

Section 2, Front Lift

- 1) Support car on Jack Stands. Remove wheels.
- 2) Disconnect brake line and ABS (if equipped) brackets from strut.



- 3) Disconnect Steering Tie Rod End. Remove the cotter pin and 12mm nut. Use a 3lb sledge to "coax" the rod end out of its tapered seat on the steering arm.



Note: This is a good time to evaluate the condition of your tie rod ends and replace them as necessary since you'll be realigning your car when all of this is over. The boots on mine were cracked so I swapped them out for new. They are ~\$30ea at Majestic.

- 4) Remove the 2 pinch bolts and flange nuts mating the strut to the knuckle. I used a 1/2" Breaker with a 19mm socket and a 1/2 Ratchet with a 22mm socket.



- 5) Remove the 3 10mm flange nuts holding the top plate of the strut to the body. These are accessed through the engine compartment. Pull the strut out.



Front Lift - Part 2

6) With the first strut removed, repeat the process for the other side.

7) Using a good strut spring compressor, begin the disassembly of the front struts.

NOTE: I used The Strutter 2 compressor, It is really a great tool and is available from Cornwell Tools. (as luck would have it, it was the August monthly special @ \$35.) This compressor is not nearly as sketchy as others I have used in the past, notably loaners from Kragen and such.



8) With the spring compressed enough to remove the load from the top plate, begin strut disassembly:



9) The bearing plate needs to be lubed with a marine-grade lithium grease. It was obvious that much of the factory applied grease had long since dissipated. This surely leads to premature wear and I suspect it to be cause of the creaking noises when turning that others have described often here.



10) Next, press out the OE top studs to make way for the new extended studs:



11) Here is a comparison of the OE stud (far right), vs largest 10mm stud available commercially, vs 10mm x 1.5 Bolt, vs Custom 80mm Blue Stud:



12) Next up is to press in the extended studs.

Front Lift, Part 3

Extended studs pressed in:



13) The front urethane spacers had to be modified as they're actually for an F-150/Expedition.



14) Strut going back together:



Note: There is a very specific way that the strut is to go back together. The service manual provides great detail on this and should be referenced. Putting the components back together is made easier by the factory assembly marks (blue paint visible), compression indents in the lower spring perch created by the end of the coil, and alignment markings stamped into the top perch and bearing plate.

15) Here is the completed strut assy with both urethane spacers 5stacked and ready to be re-installed in the E. Notice 80mm is the ideal length for the studs and lube oozing from the re-greased top plate.



16) Re-install the assy using the special service bolts shown below. These bolts will provide 30' of negative camber adjustment thanks to their reduced shank diameter of 14.68mm, down from 15.88mm.



17) Reassembly included the addition of new tie rod ends, as discussed earlier. NOTE: Be sure to use a new cotter pin on the flange nut.



Rear Lift - Part 1

1) Jack up your E via the center of the rear sub-frame and support it on jack stands at the jack points left and right (just forward of the rear wheel wells), chock the front wheels, remove the rear wheels.

2) Remove sway bar bracket on the side on which you are working (2 12mm bolts).

3) (Left side) Remove the 3 10mm bolts holding the EVAP canister. Use a 1/4" drive with an extension. You need to swing this out of the way to remove the left rear strut.



4) Disconnect brake line bracket (12mm socket) and ABS bracket from upper arm (if equipped). Use needle nose pliers to release the ABS bracket clips.

5) Disconnect the upper arm from the rear hub. Jack up on the lower arm/strut mount to facilitate this as necessary.



6) Remove rear strut. Access the two top mounting bolts via the hatch in the rear seat area. Seat needs to be flipped up to do this. Use a 14mm deep socket, extension, and 1/2 drive to remove the 2 flange nuts.



7) Now remove the lower flange bolt and pull the strut out.

Strut perch looking up from below with the strut removed:



With the strut out, you can begin pulling the strut on the other side.

Rear Lift - Part 2

At this point, both rear struts are removed. Like with the fronts, the rears needed to be disassembled so that the OE studs could be pressed out and the extended studs pressed in.

