

Transmission Type...G4AEL/G4AHL/G4AFEL

Rebuilder's Kwik Reference Guide



Clutch Clearances

Forward Clutch.....	.040-.047"	.....	Snap Ring/ Pressure Plate
Direct Clutch.....	.051-.059"	.....	Pressure Plate
Low/Reverse Clutch.....	.081-.092"	.....	Pressure Plate
Reverse Clutch.....	.059-.071"	.....	Snap Ring/ Pressure Plate
Coast Clutch.....	.040-.047"	.....	Snap Ring/ Pressure Plate

Adjusted By:

Torque Specifications

Pump Halves	71-97 In. Lbs.
Pump To Case	14-19 Ft. Lbs.
Valve Body	57-69 In. Lbs.
Valve Body To Case.....	97-130 In. Lbs.
Idler Gear Cover To Case	14-18 Lbs.
Pan/Valve Body Cover	74-95 In. Lbs.
Stator Support.....	95-122 In. Lbs.
Extension Housing	
Ring Gear Support	58-68 Ft. Lbs.
Overdrive Support	
Chain Cover	
Transfer Gears	
Governor Bolts	
Bellhousing To Main Case	27-38 Ft. Lbs.
Idler Nut	94 Ft. Lbs.
2-3 Accumulator Housing	69-95 In. Lbs.

Band Adjustment

Intermediate Band

2-4 Band..... 78-95 In. Lbs. 2 Turns

Low/Reverse Band

Overdrive Band

Unit Endplays

Location

Selective

Front Unit .005-.010" Pump Tower Spacer

Middle Unit

Rear Unit

Differential .006-.011" Preload Under Race Spacer

Chain Sprocket

Differential:

Idler Gear .27-7.8 In. Lbs. Preload Under Race Spacer

Drive Gear .004-.006" Preload Under Race Spacer

Transmission Type...G4AEL/G4AHL/G4AFEL

Rebuilder's Kwik
Reference Guide



Clutch & Band/Solenoid Application Charts

G4A-EL Clutch & Band/Solenoid Application Chart									
Gear		Forward Clutch	Coasting Clutch	3-4 Clutch	Reverse Clutch	2-4 Brake	Low/Reverse Brake	1-Way Clutch 1	1-Way Clutch 2
Reverse					Applied		Applied		
D	1st	Applied						Applied	Applied
	2nd	Applied				Applied		Applied	
	3rd	Applied	Applied	Applied		Released		Applied	
	OD	*		Applied		Applied			
S	1st	Applied						Applied	Applied
	2nd	Applied				Applied		Applied	
	3rd	Applied	Applied	Applied		Released		Applied	
L	1st	Applied					Applied	Applied	Applied
	2nd	Applied	Applied			Applied		Applied	

* Applied but does not transmit power.

G4A-EL Solenoid Application Chart				
Gear	3-4 Solenoid Output 1 On = Red	1-2 Solenoid Output 2 On = Red	2-3 Solenoid Output 3 On = Red	Lock-Up Solenoid B Output 6 On = Red
1st	On	Off	On	Off
2nd	On	On	On	Off
3rd	Off	On*	Off	Off
4th	On	On	Off	Off
Lock-Up	On	On	Off	On

* Comes on in third to prime servo for the 3-4 shift.

Transmission Type...G4AEL/G4AHL/G4AFEL

Rebuilder's Kwik
Reference Guide



Clutch & Band/Solenoid Application Charts

G4A-FEL Clutch & Band/Solenoid Application Chart								
Gear	Forward Clutch	Coasting Clutch	3-4 Clutch	Reverse Clutch	2-4 Brake	Low/Reverse Brake	1-Way Sprag 1	1-Way Roller Clutch 2
Reverse				Applied		Applied		
D	1st	Applied					Applied	Applied
	2nd	Applied				Applied	Applied	
	3rd	Applied	Applied	Applied		Released	Applied	
	4th	Applied		Applied		Applied	*	
S	1st	Applied					Applied	Applied
	2nd	Applied				Applied	Applied	
	3rd	Applied	Applied	Applied		Released	Applied	
L	1st	Applied				Applied	Applied	Applied
	2nd	Applied	Applied			Applied	Applied	

* Applied but does not transmit power.

G4A-FEL Solenoid Application Chart						
Gear	3-4 Solenoid Output 1	1-2 Solenoid Output 2 On = Red	2-3 Solenoid Output 3	Lock-Up Solenoid Output 6 On = Red	EPC Output 7 On = Red@Max	Lock- Up Feel Output 8 On = Red
1st	On	Off	On	Off	Changes to control line pressure	Function Button #1
2nd	On	On	On	Off	Changes to control line pressure	Function Button #1
3rd	Off	On*	Off	Off	Changes to control line pressure	Function Button #1
4th	On	On	Off	Off	Changes to control line pressure	Function Button #1
Lock-Up	On	On	Off	On	Min-Max	On

* Comes on in third to prime servo for the 3-4 shift.

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



Clutch & Band/Solenoid Application Charts

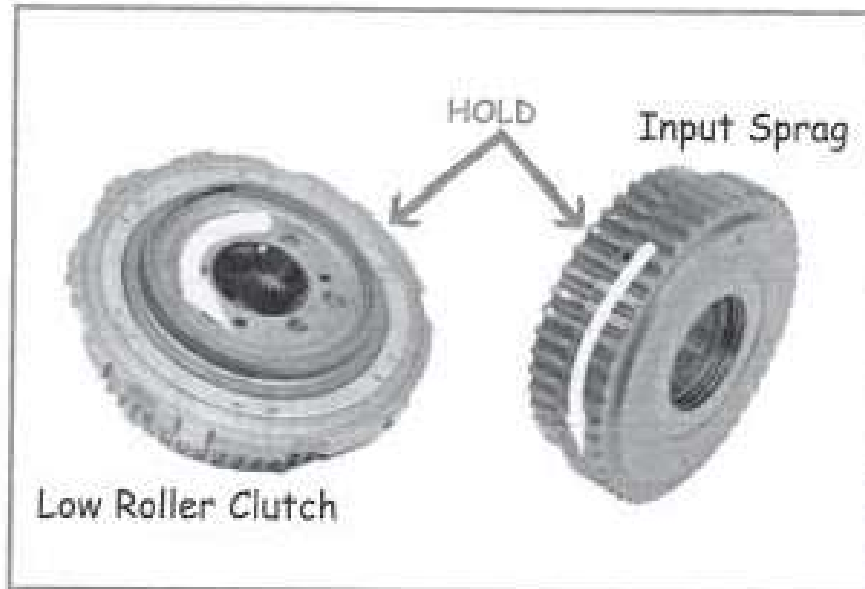
G4A-HL Clutch & Band/Solenoid Application Chart									
Gear		Forward Clutch	Coasting Clutch	3-4 Clutch	Reverse Clutch	2-4 Brake	Low/Reverse Brake	1-Way Clutch 1	1-Way Clutch 2
Reverse					Applied		Applied		
D	1st	Applied						Applied	Applied
	2nd	Applied				Applied		Applied	
	3rd	Applied	Applied	Applied		Released		Applied	
	OD	*		Applied		Applied			
2	2nd	Applied	Applied			Applied		Applied	
1	1st	Applied	Applied			Released	Applied	Applied	
	2nd	Applied	Applied			Applied		Applied	
* Applied but does not transmit power.									

Transmission Type...**G4AEL/G4AHL/G4AFEL**

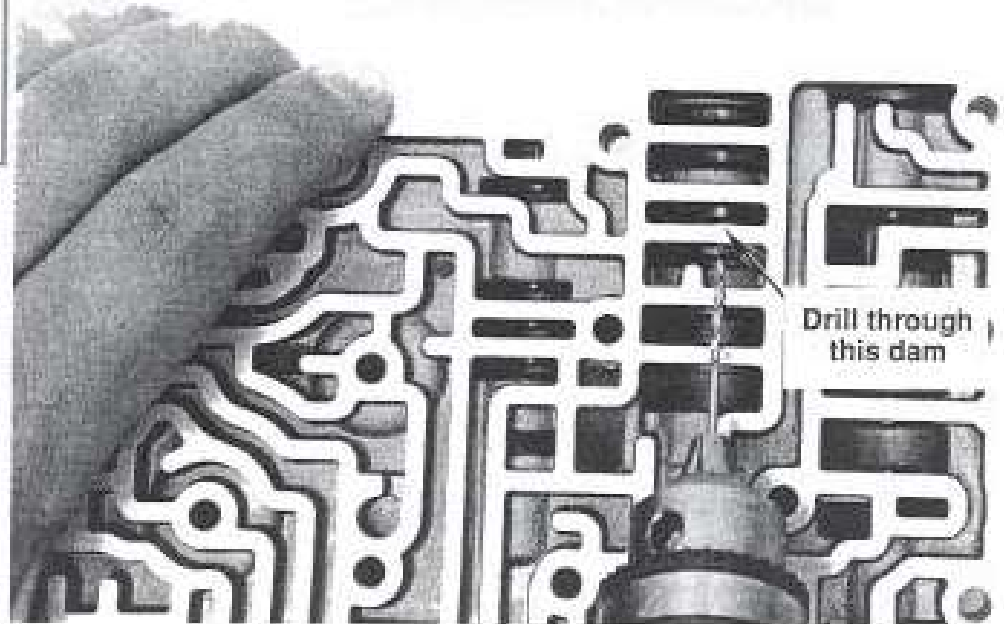
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Technical Tips For Rebuilding This Unit



