

IRS Sub-frame Removal Instructions

Tech Tip: Some of the Maximum Motorsports products for the Cobra IRS can be installed without removing the complete IRS Subframe unit from the vehicle. However, installation of most items is *much* easier if the complete IRS unit is removed from the car. With the complete IRS unit away from the car, working conditions are much nicer than working underneath the car. Also, if you install several of the MM IRS products at the same time, the ease of installation becomes even more pronounced. Removal of the IRS Subframe is actually not very difficult, and can be accomplished in one to two hours.

Removal of the complete IRS subframe....

- is required to install the MM Delrin Upper Control Arm Bushings.
- makes it is *much* easier to install the MM Delrin Lower Control Arm Bushings, and both the MM Aluminum and Urethane Differential Mounts.
- makes it somewhat easier to install the MM IRS Subframe Bushings, and the rear Swaybar Bushings.
- does not help when installing the MM Rear Coil-over Kits, the Adjustable Tie-rod Kit for bumpsteer, or the Adjustable Swaybar Endlinks.

Instructions:

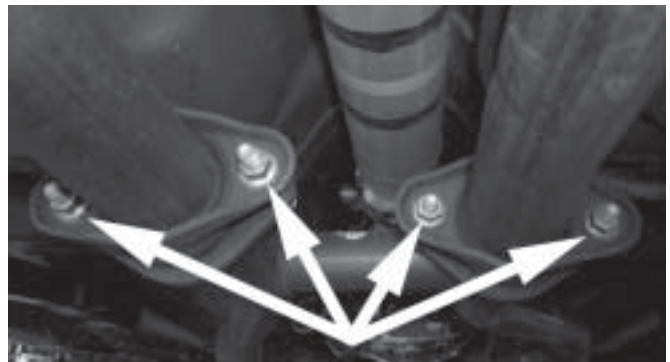
1. Raise the front end of the car by jacking under the center of the K-member. Support it with jack stands positioned under the K-Member right behind the forward front control arm pivot, as indicated by the "X" in the picture below.



2. Raise the rear of the car with a jack and support the rear of the car on a pair of jack stands. This pair of jack stands **MUST** be positioned under the chassis of the car (e.g., under aftermarket subframe connectors or under the torque boxes), not under the IRS subframe.

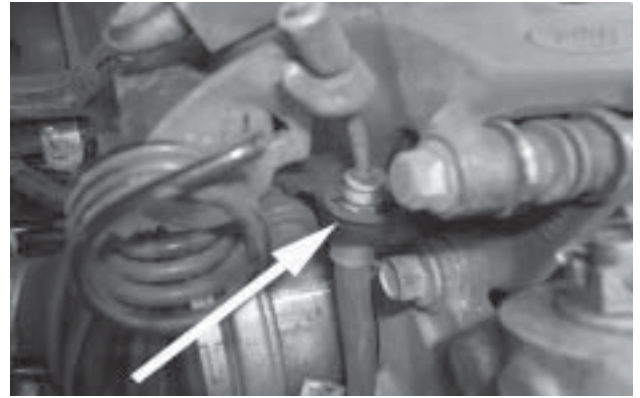
NOTE: To remove the IRS subframe from the vehicle, a minimum distance of 19" is necessary between the ground and the pinch weld seam at the bottom of the rocker panels.

3. Remove the rear wheels.
4. If using control arm mounted springs, mark the orientation of the lower spring ends on the lower control arms.
5. Remove the tail section of the exhaust from the vehicle, disconnecting it at the front of the mufflers. A flat-head screwdriver is useful in prying the rubber exhaust hangers from the exhaust.



