

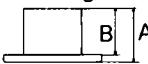
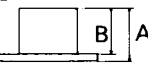

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity ℓ (US qt, Imp qt)	8.7 (9.2, 7.7) for overhaul 3.3 (3.5, 2.9) for oil change	
Hydraulic pressure kPa (kg/cm ² , psi)	Line pressure at 2,000 rpm ([N] or [P] position)	800–860 (8.0–8.6, 114–122)	750 (7.5, 107)
	1st clutch pressure at 2,000 rpm ([D ₄] or [D ₃] position)		
	2nd clutch pressure at 2,000 rpm ([D ₄] position)	400 (4.0, 57) throttle fully closed	380 (3.8, 54) throttle fully closed
	3rd clutch pressure at 2,000 rpm ([D ₄] position)	860 (8.6, 122) throttle more than 1/4 opened	750 (7.5, 107) throttle more than 1/4 opened
	4th clutch pressure at 2,000 rpm ([D ₄] position)		
	1st-hold clutch pressure at 2,000 rpm ([1] or [2] position)	800–860 (8.0–8.6, 114–122)	750 (7.5, 107)
	2nd clutch pressure at 2,000 rpm ([2] position)		
	1st clutch pressure at 2,000 rpm ([1] position)		
	Reverse clutch pressure at 2,000 rpm ([R] position)	1,190–1,270 (11.9–12.7, 169–181)	1,150 (11.5, 164)
	Throttle B pressure Throttle fully closed Throttle fully open	0–15 (0–0.15, 0–2) 590–640 (5.9–6.4, 84–91)	— 550 (5.5, 78)
Stall speed rpm	Check with car on level ground	2,000	1,850–2,150
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	0.6–0.8 (0.024–0.031)	—
	4th	0.5–0.7 (0.020–0.028)	—
	Reverse	0.75–0.95 (0.030–0.037)	—
	Clutch return spring free length		
	1st-hold, 1st, 2nd, 3rd, 4th	33.7 (1.327)	31.7 (1.248)
	Reverse	30.3 (1.193)	28.3 (1.114)
	Clutch disc thickness		
	1st-hold, 1st, 2nd, Reverse	1.88–2.00 (0.074–0.079)	Until grooves worn out.
	3rd, 4th	2.28–2.40 (0.090–0.094)	Until grooves worn out.
	Clutch plate thickness		
	1st-hold, 1st, 2nd, Reverse	1.95–2.05 (0.077–0.081)	Discoloration
	3rd, 4th	2.55–2.65 (0.100–0.104)	
	Clutch end plate thickness Mark 1	2.05–2.10 (0.081–0.083)	
	(1st, 2nd, 3rd, 4th) 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)	
	Clutch end plate thickness Mark L1	2.05–2.10 (0.081–0.083)	
	(1st-hold) Mark L2	2.15–2.20 (0.085–0.087)	
	Mark L3	2.25–2.30 (0.089–0.091)	
	Mark L4	2.35–2.40 (0.093–0.094)	
	Mark L5	2.45–2.50 (0.096–0.098)	
	Mark L6	2.55–2.60 (0.100–0.102)	
	Mark L7	2.65–2.70 (0.104–0.106)	
	Mark L8	2.75–2.80 (0.108–0.110)	
	Mark L9	2.85–2.90 (0.112–0.114)	

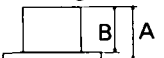
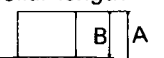
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Standards and Service Limits

