

**Subject:** A541E transmission, technical assistance

**Source:** Toyota service manuals

This reference includes the following charts, tables, and diagrams for vehicles with the 541E transmission:

- [Figure TA1232-1](#) Electronic component location diagram for 1995–96 Avalon
- [Figure TA1232-2](#) Electronic component location diagram for 1997 Avalon
- [Figure TA1232-3](#) Electronic component location diagram for 1998–99 Avalon
- [Figure TA1232-4](#) Electronic component location diagram for 1994–96 Camry
- [Figure TA1232-5](#) Electronic component location diagram for 1997–2001 Camry
- [Figure TA1232-6](#) Electronic component location diagram for 2001–02 Sienna
- [Figure TA1232-7](#) Solenoid application chart
- [Figure TA1232-8](#) Clutch and band application chart
- [Figure TA1232-9](#) Bearing and race locations and specifications
- [Figure TA1232-10](#) Accumulator piston and spring identification
- [Figure TA1232-11](#) C0 accumulator piston identification
- [Figure TA1232-12](#) Valve body components
- [Figure TA1232-13](#) Lower valve body cover installation
- [Figure TA1232-14](#) Pressure relief valve installation
- [Figure TA1232-15](#) Upper valve body bolt locations and torque
- [Figure TA1232-16](#) B0 accumulator assembly installation
- [Figure TA1232-17](#) Check balls and vibrating stopper locations
- [Figure TA1232-18](#) No. 2 lower valve body cover installation
- [Figure TA1232-19](#) Oil strainer and check valve installation
- [Figure TA1232-20](#) Check ball installation into the lower valve body No. 2 cover
- [Figure TA1232-21](#) Upper valve body pin and retainer locations
- [Figure TA1232-22](#) Upper valve body check ball locations
- [Figure TA1232-23](#) Upper valve body spring locations and specifications
- [Figure TA1232-24](#) Lower valve body retainer locations and specifications
- [Figure TA1232-25](#) Lower valve body check ball locations on the upper and lower sides
- [Figure TA1232-26](#) Lower valve body spring locations and specifications

