



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.

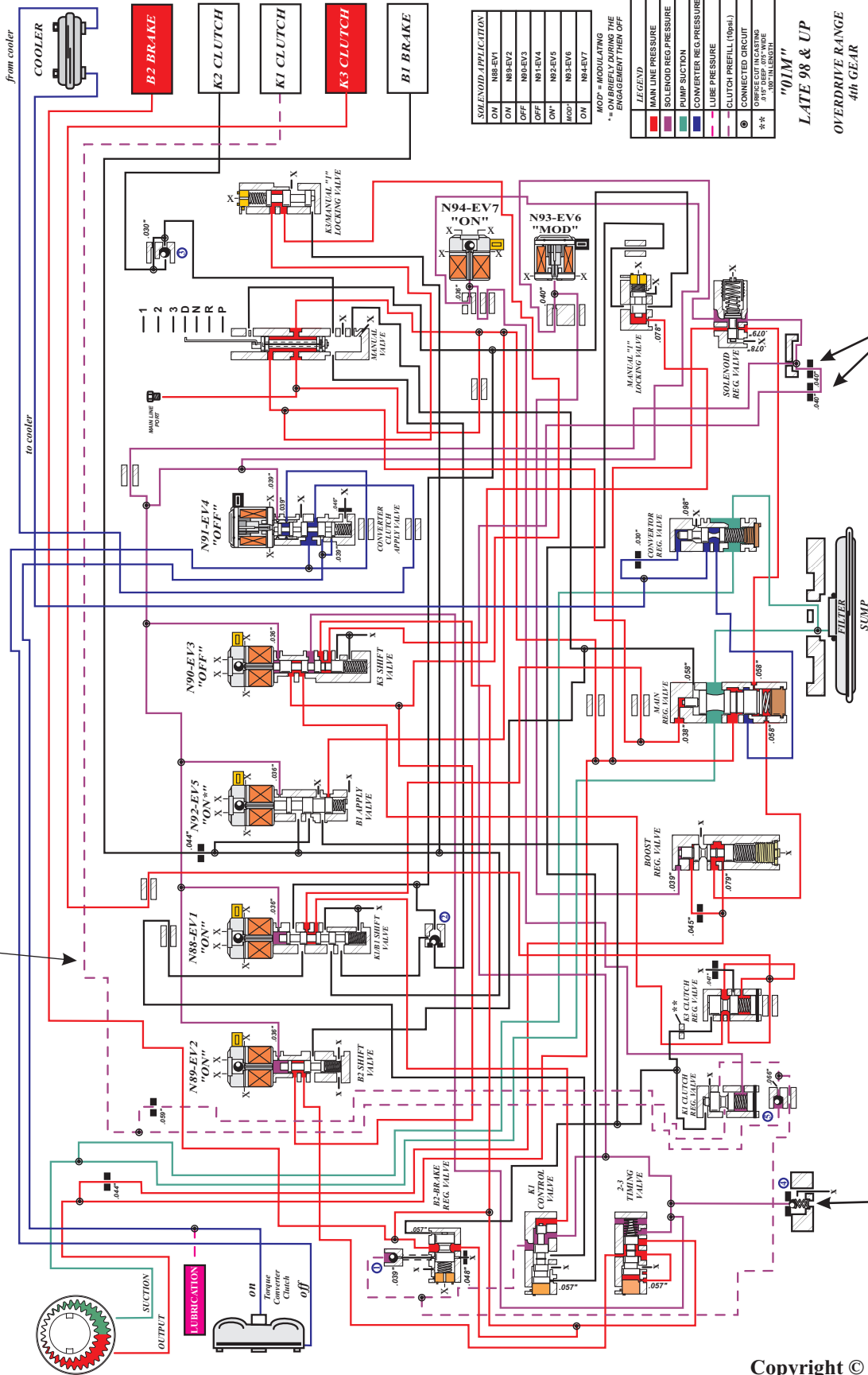
CORRECTION: To correct this condition, ensure that the solenoid casings are sealed against the valve body casting, by using gaskets, as shown in Figure 3 and 4. Check the bore of the solenoid regulator valve and repair bore if necessary. See Figure 2 for a cross-sectional view and Figure 4 for the valve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



