

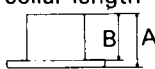
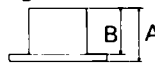
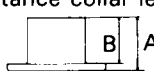
Automatic Transmission — Section 14

	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 D₄ or D₃ position		
	2nd clutch pressure at 2,000 rpm D₄ position	460 (4.6, 65) throttle fully closed	430 (4.3, 61) throttle fully closed
	3rd clutch pressure at 2,000 rpm D₄ 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 D₄		
	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	0 590–640 (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 (1st, 2nd, 3rd, 4th)	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) 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 (1st-hold)	Mark L1 2.05–2.10 (0.081–0.083) 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

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)	<div>Discoloration</div> <div>↑</div> <div>↓</div> <div>Discoloration</div>	
		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)		
		Valve body	Stator shaft needle bearing contact I.D. (torque converter side)		28.000—28.021 (1.102—1.103)
Stator shaft needle bearing contact I.D. (oil pump side)	31.000—31.013 (1.220—1.221)		—		
Oil pump driven gear I.D.	14.016—14.034 (0.552—0.553)		Wear or damage		
Oil pump driven gear shaft O.D.	13.980—13.990 (0.550—0.551)		Wear or damage		
Oil pump gear thrust clearance	0.03—0.05 (0.001—0.002)		0.07 (0.003)		
Oil pump gear-to-body clearance	Drive		0.210—0.265 (0.0083—0.0104)	—	
	Driven		0.070—0.125 (0.0028—0.0049)	—	
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	—	Wear or other defect		
	Parking brake pawl	—	↑		
	Parking gear	—	↓ Wear or other defect		
Transmission	Mainshaft reverse gear distance collar length	25.95—26.05 (1.022—1.026)	<div>Wear or damage</div> <div>↑</div> <div>↓</div> <div>Wear or damage</div>		
	2nd clutch thrust washer, 29 mm thickness	3.95—4.00 (0.156—0.157)			
	Mainshaft 2nd gear collar length	35.00—35.05 (1.378—1.380)			
		A		31.06—31.09 (1.223—1.224)	
		B			
	Countershaft reverse gear thrust washer thickness	3.95—4.05 (0.156—0.159)			
	Countershaft reverse gear collar length	26.95—27.05 (1.061—1.065)			
		A		23.05—23.09 (0.907—0.909)	
		B			
	Reverse clutch distance collar length	35.45—35.55 (1.396—1.400)			
	Thrust washer, 45.5 x 60 mm thickness (Countershaft 2nd gear/parking gear)	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)			
		Mainshaft 1st gear thrust washer thickness		3.45—3.55 (0.136—0.140)	
		Mainshaft 1st gear distance collar length		34.05—34.08 (1.341—1.342)	
	1st gear collar length	A		33.90—33.97 (1.335—1.337)	
		B		30.05—30.10 (1.183—1.185)	
		A			
		B			

Automatic Transmission (cont'd) — Section 14

Automatic Transmission (cont'd)		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)	—
				35.95—36.00 (1.415—1.417)	Wear or damage
	Countershaft 2nd gear collar length				↑
	Countershaft 1st gear	A		27.95—28.05 (1.100—1.104)	Wear or damage
	collar length	B		23.50—23.55 (0.925—0.927)	—
	Thrust washer, 38.8 x 47 mm thickness (1st 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	A		28.95—29.05 (1.140—1.144)	↑
	collar length	B		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	

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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 ↑
	Mainshaft 2nd gear	40.000–40.016 (1.5748–1.5754)	
	Mainshaft 1st gear	39.000–39.016 (1.535–1.536)	↓ Wear or damage
	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 (0–0.03)	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
	Countershaft 2nd gear	0.07–0.15 (0.003–0.006)	Adjust with a washer
	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 taper roller bearing preload N·m (kg-cm, lb-in)	3.5–4.5 (35–45, 30.4–39.1)	—
	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)	

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Automatic Transmission (cont'd) 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 (1.578)	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	3.6 (0.142)	22.0 (0.866)	96.7 (3.807)	13.0
	2nd accumulator spring B	2.0 (0.079)	6.6 (0.260)*	80.0 (3.150)	19.6
	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 A, B	1.4 (0.055)	9.4 (0.370)	33.0 (1.299)	10.5
		1.0 (0.039)	6.8 (0.268)	34.3 (1.350)	14.2