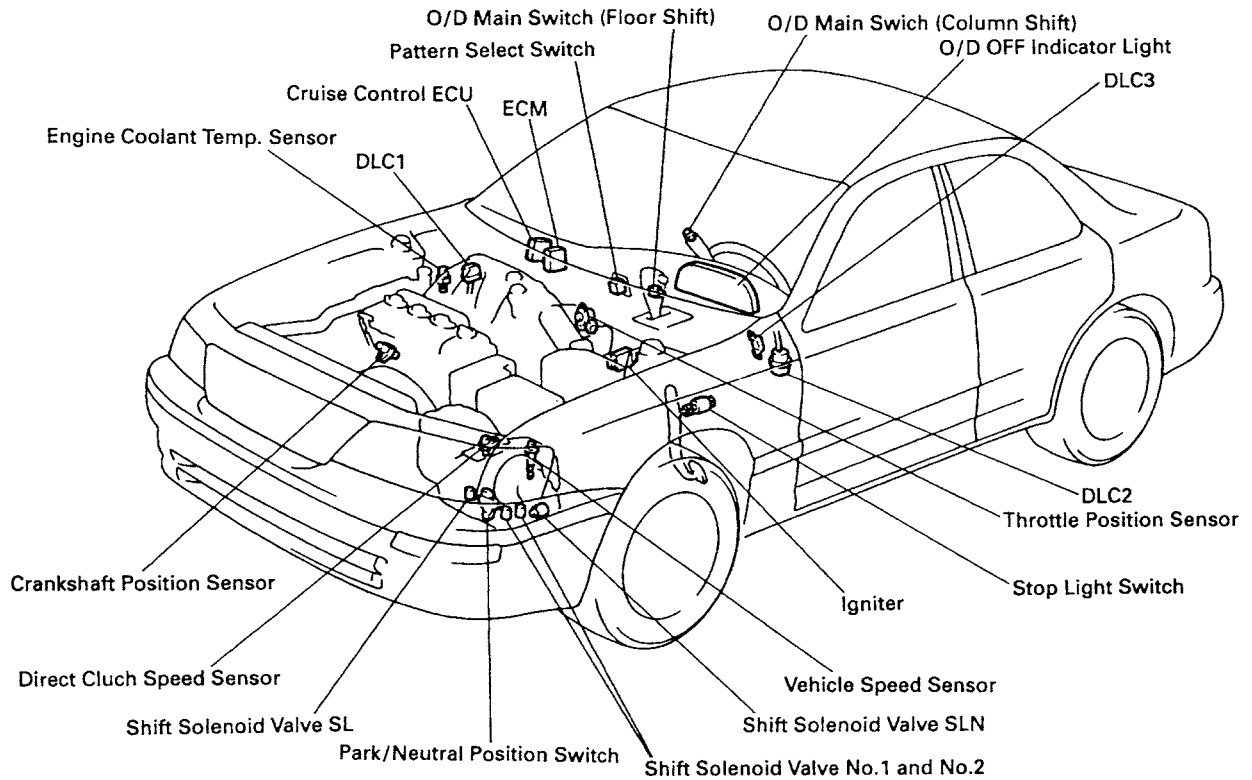


Figure TA1232-1 Electronic component location diagram for 1995-96 Avalon

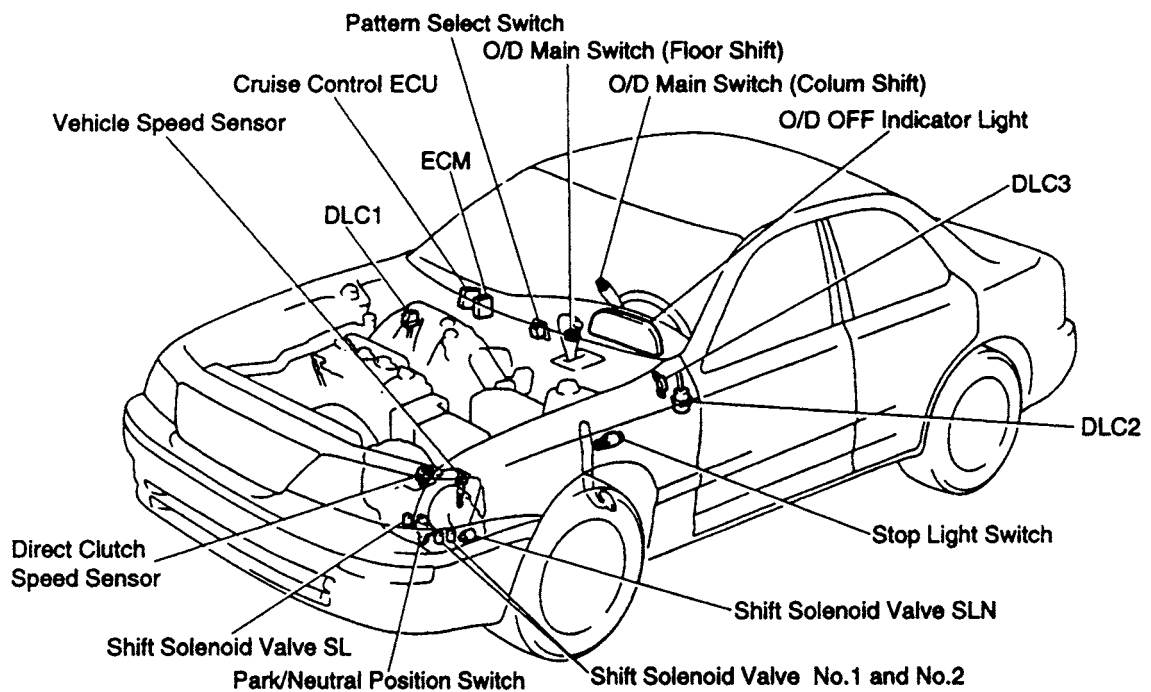


Figure TA1232-2 Electronic component location diagram for 1997 Avalon

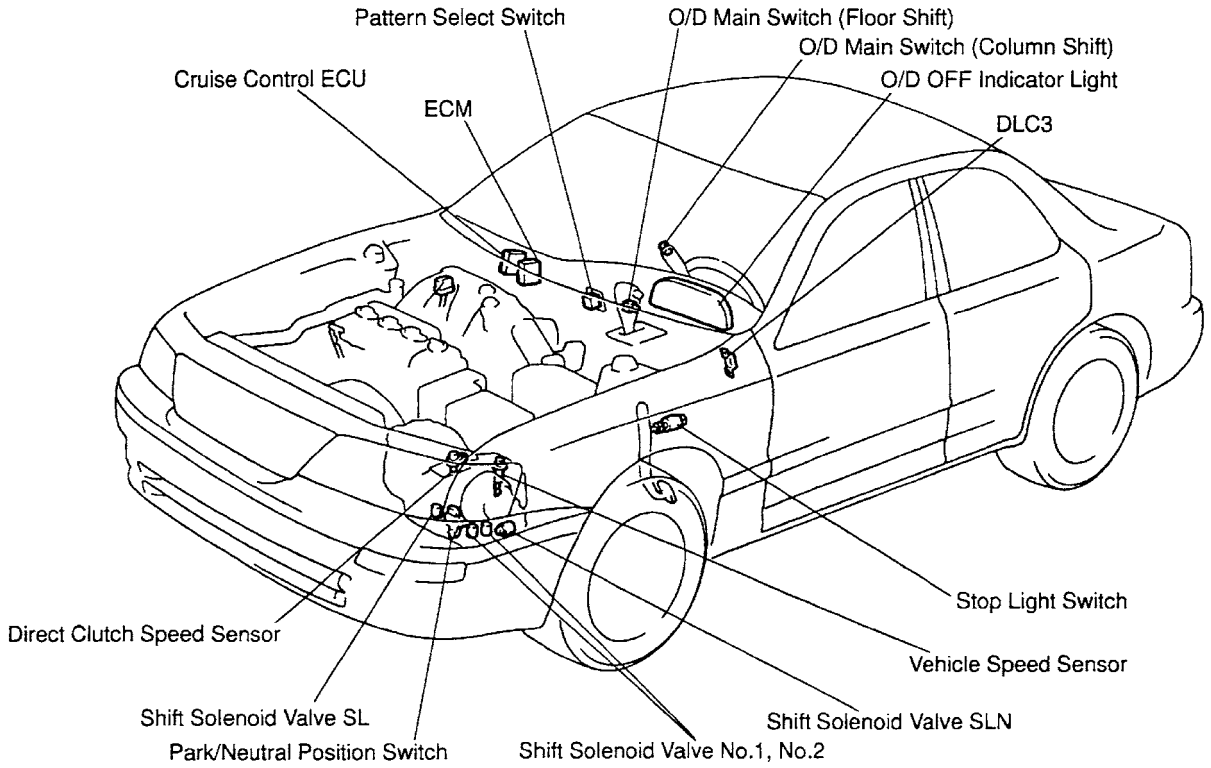


Figure TA1232-3 Electronic component location diagram for 1998-99 Avalon