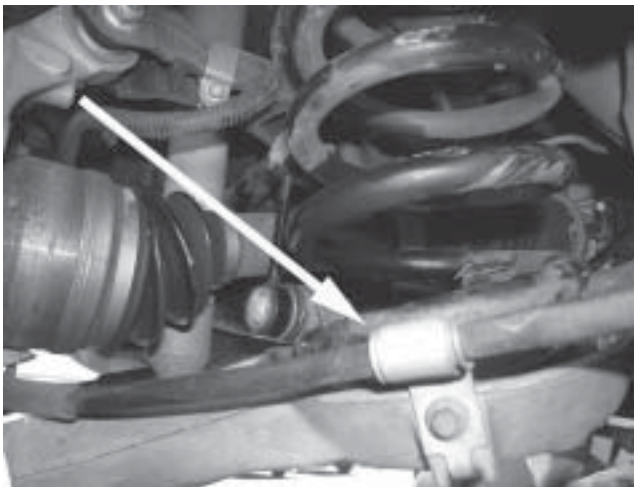
6. Place the jack firmly beneath the passenger side control arm.
7. Remove the passenger side lower shock bolt from the control arm.
8. **SLOWLY** lower the jack until the control arm is resting on the subframe.
9. Repeat steps 6-8 for the driver side control arm.
10. Mark the orientation of the drive shaft flange to the pinion flange.

11. Remove the four bolts retaining the drive shaft to the pinion flange. It may be helpful to set the parking brake to stop the drive shaft from rotating, or place a pry bar through the U-joint.
12. Using tie wire or zip-ties, secure the drive shaft to the parking brake cable bracket located slightly forward of the rear bulkhead. **AVOID** removing the drive shaft; doing so will allow oil to drain from around the output shaft of the transmission.



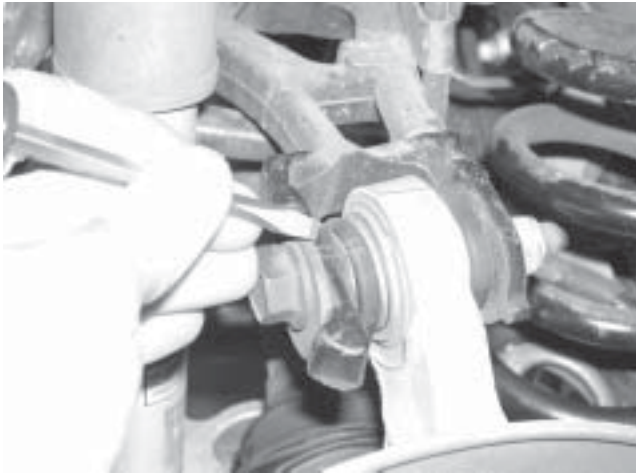
15. Disconnect the parking brake cable from the parking brake lever on each caliper. Remove the cable from the locating hole in the calipers.
16. On 2003-04 vehicles, remove the retaining bolt on each of the brake line locator brackets bolted to the rear upper control arms.

13. Unbolt the parking brake cable mounting-bracket from each control arm.

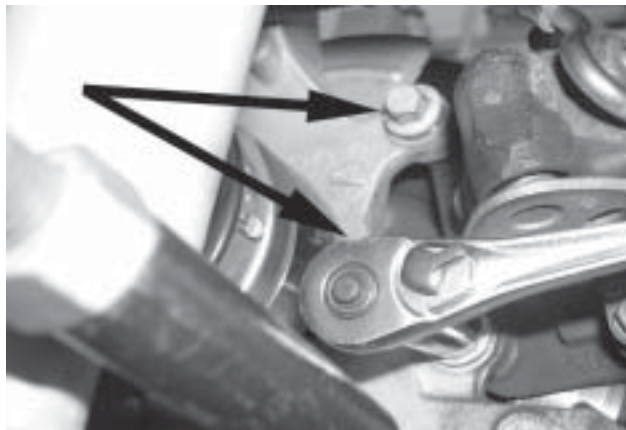


17. On 2003-04 vehicles, remove the brake line locator brackets from the control arms. It will be necessary to spread the bracket legs apart in order to remove them.
18. Using an awl or other sharp object, carefully mark the position of the eccentric camber adjustment bolt on the upper control arms. Aligning these marks during reassembly will help maintain the rear camber setting.

14. Make sure the parking brake is not set, then remove the parking brake cable housing retaining clip on each caliper.



19. Loosen the upper spindle mounting bolt on the passenger side control arm.
20. Remove the two bolts holding the caliper assembly to the spindle on the passenger side. **DO NOT** allow the caliper to hang by the brake hose. Damage to the brake hose may result.



