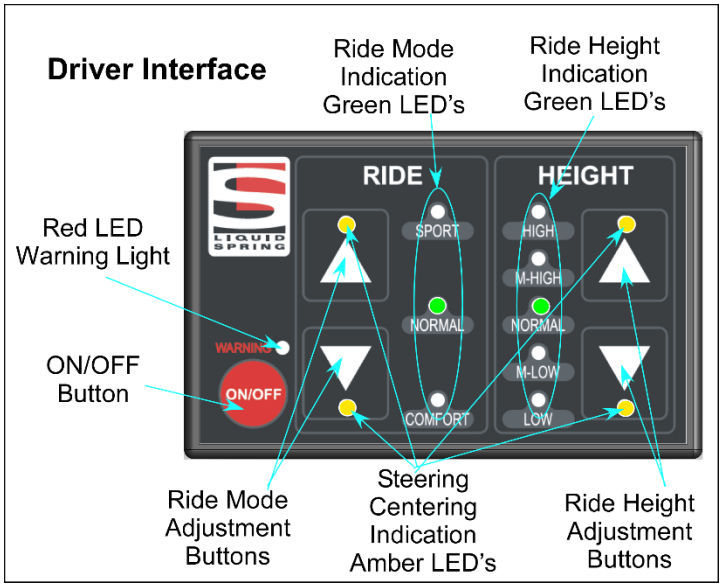
System Start-Up

This document provides a detailed initial start-up procedure for LiquidSpring® **Smart Suspension** systems. All sections must be performed for any newly installed suspension system.



WARNING: Do not run vehicle in an enclosed building without adequate ventilation or without ducting exhaust fumes outside. Operation of a vehicle inside an enclosed building can lead to serious injury or death.

Initial System Fill

1. Remove jack stands and/or any other obstructions from under vehicle.
2. Turn the vehicle ignition key to "Run". The LEDs on the Driver Display should flash momentarily.
3. Ensure that the red "Warning" LED is not lit. If the red "Warning" LED is lit, reference the LiquidSpring *Troubleshooting Guide* document.
4. The green ride height indicator LED should indicate "LOW" and begin flashing as the pump/motor starts. If pump/motor does not start, check the *Electrical* Section in the *Troubleshooting Guide*.
5. Monitor the fluid level in the reservoir. If the level drops below the minimum level as indicated on the reservoir, press and release the red ON/OFF button to shut off the system, refill the reservoir, and turn the system back on by pressing the red ON/OFF button.

Note: For certain suspension configurations, it may take longer than (3) minutes to fill system, and system may fault. If this occurs, turn system off and back on again to start the pump, then proceed to Step 6.

6. If the suspension system does not begin to rise to a preset ride height after an additional (3) minutes, stop the system (press and release red ON/OFF button) and check the following:
   a. Check for any fluid leaks.
   b. Check that the hoses are properly connected.
   c. Check fluid level in reservoir.
7. After the suspension system stops leveling, check the fluid level in the reservoir. If low, fill to the indicated line. Use of a small transfer pump can assist reservoir filling.
8. Replace the red cap after filling.

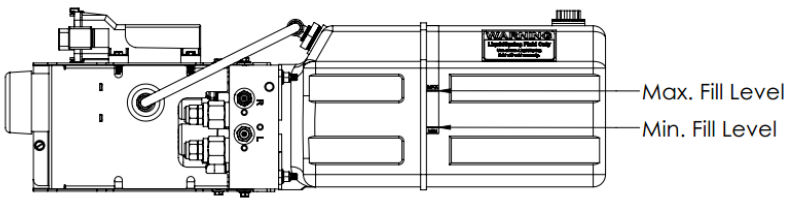


Figure 1. Fluid Fill Levels

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Bleeding the System

1. Using the Driver Interface, completely raise and lower the suspension 3-4 times to purge any air trapped within the system.
2. If the volumes were received with separate hoses, or if large quantities of fluid was lost during installation, then follow steps 3-8 to bleed the system. Otherwise, proceed to *Checking Fittings for Leaks*.
3. Locate 3/16" ID PVC Tubing (not included with kit). Alternatively, a bleed kit similar to the Actron 7840 Bleed Kit or Lisle 19200 Brake Bleeding Kit can be used.
4. Attach the PVC tubing to one of the upper bleed screws on a Volume Assembly and place the other end in a catch bucket or tray.

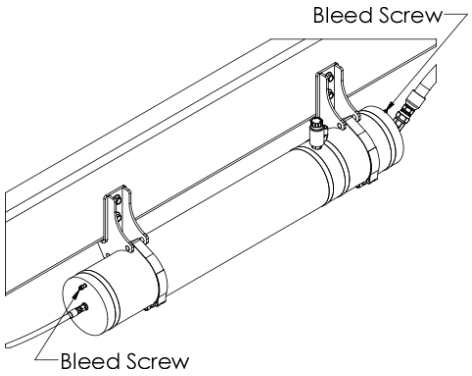

Figure 2. Bleed Screw Locations.

5. Open the bleed screw slightly.
6. After large air bubbles are no longer present, close the bleed screw and torque to **13-18 ft-lbs.**
7. Repeat with the remaining bleed screws for each Volume assembly.
8. Re-check fluid reservoir level.

Checking Fittings for Leaks

WARNING: The system operates under high fluid pressure (up to 4000 psi). Do not attempt to locate leaks by feeling with hands or any part of the body. High pressure fluids can penetrate the skin and cause severe tissue damage.

1. While system is at ride height and pressurized, visually examine fittings and hose connections for any source of leaks. Do not use hands to search for leaks. If the source of the leak is a fitting or other component, depressurize the system and repair or replace as needed.
2. If the leak is coming from the connection between a hose and a fitting, tighten the hose nut. Depressurize the system before tightening fittings. Replace hose if the leak is coming from anywhere else on the hose. Do not overtighten hose fittings.

WARNING: Never tighten a hydraulic fitting or hose under pressure. Always depressurize the system before adjusting fittings and hoses.

3. Clean all fluid from hose and fittings before re-checking for leaks.

Calibrating the System

1. A calibration of the LiquidSpring® **Smart Suspension** must be performed to establish correct ride height and steering center. Follow the directions in the *Calibration Procedure* document.

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