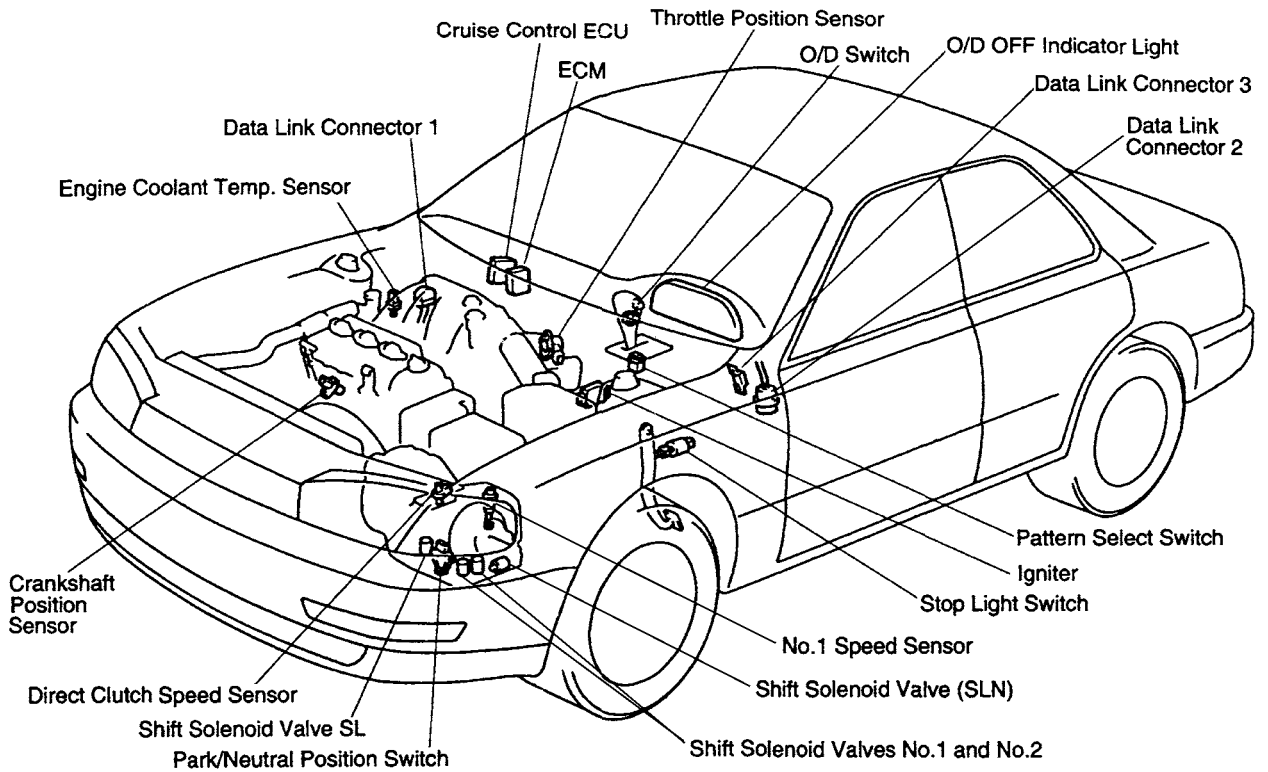


Figure TA1232-4 Electronic component location diagram for 1994-96 Camry

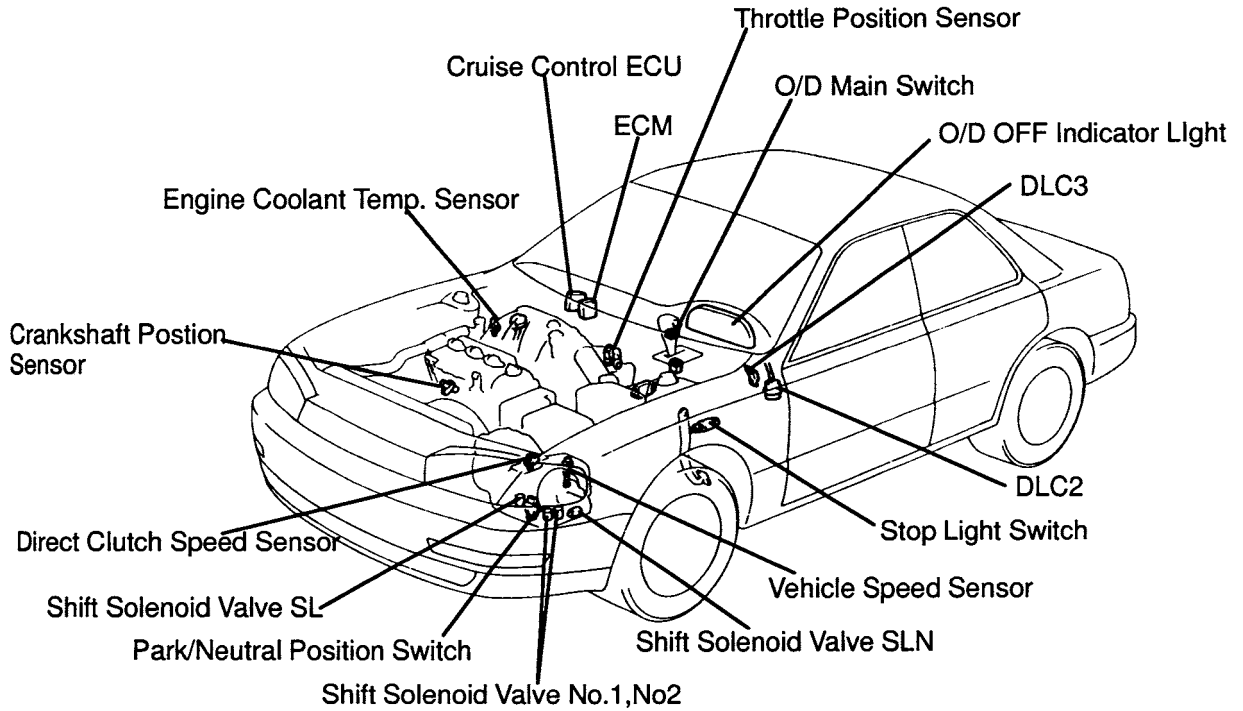


Figure TA1232-5 Electronic component location diagram for 1997-2001 Camry

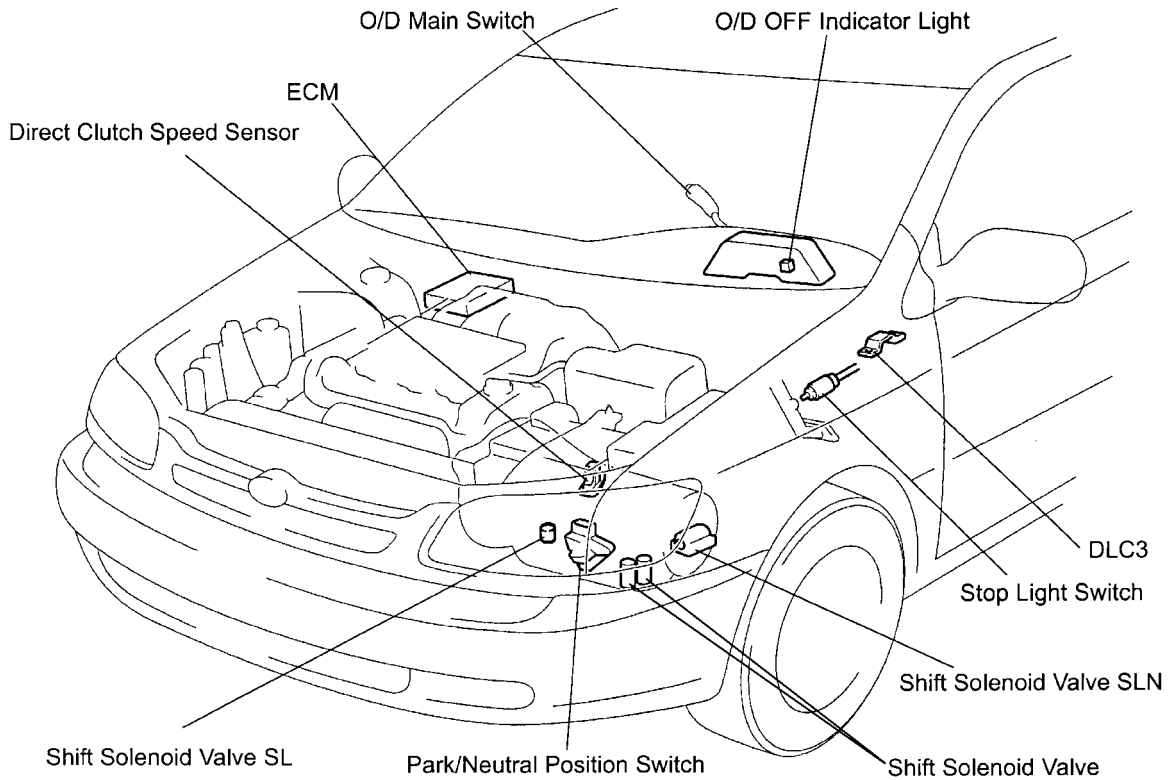
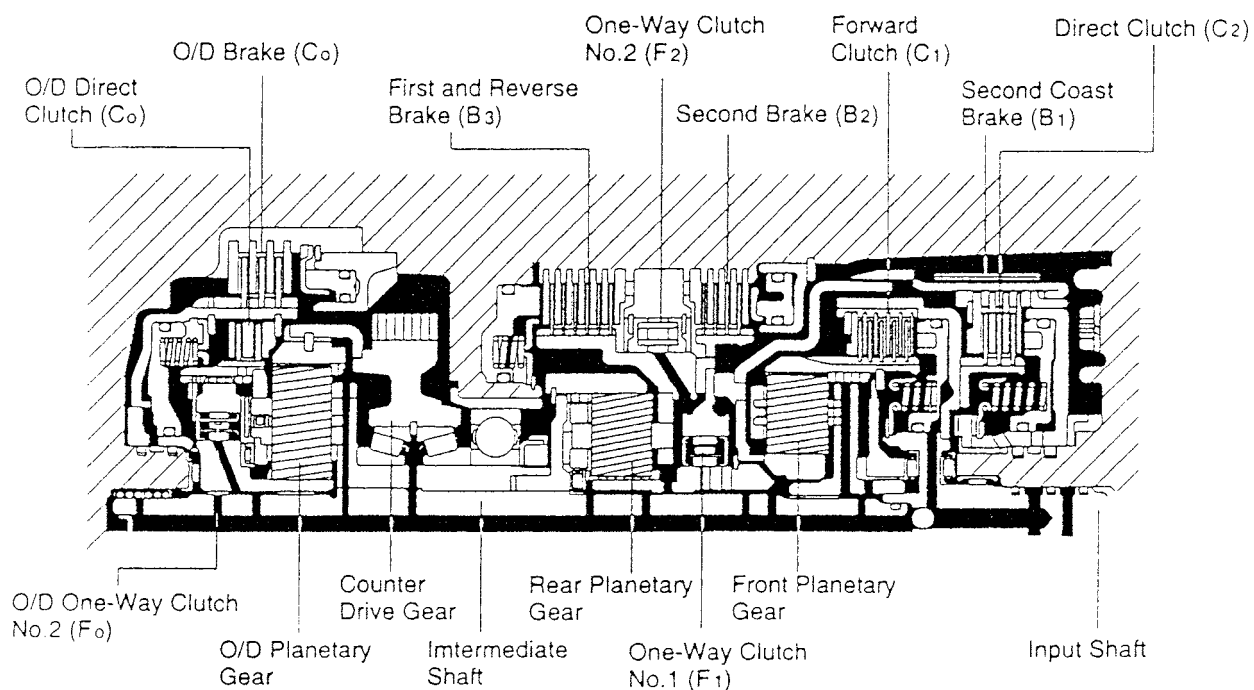