Line to Lube Modification



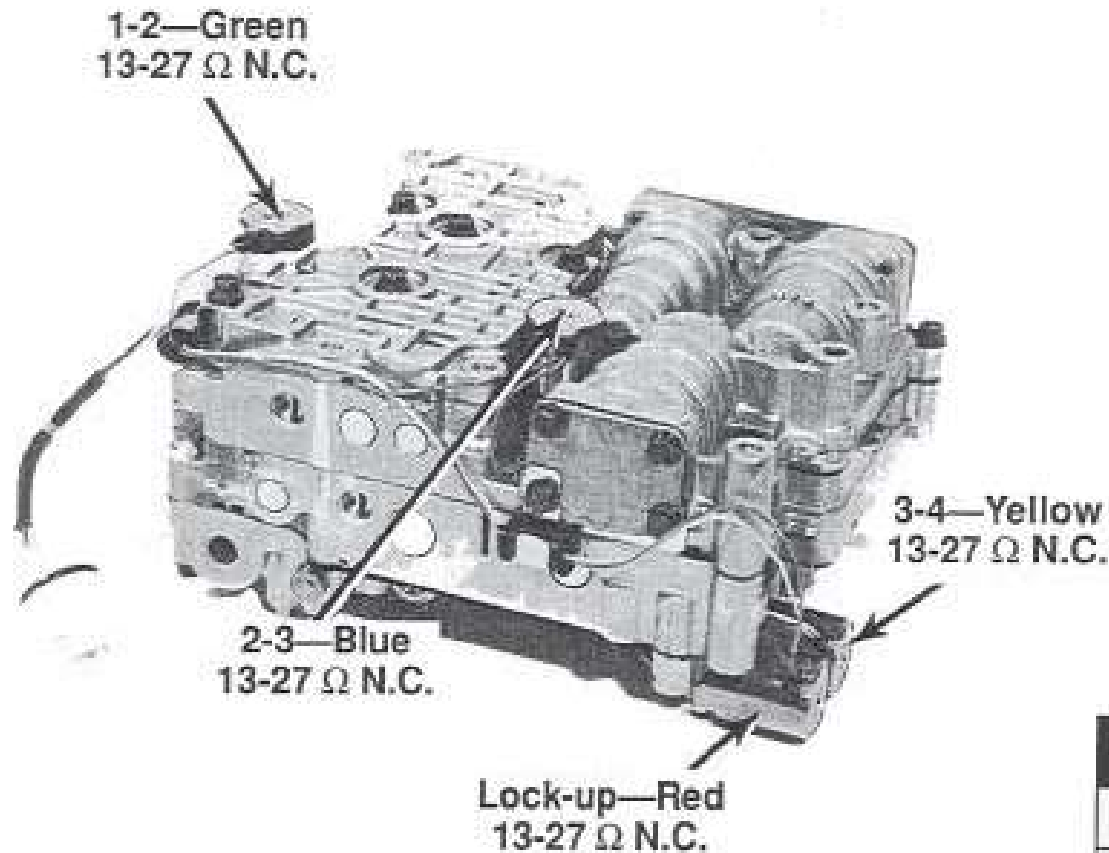
Drill a .050" hole at an angle through this dam in the valve body to increase lube.

Transmission Type...G4AEL/G4AHL/G4AFEL

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G4AEL Solenoid & Harness Information



Transmission Case Connector:



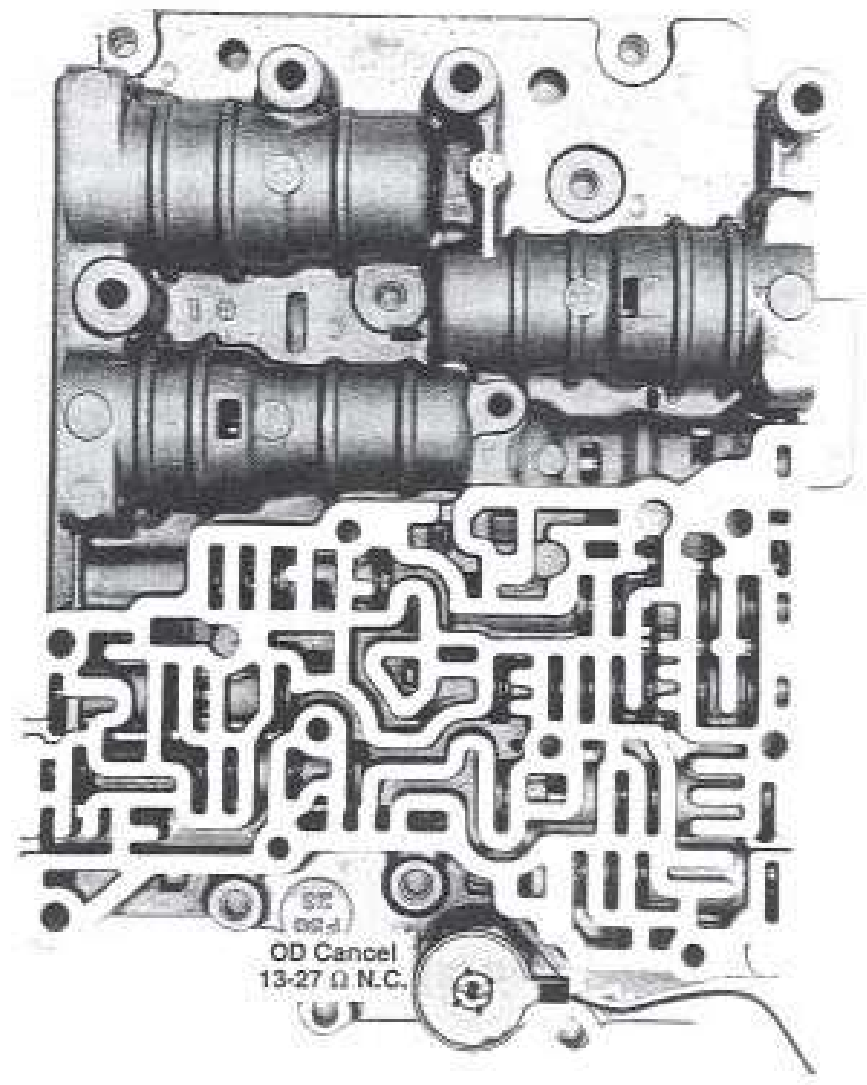
Pin #	Description	Resistance
1	-	-
2	3-4 Solenoid	13 - 27 Ohms
3	-	-
4	Lock-Up Solenoid	13 - 27 Ohms
5	2-3 Solenoid	13 - 27 Ohms
6	1-2 Solenoid	13 - 27 Ohms

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AEL Solenoid & Harness Information

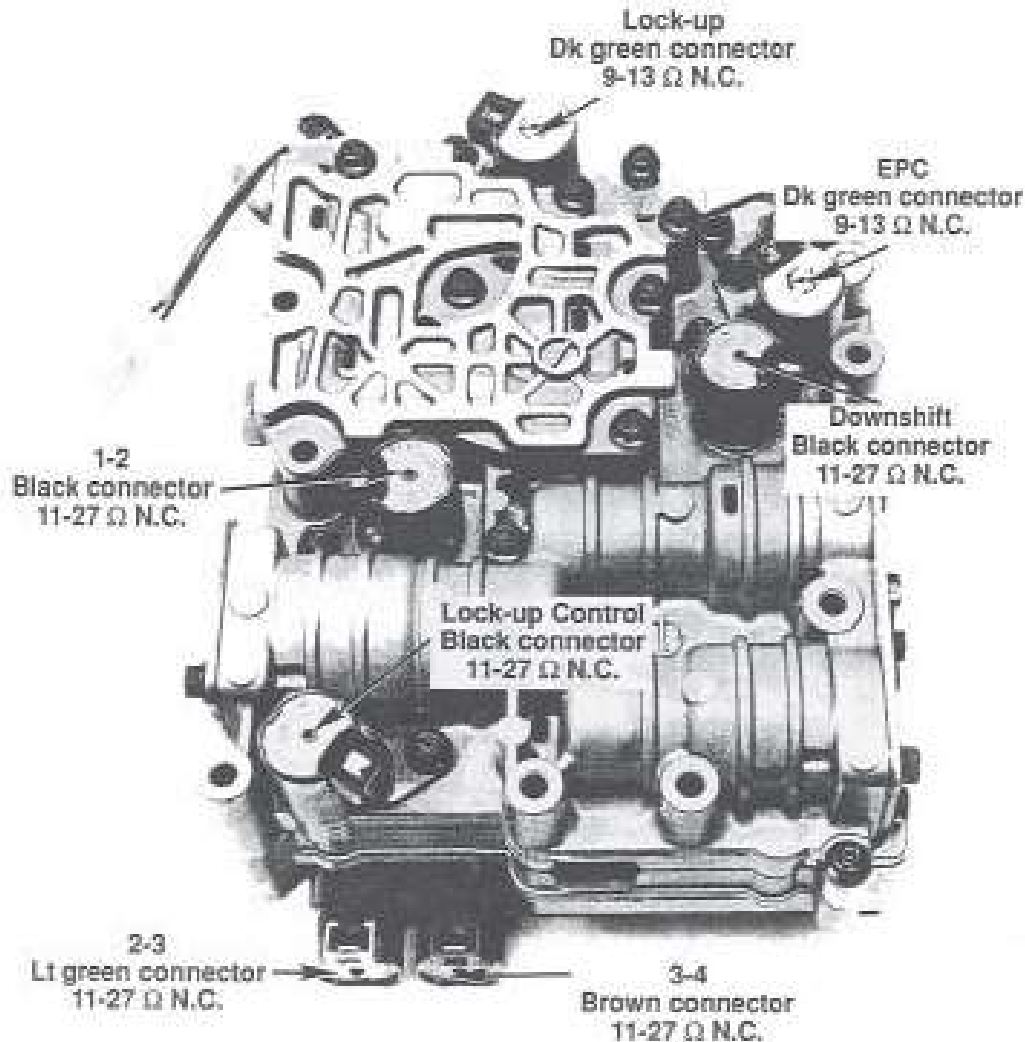


Transmission Type...G4AEL/G4AHL/G4AFEL

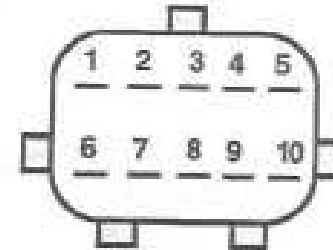
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G4AEL Solenoid & Harness Information



Transmission Case Connector:



