

Fig. 16 Positioning the coil spring in the compressor

5. Install the other plate with the pivot ball seat facing upward into the coils of the spring. Insert the upper ball nut through the coils of the spring, so the nut rests in the upper plate.

6. Insert the compression rod into the opening in the lower arm, through the upper and lower plate and upper ball nut. Insert the securing pin through the upper ball nut and compression rod.

➔ **This pin can only be inserted one way into the upper ball nut because of a stepped hole design.**

7. With the upper ball nut secured, turn the upper plate so it walks up the coil until it contacts the upper spring seat. Then back off 1/2 turn.

8. Install the lower ball nut and thrust washer on the compression rod and screw on the forcing nut. Tighten the forcing nut until the spring is compressed enough so it is free in its seat.

9. Remove the two lower arm pivot bolts, disengage the lower arm from the frame crossmember, and remove the spring.

10. If a new spring is to be installed, perform the following:

- Mark the position of the upper and lower plates on the spring with chalk.
- With an assistant, compress a new spring for installation and measure the compressed length and the amount of curvature of the old spring.

11. Loosen the forcing nut to relieve the spring tension and remove the tools from the spring.

To install:

12. Assemble the spring compressor and locate in the same position as indicated in Step 10a.

13. Before compressing the coil spring, make sure the upper ball nut securing the pin is inserted properly.

14. Compress the coil spring until the spring height reaches the dimension obtained in Step 10b.

15. Position the coil spring assembly into the lower arm and reverse the removal procedure.

Shock Absorbers

REMOVAL & INSTALLATION

⚠ CAUTION

All vehicle applications are equipped with gas-pressurized shock absorbers that will

extend unassisted. Do not apply heat or flame to the shock absorber tube.

- Remove the nut, washer and bushing from the upper end of the shock absorber.
- Raise and safely support the vehicle by the frame rails allowing the front wheels to hang.
- Remove the 2 bolts securing the shock absorber to the lower control arm and remove the shock absorber.

To install:

4. Before installation, purge a new shock of air by repeatedly extending it in its normal position and compressing it while inverted.

5. Install a new bushing and washer on the top of the shock absorber and position the unit inside the front spring. Install the two lower attaching bolts and torque them to 13–16 ft. lbs. (17–23 Nm).

6. Lower the vehicle.

7. Place a new bushing and washer on the shock absorber top stud and install a new attaching nut. Tighten to 26 ft. lbs. (41 Nm).

TESTING

- Remove the shock absorber from the vehicle.
- Extend the shock absorber fully while it is right side up, as installed in the vehicle. Then turn it upside down and fully compress it. Repeat this procedure at least 3 times to make sure any trapped air has been expelled.
- Place the shock absorber right side up in a vise and hand stroke the shock absorber. Check the shock absorber insulators for damage and wear.

4. If the shock absorber is properly primed, in its installed position, and there is a lag or a skip occurring near mid-stroke of the shaft reverse travel direction, the shock absorber must be replaced.

5. Replace the shock absorber if there is any seizing during the shaft full travel, except at either end of the travel.

6. Replace the shock absorber if upon the shaft fast, reverse stroke, there is any noise encountered other than a faint swish, such as a clicking sound.

7. If there are excessive fluid leaks, and the shock absorber action remains erratic after purging air, replace the shock absorber.

MacPherson Struts

REMOVAL & INSTALLATION

➔ See Figures 17 thru 47

1. Place the ignition switch in the **OFF** position and the steering column in the **UNLOCKED** position.

2. Remove the plastic cover from the shock tower to gain access to the upper mounting nuts and dual damping actuator.

3. Remove the two actuator screws and move the actuator aside.

4. Loosen the 3 top mount-to-airspring tower nuts; but do not remove all the nuts at this time.

5. Remove the hub nut.

6. Raise and safely support the vehicle.

➔ **When raising the vehicle, do not lift by using the lower control arms.**

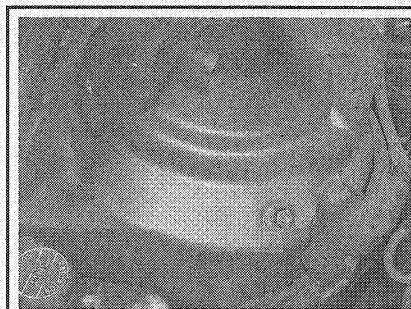


Fig. 17 This shield covers the strut housing. You will use a 13mm wrench to remove the nut

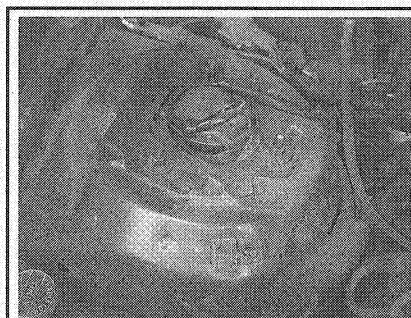


Fig. 18 After removing the shield, you will see the suspension actuator

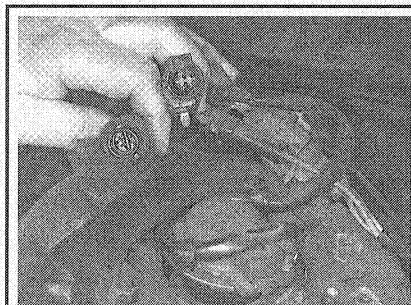


Fig. 19 You can unplug the actuator, although it is not necessary to replace the air spring

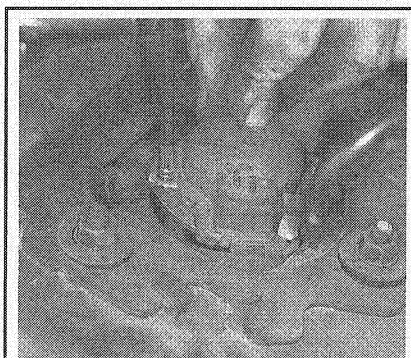


Fig. 20 2 screws hold the actuator in place