Figure TA1232-6 Electronic component location diagram for 2001-02 Sienna

Position	NORMAL			SHIFT SOLENOID VALVE NO.1 MALFUNCTIONING			SHIFT SOLENOID VALVE NO.2 MALFUNCTIONING			BOTH SOLENOIDS MALFUNCTIONING
	Solenoid valve		Gear	Solenoid valve		Gear	Solenoid valve		Gear	Gear when shift selector is manually operated
	No.1	No.2		No.1	No.2		No.1	No.2		
D	ON	OFF	1st	x	ON	3rd	ON	x	1st	O/D
	ON	ON	2nd	x	ON	3rd	OFF	x	O/D	O/D
	OFF	ON	3rd	x	ON	3rd	OFF	x	O/D	O/D
	OFF	OFF	O/D	x	OFF	O/D	OFF	x	O/D	O/D
2	ON	OFF	1st	x	ON	3rd	ON	x	1st	O/D (3rd)
	ON	ON	2nd	x	ON	3rd	OFF	x	O/D (3rd)	O/D (3rd)
	OFF	ON	3rd	x	ON	3rd	OFF	x	O/D (3rd)	O/D (3rd)
L	ON	OFF	1st	x	OFF	1st	ON	x	1st	1st
	ON	ON	2nd	x	ON	2nd	ON	x	1st	1st

x: Malfunctions

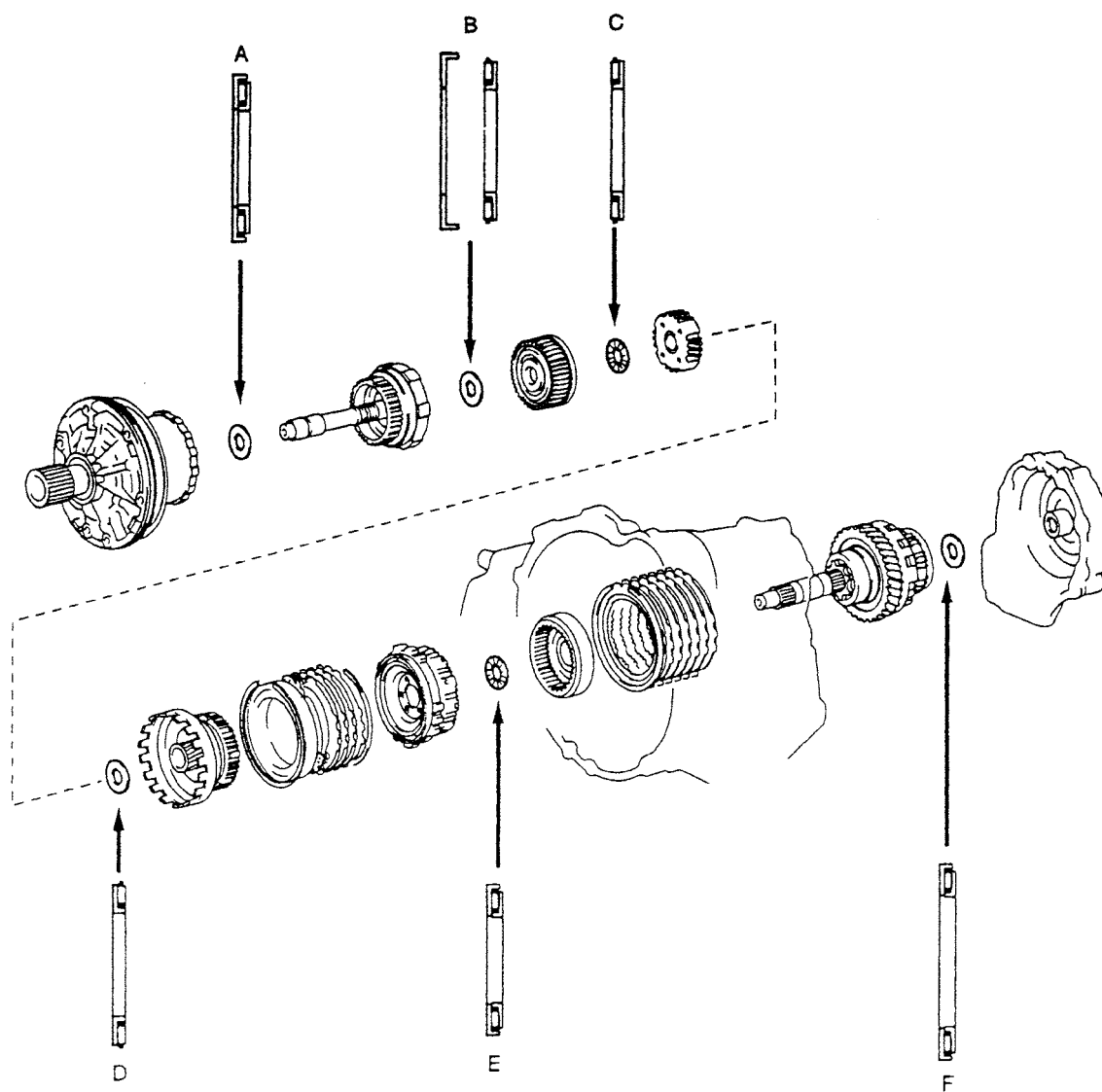
Figure TA1232-7 Solenoid application chart



○ . . . . . Operating

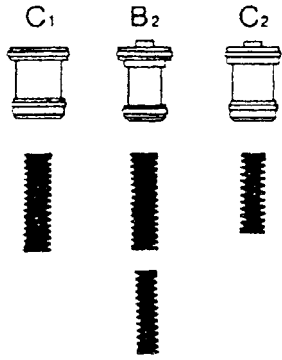
Shift lever position	Gear Position	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>	B <sub>0</sub>	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	F <sub>0</sub>	F <sub>1</sub>	F <sub>2</sub>
P	Parking	○									
R	Reverse	○		○				○			
N	Neutral	○									
D	1st	○	○						○		○
	2nd	○	○				○		○	○	
	3rd	○	○	○			○		○		
	O/D		○	○	○		○				
2	1st	○	○						○		○
	2nd	○	○			○	○		○	○	
	*3rd	○	○	○			○		○		
L	1st	○	○					○	○		○
	*2nd	○	○			○	○		○	○	

