SERVICE SPECIFICATIONS

SERVICE DATA

AT097-01

Oil Pump	Body Clearance	STD	0.07—0.15 mm	0.0028—0.0059 in.
		Limit	0.3 mm	0.012 in.
	Tip clearance	STD	0.14—0.24 mm	0.0055—0.0094 in.
		Limit	0.3 mm	0.012 in.
	Side clearance	STD	0.02—0.05 mm	0.0008—0.0020 in.
		Limit	0.1 mm	0.004 in.
	Drive and driven gear thickness		18.435—18.450 mm	0.7258—0.7246 in.
			18.451—18.486 mm	0.7264—0.7278 in.
	Pump body bushing inside diameter	STD	42.050—42.075 mm	1.6555—1.6565 in.
		Limit	42.13 mm	1.6587 in.
	Pump cover bushing inside diameter			
	Front	STD	24.000—24.021 mm	0.9449—0.9457 in.
		Limit	24.070 mm	1.9476 in.
	Rear	STD	26.500—26.521 mm	1.0433—1.0441 in.
		Limit	26.57 mm	1.0461 in.
O/D Planetary Gear and O/D Direct Clutch	O/D input shaft thrust clearance			
	(O/D planetary gear)	STD	0.40—0.90 mm	0.0157—0.0354 in.
		Limit	0.90 mm	0.0345 in.
	O/D input shaft thrust bearing race thickness		0.8 mm	0.031 in.
			1.0 mm	0.039 in.
			1.4 mm	0.055 in.
	Piston stroke		1.80—2.00 mm	0.0709—0.0787 in.
	O/D direct clutch drum bushing inside diameter	STD	26.500—26.521 mm	1.0433—1.0441 in.
		Limit	26.57 mm	1.0461 in.
	O/D planetary gear bushing inside diameter	STD	12.000—12.018 mm	0.4724—0.4731 in.
		Limit	12.07 mm	0.4752 in.
	Planetary pinion gear thrust clearance	STD	0.20—0.59 mm	0.0079—0.0232 in.
		Limit	0.80 mm	0.315 in.
O/D Brake	Piston stroke		1.25—1.85 mm	0.0492—0.0728 in.
	O/D case bushing inside diameter	STD	33.100—33.500 mm	1.3031—1.3189 in.
		Limit	33.20 mm	1.3071 in.
Front Clutch	Input shaft thrust clearance			
	(forward clutch hub)	STD	0.30—0.70 mm	0.0118—0.0276 in.
		Limit	0.70 mm	0.0276 in.
	Input shaft spacer thickness		0.9 mm	0.035 in.
			1.2 mm	0.047 in.
			1.5 mm	0.059 in.
			1.8 mm	0.071 in.
			2.1 mm	0.083 in.
	Piston stroke		3.93—4.23 mm	0.1547—0.1665 in.
	Front clutch plate thickness		1.8 mm	0.071 mm
			2.0 mm	0.079 in.
			2.2 mm	0.087 in.
			2.4 mm	0.094 in.

Rear Clutch	Piston stroke		2.00–2.20 mm	0.0790–0.0866 in.
	Rear clutch flange thickness		5.0 mm	0.197 in.
			5.2 mm	0.205 in.
			5.4 mm	0.213 in.
			5.6 mm	0.220 in.
Second Brake	Center support thrust clearance	STD	0.30–0.70 mm	0.0118–0.0276 in.
		Limit	0.90 mm	0.0354 in.
	Center support thrust washer thickness		1.8 mm	0.071 in.
			2.1 mm	0.083 in.
			2.4 mm	0.094 in.
			2.6 mm	0.102 in.
	Piston stroke		1.86–2.06 mm	0.0732–0.0811 in.
	Center support bushing inside diameter	STD	35.000–35.025 mm	1.3780–1.3789 in.
		Limit	35.08 mm	1.3811 in.
	Front planetary sum gear bushing inside diameter	STD	25.000–25.021 mm	0.9842–0.9851 in.
		Limit	25.07 mm	0.9851 in.
	Second brake flange thickness		5.0 mm	0.197 in.
			5.2 mm	0.205 in.
			5.4 mm	0.213 in.
			5.6 mm	0.220 in.
Planetary Gears and Output Shaft	Output shaft bushing inside diameter	STD	17.000–17.018 mm	0.6693–0.6700 in.
		Limit	17.07 mm	0.6720 in.
	Planetary pinion gearthrust clearance	STD	0.20–0.50 mm	0.0079–0.0197 in.
		Limit	0.75 mm	0.0295 in.
1st and Reverse Brake	Piston stroke		3.3–3.8 mm	0.130–0.150 in.
	1st and raverse brake flange thickness		6.65 mm	0.2618 in.
			7.05 mm	0.2776 in.
			7.45 mm	0.2933 in.
Transmission Case	Bushing inside diameter	STD	64.000–64.050 mm	2.5197–2.5216 in.
		Limit	64.10 mm	2.5236 in.
Parking Lock Paul	Parking lock paul braket distance		47.5–47.6 mm	1.870–1.874 in.