#4 checkball and spring
(controlled leak)

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

Two .040\"" data-bbox="854 227 874 324"/>

"01M"
LATE 98 & UP
OVERDRIVE RANGE
4th GEAR

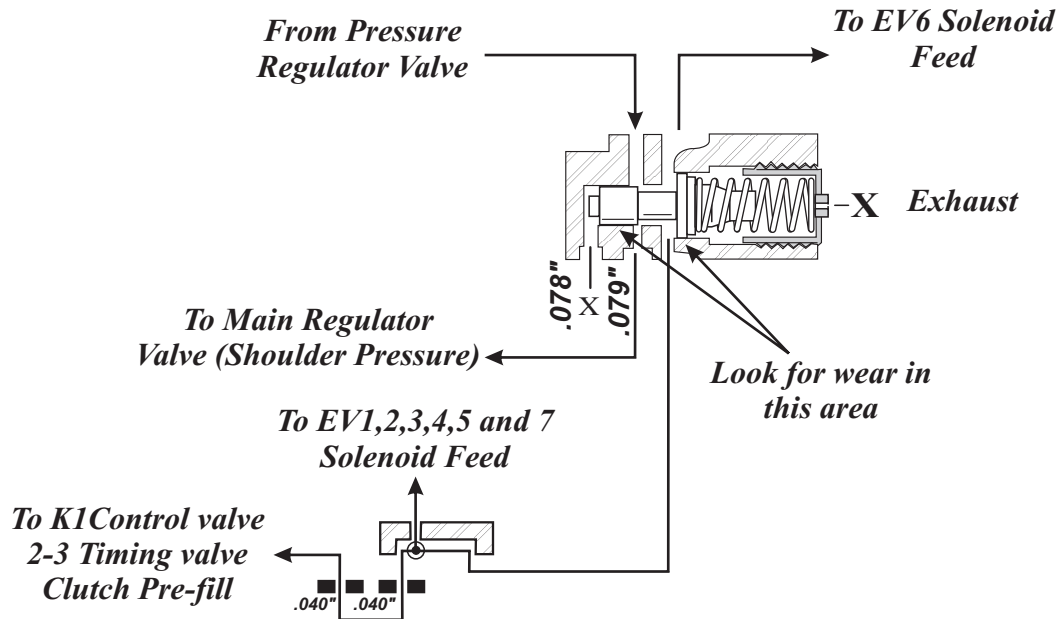
SOLENOID APPLICATION	
ON	N88-EV1
ON	N89-EV2
OFF	N90-EV3
OFF	N91-EV4
ON	N92-EV5
MOD*	N93-EV6
ON	N94-EV7

* = ON BRIEFLY DURING THE ENGAGEMENT THEN OFF

LEGEND	
MAIN LINE PRESSURE	RED
SOLENOID REG. PRESSURE	GREEN
PUMP SUCTION	BLUE
CONVERTER REG. PRESSURE	PURPLE
LUBE PRESSURE	YELLOW
CLUTCH PREFILL (10psi.)	YELLOW
CONNECTED CIRCUIT	BLACK
DISCONNECTED CIRCUIT	WHITE
ORIFICE SIZE	0.031\"" data-bbox="639 94 754 174"/>