Figure TA1232-8 Clutch and band application chart



Mark	Thrust Bearing Outside Diameter mm (in.)	Thrust Bearing Inside Diameter mm (in.)
A	See page AX-118	27.7 (1.091)
B	47.6 (1.874)	31.4 (1.236)
C	45.5 (1.791)	30.1 (1.185)
D	45.5 (1.791)	30.1 (1.185)
E	38.7 (1.524)	22.6 (0.890)
F	46.3 (1.823)	28.6 (1.126)

Figure TA1232-9 Bearing and race locations and specifications



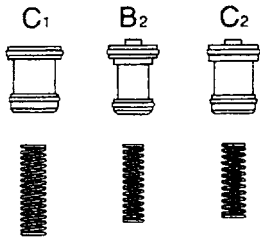
**With Double B2 Spring**

mm (in.)

Spring	Color	Free length
C <sub>2</sub>	Yellow/Purple	51.8 (2.039)
B <sub>2</sub>	None	88.2 (3.473)
B <sub>2</sub>	None	70.3 (2.767)
C <sub>1</sub>	None	73.6 (2.898)

**With Single B2 Spring**

mm (in.)



Spring	Color	Free length	Outer diameter
C <sub>2</sub>	Yellow/Purple	51.8 (2.039)	18.0 (0.709)
C <sub>2</sub>	None	57.3 (2.256)	NA
B <sub>2</sub>	Brown/Pink	77.1 (3.035)	16.0 (0.630)
B <sub>2</sub>	Orange/White	79.5 (3.130)	NA
C <sub>1</sub>	None	73.6 (2.898)	24.5 (0.965)

Figure TA1232-10 Accumulator piston and spring identification

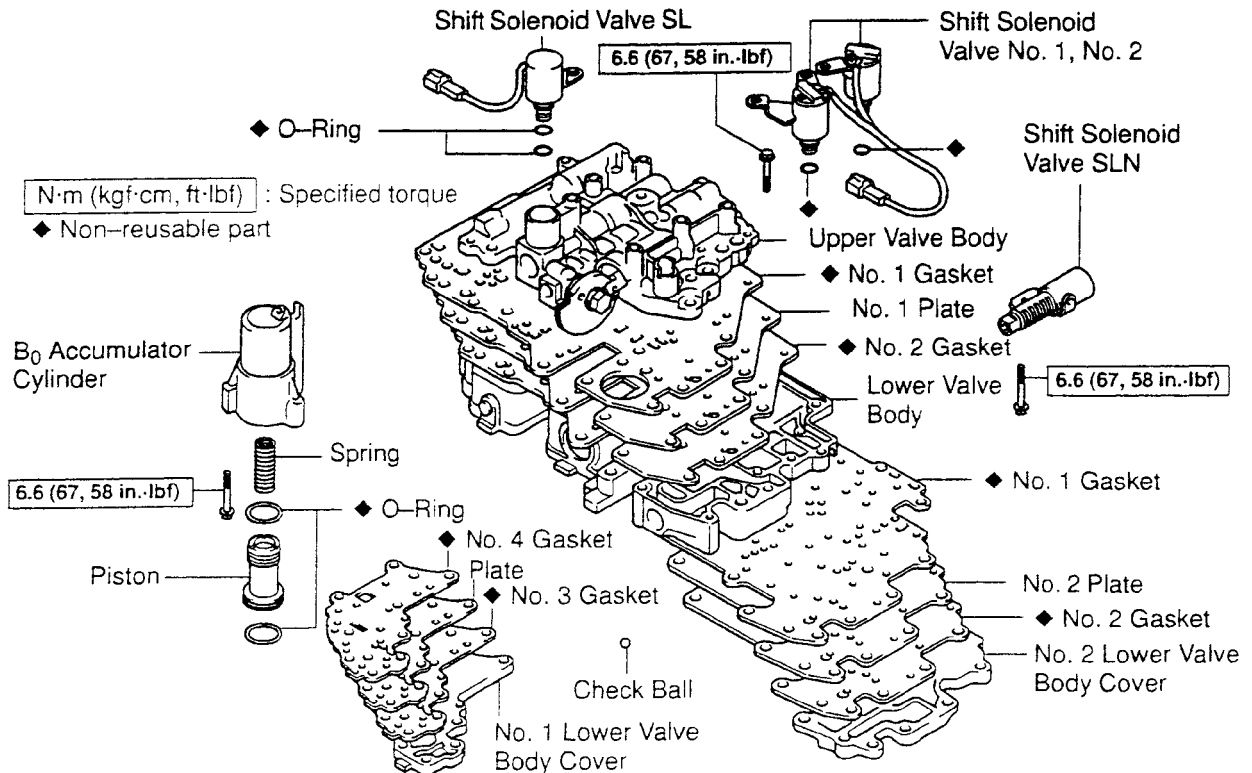


Figure TA1232-11 C0 accumulator piston identification



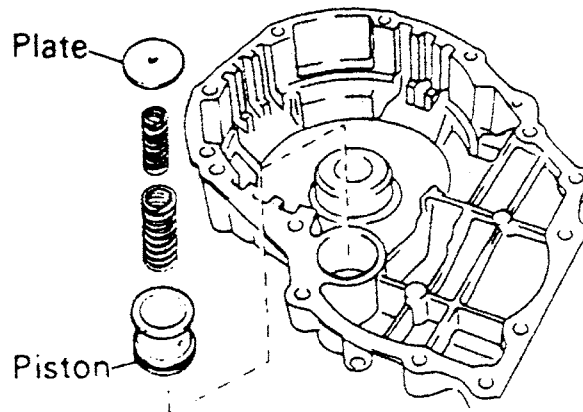
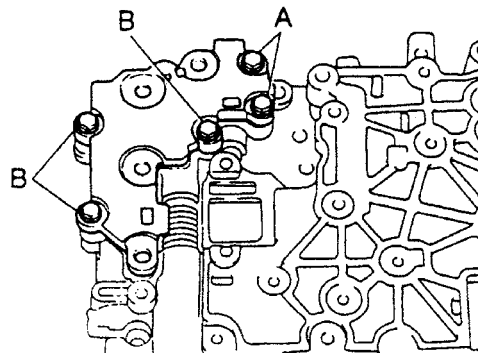
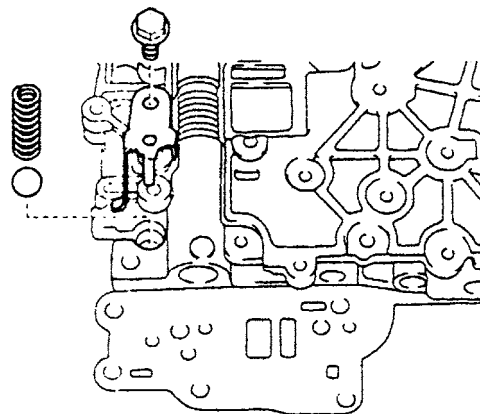