AT

UPPER VALVE BODY

Spring Specifications

Mark	Name (Color)	Free length x Outer Diameter mm (in.)	Total No. of coils
Ⓐ	2—3 Shift Valve (Orange)	37.23 x 8.7 (1.466 x 0.343)	18.0
Ⓑ	Reverse Inhibiter Valve (Light Blue)	29.3 x 7.9 (1.154 x 0.311)	20.0
Ⓒ	Modulator Valve (Brown)	31.8 x 7.6 (1.252 x 0.299)	17.0
Ⓓ	Throttle Valve (White)	25.3 x 9.2 (0.996 x 0.362)	9.5
Ⓔ	Throttle Valve (Blue)	26.85 x 8.97 (1.057 x 0.353)	10.5
Ⓕ	Secondary Regulator Valve (None)	46.0 x 16.7 (1.811 x 0.657)	15.0
Ⓖ	Cut—back Valve (Purple)	30.44.0 x 7.3 (1.198 x 0.287)	16.0
Ⓗ	Lock—up Signal Valve (Purple)	30.44 x 7.3 (1.198 x 0.287)	16.0
Ⓘ	Accumulator Control Valve (Green)	27.4 x 10.3 (1.079 x 0.406)	10.5
Ⓙ	Low Coast Modulator Valve (Red)	31.8 x 7.3 (1.252 x 0.287)	16.0
Ⓚ	Orifice Control Valve (Yellow)	38.97 x 8.6 (1.534 x 0.339)	18.0
Ⓛ	Low Inhibiter Valve (Purple)	30.44 x 7.3 (1.198x0.287)	16.0

Retainers and Pins Specifications

Mark	Name	Length x Width x Thickness or diameter mm (in.)
Ⓐ	Retainer for Modulator Valve Plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)
Ⓑ	Retainer for Reverce Inhibiter Valve Sleeve Plug	13.5 x 5.0 x 3.2 (0.531 x 0.197 x 0.126)
Ⓒ	Retainer for Check Valve Sleeve Plug	13.5 x 5.0 x 3.2 (0.531 x 0.197 x 0.126)
Ⓓ	Retainer for Low Coast Modulator Valve Plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)
Ⓔ	Retainer for Low Inhibiter Valve Plug	13.5 x 5.0 x 3.2 (0.531 x 0.197 x 0.126)
Ⓕ	Retainer for 2—3 Shift Valve Plug	13.5 x 5.0 x 3.2 (0.531 x 0.197 x 0.126)
Ⓖ	Retainer for Olifice Contrtol Valve plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)
Ⓗ	Retainer for Accumulator Control Valve Plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)
Ⓘ	Retainer for Lock—up Signal Valve Plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)
Ⓙ	Stopper for Throttle Valve	—
Ⓚ	Retainer for Secondary Regulator Valve Plug	18.0 x 5.0 x 3.2 (0.709 x 0.197 x 0.126)
Ⓛ	Pin for Throttle Valve Sleeve	23.8 x 3.0 (0.937 x 0.118)
Ⓜ	Retainer for Cut—back Valve Plug	16.0 x 5.0 x 3.2 (0.630 x 0.197 x 0.126)

Check Balls Specifications

Mark	Name	Diameter mm (in.)
Ⓐ	Check Ball	6.4 (0.252)

