## 100 Causes of Bad Shifting

- 1. Crack or split in cable housing possibly under the ferrule where it can't be seen.
- 2. Crack in the ferrule.
- 3. Crack in the cable stop on the frame.
- 4. Crack in the shifter where the cable housing inserts.
- 5. Barrel adjuster turned out too far.
- 6. Brake housing used instead of shift housing.
- 7. Cable not routed properly through the under bottom bracket cable guide.
- 8. Thick chainstay protector between the cable and the frame that interferes with the cable.
- 9. Interference from accessories mounted to the frame.
- 10. A ferrule is used that is too large and allows the housing to move inside the ferrule.
- 11. No ferrule used where one is required.
- 12. Shift housing that is too short and pulled tight in order to be used.
- 13. Plastic sheath around the cable housing pushed back from the ends.
- 14. Housing enters the cable stop/shifter/derailleur at a bad angle.
- 15. Ferrule with tongue used at the shifter or derailleur end.
- 16. Special ferrule required by frame at a cable stop but not used.
- 17. Cable fraying or splitting.
- 18. Housing forced around some obstruction like a shock.
- 19. Housing gets pulled tight as the suspension compresses.
- 20. Housing gets pulled tight as the bars are turned.
- 21. Cable clamped between a kickstand and the frame.
- 22. Kink in the cable.
- 23. Kink in the housing.
- 24. Something lodged under the head of the cable inside the shifter.
- 25. Crack in the barrel adjuster.
- 26. Interference from the front brake as the bars are turned.
- 27. Cable wrapped around the fixing bolt the wrong way.
- 28. Fixing bolt plate oriented incorrectly.
- 29. Play in derailleur pivots.
- 30. Derailleur bent at the cable fixing bolt.
- 31. Some sort of contaminant causing friction between the cable and housing.
- 32. Tight bend in the housing as it goes through internal routing.
- 33. Ferrule hole pinched shut.
- 34. Housing end pinched shut.
- 35. Sealed ferrule seal lodged between the cable and the ferrule hole.
- 36. Dirt inside the shifter.
- 37. Dirt around the derailleur pivots.
- 38. Sticky drink spilled on the front derailleur.
- 39. Derailleur hanger bolt loose.
- 40. Derailleur mounting bolt loose.
- 41. Quick release skewer loose.
- 42. Freehub body mounting bolt loose.
- 43. Play in hub axle.
- 44. Worn freehub body bearings.
- 45. Missing cassette spacer allowing play in the cogs.
- 46. Cassette lock ring loose.
- 47. Worn bottom bracket bearings.
- 48. Bottom bracket cup loose.
- 49. Crank fixing bolt loose allowing the arm to wobble on the bottom bracket.
- 50. Loose chainring bolts.

## 100 Causes of Bad Shifting (cont.)

- 51. Bent crank arms.
- 52. Bent chainring.
- 53. Bent cog
- 54. Play in B axle.
- 55. Play in P axle.
- 56. Broken hub axle.
- 57. Flex in frame while riding.
- 58. Crack in cassette carrier.
- 59. Crack in cog.
- 60. Crack in chainring.
- 61. Crack in bottom bracket cup.
- 62. Crack in crank arm.
- 63. 11 tooth lockring used on 12 tooth cog.
- 64. E-type front derailleur mounting bolt loose.
- 65. Bent derailleur hanger.
- 66. Bent hub axle.
- 67. Bent B axle.
- 68. Bent P axle.
- 69. Bent pulley cage.
- 70. Bent parallelogram.
- 71. Bent front derailleur cage.
- 72. Misaligned frame.
- 73. Spacing of frame does not match over locknut dimension of hub.
- 74. Front derailleur mounted too high or low.
- 75. Front derailleur mounted crooked.
- 76. E-Type front derailleur rotated too far forward or back.
- 77. Wheel not mounted all the way into the dropouts.
- 78. Wheel not mounted straight in semi-horizontal dropouts.
- 79. Chainstay angle exceed specifications of front derailleur.
- 80. Incompatibility between shifter and derailleur.
- 81. Number of gears on cassette does not match the number of gears in the shifter.
- 82. Chainring spacing is incorrect like if a 10 speed crankset were used on a 9 speed drivetrain.
- 83. Wrong width chain used.
- 84. Chainring installed backwards.
- 85. Chainring oriented incorrectly.
- 86. Front derailleur clamp bolt loose.
- 87. Cable mounted incorrectly through the multi-pull pulley.
- 88. Mixing cogs from different model cassettes.
- 89. Mixing cogs from the same model cassette with a different gear ratio.
- 90. Mixing chainrings from different cranksets.
- 91. Incorrect spacer used between cogs.
- 92. Incorrect chaining bolts used if they are to long they can allow play.
- 93. Bent crankarm spider.
- 94. Non-Shimano front derailleur dust boot interfering with derailleur movement.
- 95. Rear derailleur dust boot lodged between derailleur and cable.
- 96. Quick connection link used.
- 97. Play in suspension pivots.
- 98. Chainstay length below minimum.
- 99. Crank loose on bottom bracket spindle because of damaged splines.
- 100.Bent chainring spider.