Figure TA1232-12 Valve body components



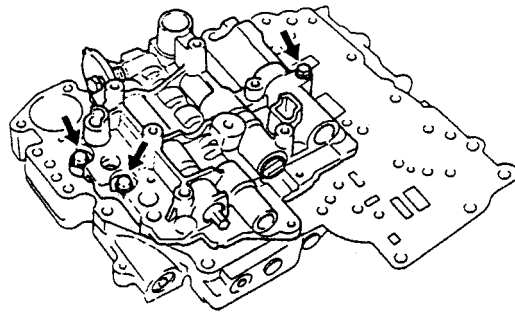
**BOLT LENGTH:**  
 Bolt A = 47 mm (1.850 inch)  
 Bolt B = 14 mm (0.551 inch)

Figure TA1232-13 Lower valve body cover installation



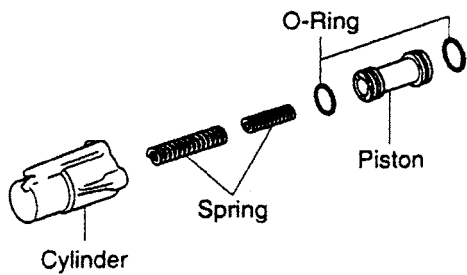
**TORQUE: 6.6 Nm (67 kgf/cm or 58 in-lb)**

Figure TA1232-14 Pressure relief valve installation



**TORQUE: 6.6 Nm (67 kgf/cm or 58 in-lb)**

Figure TA1232-15 Upper valve body bolt locations and torque



mm (in.)

	Color	Free length	Coil outer diameter
Inner	White	47.5 (1.870)	18.9 (0.744)
Outer	None	16.3 (0.642)	20.7 (0.815)

Figure TA1232-16 B0 accumulator assembly installation

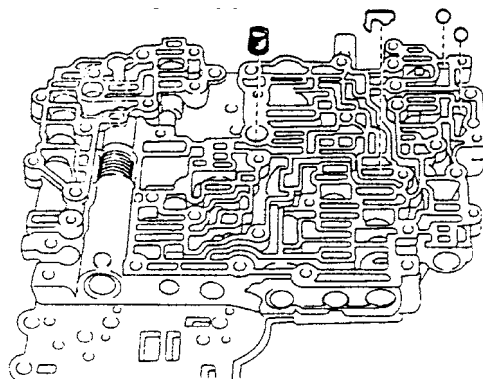


Figure TA1232-17 Check balls and vibrating stopper locations

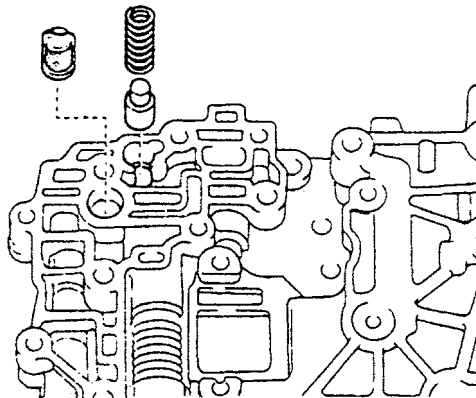
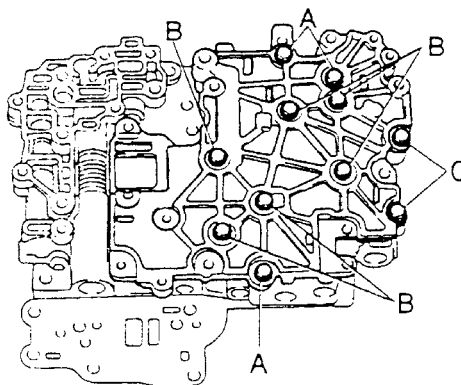


Figure TA1232-18 No. 2 lower valve body cover installation



**BOLT LENGTH:**  
Bolt A = 40 mm (1.575 inch)  
Bolt B = 44 mm (1.732 inch)  
Bolt C = 14 mm (0.551 inch)

Figure TA1232-19 Oil strainer and check valve installation

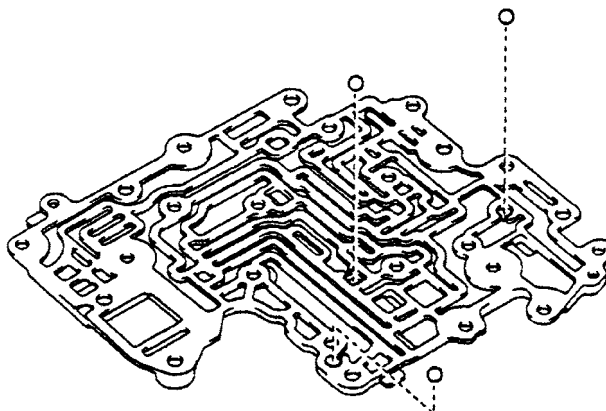
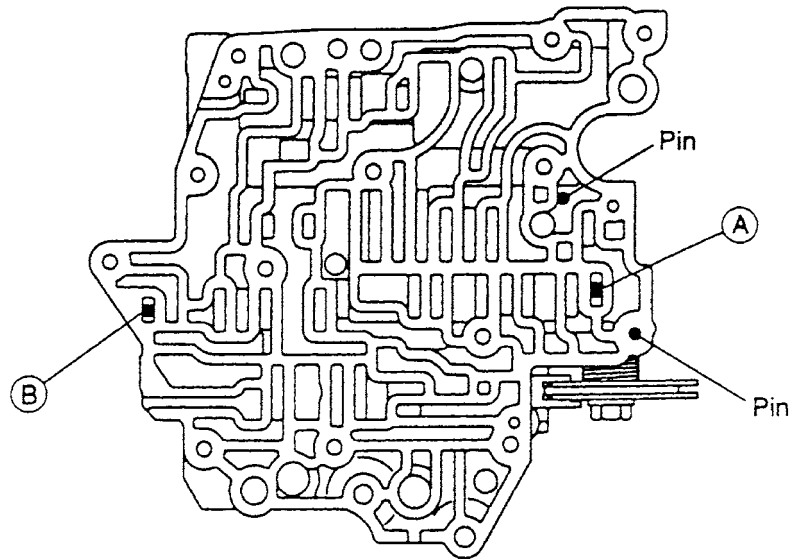


Figure TA1232-20 Check ball installation into the lower valve body No. 2 cover



Mark	Name	Height / Width / Thickness	
		mm (in.)	
Ⓐ	B <sub>1</sub> Orifice Control Valve	8.9 (0.350) / 5.0 (0.197) / 3.2 (0.126)	
Ⓑ	Low Coast Modulator Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)	