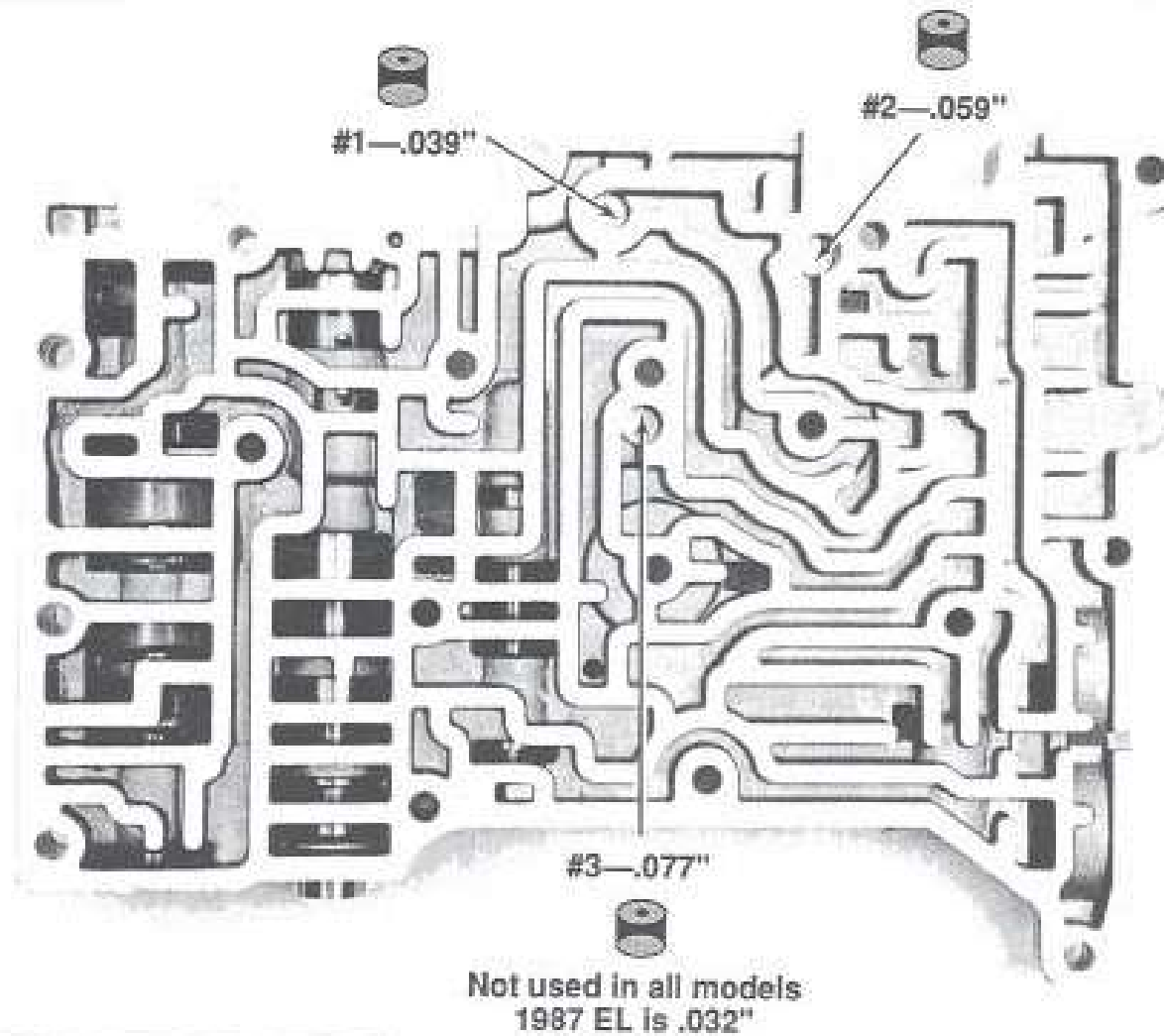
Pin #	Description	Resistance
1	TOT Sensor	2.44K - 1.19K Ohms (68 - 104 Degrees F)
2	EPC Solenoid	9 - 13 Ohms
3	3-2 Down Shift	-
4	3-4 Shift Solenoid	11 - 27 Ohms
5	1-2 Shift Solenoid	11 - 27 Ohms
6	TOT Sensor	2.44K - 1.19K Ohms (68 - 104 Degrees F)
7	Not Used	-
8	Lock-Up Feel Solenoid	18 - 26 Ohms
9	Lock-Up Control Solenoid	11 - 27 Ohms
10	2-3 Shift Solenoid	11 - 27 Ohms

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AEL Checkball Locations - Lower Valve Body



Not used in all models
1987 EL Is .032"

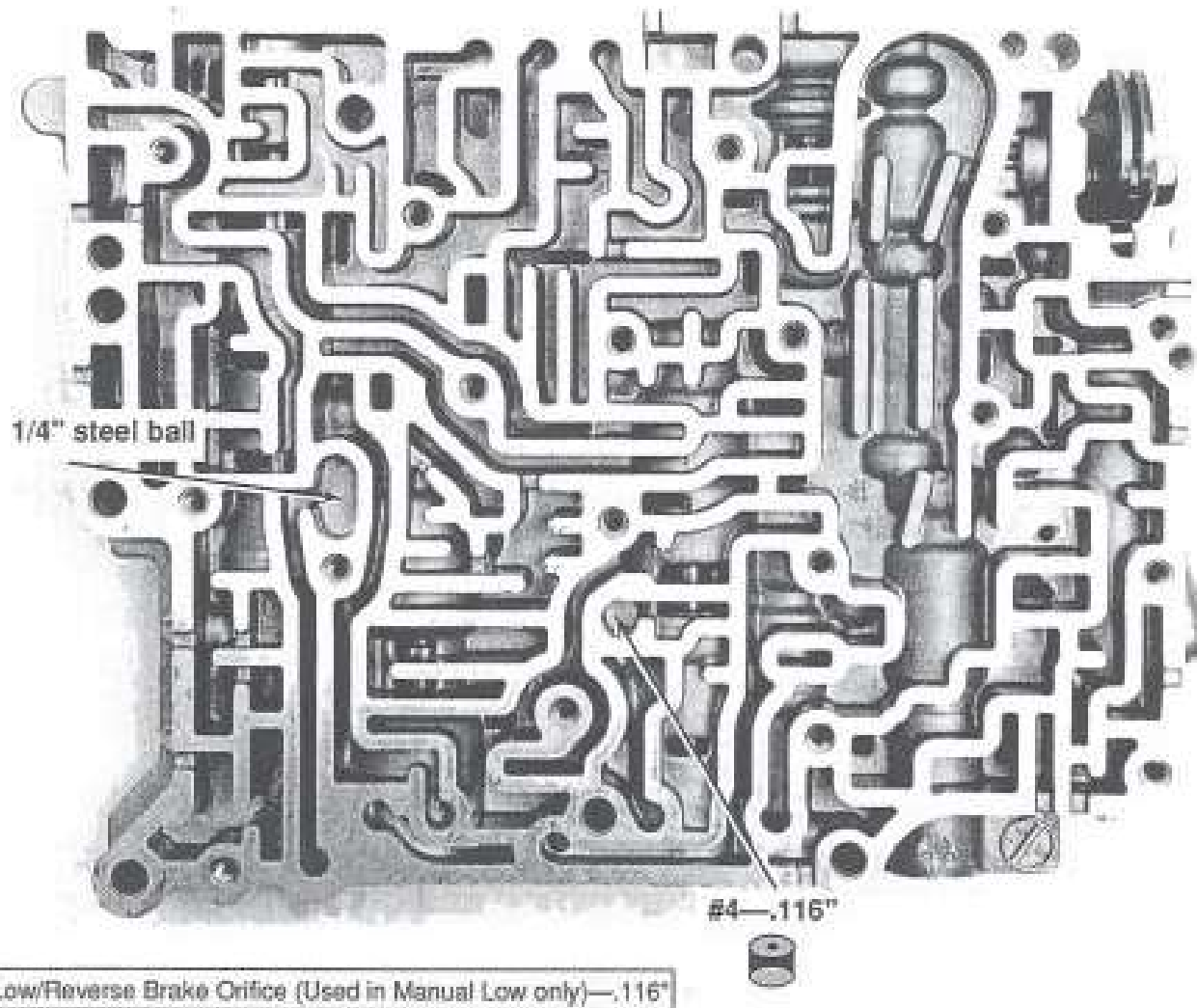
- | | |
|----|--|
| #1 | Overrun Clutch Feed Orifice—.039" |
| #2 | Reverse Clutch Feed Orifice—.059" |
| #3 | Low/Reverse Clutch Exhaust Orifice—.077" |

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AEL Checkball Locations - Main Valve Body (Lower Valve Body Side)

