



Technical Service Information

V.W. / AUDI 01M/01N/01P 3-4 UPSHIFT FLAIR

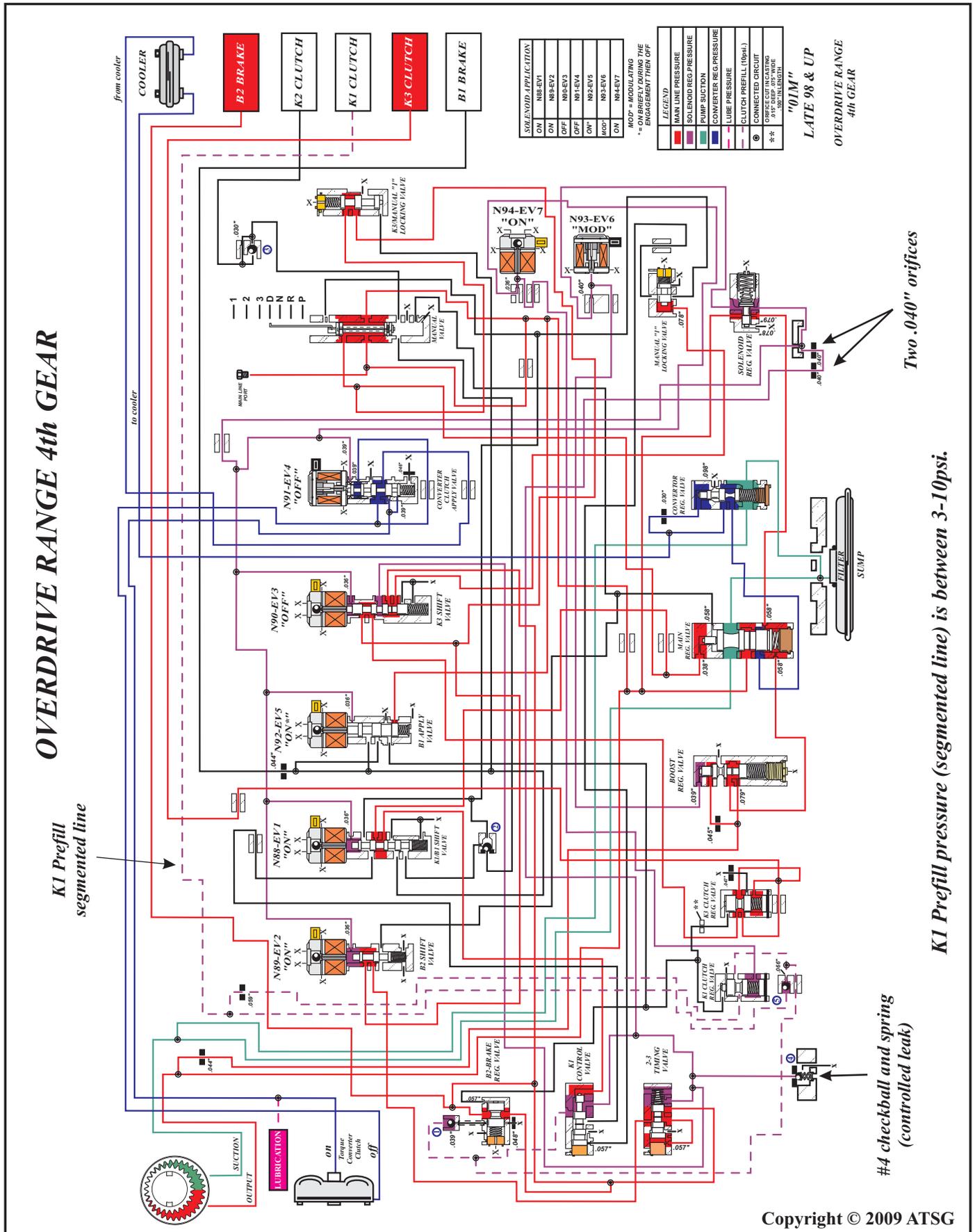
COMPLAINT: V.W. and Audi vehicles equipped with the 01M, 01N or 01P transaxles may exhibit a 3-4 upshift flair, or a quick spin up during the shift.

