

# BJ's Off-Road

## Suspension Kit Installation Instructions

Safety First! Here's a list of what you'll need for this task:

Floor jack  
Jack stands  
Tools including larger sockets  
Rust penetrating oil (recommended but not required)  
Hammer  
Torque wrench  
Eye and ear protection

Various tools may be required other than what is listed.

This process can take roughly 6-8 hours or more, depending on your tools, skill-level and the amount of help you have. The best thing you can do ensure a fast turnaround is to spray every nut and bolt to be removed with a good rust penetrating oil (WD-40 is NOT a good rust penetrating oil – PB Blaster and Kroil are recommended) for as many days possible prior to installation of your new suspension kit. Make sure the Jeep is parked on a level surface, with the transmission in park, the parking brake applied and the wheels blocked.

### Front Suspension Removal:

1. Jack the truck up and support the front securely on jack stands on the frame behind the front springs. You may need to use some spacers to get your jack stands tall enough for this. Remove the wheels.
2. Place the floor jack under the front differential as close to the center of the differential as possible.
3. Remove the front driveline from the front differential (you may leave the driveline connected to the transfer case, just compress the driveline and move it out of the way). Next remove the shocks and rubber brake lines. Cap the brake lines so they don't leak all over the place.
4. Remove all 4 u-bolts and slowly jack the front differential up away from the springs.
5. Remove the lower shackle bolts and let the front of the springs drop to the ground. Next, remove the bolt from the rear of the front springs and remove them from the vehicle.

### Front Suspension Installation:

1. Installation is opposite of removal. Loosely tighten bolts until the suspension is completely assembled.
2. Install the rear of the spring first. (The larger spring eye goes in this spot)
3. Next raise the front of the spring to the shackle and bolt them up. Finger tighten the bolts & nuts for now.
4. Lower the front differential making sure the centering pins in the leaf spring lines up with the centering hole in the spring perches on the front differential.
5. Install u-bolts and u-bolt plates. Tighten, but don't fully torque the u-bolt nuts yet.
6. Install the new shocks and brake lines (if equipped). Be sure to tighten the brake line fittings also.
7. Reinstall wheels and driveline, remove jack stands, lower front of vehicle to the ground.
8. Tighten all bolts to factory torque specifications – including u-bolts. Refer to factory service manual for torque specifications.
9. Admire your handy work.

### Rear Suspension Removal:

1. Jack the truck up and support the rear securely on jack stands on the frame in front of the rear springs. You may need to use some spacers to get your jack stands tall enough for this. Remove the wheels.
2. Place the floor jack under the rear differential as close to the center of the differential as possible.
3. Remove the rear driveline from the rear differential (you may leave the driveline connected to the transfer case, just compress the driveline and move it out of the way). Next remove the shocks and rubber brake line. Cap the brake line so it doesn't leak all over you.
4. Remove all 4 u-bolts and slowly lower the rear differential towards the ground.
5. Remove the bolt for the shackle where the shackle mounts in the frame. Next remove the front bolts from the rear springs and remove the springs. Note: on the driver side of 1980-1991 Wagoneers, Cherokees and Grand Wagoneers, there is a "captive" nut that is welded to the inside of the frame. The front bolt of the rear driver spring

goes through the frame and is attached to the captive nut. If you try to remove the bolt and it just keeps spinning, the captive nut has broken free from its weld. You will need to lower the gas tank to gain access to the nut.

6. Remove the shackles from the springs.

#### Rear Suspension Installation:

1. Installation is opposite of removal. Loosely tighten bolts until the suspension is completely assembled.
2. Install the shackle onto the small spring eye on the new springs.
3. Install the front of the spring first. (The larger spring eye goes in this spot)
4. Raise the rear of the spring to mount the shackle up. You will notice that the spring will be too “short” to bolt the shackle in. You can use a 4” or 5” piece of 2x4 lumber (or something comparable) and place it on top of the rear spring. Now you will need to use a floor jack to jack the spring up, adding weight to flatten the spring so the shackle will line up. Install the bolt. (Repeat this step for both sides)
5. Be sure that the rear spring wedges are larger in the back and smaller as they progress to the front. If the wedges are backwards (and you are sure the spring is configured correctly – the larger spring eye in the front and the smaller one on the rear), take a hammer and beat the wedge around to face other direction. Skip this step if your wedges are aligned correctly.
6. Raise the front differential making sure the centering pins in the leaf spring lines up with the centering hole in the spring perches on the rear differential.
7. Install u-bolts and u-bolt plates. Tighten, but don’t fully torque the u-bolt nuts yet.
8. Install the new shocks and brake lines (if equipped). Be sure to tighten the brake line fittings also.
9. Reinstall wheels and driveline, remove jack stands and lower rear of vehicle to the ground.
10. Tighten all bolts to factory torque specifications – including u-bolts. Refer to factory service manual for torque specifications.
11. Check out how much better your rig looks!!

Next, *PRIOR TO DRIVING YOUR VEHICLE*, you will need to fully bleed your brake system. You need to use new brake fluid during this process. Refer to your owner’s manual or factory service manual for type of fluid required. To bleed the brake system, follow the instructions listed in your service manual.

\*\*\* After driving your vehicle for one week, you need to re-torque all nuts and bolts related to the suspension and shocks. This is to account for the initial settling that will occur. Repeat this same process after another month of driving your vehicle. After that, it is recommended that you perform periodic inspections to all of your suspension systems, and check that all nuts and bolts are torqued to the proper specifications.

That’s it! You’re ready to show off your new BJ’s Off-Road Suspension Kit. This may also be the time to install larger tires to compliment the new suspension & look of your rig.

With regards to stiffness of springs and ride quality, be aware that the suspension will seem quite stiff for the first few weeks of driving. With more driving, the suspension will smooth out over time. If you would like the suspension to soften up quickly, you can take your rig off-road and flex the springs a few good times. This will help reduce the stiffness of the ride. This can take a few weeks to a few months to even out.

For questions or concerns, or further information, contact BJ’s Off-Road at one of the following:

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