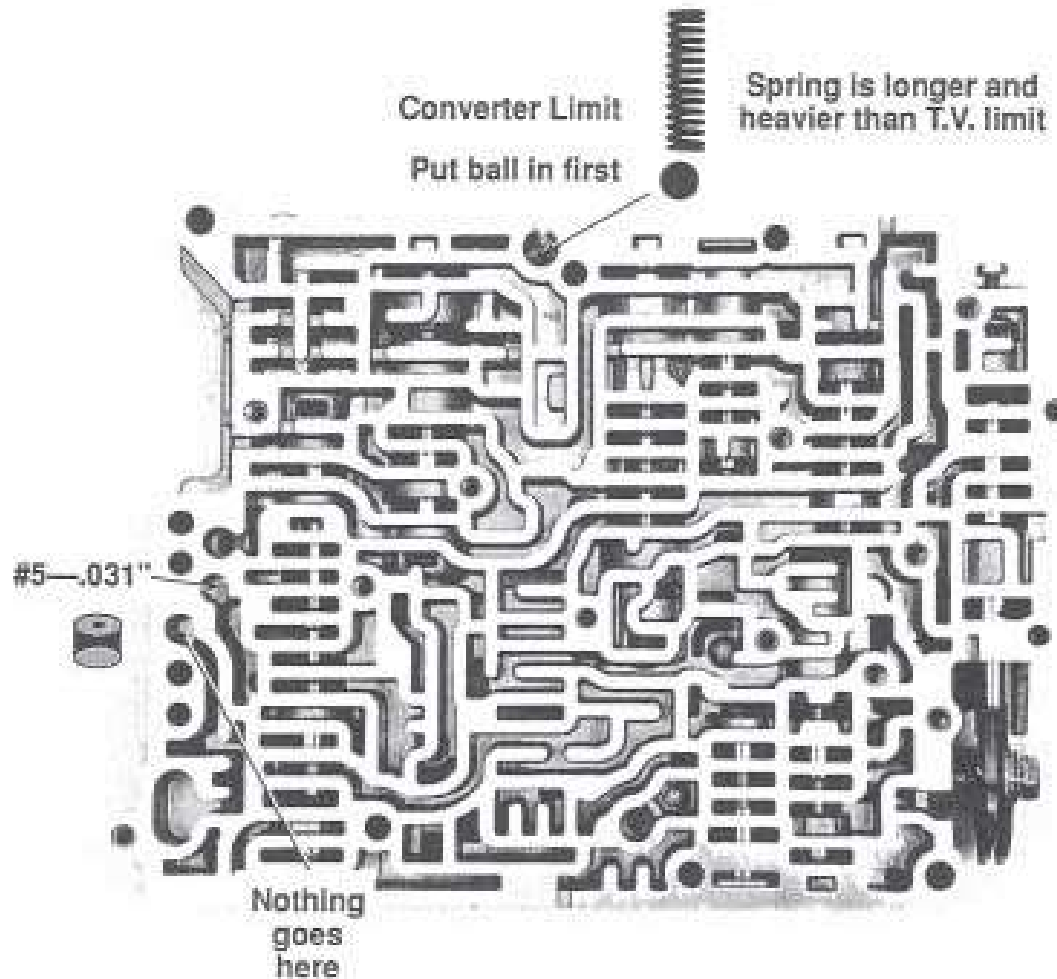


#4 Low/Reverse Brake Orifice (Used in Manual Low only) —.116"

Transmission Type...G4AEL/G4AHL/G4AFEL Rebuilder's Kwik Reference Guide



G4AEL Checkball Locations - Main Valve (Accumulator Side)



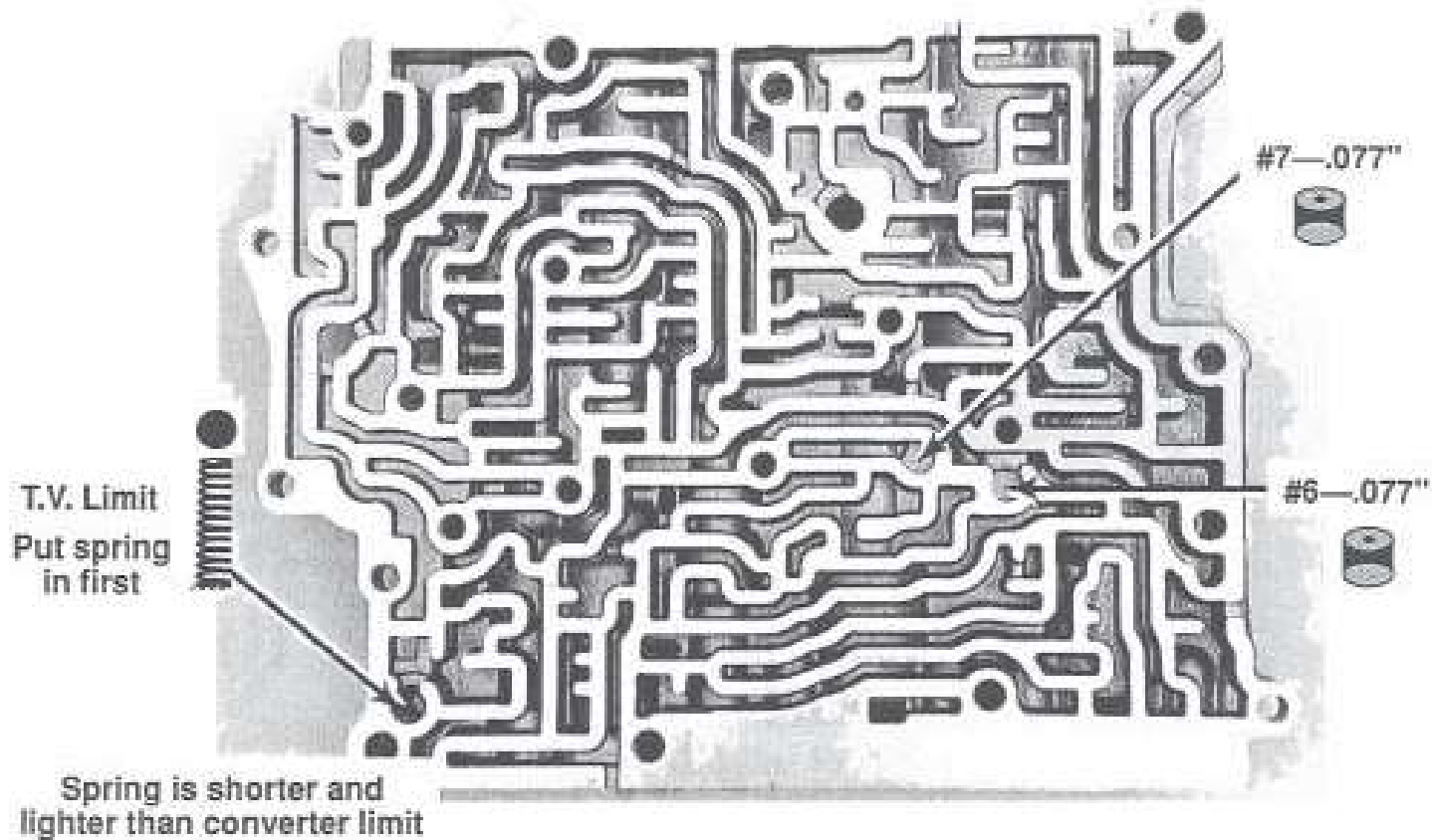
#5 2-4 Servo Orifice (1-2 shift only)—.031"

Transmission Type...**G4AEL/G4AHL/G4AFEL**

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G4AHL Checkball Locations - Accumulator Housing (Main Valve Body Side)

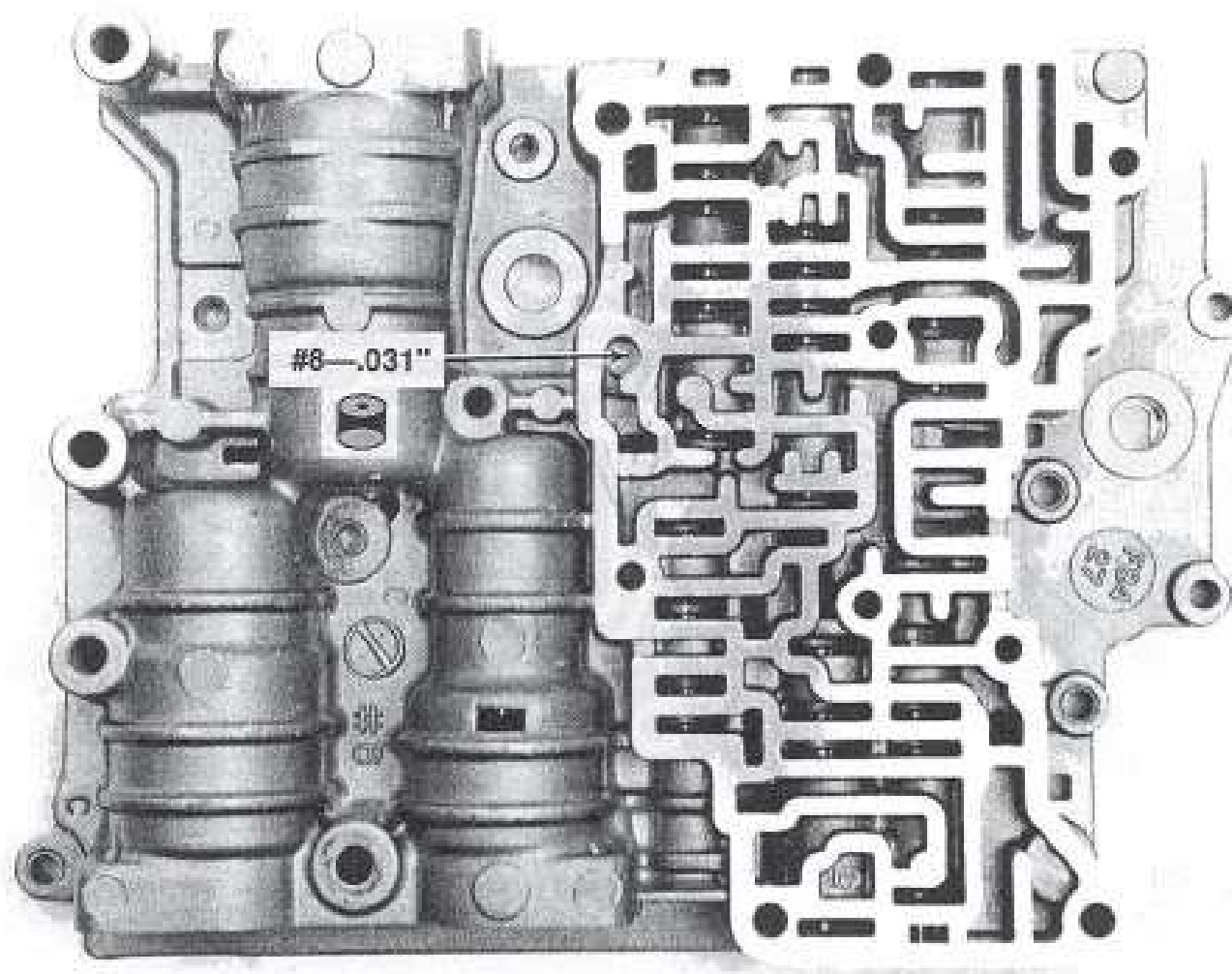


#6 2-4 Servo Orifice (3-4 Shift on throttle only)—.077"
#7 Forward Clutch Feed Orifice—.077"