Figure 1

SOLENOID REGULATOR VALVE

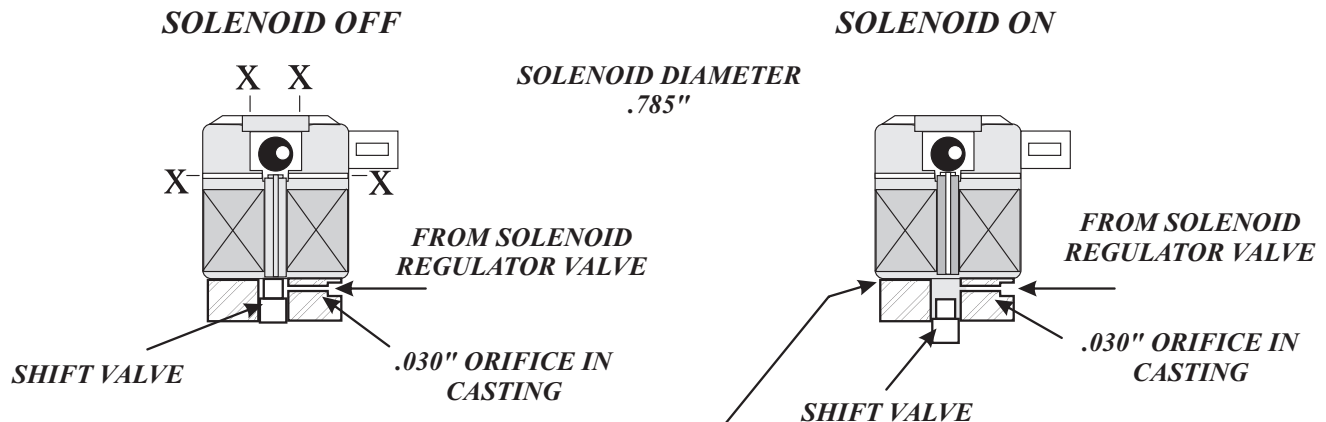


Check the bore of the Solenoid Regulator Valve for wear. Pressure bleeding past the valve lands will be exhausted at the plug shown above

