



# 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.

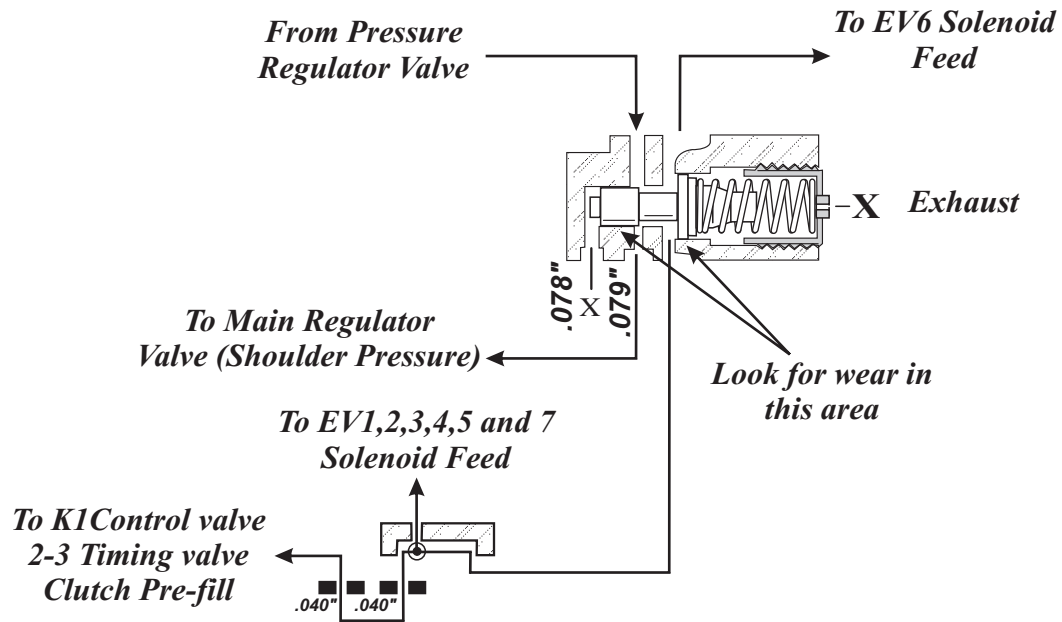
#### SERVICE INFORMATION:

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



Figure 1

## SOLENOID REGULATOR VALVE

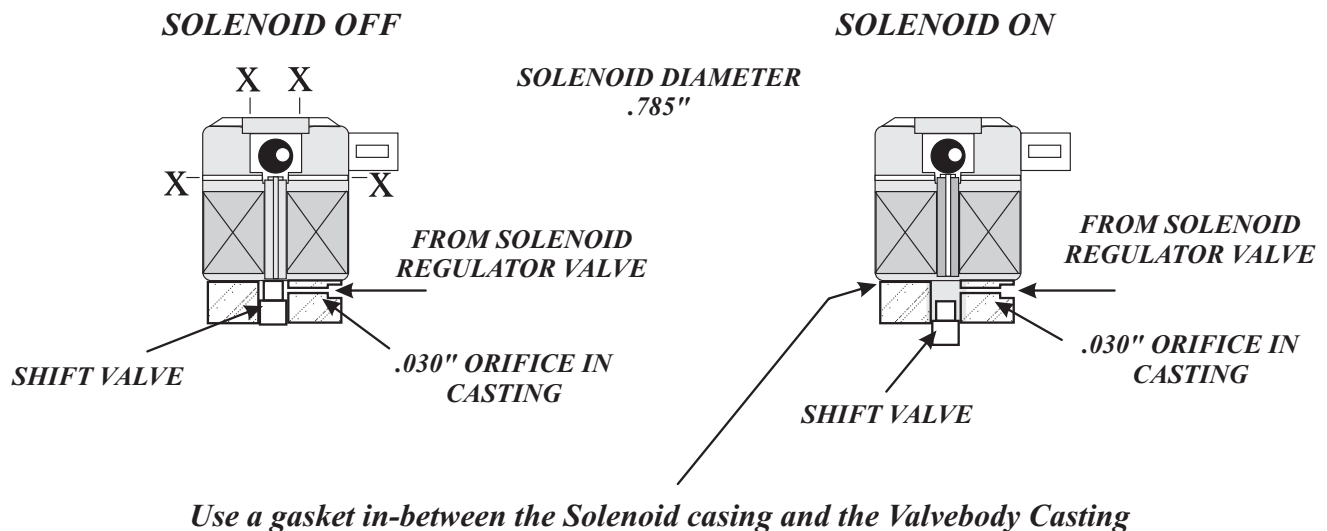


*Check the bore of the Solenoid Regulator Valve for wear. Pressure bleeding past the valve lands will be exhausted at the plug shown above*

