

## MC-9 MAINTENANCE MANUAL

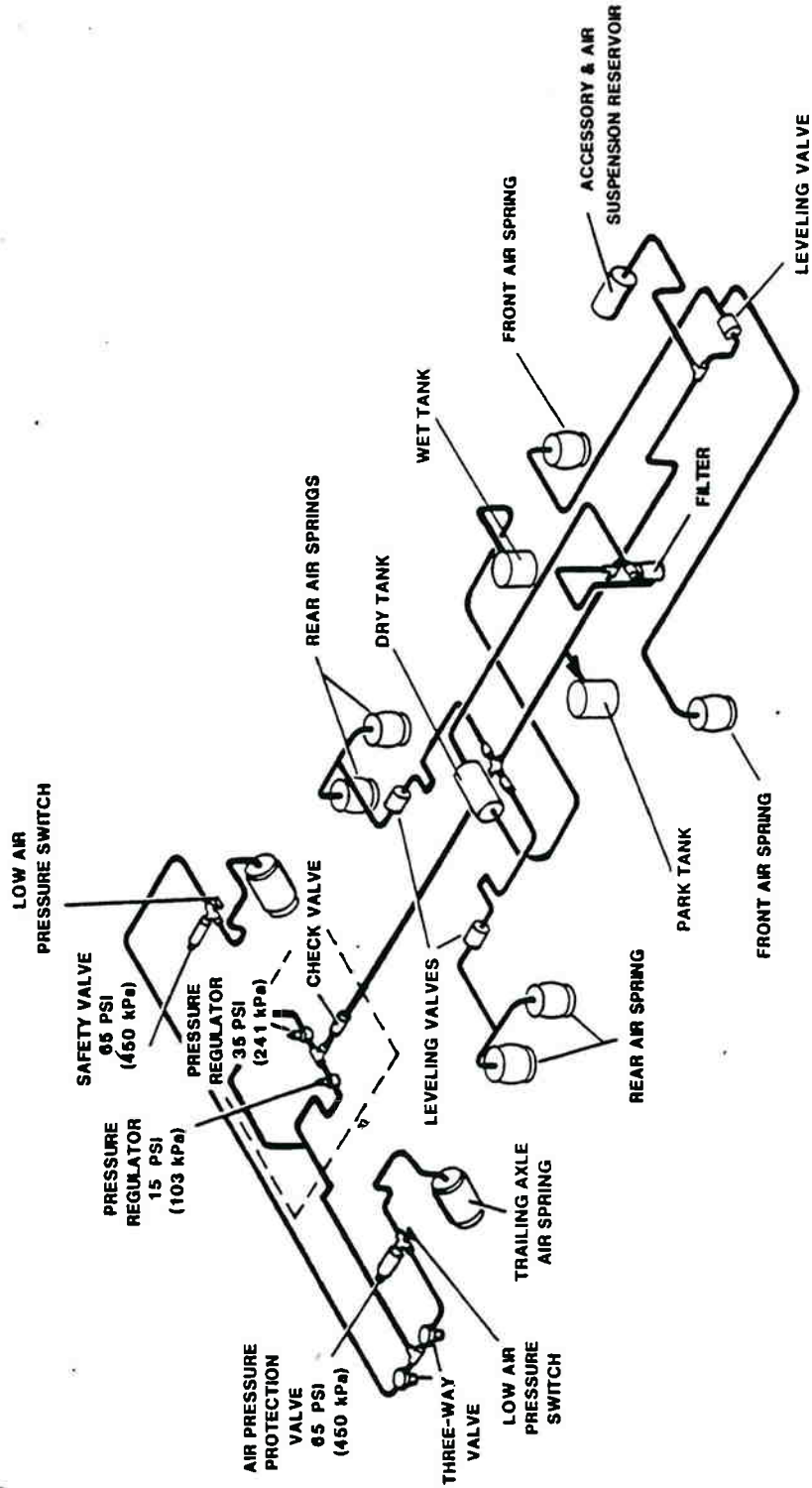
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# SECTION 12

