LMR
LATE MODEL RESTORATION

SVE
SPECIAL VEHICLE EQUIPMENT

Prop. 65 Warning for California Residents

WARNING: This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

2015-2020 SVE COIL OVER KIT

Removal:

1. Safely support the vehicle with a lift or jack stands. (Figure 1)

2. Remove the front and rear wheels.

3. Loosen and remove the (2) 15mm brake caliper retaining bolts.

4. Set the caliper on the rear of the k-member.

5. Remove the brake rotor.

6. Dislodge the ABS harness clips from the strut.

7. Hold the end link stud with a 17mm wrench and remove the nut with an 18mm deep socket. Do the same for the end link to sway bar hardware. Remove the end link.

8. Support the control arm with a jack.

9. Loosen and remove the (2) strut to spindle retaining nuts with a 24mm deep socket.

10. Flip the nuts around and rethread them back onto the bolt. Ensure that the flange on the nut is even with the dog point on the bolt.

11. Strike each bolt with a hammer until each bolt is free from the spindle. Remove the nuts, but leave the bolts in position.

12. Loosen and remove the (3) upper strut mount retaining nuts.

13. Remove the strut to spindle bolts and then remove the strut assembly from the car. (Figure 2)

14. Do the same for the other side.

15. Remove the upper shock hardware with an 18mm socket. (Figure 3)

16. Remove the lower shock hardware with a 15mm socket. (Figure 4)

17. Compress the shock by hand, and then remove it from the car.

18. Remove the 10mm retaining bolt securing the brake hose to the sway bar end link.

19. Support the IRS cradle with a jack.

20. Loosen and remove the (2) 13mm cradle support bolts. (Figure 5)

21. Now, remove the (2) 21mm cradle to body bolts.

22. Lower the IRS cradle and remove the spring. (Figure 6)

23. For the time being, reinstall the (2) 21mm IRS cradle to body bolts.

Installation Pre-check

24. To get started layout all of the components and familiarize yourself with everything that is included in the kit.

Front Installation

25. Go ahead and remove the lower strut mount from the fully threaded strut body and apply anti-seize to the lower part of the strut. (Figure 7)

26. Reinstall the lower strut mount and rotate the mount until the bottom of the threaded body is 4 inches inside of the mount by measuring from the bottom.

27. Doing this will establish a pre-determined height for the bump stop.

28. Tighten the lower collar against the lower strut mount. (Figure 8)

29. Rotate the spring perch until there is no play in the spring. Run up the adjusting collar and tighten the two against each other with the spanner wrenches.

30. Do this for the other strut assembly.

31. Verify that you have the correct strut for whichever side you are working on.

32. The drive side strut is marked with an “L” on the camber plate the passenger side is marked with an “R”. (Figure 9)

33. Whenever that is verified, install the strut into the car with the camber plate orientated correctly.

34. While holding the strut, finger tighten the three provided retaining nuts.

35. Before moving forward, make note of the slotted upper hole in the strut.

36. This allows for additional camber adjustment if it’s needed. (Figure 10)

37. Position the ear of the spindle into strut and install the strut to spindle hardware in the factory orientation.

38. Thread on the retaining nuts and tighten them down. The factory torque spec for these is 184 lb-ft.

39. Adjust the provided sway bar end link to the same length as the factory end link. (Figure 11)

40. This is done by loosening the jam nuts and rotating each end link so that they mimic the factory piece. Whenever this is done, retighten the jam nuts against the center adjuster.

41. Install the end link in the same orientation as the factory one was. (Figure 12)

42. Thread on the retaining nuts and then use a combination of a 19mm wrench and 6mm Allen socket to tighten the nuts.

43. Torque the three strut mount retaining nuts to 14.5 lb-ft.

44. Reinstall the brake rotor and hold it in place with a lug nut.

45. Reposition the brake caliper over the rotor.

46. Align the bolt holes and reinstall the retaining hardware. (Figure 13)

47. A GT350 front caliper is shown. The retaining bolts for this caliper torque to 136 lb-ft. All other factory S550 brake caliper retaining bolts torque to 85 lb-ft.

48. Repeat these steps for the other side.

Rear Installation

49. Remove the lower shock mount from the threaded body, apply anti-seize to the threads, and reinstall the lower mount. (Figure 14)

50. Next, set the pre-determined bump stop height for the shock.

51. To do this, lay the factory shock on something flat with the lower shock mount up against something flat as well.

52. Verify that the dust boot is installed and then mark the top of the bump stop. (Figure 15)

53. Set the factory shock aside and then position the new shock into place.

54. Remove the pre-installed dust boot from the new shock so that you can see where the bump stop is. (Figure 16)

55. To compensate for lowering the vehicle, adjust the shock so that the bump stop is approximately a quarter-inch shorter than the factory shock.

