114)
	4th clutch pressure at 2,000 rpm in [D] position	throttle more than 3/16 opened	throttle more than 3/16 opened
	1st-hold clutch pressure at 2,000 rpm in [1] position	830 – 880 (8.5 – 9.0, 121 – 128)	785 (8.0, 114)
	2nd clutch pressure at 2,000 rpm in [2] position		
	4th clutch pressure at 2,000 rpm in [R] position		
Throttle B pressure	Throttle fully closed	0 – 15 (0 – 0.15, 0 – 2)	0 – 15 (0 – 0.15, 0 – 2)
	Throttle fully opened	600 – 660 (6.1 – 6.7, 87 – 95)	600 – 660 (6.1 – 6.7, 87 – 95)
Stall speed rpm	Check with vehicle on level ground	2,100	1,950 – 2,250
Clutch	Clutch initial clearance	1st-hold 0.7 – 0.9 (0.028 – 0.035)	—
		1st 0.65 – 0.85 (0.026 – 0.033)	—
		2nd, 3rd, 4th 0.75 – 0.95 (0.030 – 0.037)	—
	Clutch return spring free length	1st 41.4 (1.630)	39.4 (1.551)
		2nd, 3rd, 4th 33.0 (1.299)	31.0 (1.220)
	Clutch disc thickness	1st-hold, 1st, 2nd, 3rd 1.88 – 2.00 (0.074 – 0.079)	Until grooves worn out
		4th 2.28 – 2.40 (0.090 – 0.094)	Until grooves worn out
	Clutch plate thickness	1st-hold, 1st 1.95 – 2.05 (0.077 – 0.081)	Discoloration
		2nd, 3rd, 4th 2.25 – 2.35 (0.089 – 0.093)	
	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)	
Valve body	Stator shaft needle bearing contact I.D. (torque converter side)	28.000 – 28.021 (1.102 – 1.103)	Wear or damage
	Stator shaft needle bearing contact I.D. (ATF pump side)	31.000 – 31.013 (1.220 – 1.221)	—
	ATF pump driven gear I.D.	14.016 – 14.034 (0.552 – 0.553)	Wear or damage
	ATF pump driven gear shaft O.D.	13.980 – 13.990 (0.550 – 0.551)	Wear or damage
	ATF pump gear side clearance	0.03 – 0.05 (0.001 – 0.002)	0.07 (0.003)
	ATF pump gear-to-body clearance	0.210 – 0.265 (0.008 – 0.010)	—
		Drive 0.070 – 0.125 (0.003 – 0.005)	—
Regulator valve body	Sealing ring contact I.D.	37.000 – 37.025 (1.457 – 1.458)	37.05 (1.459)

* Clutch end plate diameter: 1st: 116 mm (4.57 in)
1st-hold, 2nd, 3rd and 4th: 120 mm (4.72 in)

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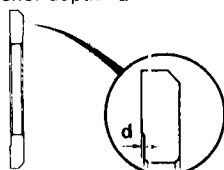
Standards and Service Limits