Transmission Type...**G4AEL/G4AHL/G4AFEL** Rebuilder's Kwik
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G4AHL Checkball Locations - Accumulator Housing (Back Side)



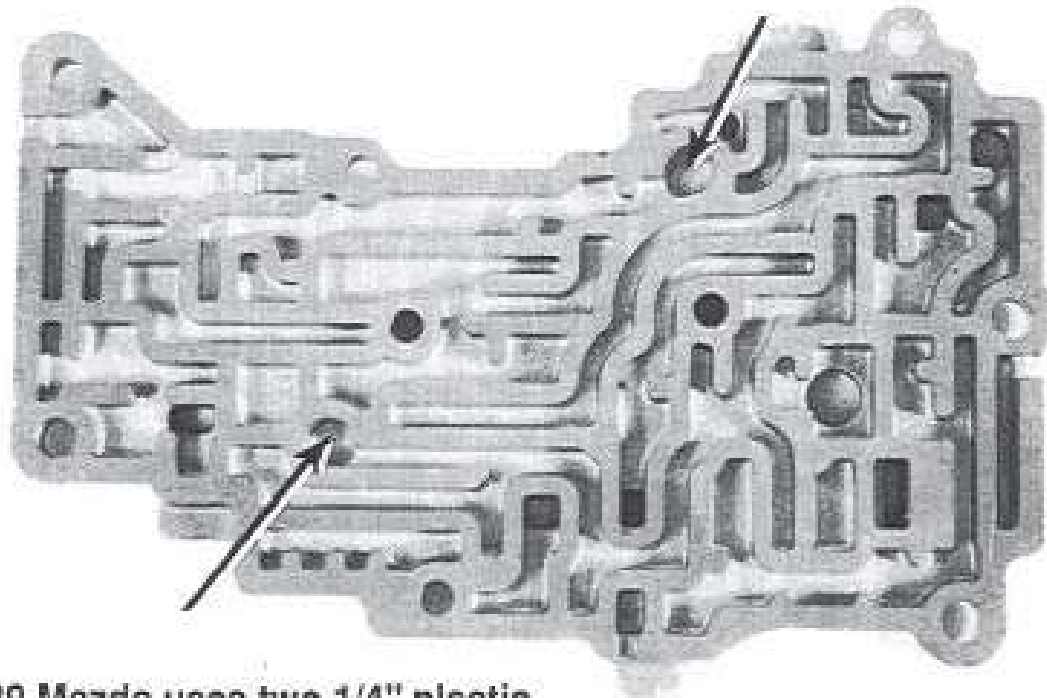
#8 3-4 Clutch Feed Orifice (lift-foot only)—.031"

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AHL Checkball Locations - Separator Plate to Cover Gasket and Cover



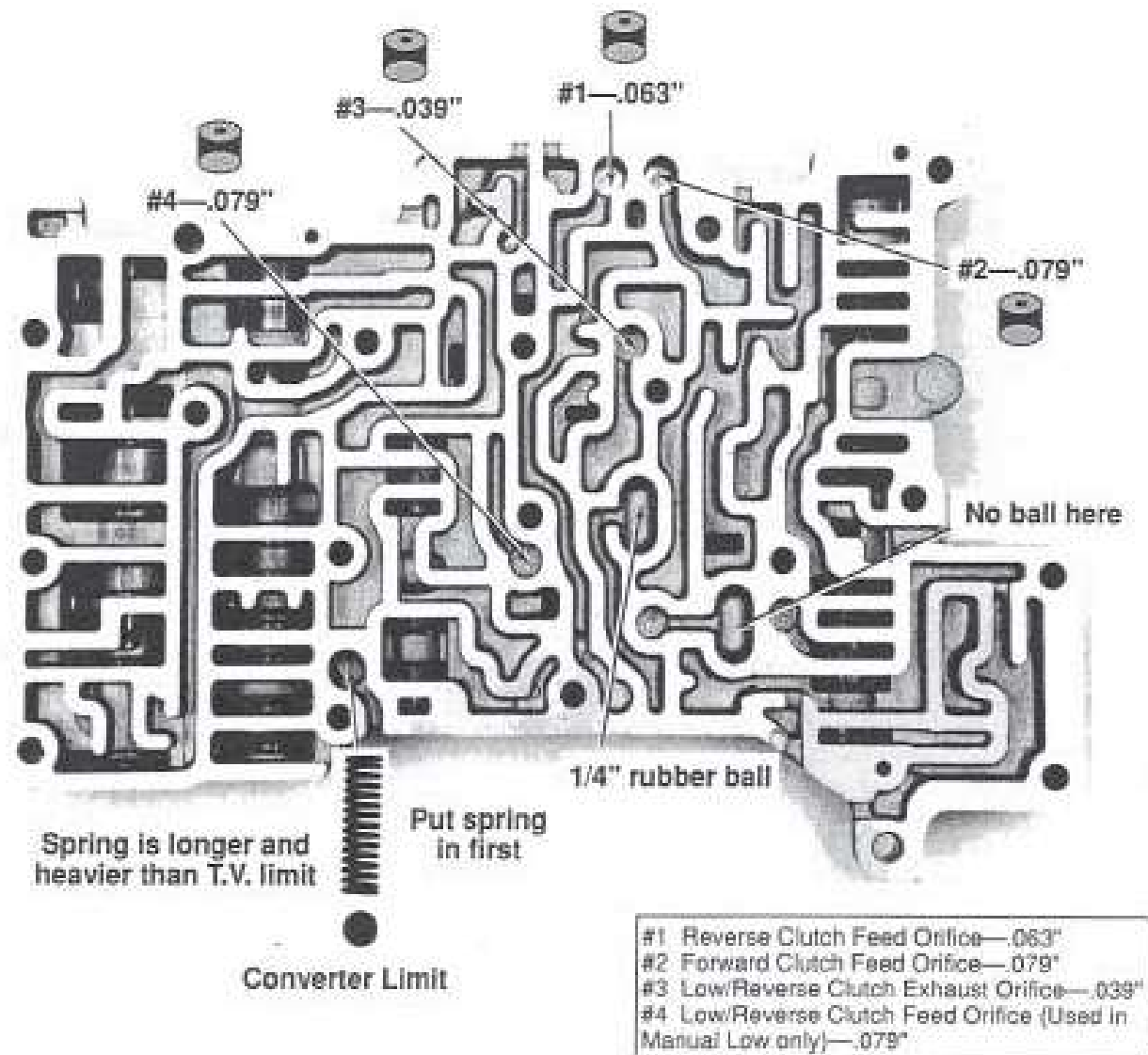
1987-89 Mazda uses two 1/4" plastic balls here. 1990-UP Mazda and all Fords do not have balls here.

Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AHL Checkball Locations - Lower Valve Body

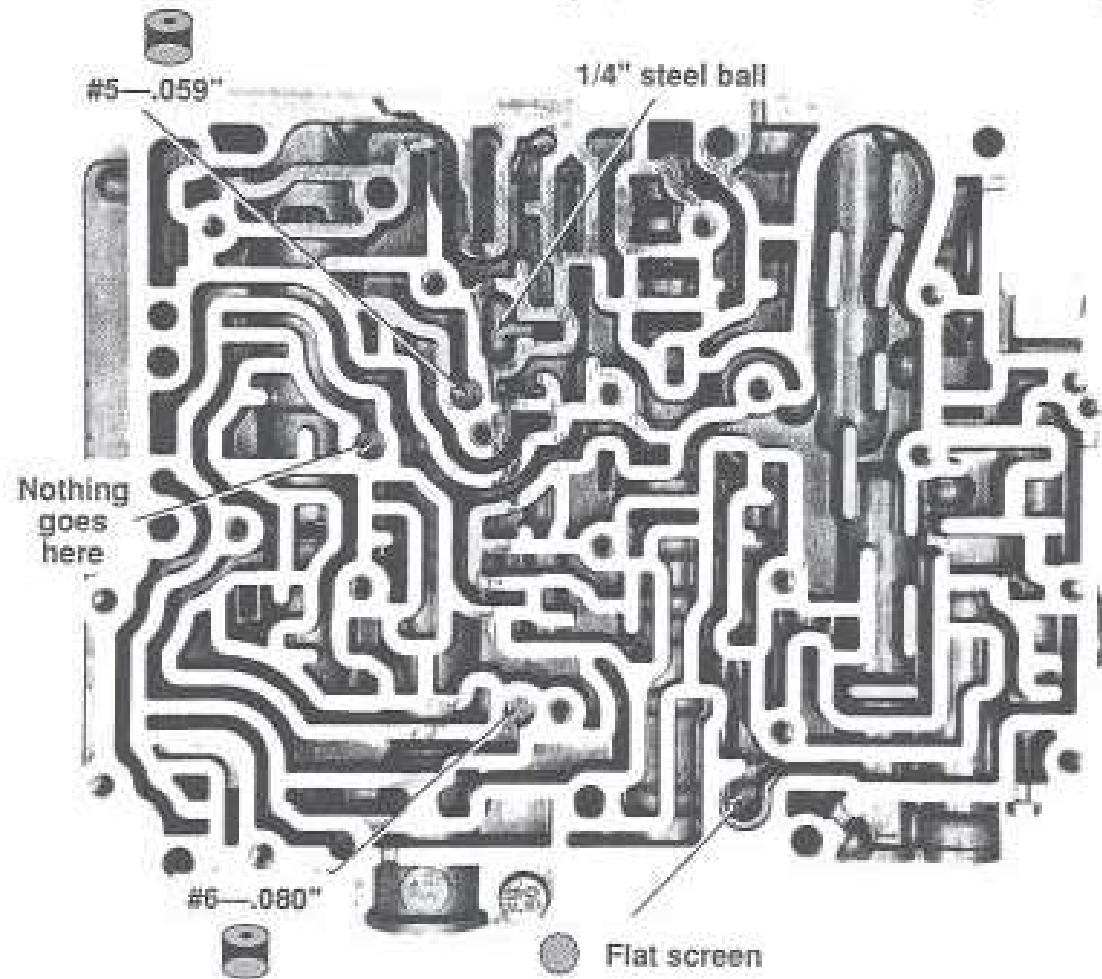


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AHL Checkball Locations - Main Valve Body (Lower Valve Body Side)

