INSTALLATION INSTRUCTIONS
MID FIFTY
REAR SPRINGS

These instructions are written for installation of the rear springs with the bed still on the truck, as that poses the most difficulty. If you are installing the springs on a bare chassis, the process will be the same, but with much better access. There will also be no need for some of the special tools or methods required by bed clearance issues.

It has been assumed that the installation will be done on level ground, a driveway or in a garage. Air tools are recommended and referenced. If none are available, hand tools can be used for the process. Required and recommended tools are listed and pictured at the end of the instructions.

Generally, the instruction sequencing will involve working a number of steps on one side, then performing the same sequence on the other side of the truck. This will keep the tools, air hose, parts, etc., together during most operations in an attempt to be as efficient as possible.

This process is **A TWO-MAN JOB**. The parts are heavy and cumbersome. You will also appreciate someone available to hand you the needed tool, rather than crawl out from under the truck to get it. The whole process can be accomplished in a half day. Allow a full day for surprises unique to your truck's condition and/or age.

It is recommended that you read through the instructions once, then again while under the truck to fully familiarize yourself with work areas, part nomenclature and access issues.

PREPARATIONS

SHACKLE PIN FIT: As soon as is practical, trial fit the shackle pins through the new spring's end bushings. These bushings can compress when installed and should be sized after installation into the spring. The shackle pins should slide freely without shake in the bushings. If the bushing is compressed, you may choose to return the spring for sizing, have a local machine shop do it, or do it yourself if proper tools are available.

SHIPPING LABEL REMOVAL: the springs are shipped unboxed with shipping labels and tape on their outer surfaces. The presence of these does not affect the spring's installed performance. If you wish to remove them, using a rotary wire brush in a drill motor works well. Adhesive remover works well to remove any glue residue. Blow dry and towel dry the springs.

If you wish to paint the springs, do not disassemble them. Mask the bushing internal surface using a rolled piece of paper. Apply a light spray coat to the exterior surfaces and allow the paint to dry completely before handling them for installation.

TO BEGIN, PUT THE TRUCK ON (4) JACK STANDS

Break loose the rear lug nuts, leaving them snugged.

Jack up the front of the truck and support it with jack stands at the front end of the frame rails behind the gravel pan.

Jack up the rear of the truck with the jack under the axle center section. Place jack stands under the frame rail below the forward bed crossmember (forward of the front spring fitting). This placement will allow the most room to work. Leave the jack supporting the axle weight.

LOWERING THE REAR AXLE

Remove the nuts and washers at the lower shock absorber mount. Slide the shock off its mounting stud and swing the shock inboard. Allow it to hang.

Remove the (4) U-bolt nuts under the spring. Remove the U-bolts, upper spring retainer and shock bracket. Keep these parts together (as well as the shock attach nut/washers) and set them aside.

Move to the other side of the truck and repeat the previous steps. Do not mix LH and RH parts together.

Lower the rear axle to the ground, leaving the jack under it.

REMOVE THE FRONT SHACKLE PIN.

Locate and loosen the front shackle cross pin lock nut to cover the end threads of the pin. The nut will protect the threads from damage. Tap on the nut face to drive the cross pin loose. Remove both pin and nut.

The shackle pin is removed by driving it out from the inside. Locate the large vertical slot through the crossmember attach flange, behind the fitting, near the lower edge of the frame rail. Insert a punch/long screwdriver/drift pin through the slot and into a hole in the rear of the support fitting. Use a hammer to tap out the pin.

Often, the shackle pin is frozen. An air hammer with a punch bit works very well to start it out. NOTE: Reduce the air line pressure to 30-40 psi. You want to tap out the pin, not mash it over or shatter it.

If you are re-using the shackle pins, this would be a good time to check the fit of the pin to the spring bushings. The rear shackle pin is the same size, so you can use the same pin to check all four bushings.

REMOVE THE REAR SHACKLE PIN

Slide the spring assembly forward and down, allowing the rear Y-hanger to pivot below the frame rail. This should allow better access to the shackle pin.

As above, remove the cross pin and locking nut.

Tap out the rear Y-hanger shackle pin using a drift pin and hammer.

REMOVE THE SPRING and take it to the work bench (or other clean work area).

REMOVE THE FRONT SPRING SUPPORT FITTING

NOTE: Flipping this fitting is HIGHLY RECOMMENDED to prevent spring eye binding. This will also lower the rear by an additional inch, as it relocates the shackle pin center. If further lowering of the rear is desired, the fitting can be located higher on the frame rail. If you choose not to flip the fitting, skip to "Bench Work".

Using a die grinder (or drill) with a 3" dia cutoff wheel, cut slots in the support fitting rivet heads. The slots should be centered on the head and as deep as the head is tall. One slot is good. Two slots making an X in the head are best. Access and tool clearance will dictate which you are able to do.

Using an air hammer with a chisel bit, shear off the rivet heads flush to the fitting face. The slots you cut will allow the rivet head to fold in on itself as the shearing progresses. Begin by shearing the rear upper and lower rivets. Access is good and this will give you a feel for the tool and air pressure required. The lower forward rivet is also reasonably accessible. The upper forward rivet is the most difficult for accessibility.