CAUSE: The cause may be, low solenoid feed pressure, a worn Solenoid Regulator Valve bore, or a missing spring for checkball number 4. This can cause a flair on the 3-4 upshift because of the lack of pre-fill on the K1 clutch. This pre-fill pressure ranges from 3-10 psi. and begins at the solenoid regulator valve, is fed thru two .040" orifices and is finally regulated by the number 4 checkball and spring. The lack of pre-fill can cause the K1 clutch to release too quick during the 3-4 upshift transition. See the partial circuit diagram shown in Figure 1.

CORRECTION: To correct this condition, ensure that the solenoid casings are sealed against the valve body casting, by using gaskets, as shown in Figure 3 and 4. Check the bore of the solenoid regulator valve and repair bore if necessary. See Figure 2 for a cross-sectional view and Figure 4 for the valve location. Verify that the spring under checkball number 4, as shown in Figure 6, is in the correct location.

SERVICE INFORMATION:

Solenoid gaskets are available in some aftermarket overhaul kits. Valve repair and a replacement spring, for the number 4 checkball are available from Sonnax.



OVERDRIVE RANGE 4th GEAR

K1 Prefill segmented line

Two .040" orifices

K1 Prefill pressure (segmented line) is between 3-10psi.

#4 checkball and spring (controlled leak)

"OIM"
LATE 98 & UP
OVERDRIVE RANGE
4th GEAR

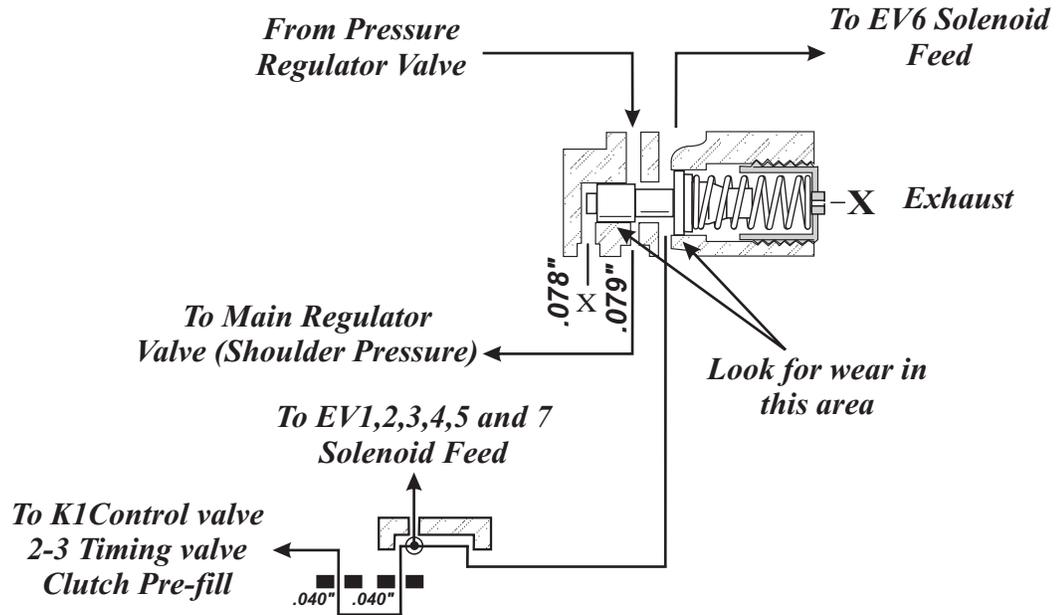
SOLENOID APPLICATION	
ON	N88-EV1
ON	N89-EV2
OFF	N90-EV3
OFF	N91-EV4
ON*	N92-EV5
MOD*	N93-EV6
ON	N94-EV7