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	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
2nd accumulator body	Sealing ring contact I.D.	35.000 – 35.025 (1.378 – 1.379)	35.05 (1.380)
Shifting device and parking brake control	Reverse shift fork finger thickness Park brake pawl Park gear	5.90 – 6.00 (0.232 – 0.236) _____ _____	5.40 (0.213) Wear or other defect Wear or other defect
Servo body	Shift fork shaft bore I.D. Shift fork shaft valve bore I.D.	14.000 – 14.005 (0.5512 – 0.5514) 14.006 – 14.010 (0.5514 – 0.5516) 14.011 – 14.015 (0.5516 – 0.5518) 37.000 – 37.039 (1.457 – 1.458)	_____ _____ _____ 37.045 (1.4459)
Transmission	Diameter of needle bearing contact area On mainshaft and stator shaft On mainshaft 4th gear collar On mainshaft 1st gear collar On countershaft (right side) On countershaft 3rd gear collar On countershaft 4th gear On countershaft reverse gear collar On countershaft 1st gear collar On secondary shaft 2nd gear On reverse idler gear shaft Inside diameter Mainshaft 1st gear Mainshaft 4th gear Countershaft 1st gear Countershaft reverse gear Countershaft 4th gear Countershaft 2nd gear Countershaft 3rd gear Secondary shaft 2nd gear Reverse idler gear Reverse idler gear shaft holder Mainshaft 1st gear collar length Mainshaft 1st gear collar flange thickness Countershaft reverse gear collar length Countershaft reverse gear collar flange thickness Diameter of countershaft one-way clutch contact area Diameter of parking gear one-way clutch contact area Mainshaft ATF feed pipe O.D. Mainshaft ATF feed pipe O.D. Mainshaft sealing ring 37 mm thickness Mainshaft bushing I.D. Countershaft ATF feed pipe O.D. Countershaft ATF feed pipe O.D. Countershaft bushing I.D. Secondary shaft sealing ring 35 mm thickness Mainshaft sealing ring groove width Secondary shaft sealing ring groove width	23.980 – 23.993 (0.944 – 0.945) 33.975 – 33.991 (1.3376 – 1.3382) 32.975 – 32.991 (1.298 – 1.299) 41.005 – 41.015 (1.614 – 1.615) 43.975 – 43.991 (1.731 – 1.732) 34.975 – 34.991 (1.377 – 1.378) 36.975 – 36.991 (1.4557 – 1.4563) 33.975 – 33.991 (1.3376 – 1.3382) 36.975 – 36.991 (1.4557 – 1.4563) 13.990 – 14.000 (0.5508 – 0.5512) 38.000 – 38.016 (1.496 – 1.497) 40.000 – 40.016 (1.5748 – 1.5754) 40.000 – 40.016 (1.5748 – 1.5754) 43.000 – 43.016 (1.693 – 1.694) 41.000 – 41.016 (1.614 – 1.615) Involute spline 52.000 – 52.019 (2.0472 – 2.0480) 43.000 – 43.016 (1.693 – 1.694) 18.007 – 18.020 (0.7089 – 0.7094) 14.416 – 14.434 (0.5676 – 0.5683) 35.00 – 35.05 (1.378 – 1.380) 2.95 – 3.10 (0.116 – 0.122) 16.00 – 16.05 (0.630 – 0.632) 2.95 – 3.05 (0.116 – 0.120) 88.869 – 88.895 (3.499 – 3.500) 72.212 – 72.225 (2.8430 – 2.8435) 11.47 – 11.48 (0.4516 – 0.4520) 5.97 – 5.98 (0.2350 – 0.2354) 1.980 – 1.995 (0.078 – 0.079) 6.018 – 6.030 (0.2369 – 0.2374) 11.500 – 11.518 (0.4528 – 0.4535) 11.47 – 11.48 (0.4516 – 0.4520) 7.97 – 7.98 (0.3138 – 0.3142) 8.000 – 8.015 (0.315 – 0.316) 11.500 – 11.518 (0.4528 – 0.4535) 1.980 – 1.995 (0.078 – 0.079) 2.025 – 2.060 (0.080 – 0.081) 2.025 – 2.060 (0.080 – 0.081)	Wear or damage ↑ ↓ Wear or damage ↑ ↓ Wear or damage _____ Wear or damage _____ Wear or damage Wear or damage Wear or damage 11.45 (0.451) 5.95 (0.2343) 1.80 (0.071) 6.045 (0.238) 11.35 (0.454) 11.45 (0.451) 7.95 (0.313) 8.03 (0.316) 11.53 (0.454) 1.80 (0.071) 2.08 (0.082) 2.08 (0.082)