## SUSPENSION

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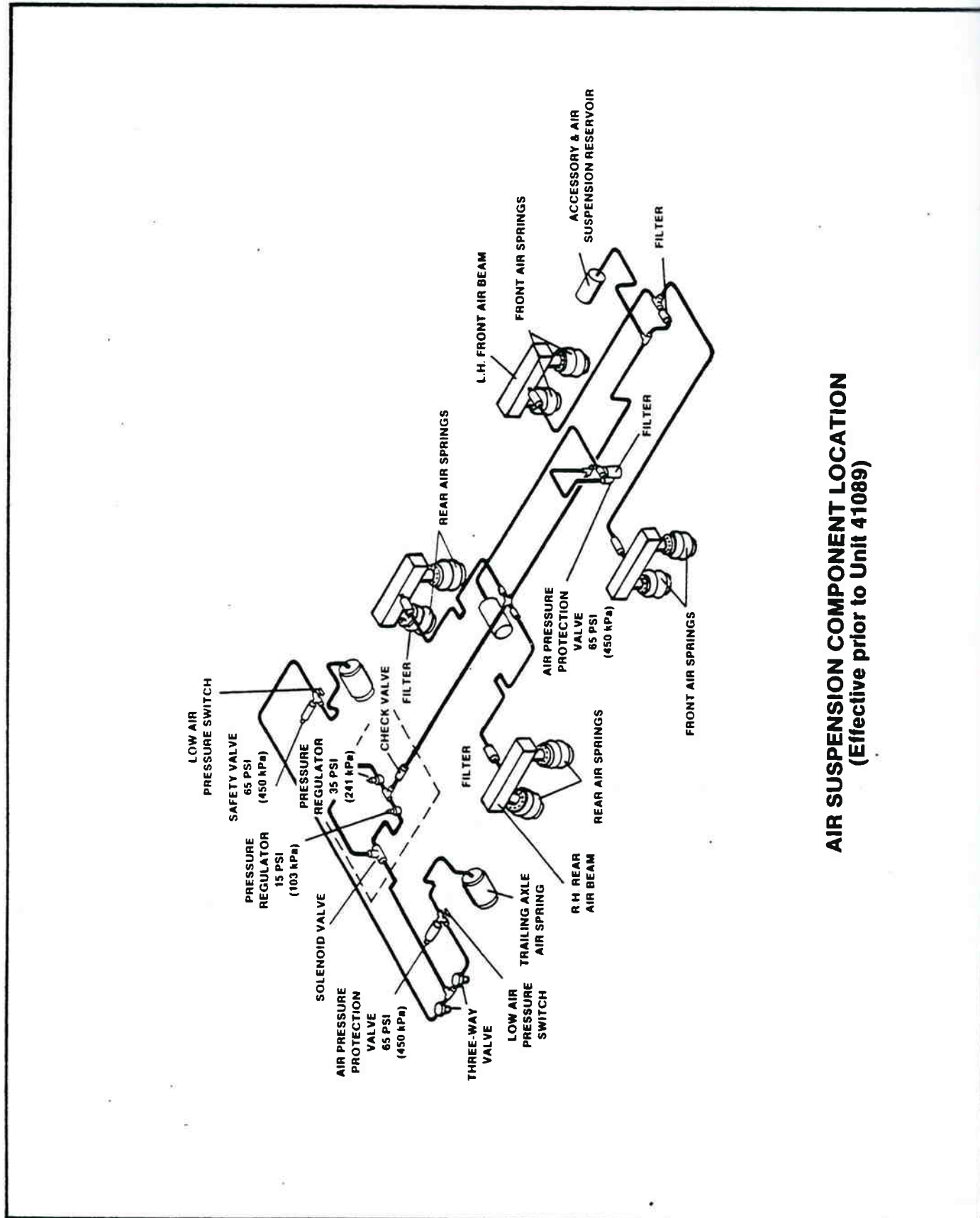
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**AIR SUSPENSION COMPONENT LOCATION**  
(Effective with Unit 41089)

Figure 12-1A. Air Suspension Component Locations.  
(Effective with Unit 41089)

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AIR SUSPENSION COMPONENT LOCATION  
(Effective prior to Unit 41089)

Figure 12-1B. Air Suspension Component Locations.  
(Effective prior to Unit 41089)

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## SUSPENSION

### DESCRIPTION

The coach rides on an air suspension system. Air springs (bellows) are installed above both the front and rear axles. They are fastened between the axle support structures and the bogies. Air is supplied to the air springs from the coach air reservoirs.

Prior to unit 41089, the air reservoirs are in the bogie air beams (see figure 12-1A). Effective with that unit, air is stored in air tanks (see figure 12-1B).

Other suspension components are height control valves, radius rods and shock absorbers. The system is entirely automatic in operation and is designed to maintain a constant vehicle height regardless of load. A pressure regulating valve maintains constant pressure in the air springs and uniform loading of the rear trailing wheels regardless of total vehicle load. Refer to Section 4, Brakes and Air System, for regulating valve pressure setting.