* = ON BRIEFLY DURING THE ENGAGEMENT THEN OFF

LEGEND	
[Red Line]	MAIN LINE PRESSURE
[Blue Line]	SOLENOID REG. PRESSURE
[Green Line]	PUMP SUCTION
[Purple Line]	CONVERTER REG. PRESSURE
[Yellow Line]	LUBE PRESSURE
[Orange Line]	CLUTCH PREFILL (Opre.)
[Black Line]	CONNECTED CIRCUIT
[Grey Line]	OIL PUMP INLET
[Symbol]	** = 100" IN LENGTH
[Symbol]	** = 100" IN LENGTH

Figure 1

SOLENOID REGULATOR VALVE

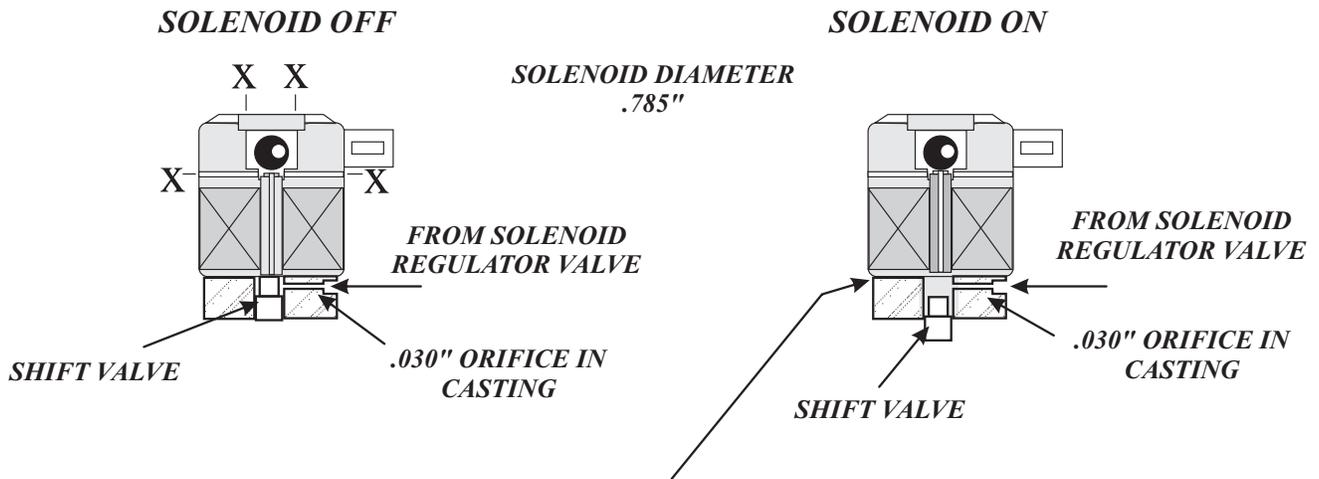


Check the bore of the Solenoid Regulator Valve for wear. Pressure bleeding past the valve lands will be exhausted at the plugh shown above