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	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Selector hub O.D.	55.67 – 55.70 (2.192 – 2.193)	Wear or damage
	Thrust washer thickness		
	Mainshaft 4th gear right side	4.45 – 4.55 (0.175 – 0.179)	Wear or damage
	Mainshaft 4th gear left side	3.45 – 3.55 (0.136 – 0.140)	Wear or damage
	Mainshaft 1st gear right side	1.45 – 1.50 (0.057 – 0.059)	1.40 (0.055)
	Mainshaft 1st gear left side	2.43 – 2.50 (0.096 – 0.098)	Wear or damage
	Countershaft 3rd gear collar length	1 35.425 – 35.440 (1.3947 – 1.3953)	_____
		2 35.440 – 35.455 (1.3953 – 1.3959)	_____
		3 35.455 – 35.470 (1.3959 – 1.3965)	_____
		4 35.470 – 35.485 (1.3965 – 1.3970)	_____
		5 35.485 – 35.500 (1.3970 – 1.3976)	_____
		6 35.500 – 35.515 (1.3976 – 1.3982)	_____
	Countershaft 2nd gear spacer length	17.90 – 17.95 (0.705 – 0.707)	_____
	Cotter thickness	1 1.975 – 2.000 (0.078 – 0.079)	_____
		2 2.000 – 2.025 (0.079 – 0.080)	_____
		3 2.025 – 2.050 (0.080 – 0.081)	_____
		4 2.050 – 2.075 (0.081 – 0.082)	_____
		5 2.075 – 2.100 (0.082 – 0.083)	_____
		6 2.100 – 2.125 (0.083 – 0.084)	_____
		7 2.125 – 2.150 (0.084 – 0.085)	_____
		8 2.150 – 2.175 (0.085 – 0.086)	_____
		9 2.175 – 2.200 (0.086 – 0.087)	_____
		10 2.200 – 2.225 (0.087 – 0.088)	_____
		11 2.225 – 2.250 (0.088 – 0.089)	_____
		12 2.250 – 2.275 (0.089 – 0.090)	_____
		13 2.275 – 2.300 (0.090 – 0.091)	_____
		14 2.300 – 2.325 (0.091 – 0.092)	_____
		15 2.325 – 2.350 (0.092 – 0.093)	_____
		16 2.350 – 2.375 (0.093 – 0.094)	_____
	Cotter retainer thickness	1 2.97 – 3.00 (0.117 – 0.118)	_____
		2 3.00 – 3.03 (0.118 – 0.119)	_____
		3 3.03 – 3.06 (0.119 – 0.120)	_____
		4 3.06 – 3.09 (0.120 – 0.122)	_____
		5 3.09 – 3.12 (0.122 – 0.123)	_____
	Countershaft reverse gear thrust washer thickness	1.45 – 1.50 (0.057 – 0.059)	1.40 (0.055)
	Countershaft 1st gear collar length	1 62.50 – 62.55 (2.461 – 2.463)	_____
		2 62.60 – 62.65 (2.465 – 2.467)	_____
	Thrust washer thickness		
	Countershaft 1st gear left side	3.43 – 3.50 (0.135 – 0.138)	Wear or damage
	Secondary shaft 2nd gear	4.45 – 4.55 (0.175 – 0.179)	Wear or damage
	Secondary shaft spacer 31 mm length	33.00 – 33.05 (1.299 – 1.301)	_____
	End play		
	Mainshaft 4th gear	0.10 – 0.22 (0.004 – 0.009)	_____
	Mainshaft 1st gear	0.08 – 0.33 (0.003 – 0.013)	_____
	Countershaft 3rd gear	0 – 0.03 (0 – 0.001)	Adjust with a 3rd gear collar or cotters
	Countershaft 2nd gear	0 – 0.05 (0 – 0.002)	
	Countershaft 4th gear	0.05 – 0.11 (0.002 – 0.004)	Adjust with a cotter retainer
	Countershaft reverse gear	0.10 – 0.25 (0.004 – 0.010)	
	Countershaft 1st gear	0.20 – 0.31 (0.008 – 0.012)	Adjust with a 1st gear collar
	Secondary shaft 2nd gear	0.01 – 0.11 (0.0004 – 0.0043)	Adjust with a thrust washer
	Reverse idler gear	0.05 – 0.18 (0.002 – 0.007)	_____
	Secondary shaft 2nd gear thrust washer depth "d"	0 (0)	_____
		0 – 0.03 (0 – 0.001)	_____
		0.03 – 0.06 (0.001 – 0.002)	_____
		0.06 – 0.09 (0.002 – 0.004)	_____
		0.09 – 0.12 (0.004 – 0.005)	_____