Automatic Transmission (cont'd) — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Clutch end plate thickness (Reverse)	Mark R1 4.05—4.10 (0.159—0.161) Mark R2 4.15—4.20 (0.163—0.165) Mark R3 4.25—4.30 (0.167—0.169) Mark R4 4.35—4.40 (0.171—0.173) Mark R5 4.45—4.50 (0.175—0.177) Mark R6 4.55—4.60 (0.179—0.181) Mark R7 4.65—4.70 (0.183—0.185) Mark R8 4.75—4.80 (0.187—0.189) Mark R9 4.85—4.90 (0.191—0.193)	Discoloration ↑ ↓ Discoloration
Valve body	Stator shaft needle bearing contact I.D. (torque converter side) Stator shaft needle bearing contact I.D. (oil pump side) Oil pump driven gear I.D. Oil pump driven gear shaft O.D. Oil pump gear thrust (Axial) clearance Oil pump gear-to-body clearance Drive Driven	28.000—28.021 (1.102—1.103) 31.000—31.013 (1.220—1.221) 14.016—14.034 (0.552—0.553) 13.980—13.990 (0.550—0.551) 0.03—0.05 (0.001—0.002) 0.210—0.265 (0.0083—0.0104) 0.070—0.125 (0.0028—0.0049)	Wear or damage — Wear or damage Wear or damage 0.07 (0.0028) — —
Regulator valve body	Sealing ring contact I.D.	37.00—37.025 (1.457—1.458)	37.05 (1.459)
Accumulator body	Sealing ring contact I.D.	42.000—42.030 (1.654—1.655)	42.05 (1.656)
Shifting device and parking brake control	Parking brake cone Parking brake pawl Parking gear	— — —	Wear or other defect ↑ Wear or other defect
Transmission	Mainshaft reverse gear distance collar length 2nd clutch thrust washer, 29 mm thickness Mainshaft 2nd gear collar length A B  Countershaft reverse gear thrust washer thickness Countershaft reverse gear collar length A B  Reverse clutch distance collar length Thrust washer, 45.5 x 60 mm thickness (Countershaft 2nd gear/parking gear) Mainshaft 1st gear thrust washer thickness Mainshaft 1st gear distance collar length 1st gear collar length A B 	25.95—26.05 (1.022—1.026) 3.95—4.00 (0.156—0.157) 35.00—35.05 (1.378—1.380) 31.06—31.09 (1.223—1.224) 3.95—4.05 (0.156—0.159) 26.95—27.05 (1.061—1.065) 23.05—23.09 (0.907—0.909) 35.45—35.55 (1.396—1.400) 1.27—1.30 (0.050—0.051) 1.32—1.35 (0.052—0.053) 1.37—1.40 (0.054—0.055) 1.42—1.45 (0.056—0.057) 1.47—1.50 (0.058—0.059) 1.52—1.55 (0.060—0.061) 1.57—1.60 (0.062—0.063) 1.62—1.65 (0.064—0.065) 1.67—1.70 (0.066—0.067) 1.72—1.75 (0.068—0.069) 1.77—1.80 (0.070—0.071) 1.82—1.85 (0.072—0.073) 1.87—1.90 (0.074—0.075) 3.45—3.55 (0.136—0.140) 34.05—34.08 (1.341—1.342) 33.90—33.97 (1.335—1.337) 30.05—30.10 (1.183—1.185)	Wear or damage ↑ ↓ Wear or damage — — — — — — — — — — — — — — — — — Wear or damage ↑ Wear or damage