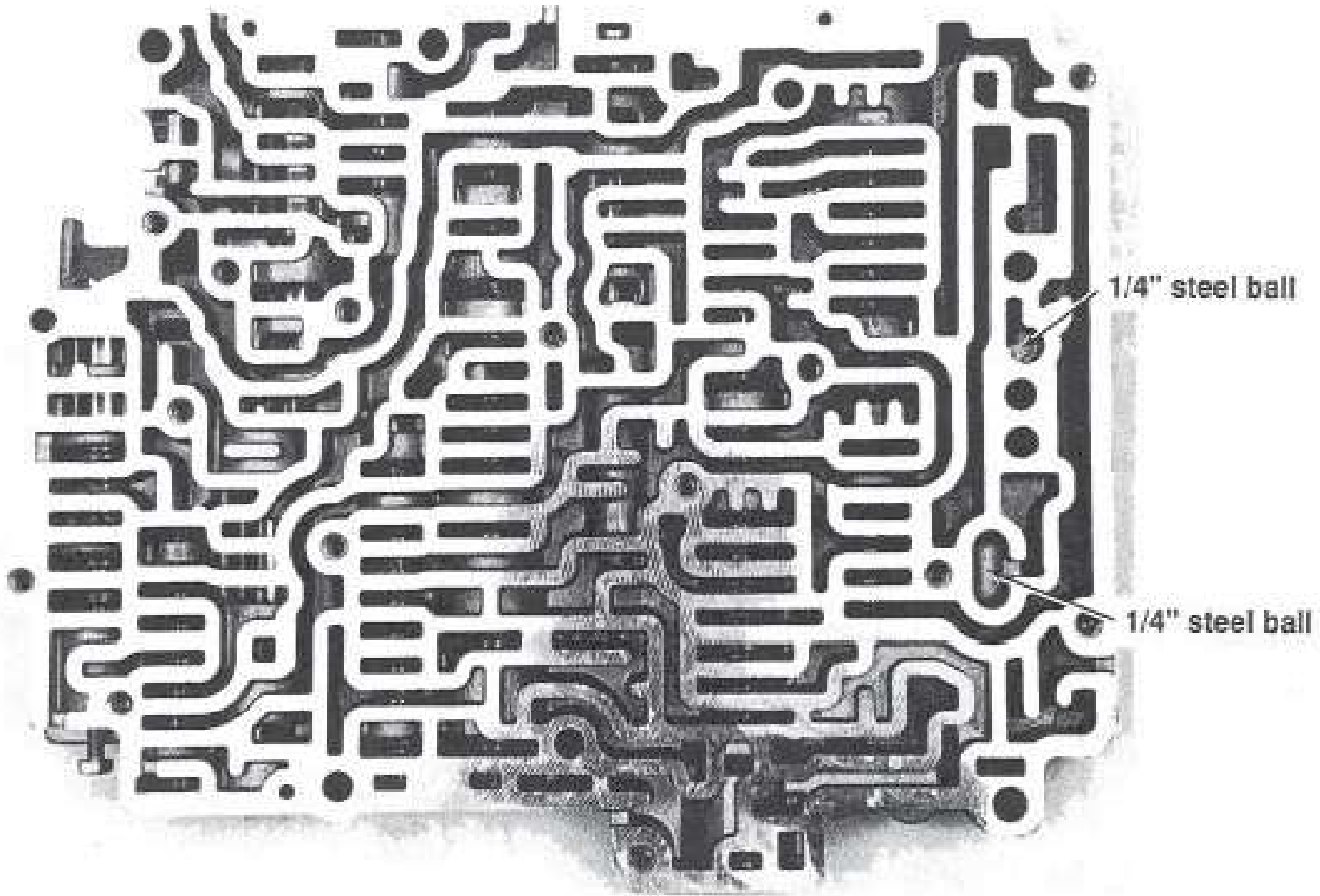


#5 Coast Clutch Feed Orifice—.059"
#6 Band Release/Coast Bypass Orifice Feed—.080"

Transmission Type...**G4AEL/G4AHL/G4AFEL** Rebuilder's Kwik
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G4AHL Checkball Locations - Main Valve Body (Accumulator Side)

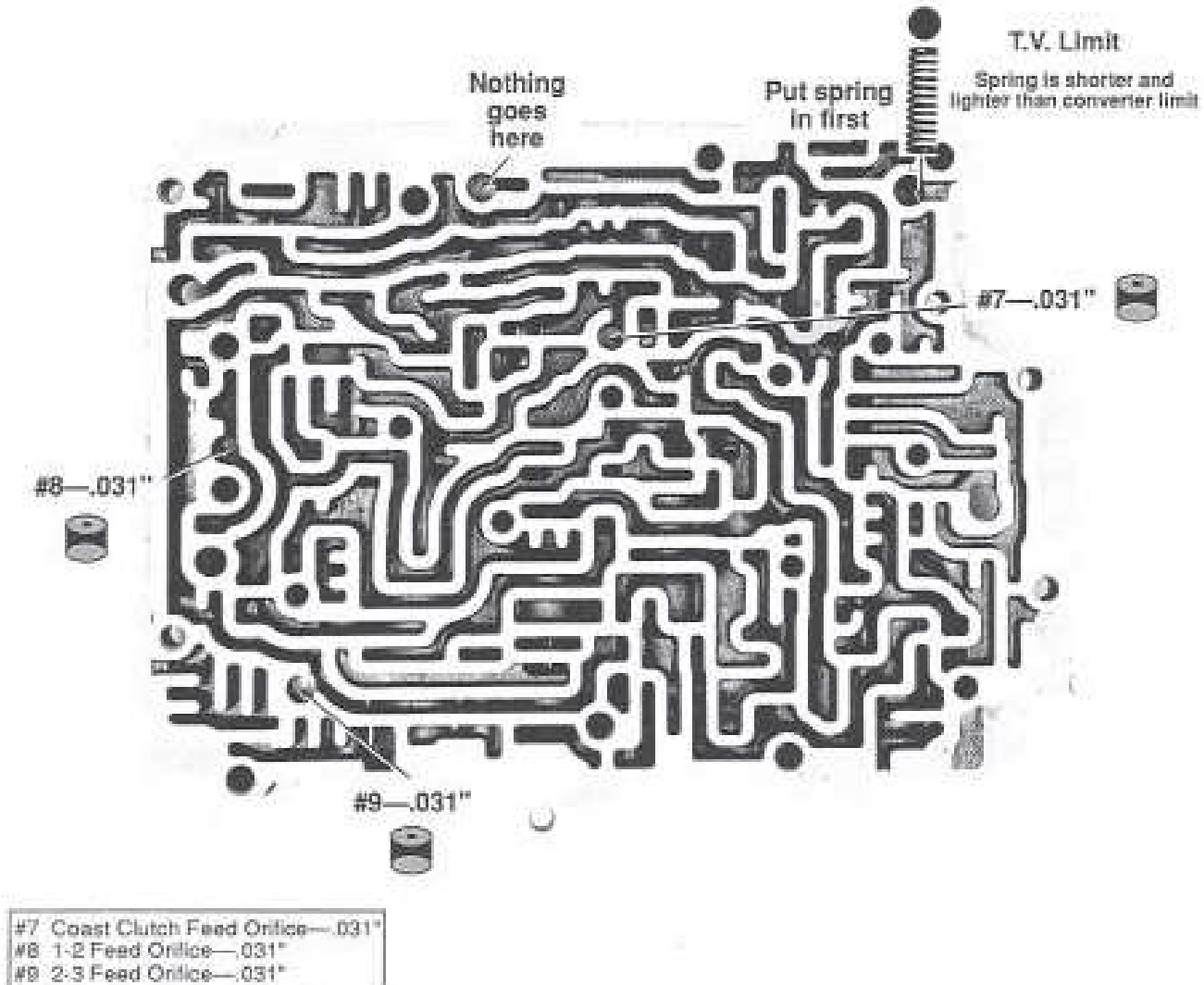


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AHL Checkball Locations - Accumulator Housing (Main Valve Body Side)