Load the angle drill attachment and a ¼" drill into a drill motor. Using low rpm, drill a drill point 1/8" deep into center of the sheared end of each rivet. This will help center and hold the punch in the next step.

Change the air hammer bit to a punch, preferably one that comes to a point. Center the punch on a rivet drill point and drive the rivet stump through the frame rail. Again, starting with the rear upper and lower rivets will get you accustomed to the procedure. Access will be less for the lower forward rivet. The upper forward rivet is dicey, because the hammer will be at an angle and difficult to hold on the rivet center.

If this rivet proves too stubborn, and you have the other three removed, make sure the rivet head is sheared flush so no "flash" is holding the fitting. Then, if the fitting will rotate around the last rivet, use the air chisel (delicately) or a pry bar between the face of the frame rail and the fitting flange to "pry" the fitting away from the frame and over the rivet stump. Do this as close to the rivet as possible and go gently. The fitting is cast iron and brittle. The fitting should come free.

Using the right angle drill attachment, a stubby 13/32" (.406) drill and the drill motor, open up the fitting attach holes through the frame to 13/32" dia. Deburr the holes.

(NOTE: If you plan to relocate the fitting higher, use the fitting as a template to locate the new hole centers.)

Mark the support fitting as to driver or passenger side. Move it to the work bench.

Move to the other side of the truck and repeat the previous steps.

INSTALL THE SPRING

BENCH WORK:

Use the 13/32" drill to open up the attach holes in each support fitting. A drill press is useful here, but it can also be done using a hand drill and bench vise.

Deburr the holes.

UNDER THE TRUCK:

Trial fit the support fitting to the hole pattern in the frame rail using 3/8 bolts inserted through all holes. If a bolt does not go easily, put bolts through all holes that fit, and size the odd hole using the 13/32 drill and the fitting as a template.

BENCH WORK:

If you are replacing the shackle pins, install the zert (grease) fittings into the ends of them. Thread starting is easier here than under the truck in the dark.

Place the spring on the bench, on its side. Slide it so that the shorter end of the spring overhangs the bench edge. Slip the support fitting over the end of the spring, aligning the shackle pin holes. Position the support fitting so that the clevis base is on the spring's convex side and its flange faces the frame rail. You may need to re-position the spring and fitting until you're sure it matches the side you are building.

Insert the shackle pin through the spring and clevis (zert pointing out). With one person shining a flashlight through the cross pin hole, the other person can clock (rotate) the shackle pin using the zert fitting as a handle until the light shows that the notch in the shackle pin clearly aligns with the cross pin hole. Insert the cross pin. Tap it home to expose its threads on the other side. Install the cross pin lock nut. Torque to 20-25 ft-lbs. Move the spring assembly to its side of the truck so it is ready for installation.

Repeat the above steps to build the opposite hand spring assembly.

UNDER THE TRUCK:

Lift the spring into position and insert the shackle pin through the rear spring eye and Y-hanger. With one person supporting the spring weight and holding the flashlight on the cross pin hole, the other can now clock the shackle pin, insert the cross pin, tap it home and install the lock nut.

Slide the spring forward and up so that the Y-hanger is above the frame rail. Align the front support fitting (clevis down) with its holes in the frame rail. Insert an attach bolt. Rotate the fitting around that one bolt to align each of the other holes. When all bolts are inserted, install the fitting using lock washers and nuts. Thread locker is recommended. Tighten to 40-45 ft-lbs. Flat washers with nylock nuts can be used instead of lock washers. All hardware should be grade 8 fine threads.

Move to the other side of the truck and repeat the above steps.

Grease the shackle pins at each zert fitting, both sides. Pressurize the fittings until grease begins to squeeze out around the shackle pin ends.

INSTALL REAR AXLE

With one person on each side of the truck to control and guide the axle, raise the rear axle to contact the springs. Align the spring center bolt into its hole on the spring perch. Continue lifting the axle until a small gap appears at the top of each rear jack stand to ensure the axle is well seated and the jack bears the full weight.

Continue with one person on each side of the truck to perform that side's tasks.

Check to ensure no gaps exist between the spring perches and the springs.

Replace the upper spring retainer plate. Drop in the (4) U-bolts over the retainer and through the holes of the shock mounting plate. The shock mounting stud should face the rear.

Install each of the (4) U-bolt nuts using thread locker. Tighten to 50-60 ft-lbs.

Slip the lower end of the shock over its mounting stud and install washers and nut. Tighten until the nut bottoms against the stud shoulder. Torque to 25-30 ft-lbs.

Jack up the truck and remove the jack stands. Lower the truck to the ground.

Happy driving!

TOOLS REQUIRED

1. A long handle screwdriver. #3 Phillips shown. A drift pin or 3/8” dia piece of rebar will also do.
2. A hammer.
3. An air hammer with
    a. A chisel bit and
    b. A punch bit
4. A die grinder with 3” dia cutoff wheel.
5. A right angle drill attachment with
    a. A 13/32 (.406) dia drill X 3” long
    b. A ¼ “ (.250) dia drill X 3” long