The air springs are made from a special compound rubber molded to the proper contour and dimensions. The entire vertical load of the coach is taken by these air springs. See figures 12-1A and 12-1B.

Radius rods are used to hold the axles in the proper transverse and longitudinal position. Four radius rods are used at the rear axle and five at the front axle. These rods transmit both braking and driving forces from the axles to the coach body.

Delay-type height control valves increase or decrease the air pressure as required. Two height control valves are located at the rear axle, and one at the front axle. The valves are mounted on the coach body and are connected to the axles by rubber-bushed links. Because of the delay mechanism in each height control valve, the valves respond only to sustained variations in the height of the axles in relationship to the coach body. Thus no change in air pressure takes place during normal driving. However, the valves automatically regulate air pressure to compensate for changes in the load carried by the coach, or due to changes in the location of the coach load.

Double-acting shock absorbers are used to enhance ride characteristics. Two shock absorbers are used at the front axle, four at the rear and two at the rear trailing wheels.

An auxiliary air system is provided to supply compressed air for the operation of the system. Compressed air from the main system is fed to an auxiliary tank.

### MAINTENANCE

The suspension system requires periodic lubrication only at the rear trailing axle trunnions. Refer to Lubrication (Section 10) of this manual. Routine maintenance should also include visual inspection procedures and occasional tests to determine that the correct coach body height is maintained. The suspension air filter should also be replaced periodically.

To remove axles, refer to Section 1, Front Axle, and to Section 2, Rear Axle.

**NOTE:** When installing major components of the suspension system, refer to the torque recommendations shown in the figures at the end of this section.

## TRAILING AXLE UNLOADING SYSTEM - OPTIONAL

A switch mounted on the switch panel will allow the driver to partially unload the trailing wheels to add weight to the drive wheels on icy conditions (figure 12-2).

A buzzer and a low air tell-tale light will remind the driver to return the system to normal as soon as conditions permit. The trailing axle bellow air pressure is controlled from 35 psi to 15 psi (241 kPa to 104 kPa) in the unloaded position. This will increase the load on the drive wheels by approximately 2,000 lbs. (907 kg). See figures 12-3 and 12-4.

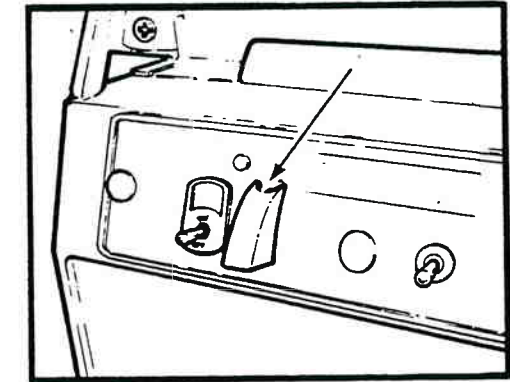


Figure 12-2. Unloading Switch on Instrument Panel.

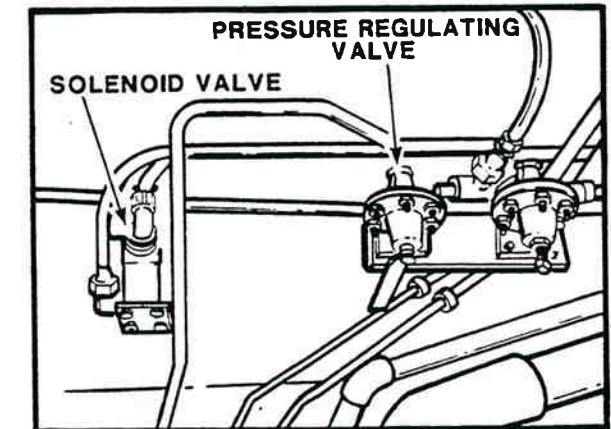


Figure 12-3. Axle Unload Solenoid Valve and Pressure Regulator.

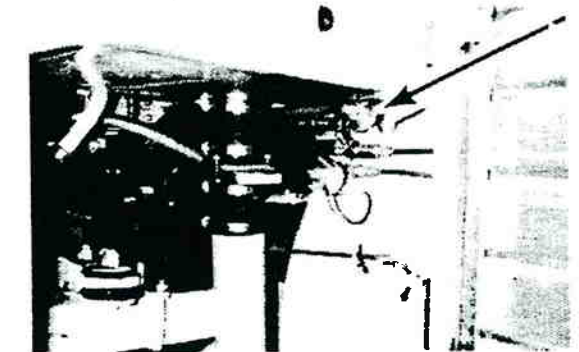


Figure 12-4. Trailing Axle Low Air Pressure Switch.