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Thrust washer, 43 x 74 mm (Mainshaft 4th gear)	9.67–9.70 (0.381–0.382) 9.72–9.75 (0.383–0.384) 9.77–9.80 (0.385–0.386) 9.82–9.85 (0.387–0.388) 9.87–9.90 (0.389–0.390) 9.92–9.95 (0.391–0.392) 9.97–10.00 (0.393–0.394)	— — — — — — —
	Countershaft 2nd gear collar length	35.95–36.00 (1.415–1.417)	Wear or damage
	Countershaft 1st gear collar length 	27.95–28.05 (1.100–1.104) 23.50–23.55 (0.925–0.927)	Wear or damage
	Thrust washer, 38.8 x 47 mm thickness (1st-hold clutch front side)	2.97–3.00 (0.117–0.118) 3.02–3.05 (0.119–0.120) 3.07–3.10 (0.121–0.122) 3.12–3.15 (0.123–0.124) 3.17–3.20 (0.125–0.126) 3.22–3.25 (0.127–0.128) 3.27–3.30 (0.129–0.130) 3.32–3.35 (0.131–0.132) 3.37–3.40 (0.133–0.134) 3.42–3.45 (0.135–0.136) 3.47–3.50 (0.137–0.138)	— — — — — — — — — — —
	1st-hold clutch distance collar length	68.95–69.05 (2.715–2.718)	Wear or damage
	Countershaft 3rd gear collar length 	28.95–29.05 (1.140–1.144) 24.02–24.05 (0.946–0.947)	— —
	Diameter of one-way clutch contact area		
	Countershaft 1st gear I.D.	95.764–95.790 (3.770–3.771)	
	Countershaft 2nd gear I.D.	86.487–86.513 (3.405–3.406)	
	One-way clutch hub O.D.	79.107–79.120 (3.114–3.115)	
	Parking gear one-way clutch contact area O.D.	69.833–69.846 (2.749–2.750)	
	Feed pipe A O.D.	6.97–6.98 (0.274–0.275)	
	Feed pipe B O.D.	11.47–11.53 (0.452–0.454)	Wear or damage
	Mainshaft bushing I.D.	7.018–7.030 (0.276–0.277)	7.045 (0.277)
	Countershaft bushing I.D.	11.500–11.518 (0.4528–0.4535)	11.53 (0.454)
	Mainshaft sealing ring, 37 mm thickness	1.980–1.995 (0.078–0.079)	1.80 (0.071)
	Countershaft sealing ring, 42 mm thickness	1.980–1.995 (0.078–0.079)	1.80 (0.071)
	Mainshaft sealing ring groove width	2.025–2.060 (0.080–0.081)	2.08 (0.082)
	Countershaft sealing ring groove width	2.025–2.060 (0.080–0.081)	2.08 (0.082)
	Diameter of needle bearing contact area		
	Mainshaft-stator shaft	24.980–24.993 (0.983–0.984)	Wear or damage
	Mainshaft 3rd gear	53.968–53.984 (2.1247–2.1254)	
	Mainshaft 1st gear collar	34.975–34.991 (1.377–1.378)	
	Mainshaft 1st gear distance collar	34.975–34.991 (1.377–1.378)	
	Mainshaft 2nd gear collar	34.975–34.991 (1.377–1.378)	
	Countershaft-torque converter housing	38.505–38.515 (1.5159–1.5163)	
	Countershaft 3rd gear collar	47.975–47.991 (1.8888–1.8894)	
	Countershaft 1st gear collar	38.975–38.991 (1.534–1.535)	
	Countershaft 2nd gear collar	38.975–38.991 (1.534–1.535)	
	Countershaft reverse gear collar	33.975–33.991 (1.534–1.535)	
	Reverse idler gear shaft	13.99–14.00 (0.5508–0.5512)	Wear or damage

(cont'd)

Standards and Service Limits

Automatic Transmission (cont'd) — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	I.D.		
	Mainshaft 4th gear	59.000–59.016 (2.3228–2.3235)	Wear or damage ↑ ↓ Wear or damage
	Mainshaft 2nd gear	40.000–40.016 (1.5748–1.5754)	
	Mainshaft 1st gear	39.000–39.016 (1.535–1.536)	
	Countershaft 3rd gear	54.000–54.016 (2.126–2.127)	
	Countershaft 2nd gear	44.020–44.036 (1.733–1.734)	
	Countershaft 1st gear	44.000–44.016 (1.732–1.733)	
	Countershaft reverse gear	39.000–39.016 (1.535–1.536)	
	Reverse idler gear	18.007–18.020 (0.7089–0.7094)	
	End play		
	Mainshaft 4th gear	0.03–0.18 (0.001–0.007)	—
	1st/4th clutch	0–0.08 (0–0.003)	Adjust with a washer
			—
	Mainshaft 2nd gear	0.06–0.16 (0.002–0.006)	—
	Mainshaft 1st gear	0.10–0.25 (0.004–0.010)	—
	Countershaft 3rd gear	0.02–0.12 (0.001–0.005)	—
	Countershaft 4th gear	0–0.08 (0–0.003)	Adjust with a washer
			Adjust with a washer
	Countershaft 2nd gear	0.07–0.15 (0.003–0.006)	—
			—
	Countershaft reverse gear	0.05–0.16 (0.002–0.006)	—
	Reverse idler gear	0.03–0.30 (0.001–0.012)	—
	Secondary gear shaft tapered roller bearing preload (starting torque)N·m (kg-cm, lb-in)	3.5–4.5 (35–45, 30–39)	—
	Thrust washer, 90 mm thickness (torque converter housing side)	0.99–1.01 (0.039–0.040)	Wear or damage
	Thrust washer, 75 mm thickness A	1.56–1.58 (0.061–0.062)	
	B	1.59–1.61 (0.0626–0.0634)	
	C	1.62–1.64 (0.064–0.065)	
	D	1.65–1.67 (0.065–0.066)	
	E	1.68–1.70 (0.066–0.067)	
	F	1.71–1.73 (0.067–0.068)	
	G	1.74–1.76 (0.0685–0.0693)	
	H	1.77–1.79 (0.0697–0.0705)	
	I	1.80–1.82 (0.071–0.072)	
	J	1.83–1.85 (0.072–0.073)	
	K	1.86–1.88 (0.073–0.074)	
	L	1.89–1.91 (0.074–0.075)	
	M	1.92–1.94 (0.0756–0.0764)	
	N	1.95–1.97 (0.077–0.078)	
	O	1.98–2.00 (0.078–0.079)	
	P	2.01–2.03 (0.079–0.080)	
	Q	2.04–2.06 (0.080–0.081)	
	R	2.07–2.09 (0.081–0.082)	
	S	2.10–2.12 (0.0827–0.0835)	
	T	2.13–2.15 (0.084–0.085)	
	U	2.16–2.18 (0.085–0.086)	
	V	2.19–2.21 (0.086–0.087)	
	W	2.22–2.24 (0.087–0.088)	
	X	2.25–2.27 (0.0886–0.0894)	
	Y	2.28–2.30 (0.090–0.091)	
	Z	2.31–2.33 (0.091–0.092)	
	AA	2.34–2.36 (0.092–0.093)	
	AB	2.37–2.39 (0.093–0.094)	
	AC	2.40–2.42 (0.094–0.095)	
	AD	2.43–2.45 (0.0957–0.0965)	