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Figure 2

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

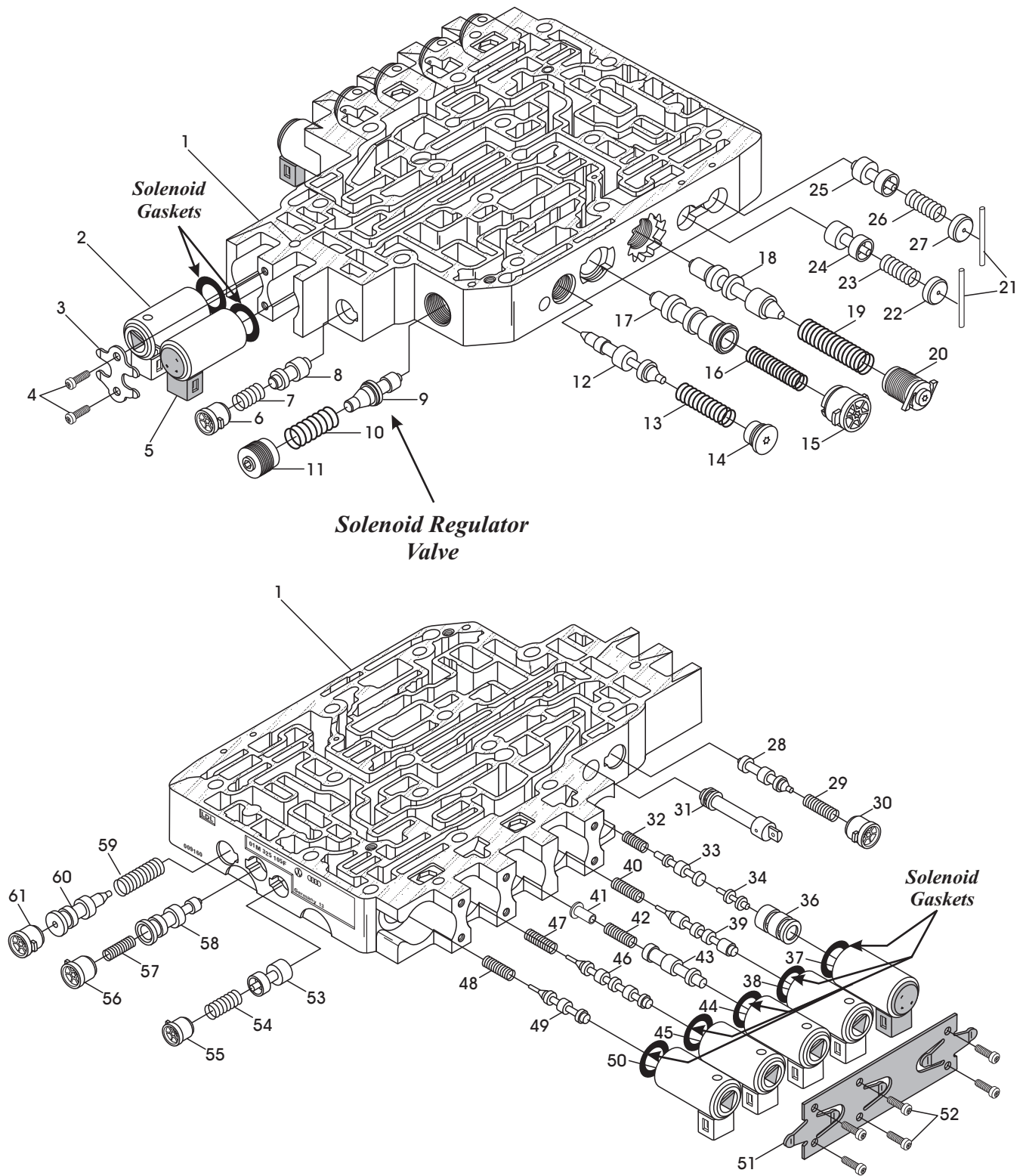


*Use a gasket in-between the Solenoid casing and the Valvebody Casting*

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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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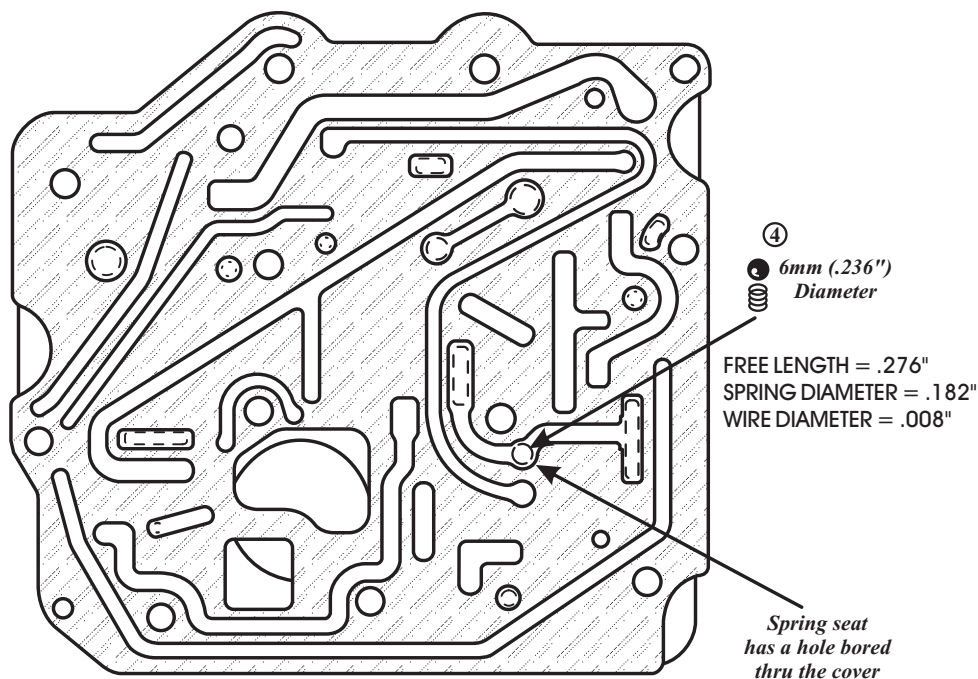
Figure 4

## 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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Figure 6