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Figure 2

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

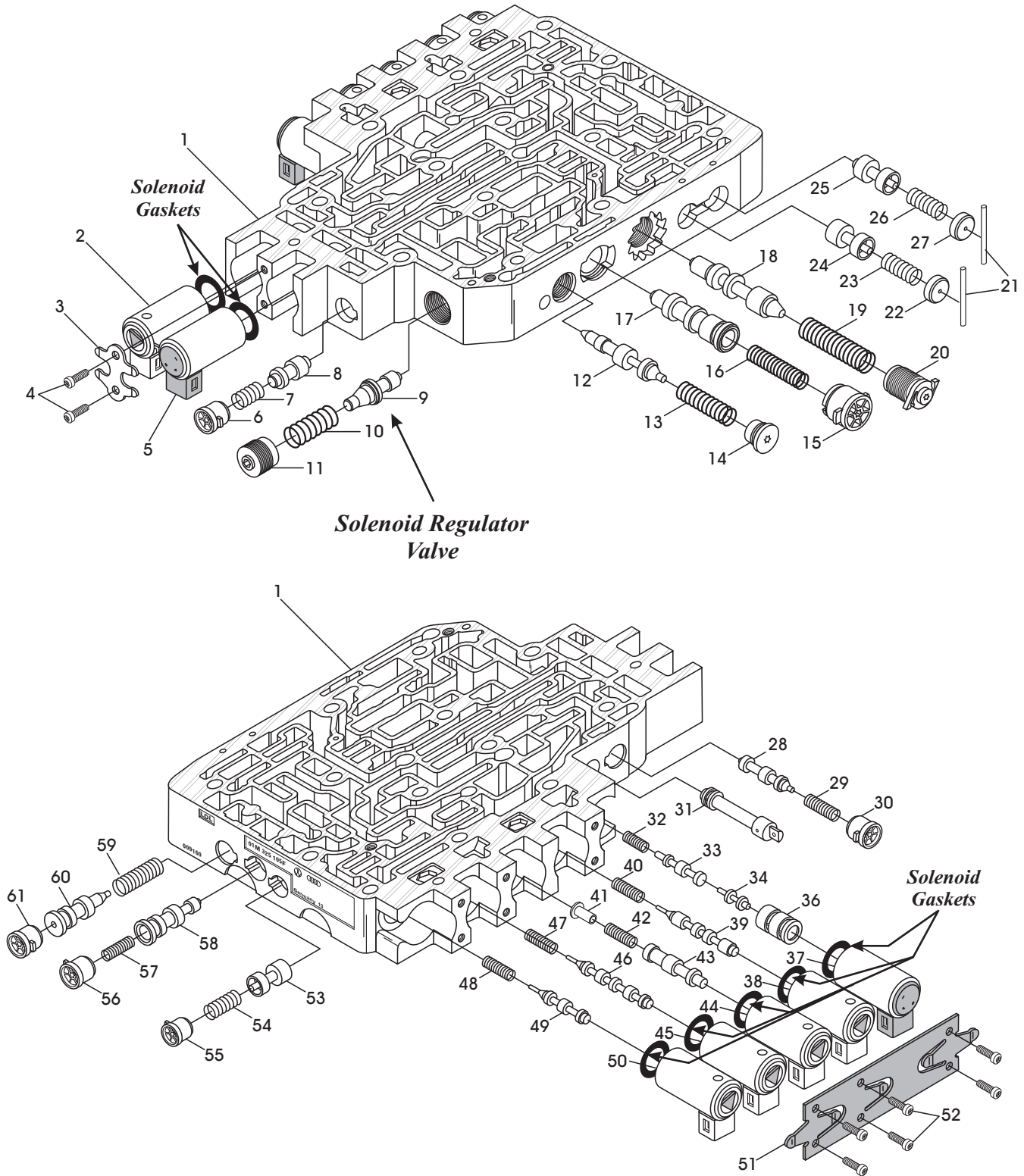


Use a gasket in-between the Solenoid casing and the Valvebody Casting

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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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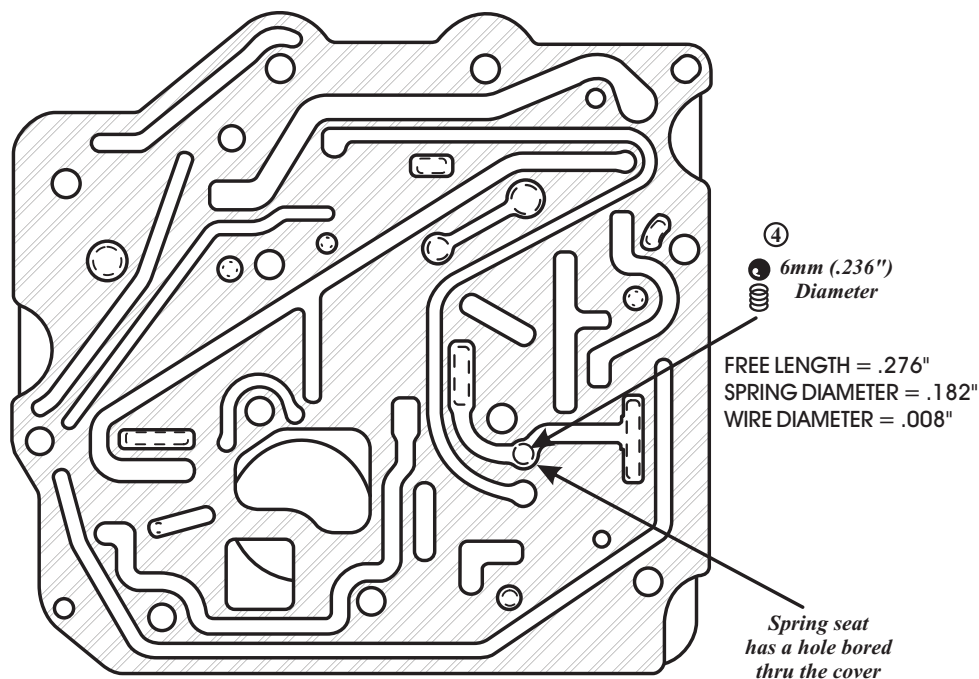
Figure 4

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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