Figure TA1232-21 Upper valve body pin and retainer locations

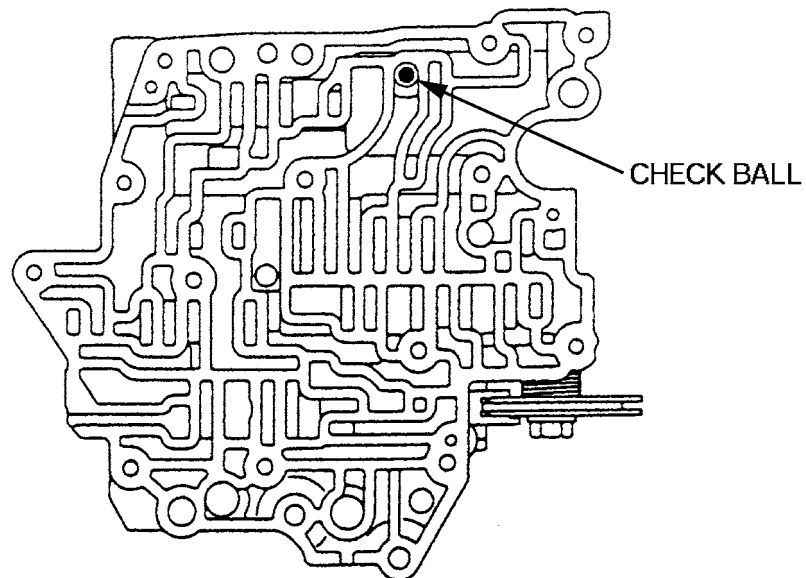
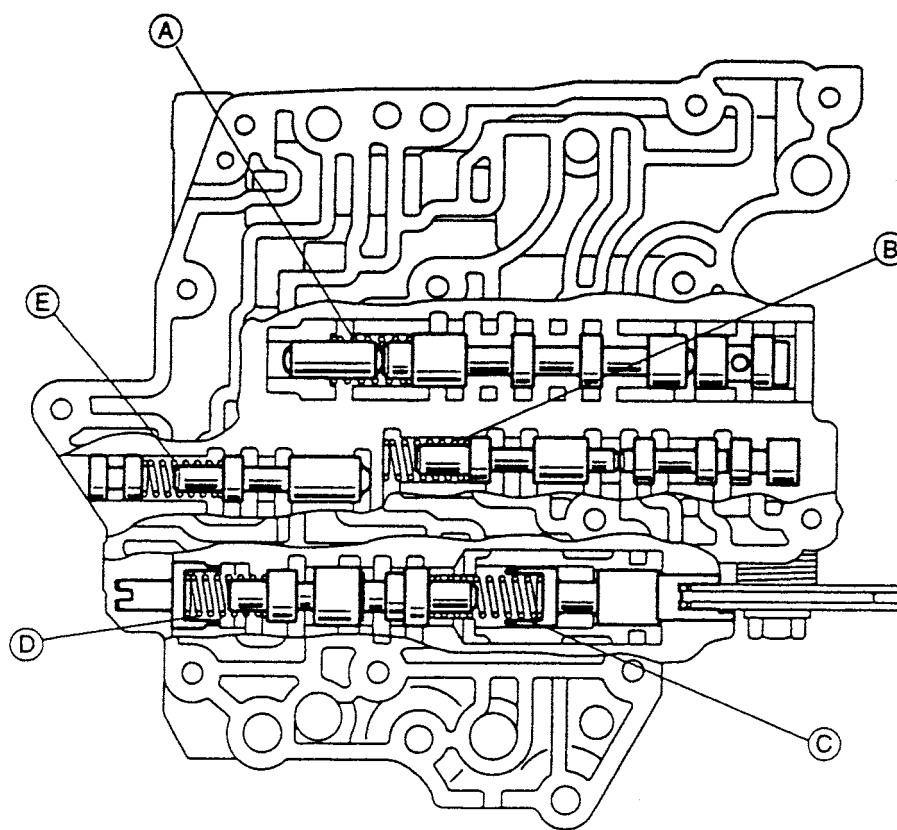
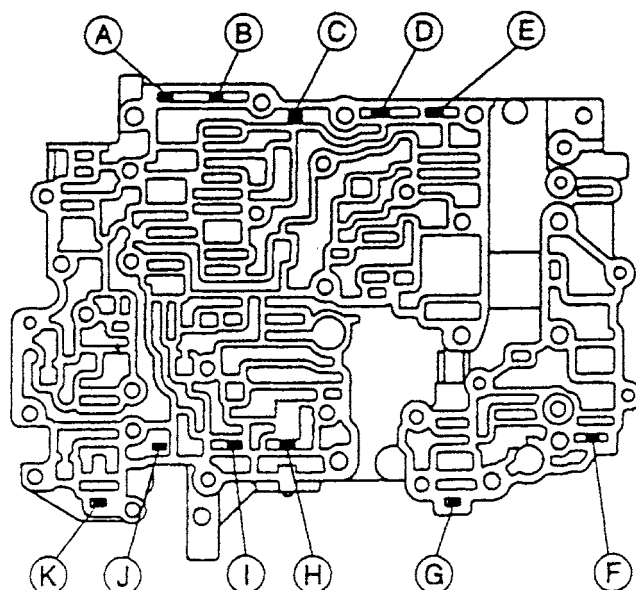


Figure TA1232-22 Upper valve body check ball locations



Mark	Name (Color)	Free Length / Outer Diameter mm (in.)	Total No. of Coils
Ⓐ	Lock-Up Relay Valve (Yellow)	26.8 (1.055) / 10.2 (0.402)	10.8
Ⓑ	B, Orifice Control Valve (White)	24.8 (0.976) / 6.4 (0.252)	12.0
Ⓒ	Throttle Valve (Green)	31.5 (1.240) / 7.0 (0.276)	11.4
Ⓓ	Down-Shift Plug (None)	15.0 (0.591) / 11.0 (0.433)	7.0
Ⓔ	Low Coast Modulator Valve (Purple)	20.2 (0.795) / 7.9 (0.311)	11.9

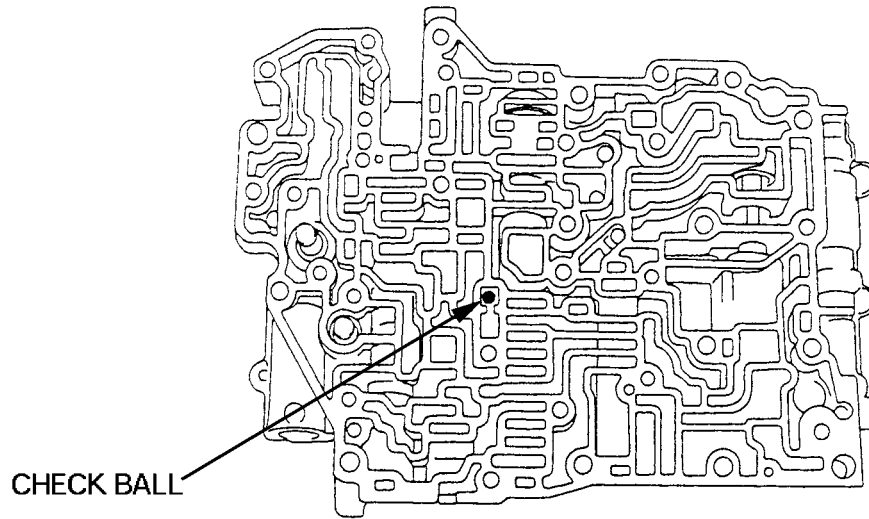
Figure TA1232-23 Upper valve body spring locations and specifications