(cont'd)

Standards and Service Limits

Automatic Transmission (cont'd) — Section 14

	MEASUREMENT	STANDARD (NEW)			
		Wire Dia.	O.D.	Free Length	No. of Coils
Spring	Idle shaft spring A	0.7 (0.028)	5.7 (0.224)	14.6 (0.575)	7.0
	Servo detent spring	1.0 (0.039)	7.6 (0.299)	14.8 (0.583)	5.5
	Regulator valve spring A	1.58 x 2.0 (0.062 x 0.079)	14.7 (0.579)	88.6 (3.488)	20.9
	Regulator valve spring B	1.8 (0.071)	9.6 (0.378)	44.0 (1.732)	14.7
	Stator reaction spring	6.0 (0.236)	38.4 (1.512)	30.3 (1.193)	2.0
	Torque converter check valve spring	1.1 (0.043)	8.4 (0.331)	41.8 (1.646)	15.7
	Relief valve spring	1.1 (0.043)	8.4 (0.331)	44.4 (1.748)	19.5
	Cooler relief valve spring	1.2 (0.047)	8.4 (0.331)	35.7 (1.406)	16.5
	One-way relief valve spring	0.9 (0.035)	6.4 (0.252)	25.1 (0.988)	11.9
	LSD relief valve spring	0.8 (0.031)	8.4 (0.331)	37.3 (1.469)	12.1
	2nd orifice control valve spring	0.8 (0.031)	8.1 (0.319)	47.9 (1.886)	16.0
	3rd orifice control valve spring	0.9 (0.035)	8.6 (0.339)	48.3 (1.902)	16.6
	4th exhaust valve spring	0.6 (0.024)	7.6 (0.299)	24.4 (0.961)	7.9
	Throttle valve B spring A/B/C/D	0.9 (0.035)	7.1 (0.280)	29.0 (1.142)	12.6
	1-2 shift valve spring	0.9 (0.035)	8.6 (0.339)	40.4 (1.591)	14.5
	2-3 shift valve spring	0.8 (0.031)	7.0 (0.276)	43.7 (1.720)	21.2
	3-4 shift valve spring	0.8 (0.031)	7.0 (0.276)	43.7 (1.720)	21.2
	1st-hold accumulator spring	3.4 (0.134)	24.3 (0.957)	64.7 (2.547)	6.7
	1st accumulator spring	2.3 (0.091)	20.0 (0.787)	104.6 (4.118)	14.8
	4th accumulator spring	3.0 (0.118)	18.0 (0.709)	84.5 (3.327)	12.8
	2nd accumulator spring	3.3 (0.130)	20.2 (0.795)	78.0 (3.071)	11.8
	3rd accumulator spring	3.2 (0.126)	19.0 (0.748)	88.6 (3.488)	14.3
	Lock-up shift valve spring	1.0 (0.039)	8.6 (0.339)	51.3 (2.020)	19.8
	Lock-up timing valve B spring	0.8 (0.031)	5.6 (0.220)	27.8 (1.094)	16.4
	Lock-up control valve spring A/3/C	0.8 (0.031)	6.6 (0.260)	38.3 (1.508)	25.0
	Servo control valve spring	1.0 (0.039)	8.1 (0.319)	53.5 (2.106)	20.8
	Modulator valve spring A/B	1.4 (0.055)	9.4 (0.370)	33.0 (1.299)	10.5
	CPC valve spring A/B/C	1.0 (0.039)	6.8 (0.268)	32.1 (1.264)	15.6
	4-3 kick-down valve spring	0.9 (0.035)	6.6 (0.260)	30.7 (1.209)	12.9
	3-2 kick-down valve spring	1.0 (0.039)	6.1 (0.240)	27.1 (1.067)	13.4
	2nd exhaust valve spring	1.0 (0.039)	6.1 (0.240)	27.1 (1.067)	13.4