9) Strut in compressor:



10) Once pressure is off the top plate, remove it using a 14mm box wrench and 6mm allen wrench:



11) Rear strut disassembled:



12) Press out the OE studs and press in the extended studs:



13) Rear top plate with new studs:



14) Strut reassembled with spacer installed:



Next up - rear strut/spacer assy gets installed in the E - now things get interesting.

Rear Lift - Part 3

Now the newly extended strut assemblies need to get back in. The trick here is to drop the lower arm to gain clearance.

15) Raise the side you are working on by placing the floor jack under the lower arm/lower strut mount.



With the E raised, place a jack stand under the jack point at the center of the rear sub-frame and remove the jack stand that is forward of the wheel well on the side you are working - you'll need this area free.

16) Remove the two 17mm bolts that secure the lower arm bracket to the body. You can relieve some stress on the bracket by using the floor and/or bottle jack.



The picture above illustrates the lower arm having been dropped to allow installation of the strut assy. Note that I did not move the jack stand - this technique evolved over time. You want to get that thing out of your way - trust me. Not having it there will make things go much more smoothly when you reinstall the lower arm.

17) At this point, you want to install the adjustable upper arms. Really straight forward here, two bolts to deal with. More detail on the arms further down in the thread.



18) With the lower arm out of the way, you can insert the top of the spacer up into its perch. Ideally, you'll have someone nearby to hold it up while you start the lock nuts from the top-side cargo area.

19) With the top of the strut secure, it's time to shift attention to the bottom attachment point. This is tricky. You need to manipulate the lower arm using the jacks. Get out your XXL flat head and use it to manipulate the strut. This BFSD is key, as illustrated in the pictures that follow:



Use the screw driver to line things up:



Once things are lined up, reinstall the flange bolt.

20) With the strut secure and in place, reinstall the lower arm. Jack up the lower arm, get the outboard bolt started, then use a 17mm box wrench and start the inboard bolt.

Here's the rear arm reinstalled:



Alignment:

Instruction Sheet

1. Take alignment readings and determine amount of camber change needed.
2. Raise vehicle by body pinch welds. Remove tire and wheel assembly.
3. Remove the upper strut-spindle bolt.
4. When installing **on a strut with elongated upper or lower holes** use the adapter plate included in the kit. Check for proper fit of the adapter plate to the strut flange. Plate should sit flush against the strut and dimples should mount inside strut slot. Due to variations among strut manufacturers, slight modifications to the strut and/or plate may be necessary. Hold the adapter plate in place against the strut as shown in **Figure 1**. Using dimples on plate as a guide, mark where dimples will contact strut. Using a hammer and center punch make a small indentation where dimples will sit against strut. This will allow plate to lock against strut when is tightened.
5. Line up small tab with cam on bolt. **Install bolt with large tab out toward wheel for positive camber or in away from wheel for negative camber (See Figures 2 and 3).** Install bolt into strut hole making sure the small tab on the washer is in the hole and the washer is flush on the strut. Add lock nut, snug, but do not tighten.
6. **Loosen the lower strut bolt.**
7. Reinstall tire and wheel assembly and recompensate alignment equipment. Rotate EZ Cam XR bolt to obtain desired camber reading.
8. Torque lower bolt to manufacturer's specification.
9. (**do not over torque**):

Always check for proper clearance between suspension components and other components of the vehicle.