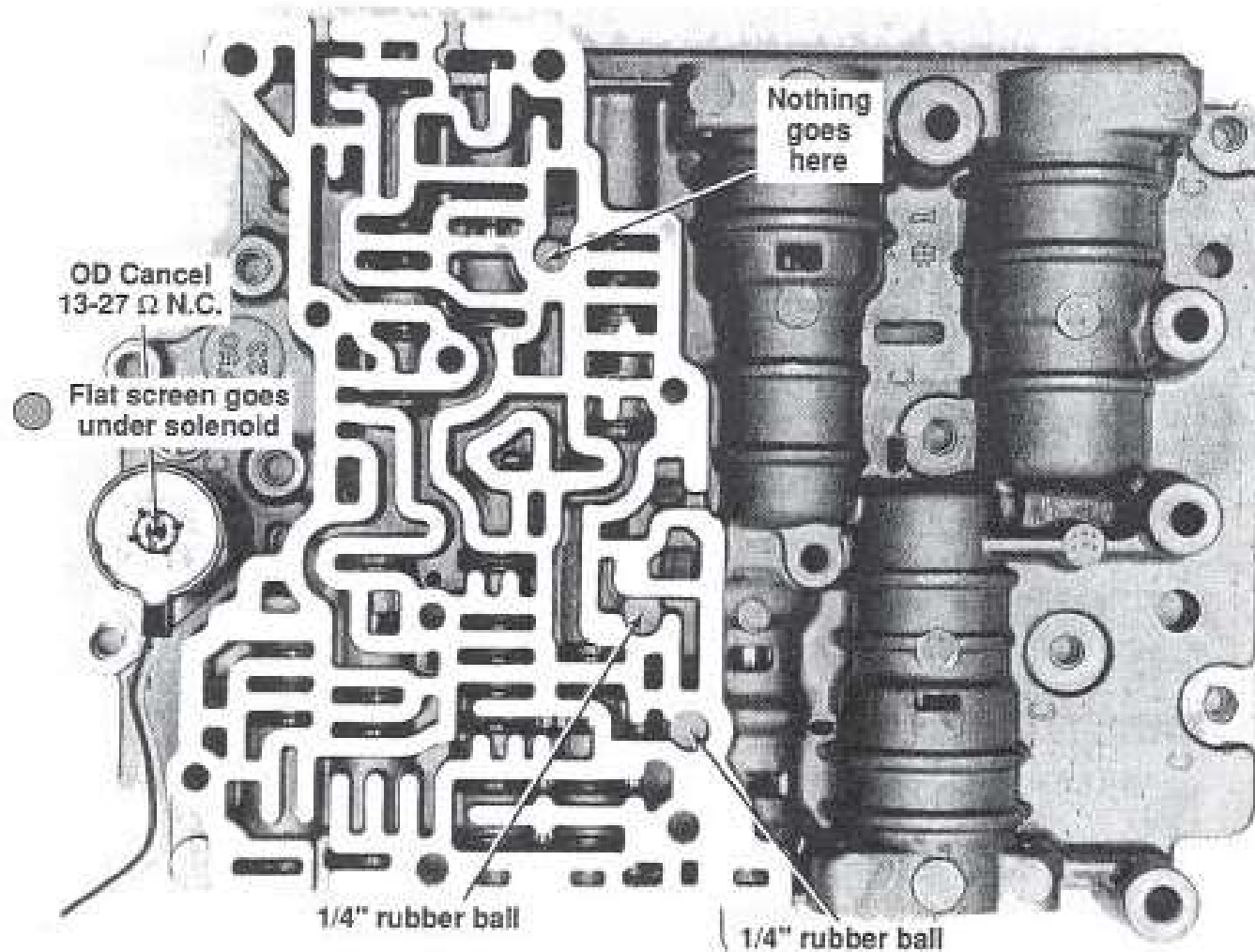


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AHL Checkball Locations - Accumulator Housing (Back Side)

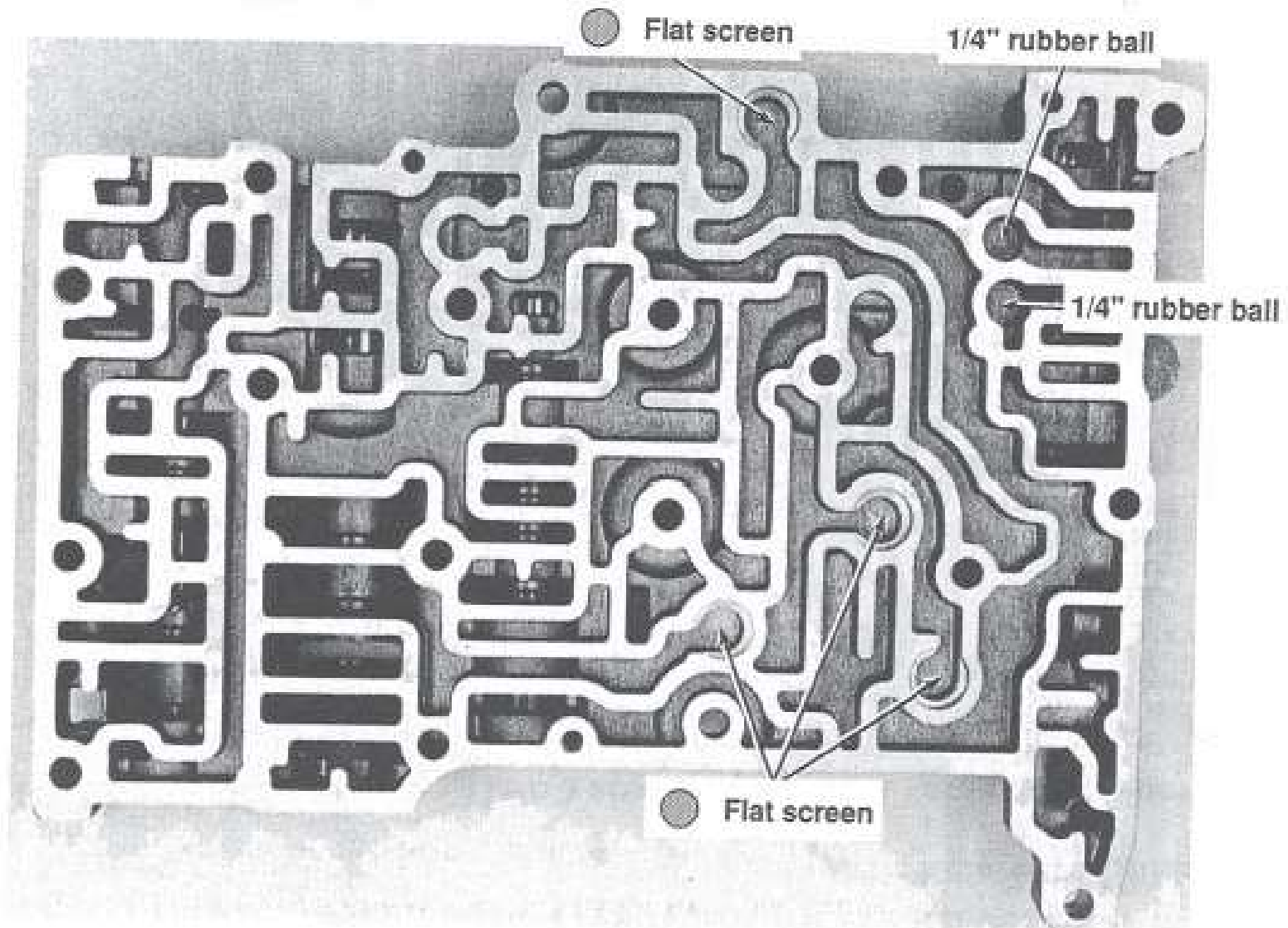


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Lower Valve Body

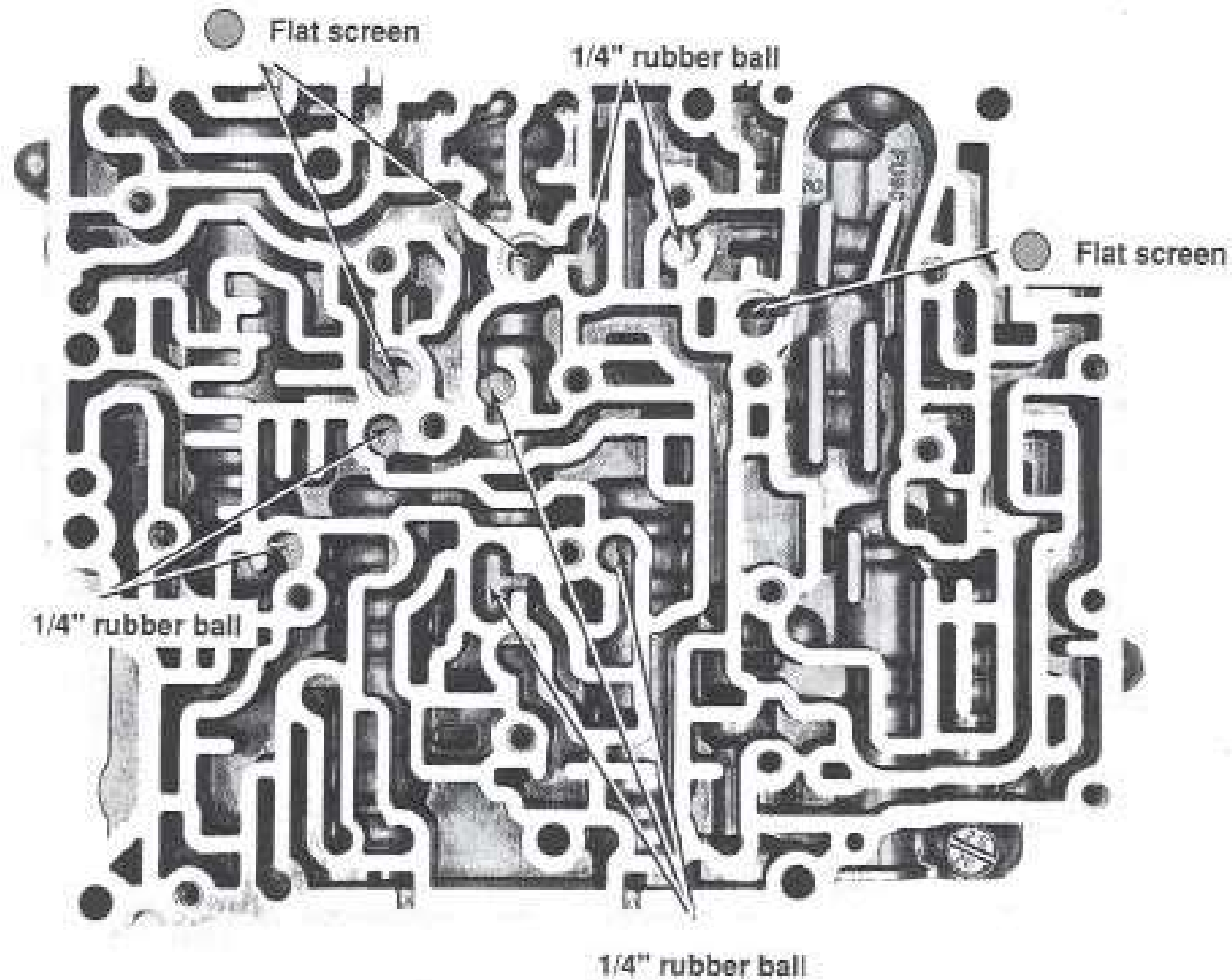


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Main Valve Body (Lower Valve Body Side)