Mark	Name	Height / Width / Thickness mm (in.)
Ⓐ	Accumulator Control Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)
Ⓑ	2-3 Shift Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)
Ⓒ	1-2 Shift Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)
Ⓓ	Reverse Control Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)
Ⓔ	Cut-Back Valve	6.5 (0.256) / 5.0 (0.197) / 3.2 (0.126)
Ⓕ	Secondary Regulator Valve	11.0 (0.433) / 5.0 (0.197) / 3.2 (0.126)
Ⓖ	Solenoid Modulator Valve	8.5 (0.335) / 5.0 (0.197) / 3.2 (0.126)
Ⓗ	Lock-Up Control Valve	9.2 (0.362) / 5.0 (0.197) / 3.2 (0.126)
Ⓘ	Second Coast Modulator Valve	8.0 (0.315) / 5.0 (0.197) / 3.2 (0.126)
Ⓙ	Second Lock Valve	9.2 (0.362) / 11.5 (0.453) / 3.2 (0.126)
Ⓚ	3-4 Shift Valve	6.5 (0.256) / 5.0 (0.197) / 3.2 (0.126)

Figure TA1232-24 Lower valve body retainer locations and specifications

## UPPER SIDE



## LOWER SIDE

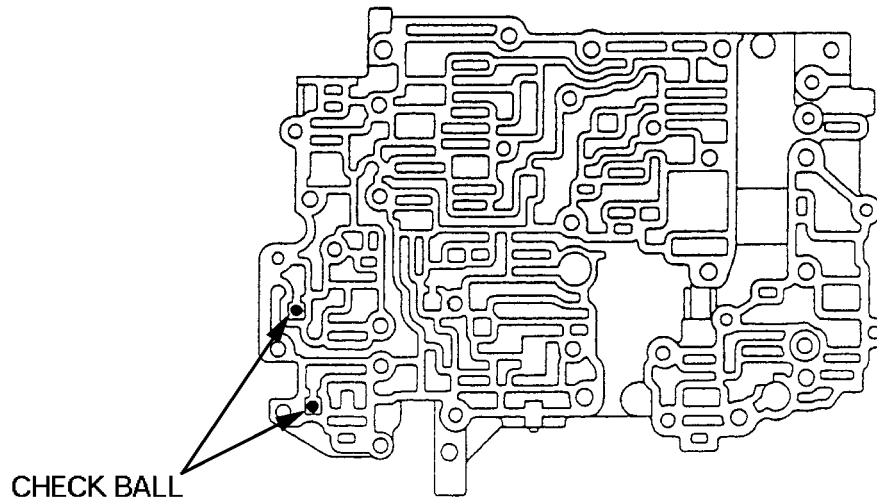
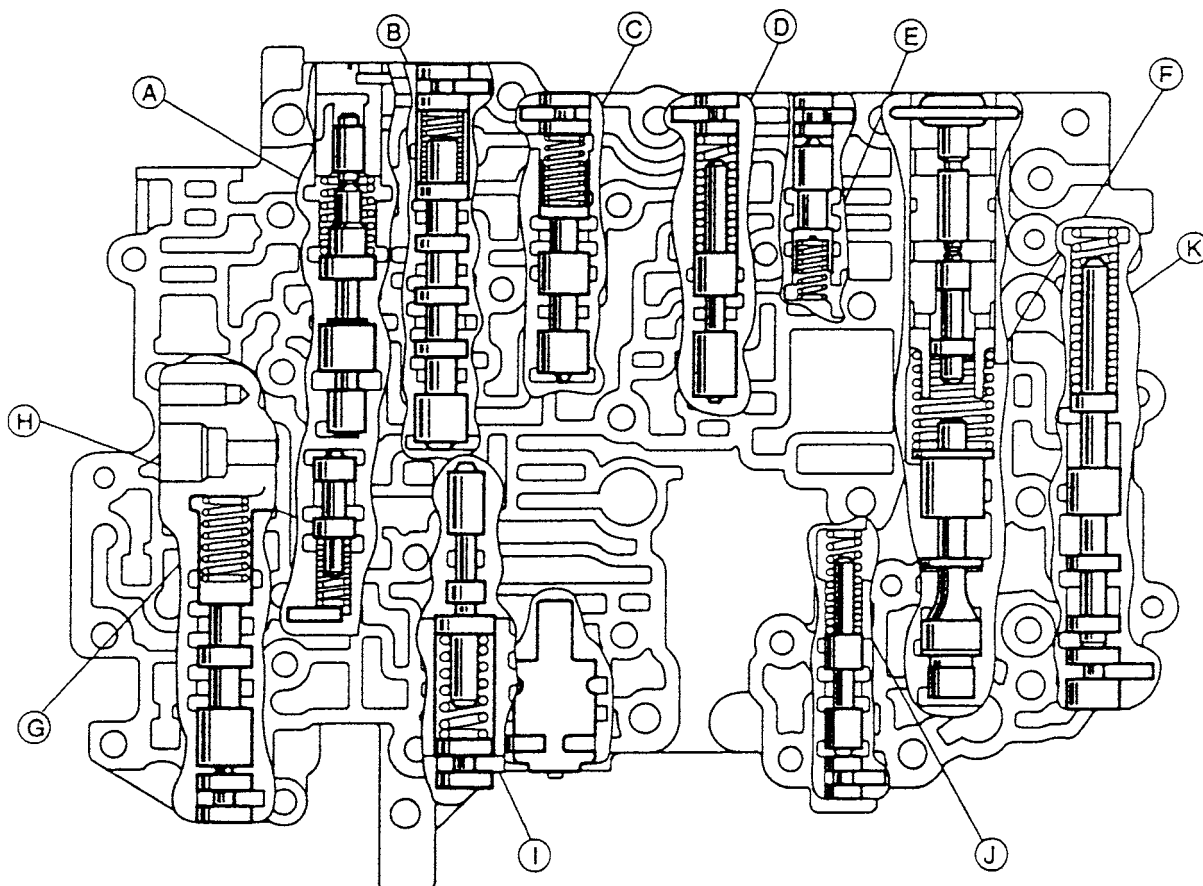


Figure TA1232-25 Lower valve body check ball locations on the upper and lower sides



Mark	Name (Color)	Free Length / Outer Diameter mm (in.)	Total No. of Coils
Ⓐ	Accumulator Control Valve (Red)	25.1 (0.988) / 8.6 (0.339)	8.0
Ⓑ	2-3 Shift Valve (None)	28.0 (1.102) / 7.6 (0.299)	10.3
Ⓒ	1-2 Shift Valve (Light Green)	29.2 (1.150) / 8.9 (0.350)	12.0
Ⓓ	Reverse Control Valve (White/Purple)	38.1 (1.500) / 6.5 (0.256)	19.0
Ⓔ	Cut-Back Valve (None)	21.8 (0.858) / 6.0 (0.236)	13.5
Ⓕ	Primary Regulator Valve (None)	36.6 (1.441) / 16.1 (0.634)	6.3
Ⓖ	3-4 Shift Valve (None)	28.0 (1.102) / 7.6 (0.299)	10.3
Ⓕ	Second Lock Valve (None)	20.7 (0.815) / 7.4 (0.291)	9.5
Ⓘ	Second Coast Modulator Valve (White)	32.2 (1.268) / 9.0 (0.354)	11.4
Ⓙ	Solenoid Modulator Valve (Purple/Pink)	30.2 (1.189) / 5.6 (0.220)	15.3
Ⓚ	Secondary Regulator Valve (None)	46.9 (1.846) / 5.9 (0.232)	21.8

Figure TA1232-26 Lower valve body spring locations and specifications