LOWER VALVE BODY

Springs Specifications

Mark	Name (Color)	Free length x Outer Diameter mm (in.)	Total No. of coils
Ⓐ	1—2 Shift Valve (Orange)	37.23 x 8.7 (1.466 x 0.343)	18.0
Ⓑ	3—4 Shift Valve (Orange)	37.23 x 8.7 (1.466 x 0.343)	18.0
Ⓒ	Check Ball (None)	14.0 x 9.8 (0.551 x 0.386)	6.0
Ⓓ	Pressure Reliefe Valve(White)	24.0 x 8.2 (0.945 x 0.323)	12.0
Ⓔ	Primary Regulator Valve (Red)	58.2 x 20.9 (2.291 x 0.823)	11.0
Ⓕ	Lock—up Control Valve(White)	26.95 x 9.8 (1.061 x 0.386)	13.0
Ⓖ	C_0 Exhaust Valve (Yellow)	33.3 x 8.2 (1.311 x 0.323)	14.0
Ⓗ	2—3 Timing Valve(Yellow)	38.79 x 8.6 (1.534 x 0.339)	18.0

Retainers and Pins Specifications

Mark	Name	Length x Diameter mm (in.)
Ⓐ	Pin for 2—3 Timing Valve Sleeve	23.8 x 2.5 (0.927 x 0.098)

Mark	Name	Length x Width x Thickness mm(in.)
Ⓐ	Retainer for Primary Regulator Valve Plunger Sleeve	18.0 x 5.0 x 3.2 (0.709 x 0.197 x 0.126)
Ⓑ	Retainer for C_0 Exhaust Valve	12.0 x 5.0 x 3.2 (0.472 x 0.197 x 0.126)
Ⓒ	Retainer for 3—4 Shift Valve Plug	12.0 x 5.0 x 3.2 (0.472 x 0.197 x 0.126)
Ⓓ	Retainer for 1—2 Shift Valve Plug	12.0 x 5.0 x 3.2 (0.472 x 0.197 x 0.126)

Mark	Name	Length x Diameter mm(in.)
Ⓔ	Pin for Lock—up control Valve Plug	23.8 x 2.5(0.937 x 0.098)

Check Valve, Ball and Springs Specifications

Mark	Name	Diameter mm (in.)
Ⓐ	Check Ball	8.7 (0.343)

Mark	Name (Color)	Free length x Outer Diameter mm (in.)	Total No. of coils
Ⓑ	Check Ball (None)	14 x 9.8 (0.551 x 0.386	6.0
Ⓒ	Pressure Relief Valve	24.0 x 8.2 (0.945 x 0.323)	12.0

ACCUMULATOR

	Piston Diameter mm (in.)	Spring Free length x Outer Diameter mm (in.)	Spring Color
B_0	35.9 (1.413)	63.1 x 20.7 (2.484 x 0.815)	Light Green
B_2	43.9 (1.728)	65.0 x 25.1 (2.559 x 0.988)	Blue
C_1	29.9 (1.413)	91.5 x 17.7 (3.602 x 0.697)	Green
C_2	39.9 (1.571)	83.5 x 21.7 (3.287 x 0.854)	Light Green

TORQUE SPECIFICATIONS

AT098-01

Part tightened		N·m	kgf·cm	ft·lbf
Oil pump cover x oil pump body	10mm head bolt	8.8	90	78 in.·lbf
	12 mm head bolt	21	210	15
Lower balve body cover x Lower valve body		5.4	55	48 in.·lbf
Upper valve body x Lower valve body		5.4	55	48 in.·lbf
Manual detent spring x Lower valve body		5.4	55	48 in.·lbf
Parking lock pawl x Transfer adoptor		19	195	14
Transmission rear cover x Transmission case		7.8	80	69 in.·lbf
C_1 accumulator cover x Transmission case		7.8	80	69 in.·lbf
Transfer Adoptor x Transmission case		37	380	27
Center support set bolt		25	250	18
Torque converter x Drive plate		28	290	21
Oil pan x Transmission case		6.9	70	61 in.·lbf
Transmission housing x Transmission case		64	650	47
Fluid Temp. sensor Transmission case		34	350	25
Oil cooler union x Transmission case		29	300	22
Park/neutral position switch x Transmission case		13	130	9
Park/neutral position switch x Manual valve shaft		6.9	70	61 in.·lbf
Control shaft x Transmission case		13	130	9
Oil pump x Transmission case		25	250	18
Valve body x Transmission case		10	100	87in.·lbf
Oil strainer x Valve body		10	100	87in.·lbf