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)			
		Wire Dia.	O.D.	Free Length	No. of Coils
Springs	One-way ball spring	0.29 (0.011)	4.0 (0.157)	14.0 (0.551)	13.0
	Secondary spring	2.3 (0.091)	20.2 (0.795)	21.099 (0.831)	4.0
	4-3 kick down valve spring	1.1 (0.043)	7.1 (0.280)	51.3 (2.020)	22.5
	Regulator valve spring A	1.8 (0.071)	14.7 (0.579)	86.5 (3.406)	16.5
	Regulator valve spring B	1.7 (0.067)	6.0 (0.236)*	43.0 (1.693)	13.5
	Stator reaction spring	6.5 (0.256)	26.4 (1.039)*	30.3 (1.193)	1.9
	Modulator valve spring A	1.5 (0.059)	9.4 (0.370)	30.6 (1.205)	9.9
	Modulator valve spring A, B	1.4 (0.055)	9.4 (0.370)	33.0 (1.299)	10.5
	Torque converter check valve spring	1.1 (0.043)	8.4 (0.331)	41.8 (1.646)	15.7
	Relief valve spring	0.9 (0.035)	8.4 (0.331)	56.5 (2.224)	22.4
	Cooler relief valve spring	1.1 (0.043)	8.4 (0.331)	46.8 (1.843)	17.0
	3-4 orifice control valve spring	1.0 (0.039)	6.6 (0.260)	49.6 (1.953)	26.8
	1-2 shift valve spring	0.9 (0.035)	7.6 (0.299)	55.5 (2.185)	24.0
	2-3, 3-4 shift valve spring	0.8 (0.031)	6.6 (0.260)	42.1 (1.657)	22.0
	4-3 shift timing valve spring	0.7 (0.028)	7.1 (0.280)	35.0 (1.378)	20.4
	1st accumulator spring	2.9 (0.114)	18.0 (0.709)	75.5 (2.972)	11.5
	4th accumulator spring	2.8 (0.110)	16.5 (0.650)	80.8 (3.181)	14.6
	2nd accumulator spring A	3.7 (0.146)	22.0 (0.866)	93.7 (3.689)	12.1
	2nd accumulator spring B	1.8 (0.071)	6.6 (0.260)*	80.0 (3.150)	22.7
	1st-hold accumulator spring	4.0 (0.157)	25.0 (0.984)	68.4 (2.693)	7.2
	3rd accumulator spring	3.2 (0.126)	19.0 (0.748)	78.4 (3.087)	11.1
	Reverse accumulator spring	3.5 (0.138)	18.6 (0.732)	115.5 (4.547)	19.0
	Lock-up shift valve spring	0.9 (0.035)	7.6 (0.299)	73.7 (2.902)	32.0
	Lock-up timing valve spring	0.8 (0.031)	6.6 (0.260)	61.2 (2.409)	38.5
	Lock-up control valve spring A	0.7 (0.028)	6.6 (0.260)	36.3 (1.429)	14.1
	B	0.7 (0.028)	6.6 (0.260)	37.5 (1.476)	24.6
	C	0.7 (0.028)	6.6 (0.260)	38.5 (1.516)	24.6
	CPC valve spring	1.0 (0.039)	6.8 (0.268)	34.3 (1.350)	14.2

*: I.D.