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## Tools you'll need to install these shackles and bushings.

Set of sockets and wrenches	
Large pry bar	Large cold chisel
Large drift punch	Really large hammer
11/16" Craftsman Deep well socket and 3" extension	4 degree shims minimum between the spring and axle
Long 1/8" drill bits (2, you'll break one I bet)	Large Vice Grips
Drill, cordless is best	Spray lube
Floor Jack	Tall jack stands
Gloves	Band-Aids

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## Getting Started

1. Jack up one side of the truck at a time. Place the jack stand under frame just in front of transmission crossmember. Make sure it is good and strong. Your legs will be under the truck for a while and you need those for later. With the frame supported by the jack stand remove the tire, disconnect the swaybar and lower the jack and axle until almost all the tension is off the leaf spring.
2. Remove the  $\frac{3}{4}$ " nuts from the shackle bolts then use the pry bar to remove the shackles. Raising and lower the jack under the axle may be necessary to relieve any tension on the shackles from the spring. Two people make this a lot more fun.
3. With the old shackles out you can take your drill and long 1/8" drill bit and drill out the rubber part of the old bushings in the frame. Drill a series of holes around the bushing and try to remove as much of the rubber as possible. Take your spray lube (WD 40 or the like) and squirt some in a few of the holes you just drilled. You can then use your large vice grips to grab the center sleeve of the bushing to pull it out. Wiggle it back and forth and spray more lube if it's sticks. Wear gloves as you do this as it easy for the vice grips to slip and you can cut your hands pretty good if they do. If you are replacing rubber bushings in the spring eye too these instruction will also work for that.
4. You now have the rubber out of the outside bushing and center sleeve. Now you have to get the outer shell of the bushing out. This is the hard part. In order to do this you either need a bushing puller (very expensive to just use once) or you can cut it out with the chisel. The bushings are two pieces, an inner and outer. You only need to cut the outer bushing out. The bushing is 1" in diameter so a 1" chisel works very well. A  $\frac{1}{2}$ " chisel will also come in handy to get in to the harder spots. You will need a large hammer for this. A 3 lb. sledge works great.  
With the chisel and hammer bend up the outer lip of the bushing shell and bend it in a little bit. Then take the large chisel and make a cut down the length of the bushing until it is cut all the way through. This will take some time and the  $\frac{1}{2}$ " chisel will come in handy for the last little bit in the middle of the frame. Be careful not to damage the frame and bushing bracket. It's heavy steel and a little nick here or there isn't a big deal. Just try not to destroy it. With the outer bushing shell cut you can twist it out with the large vice grips. Again, spray lube is your friend. Try to rotate the bushing shell to get lube around the whole thing. Pull while twisting. This step can take anywhere for 20 minutes to 4 hours depending on tools and abilities. The right tools make it much easier.
5. With the outer bushing completely out take your drill and spray lube and remove the rubber and inner sleeve in the inner bushing next. Follow the same steps as before. This is where the long drill bit will come in handy as it's close to 3" to the other side. After you have the insides of the bushing removed take your Craftsman 11/16" deep well socket and install you 3" extension in backwards (through the socket so just a little bit is sticking out the end) and place it in the hole in the frame with the back of the socket facing the inner bushing. This socket is the exact right size. A shorter socket is too narrow and will jam in the frame. Hit the extension sticking out of the socket with your hammer a few times. The inner bushing shell should pop out fairly easily, at least compared what you just went through.
6. With both bushings out you can clean up the hole with some sandpaper and apply grease for the new bushing. GREASE EVERYTHING. Anti-seize works great for this. Slide the new bushing in the frame and spring if you are replacing those too. Repeat for the other side.
7. Install the new shackles and new bolts. Place washers under both the head of the bolt and nut. Tighten to where it is very snug then back it off about  $\frac{1}{2}$  turn. Recheck it after a few miles. To check with the full weight on

the tires, just use a  $\frac{3}{4}$ " wrench on the nut. Tighten until the bolt starts to move. That should be about right. If you have too much play then you can go a little tighter. Looser is better for off-road.

8. Remember, you need to have at least a 4 degree shim under the springs to compensate for the change these shackles will make to your alignment and pinion angle.