10. Complete alignment and road test vehicle.

Strut with slotted upper hole

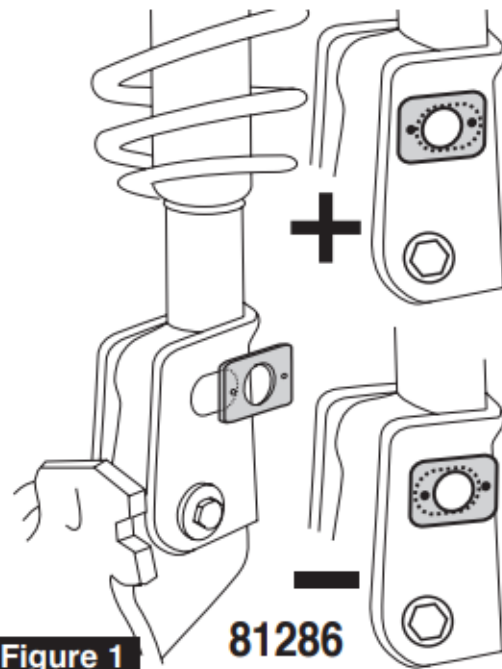


Figure 2

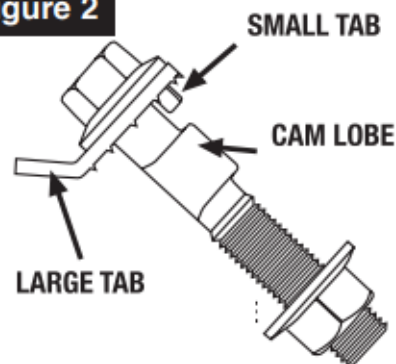
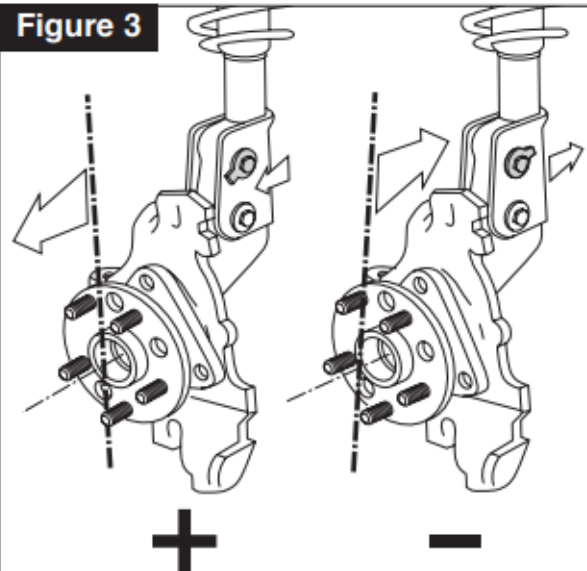


Figure 3



Instruction Sheet

UPPER REAR CAMBER ARMS

This part should only be installed by personnel who have the necessary skill, training and tools to do the job correctly and safely. Incorrect installation can result in personal injury, vehicle damage and / or loss of vehicle control.

Before beginning alignment check for loose or worn parts, proper tire pressures, and odd tire wear patterns. Replace any loose or worn parts.

Plan Ahead - Read All Instructions BEFORE installing part.

1. Raise rear of vehicle and support on jack stands.
2. Remove rear wheel and tire assembly. If applicable, carefully remove the plastic anti-lock brake wire bracket from the upper arm and position out of the way. Loosen and remove bolt and nut from spindle at the upper control arm and remove the bolt holding the upper control arm to the body and remove arm.
3. Make sure that both ends of the have equal threads showing on either side of the turn buckle. Install the arm by first installing the bolt at the body, but DO NOT tighten.
4. Install the arm to spindle bolt and the supplied nut but DO NOT tighten. Replace wheel and tire assembly, alignment equipment, re-compensate, and lower the vehicle.

NOTE: Tightening the fasteners with the vehicle in the raised position may cause premature bushing wear due to preloading the bushing.

5. Adjust camber by loosening jam nuts and turning center piece to desired camber specifications

NOTE: The maximum length of the arm is reached when the flat on one rod is visible at the end of the turnbuckle adjuster. DO NOT lengthen the arm beyond this point.

6. After camber adjustment is made, make sure that either set of holes on the center piece are facing up and down and then tighten the jam nuts. **Tighten the arm to spindle bolt and the arm to body bolt to manufacturer's specifications.**
7. If the vehicle is equipped with rear wheel ABS, attach the OE ABS wire bracket into the bracket plate.

Always check for proper clearance between suspension components and other components of the vehicle.

8. Set rear toe to specifications, complete alignment and road test vehicle.