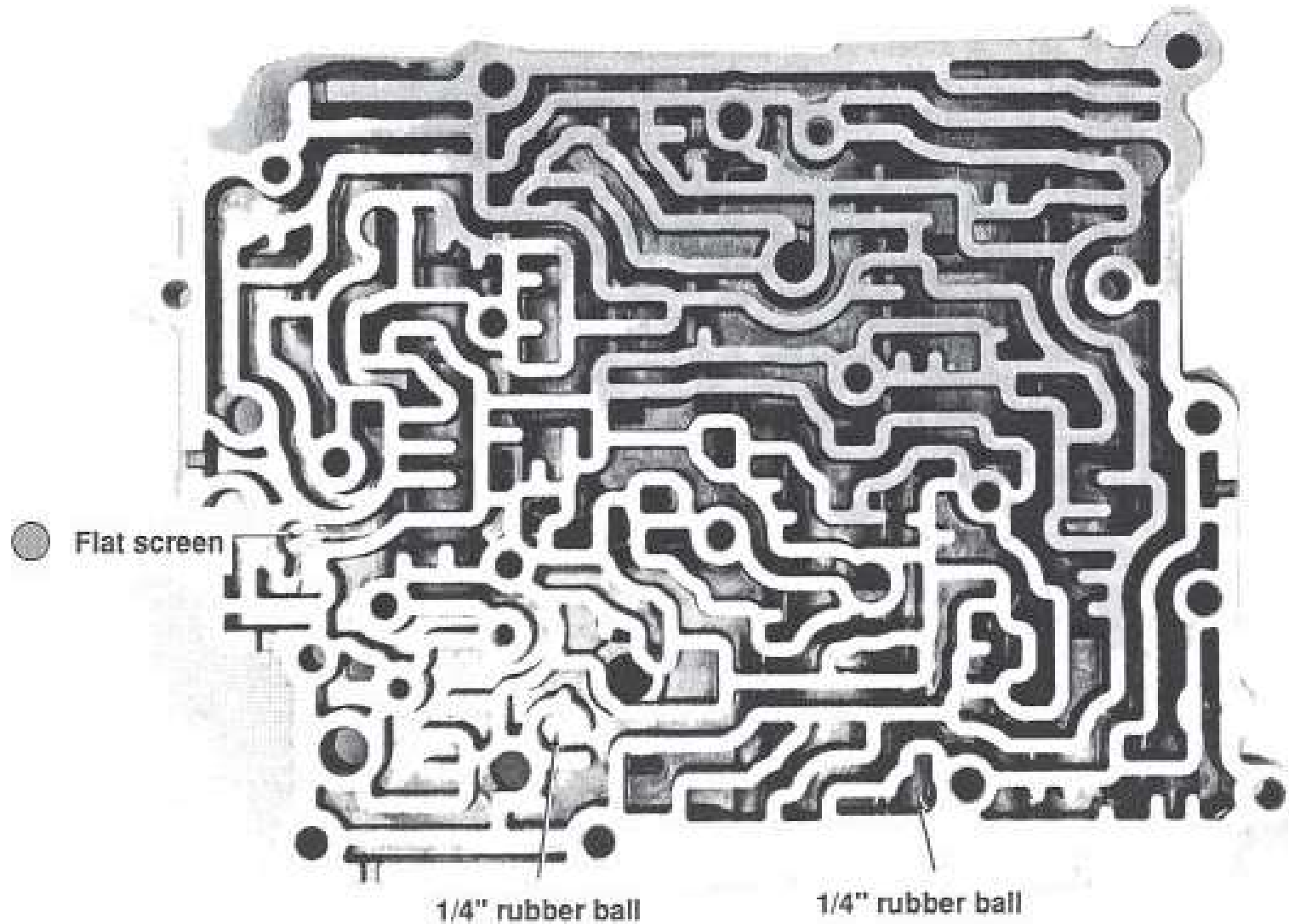


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Main Valve Body (Accumulator Side)



Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Accumulator Housing (Main Valve Body Side)

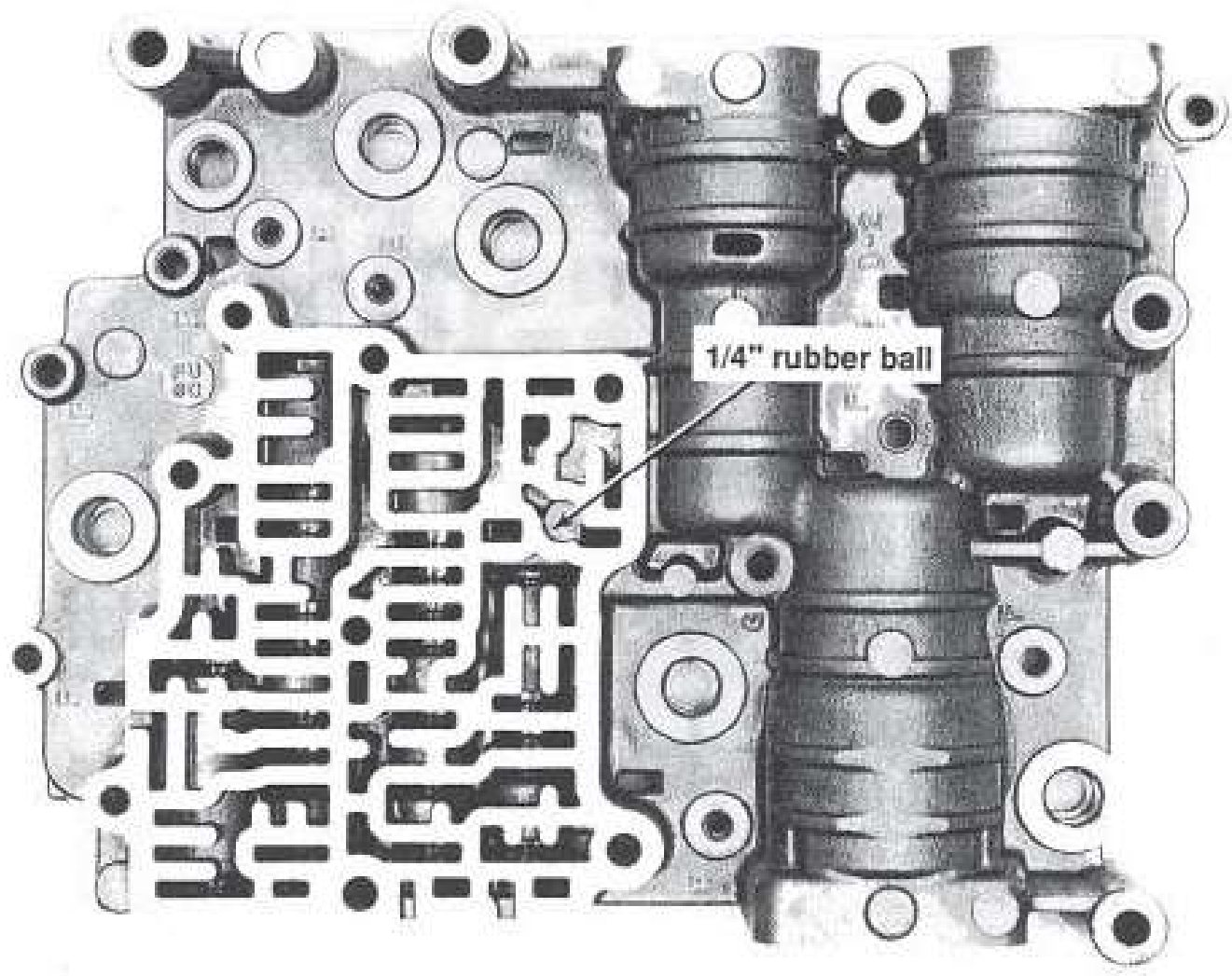


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Accumulator Housing (Back Side)

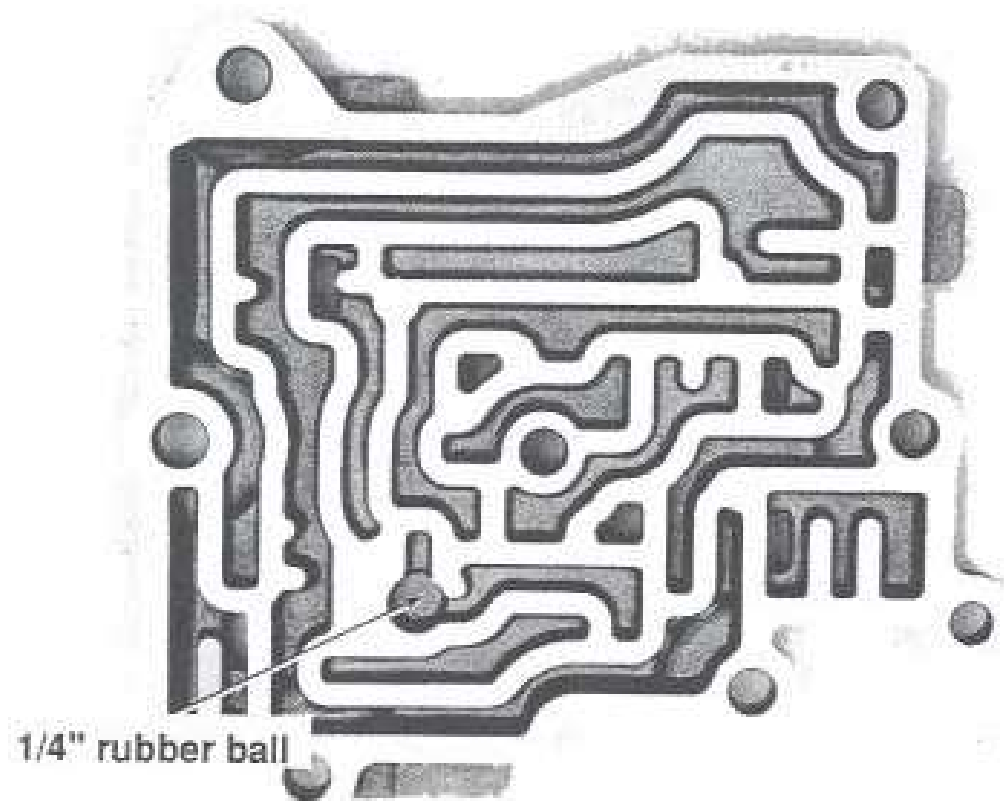


Transmission Type...**G4AEL/G4AHL/G4AFEL**

Rebuilder's Kwik
Reference Guide



G4AFEL Checkball Locations - Separator Plate to Cover Basket and Cover



1/4" rubber ball