56. Whenever this is done, run down the locking collar and snug it down with the spanner wrench.

57. Reinstall the dust boot and then do the same for the other shock.

58. With either side of the IRS cradle supported and detached from the body of the car, verify that the lower spring isolator is positioned correctly within the lower control arm. (Figure 17)

59. The upper isolator will not be reused.

60. If needed, lower the cradle and install the rear spring and perch at the same time.

61. Make sure that the lower spring pigtail is aligned with the lower isolator.

62. Jack up on the IRS cradle and reinstall the rearward 21mm bolt followed by the frontward 21mm bolt and IRS cradle support bracket. (Figure 18)

63. Tighten the 13mm cradle support to body bolts to 41 lb-ft and the two 21mm cradle to body bolts to 129 lb-ft.

64. If equipped, remove the plastic dust cap from the upper shock mount.

65. Remove the 15mm retaining nut and then separate the upper mount from the shock.

66. Remove the supplied nut and spacer from the new shock.

67. Install the upper mount in the factory orientation on the new shock. (Figure 19)

(If applicable, use a drift and hammer to drive the small spacer off of the factory shock. Install this spacer onto the new shock.) (Figure 20)

68. Position the spacer and then install the provided nut.

69. Torque this nut to 22 lb-ft.

70. Position the upper shock mount underneath the small studs in the body of the car and loosely install the bolts. (Figure 21)

71. If needed, compress the shock by hand and then align the lower section of the shock with the bolt holes in the lower control arm. Loosely install the retaining bolts.

72. Torque the lower bolts first to 35 lb-ft followed by the upper bolts which torque to 66 lb-ft. (Figure 22)

73. If it was removed, reinstall the bolt securing the brake hose to the sway bar end link bracket.

74. This bolt torques to 22 lb-ft.

75. Repeat these steps for the other side.

Adjustment Procedure

The car should already be safely supported via a lift or jack stands and the wheels removed.

Front Adjustment

76. Rotate the center collar away from the spring collar.

77. Use the spanner wrench and rotate the spring collar up to raise the car or down to lower the car. (Figure 23)

78. Whenever you reach the desired setting, measure the distance between the spring and the spring collar. Write this down.

79. Run up the center collar and tighten the two

collars against each other.
80. Mark both of the collars with a paint pen so that you can visibly see if the collars were to ever rotate.

81. To adjust the camber, the front strut will need to be removed from the strut tower in order to gain access to the 4 socket head bolts. (Figure 24)

82. The alignment shop will need to know this information.

83. Do the same for the other side.

Rear Adjustment

84. The rear adjustment is a little tricky because of the limited working space.

85. Because of the S550 chassis, the weight of the car is supported by an individual spring which is why the rear doesn't utilize a true coil over assembly.

86. In order to easily rotate the collars, the weight of the car needs to be off of the spring. This is done by dropping the IRS cradle. Support the cradle and then remove the two bracket to body bolts; followed by the two 21mm IRS cradle to body bolts.

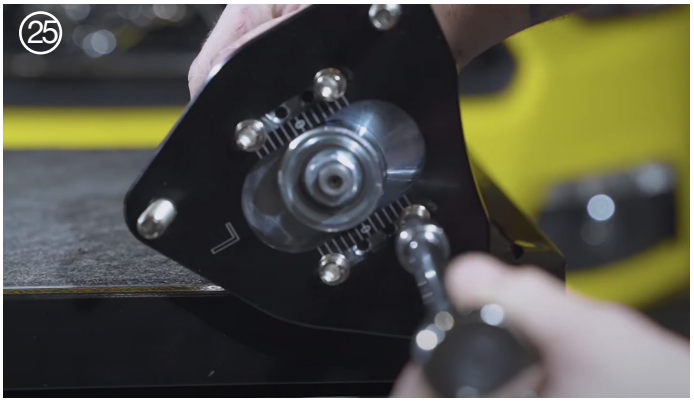
87. Now you can make your adjustments.

88. Contrary to the front, the spring collar will need to be rotated down to raise the car or up to lower the car. (Figure 25)

89. To do this, separate the locking collar from the spring collar.

90. Rotate the spring collar until you reach the desired setting. Measure the distance between the spring collar and the top of the perch. Write this down.

91. Tighten the two collars against each other. (Figure 26)



92. Mark both of the collars with a paint pen so that you can visibly see if the collars were to ever rotate.

93. With the adjustments made, reinstall the previously removed hardware and torque to spec. The 21mm bolts have a torque spec of 129 lb-ft and the two 13mm bolts have a torque spec of 41 lb-ft.

94. Do this for the other side.

95. At this time, you need to double-check your work.

96. Reinstall the wheels and torque the lug nuts to the factory specification which is 150 lb-ft.

97. Take the car to the alignment shop and have the car aligned.

For a More In Depth Install
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