21. Remove the upper spindle mounting bolt.
22. Lift the upper control arm away from the spindle and move the brake line so it is routed above the upper control arm.
23. Replace the upper spindle mounting bolt.
24. Using a zip-tie or safety wire, hang the caliper from the rear chassis mounting bracket for the IRS sub-frame. **DO NOT** hang the caliper from the subframe.



25. Repeat steps 19-24 for the driver side.
26. Unbolt the ABS sensors from each side of the differential housing and disconnect the plastic retaining clips. These attachment bolts have a head with both an external hex and an internal Torx.
27. Position the jack under the differential and raise the jack until it just contacts the differential. It may be necessary to place a block of wood between the jack and the differential. Be careful not to lift the rear of the car off the jack stands.



28. Remove the two rear 12mm IRS subframe mounting bolts.
29. Loosen the two forward 14mm IRS subframe mounting bolts.

NOTE: On many factory equipped IRS Mustangs, Ford inadvertently used 12mm bolts to secure the 14mm forward IRS subframe mounts. To prevent excessive movement of the IRS subframe, the proper 14mm factory mounting bolts can be purchased from Maximum Motorsports.

30. Slowly lower the jack, allowing the IRS subframe to pivot about the forward mounting bolts, until the springs are uncompressed.
31. Remove the rear springs from the control arms.
32. Raise the jack up until the IRS subframe is level again.
33. Remove the two forward IRS subframe mounting bolts. It may be necessary to have a friend stabilize the subframe to stop it from falling down upon removal of the forward mounting bolts.
34. Slowly lower the IRS subframe to the ground.
35. Pull the IRS subframe out from under the car.
36. Your IRS subframe is now ready for installation of any of the MM IRS products.

Re-install IRS Subframe

37. Position the IRS subframe beneath the vehicle with a floor jack placed beneath the differential. It may be necessary to insert a block of wood between the differential and the jack.
38. Raise the IRS subframe into position and re-install the two forward 14mm subframe mounting bolts and nuts.
39. Slowly lower the jack until the springs can be inserted.
40. Insert the factory location springs, being sure to orient the spring ends and rubber isolators according to the marks made in step 4.
41. Jack the rear of the IRS subframe up into position.
42. Install the two rearward 12mm IRS subframe mounting bolts.
43. Torque each of the four IRS subframe mounting bolts to 76 ft-lb.
44. Reinstall the ABS sensors onto the differential housing being sure to attach the wires to their respective retaining clips. Torque the Torx bolts to 5 ft-lb.
45. Temporarily remove the upper spindle mounting bolt on each control arm.
46. On each side of the vehicle, lift the upper control arm away from the spindle and move the brake line back into the stock location routing, below the upper control arm.
47. Replace the upper spindle mounting bolt on each side of the vehicle.
48. Reinstall the brake calipers. Torque the caliper mounting bolts to 76 ft-lb.
49. On 2003-04 vehicles, replace the brake line locator brackets back onto the upper control arms.
50. On 2003-04 vehicles, insert the mounting bolt back into each of the brake line locator brackets and tighten until the bracket's legs are touching.
51. Use the marks previously made on the eccentric cam alignment bolts to realign them. Torque the bolts to 66 ft-lb.
52. Reinstall the parking brake cable onto the parking brake lever on each caliper. Reinstall the parking brake cable housing retaining clip.
53. Reinstall the parking brake cable mounting bracket to the lower control arm and torque the bolt to 9 ft-lb.
54. Connect the drive shaft to the differential. Use the mark made in Step 10 to correctly orient the drive shaft. Torque the bolts to 83 ft-lb. Set the parking brake or use a pry bar through the U-joint to stop the drive shaft from rotating while tightening the bolts.
55. Use a jack to raise passenger side control arm until the lower shock bolt can be inserted. Place the factory nut on the bolt.
56. Torque the lower shock mounting bolt to 98 ft-lb.
57. Repeats steps 55-56 for the driver side control arm.
58. Reinstall the exhaust system and torque the exhaust flange bolts to 34 ft-lb.
59. Reinstall the rear wheels and torque the lug nuts to the manufacturer's specifications.
60. Safely lower the car to the ground and test drive.
61. Re-torque the four subframe mounting bolts after 1000 miles of driving.