Lincoln Mark VII Air Spring Solenoid Replacement

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Removal and Installation of Air Spring Solenoid

At some point, our Mark VII's will require air spring service. Most air spring service requires the removal and installation of the solenoid. The solenoid is located in the top of each spring. This solenoid has a pressure line (plastic), which connects it to a source of dried, and compressed air. It also has one electrical connection, which electrically opens and closes the solenoid and facilitates the increase or decrease of air pressure within the air spring, thus adjusting the ride height of that particular corner of the car.

The following instructions relate to the solenoid *only*. Air spring removal and installation is quite simple, but is covered elsewhere.

Solenoid Installed in Air Spring (Typical)

Cautions

You will be working with compressed air. Always use extreme caution when deflating or inflating the air springs. Always wear eye protection and keep hands and arms clear from possible injury if an air spring failure occurs.

You will be using jacks and jack stands. Make sure that the jacks and jack stands are capable of carrying the weight of the car. Always use tire chocks to prevent the car from rolling and always keep yourself out from under the car when servicing air spring components.

Preparation

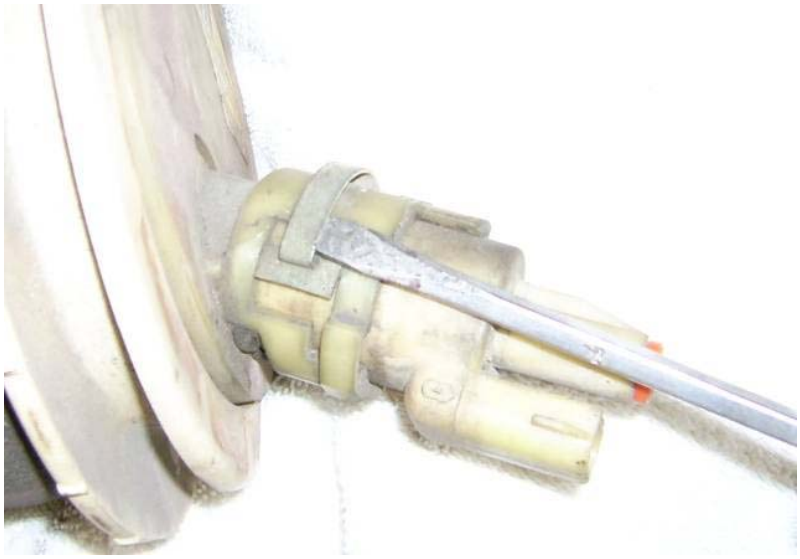
If possible, inflate the springs by turning the ignition switch ON and opening the driver's door. This will *trim* (level) the car. Turn the ignition to the OFF position and open the trunk. Turn OFF the air suspension switch located on the driver's side trunk panel just above and forward of

the spare tire. On models with a full size spare, the switch will be rearward of the driver's side trunk hinge about 2" below the trunk lip. It is in the same location on all Mark VII's. It is a rocker switch and it is in a recess within the carpeted side panel. (Consult your owners manual for location if necessary)

Raise the front or rear of the car (depending upon which solenoid you will be working on) and place jack stands under the ***body*** of the car. Place a jack under the axle closest to the spring you are working on. Make sure the jack is retracted. You will be raising the suspension in a later step.

Remove the wheel and tire assembly. The air spring will be visible at this point and the solenoid will be located in the top of the air spring.

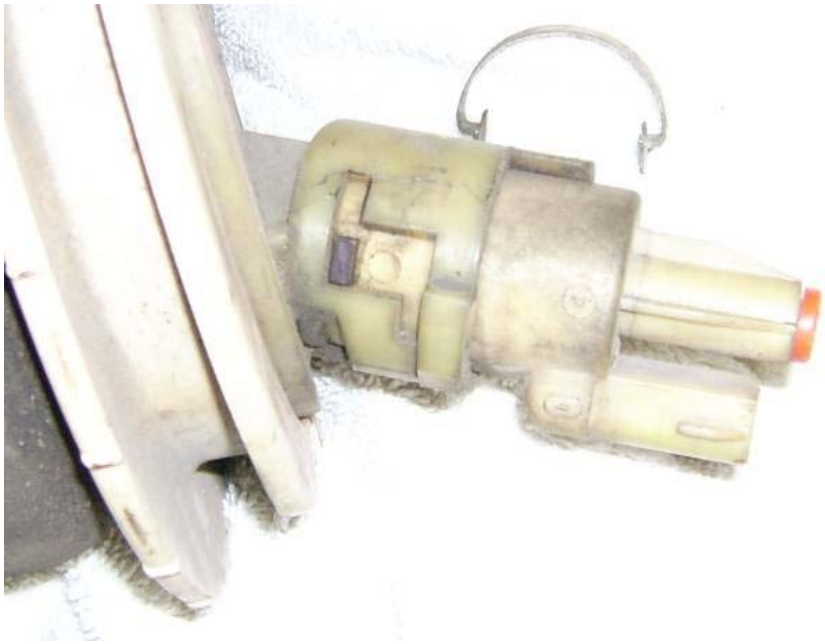
Removal of the Solenoid



Using a screwdriver, remove the lock clip from the air spring. This clip prevents the solenoid from rotating and releasing pressure. This can be somewhat difficult on the rear air springs.

Lock clip removed.

In the above illustration, the lock tab has been marked in black. Grasp the solenoid by the body and rotate it until the tab is in the wide slot.



The solenoid has been rotated and is ready to release pressure. At this point, the solenoid may “POP” away from the spring, but usually it requires a slight pull. If the spring is inflated, the “POP” may startle you. Be prepared! The solenoid cannot fly out of the spring at this point.

Pressure release position

At this point, the pressure in the spring has been released. The solenoid must be turned again in the direction of the arrow. Once it is rotated to the next stop, it may be removed from the air spring.

Solenoid loose.

O-Rings

View into top of Air Spring.

Inside of the air spring, there is a large O-ring. This O-ring may be askew from the sudden pressure release. Inspect the O-ring and replace if necessary. This O-ring does not hold pressure. Note the position of the O-rings on the solenoid in the right of the picture. The positions of these O-rings are WRONG. This is caused when the solenoid is installed without lubricant.

Correct O-Ring Position

Inspect all O-rings for damage and replace if necessary. The two O-rings on the solenoid share the same groove. These are the O-rings that retain air pressure.

Installation

Using petroleum jelly or a light grease, **lightly** coat the bore of the solenoid mounting socket, inside the top of the air spring. Install the solenoid in the reverse order of disassembly. Make sure that the solenoid is in the locked position and the safety clip is re-installed.

Turn the suspension switch in the trunk ON. Turn the ignition switch ON. Using the jack that was placed under the suspension earlier, raise the suspension until the compressor cycles and the air spring inflates. Stay clear of the air spring until inflation has concluded.

Caution: The weight of the car will be transferred to the jack that was placed under the suspension! The car may also rise.

After the air spring has filled, use soapy water to check for leaks. Correct as necessary. Re-install the wheel and tire assembly and turn the ignition switch and suspension switch in the trunk OFF. Return the car to the ground ***slowly*** and turn the suspension switch in the trunk ON. Turn the ignition switch ON. Open the driver's door, and allow the car to trim (level).

Listen for leaks and confirm that the compressor does not continuously cycle.

Go drive someplace fun.