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Figure 2

EV1 (N88), EV2 (N89), EV3 (N90), EV5 (N92) AND EV7 (N94) SOLENOID CHECK AND OPERATION

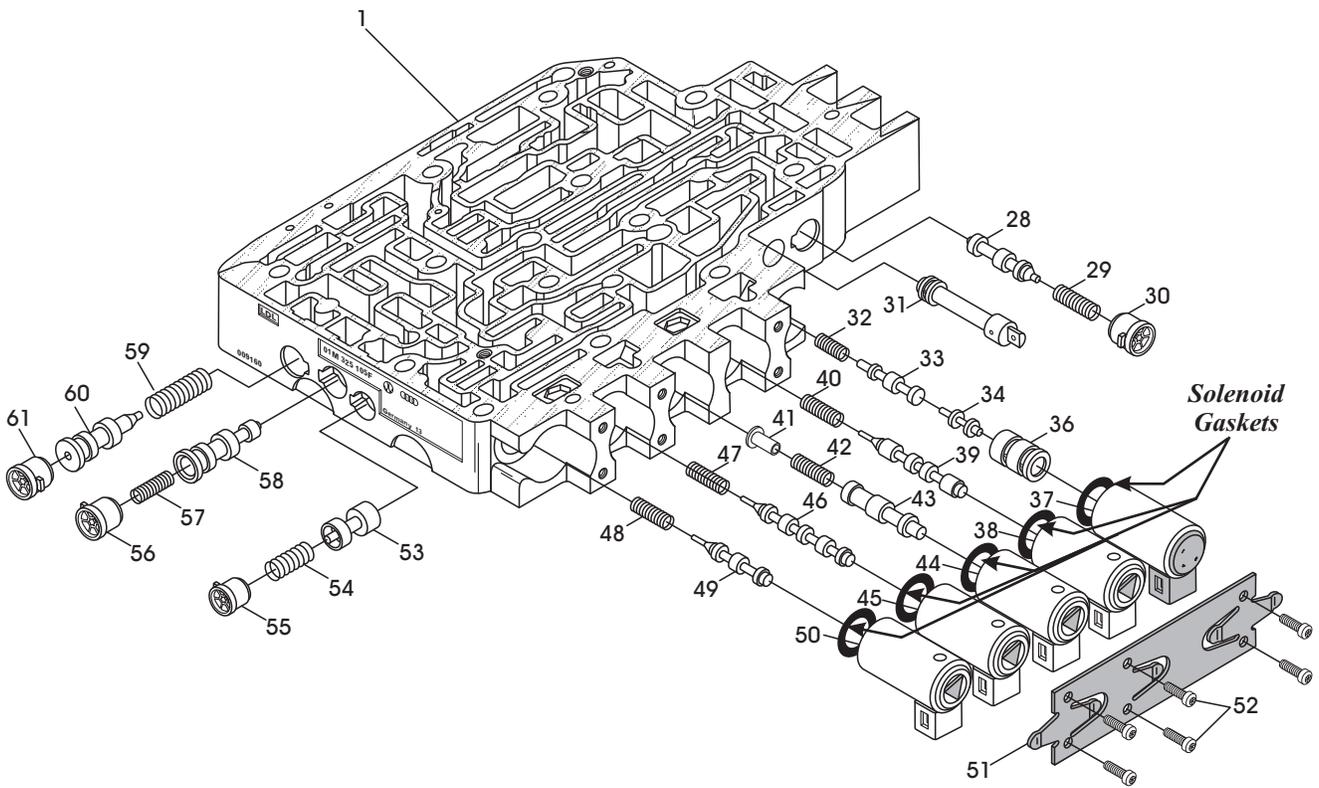
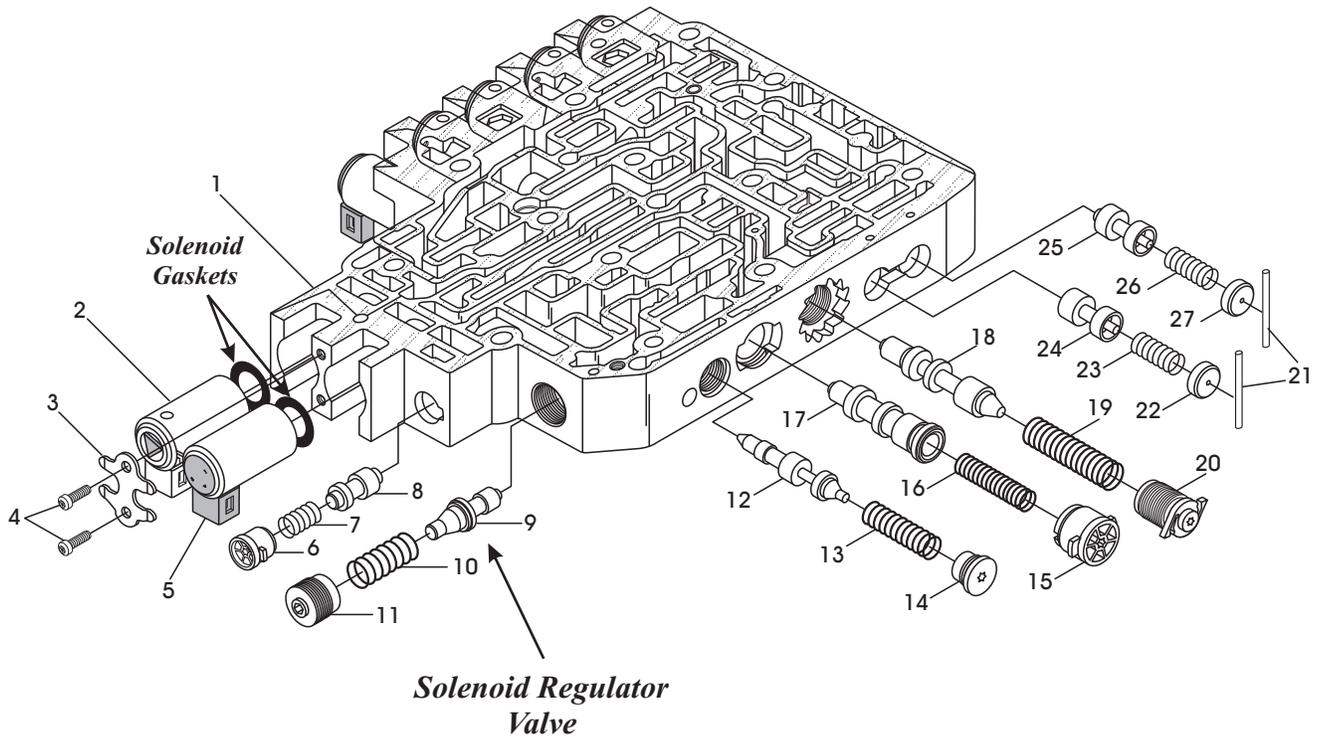


Use a gasket in-between the Solenoid casing and the Valvebody Casting

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Figure 3

AUDI AND VOLKSWAGEN 98&UP 01M VALVE BODY EXPLODED VIEW



NOTE: Refer to Figure 5 for the Valve Legend

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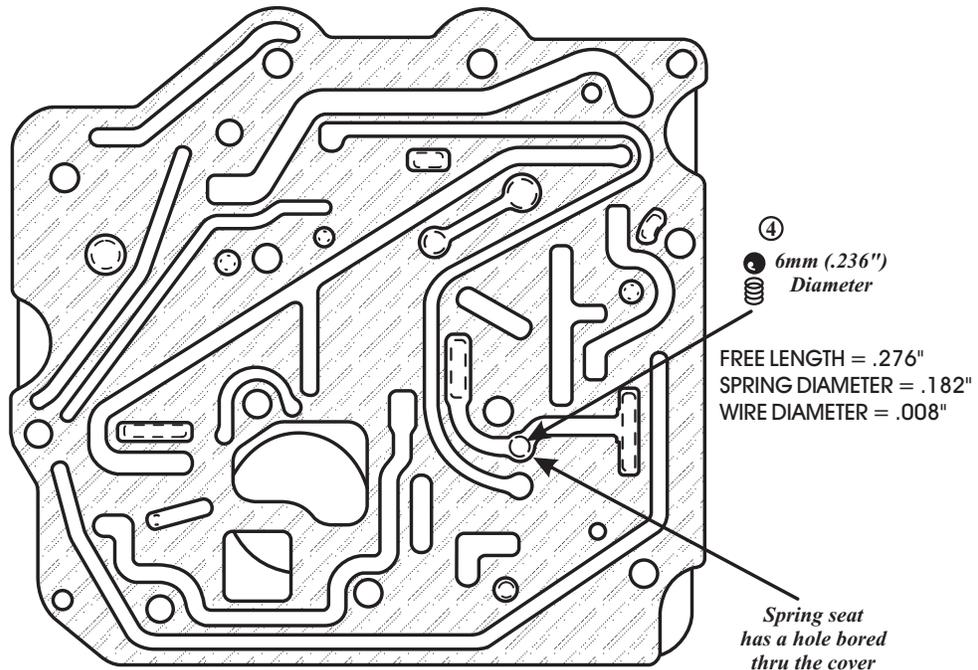
Figure 4

LEGEND

- | | |
|--|---|
| 1. MAIN VALVE BODY CASTING | 32. CONVERTER CLUTCH APPLY VALVE SPRING |
| 2. EV-7 SOLENOID (N94) | 33. CONVERTER CLUTCH APPLY VALVE |
| 3. SOLENOID RETAINING BRACKET | 34. CONVERTER CLUTCH CONTROL VALVE |
| 4. SOLENOID RETAINING BRACKET BOLTS | 36. CONVERTER CLUTCH CONTROL VALVE SLEEVE |
| 5. EV-6 SOLENOID (N93) | 37. EV-4 SOLENOID, CONVERTER CLUTCH (N91) |
| 6. MANUAL 1ST LOCKING VALVE RETAINER (YELLOW) | 38. EV-3 SOLENOID (N90) |
| 7. MANUAL 1ST LOCKING VALVE SPRING | 39. K-3 SHIFT VALVE |
| 8. MANUAL 1ST LOCKING VALVE | 40. K-3 SHIFT VALVE SPRING |
| 9. SOLENOID REGULATOR VALVE | 41. B-1 APPLY VALVE SPRING SEAT |
| 10. SOLENOID REGULATOR VALVE SPRING | 42. B-1 APPLY VALVE SPRING |
| 11. SOLENOID REGULATOR VALVE RETAINER | 43. B-1 APPLY VALVE |
| 12. CONVERTER REGULATOR VALVE | 44. EV-5 SOLENOID (N92) |
| 13. CONVERTER REGULATOR VALVE SPRING | 45. EV-1 SOLENOID (N88) |
| 14. CONVERTER REGULATOR VALVE RETAINER | 46. K-1/B-1 SHIFT VALVE |
| 15. MAIN PRESSURE REGULATOR VALVE RETAINER (BROWN) | 47. K-1/B-1 SHIFT VALVE SPRING |
| 16. MAIN PRESSURE REG. VALVE SPRING | 48. B-2 SHIFT VALVE SPRING |
| 17. MAIN PRESSURE REGULATOR VALVE | 49. B-2 SHIFT VALVE |
| 18. BOOST PRESSURE REGULATOR VALVE | 50. EV-2 SOLENOID (N89) |
| 19. BOOST PRESSURE REG. VALVE SPRING | 51. SOLENOID RETAINING BRACKET |
| 20. BOOST PRESSURE REGULATOR RETAINER (ADJUSTABLE) | 52. SOLENOID RETAINING BRACKET BOLTS (6) |
| 21. K-3 & K1 REGULATOR VALVE RETAINING PINS | 53. B-2 REGULATOR VALVE |
| 22. K-3 REGULATOR VALVE BORE PLUG | 54. B-2 REGULATOR VALVE SPRING |
| 23. K-3 REGULATOR VALVE SPRING | 55. B-2 REGULATOR VALVE RETAINER (YELLOW) |
| 24. K-3 REGULATOR VALVE | 56. K-1 CONTROL VALVE RETAINER (TAN) |
| 25. K-1 REGULATOR VALVE | 57. K-1 CONTROL VALVE SPRING |
| 26. K-1 REGULATOR VALVE SPRING | 58. K-1 CONTROL VALVE |
| 27. K-1 REGULATOR VALVE BORE PLUG | 59. 2-3 TIMING VALVE SPRING |
| 28. MANUAL 1ST/K-3 LOCKOUT VALVE | 60. 2-3 TIMING VALVE |
| 29. MANUAL 1ST/K-3 LOCKOUT VALVE SPRING | 61. 2-3 TIMING VALVE RETAINER (TAN) |
| 30. MANUAL 1ST/K-3 LOCKOUT RETAINER (YELLOW) | |
| 31. MANUAL VALVE | |

Figure 5

CHANNEL PLATE CHECKBALL AND SPRING LOCATION



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Figure 6