

Airtail Suspension System for Harley Davidson Softails "Setup" Instructions

Note: Please read and follow the Installation Instructions first, then read and follow these Setup Instructions completely before riding the motorcycle

Caution

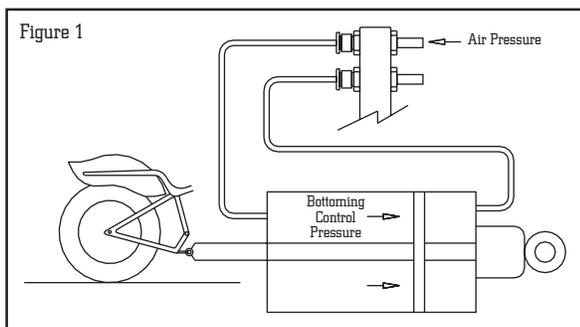
The use of "lowering kits" on Progressive Suspension AirTail shocks is not recommended—or necessary. Use of a "lowering kit" may void the warranty or damage the shock/motorcycle.

Progressive Suspension AirTail shocks are designed to work on the OEM (Original Equipment) frame and swingarm. Use of these shocks on a frame or swingarm other than OEM may produce an unsatisfactory ride and void the warranty.

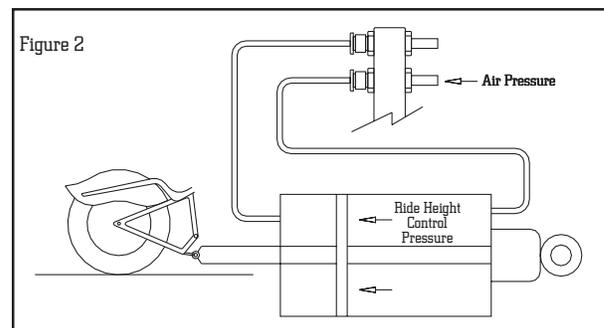
Lowering your motorcycle will decrease initial ground clearance. The motorcycle will be lower to the ground and care should be taken, especially over bumps or in turns. Lowering a motorcycle can change the handling characteristics. Always use extreme caution when riding after a change is made and take time to get accustomed to any handling change.

How it works...

Progressive Suspension's Airtail suspension system is like no other motorcycle suspension. Though the dampers used on this system have vastly improved damping, what really makes this system unique is the dual air chamber design.



One air chamber, referred to as the "Bottoming Control" chamber, holds the bike up and keeps it from bottoming out (see figure 1). The other chamber, referred to as the "Ride Height Control" chamber, pushes the bike down lowering the ride height (see figure 2).



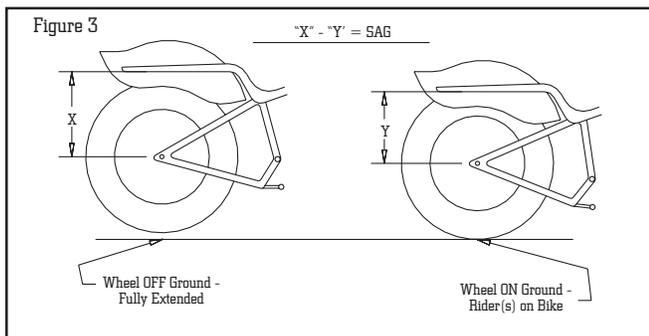
To vary the pressure you can use compressed air such as that produced by an air-compressor (not exceeding 150 psi), or a high-pressure low-volume manual pump (such as Progressive Suspension's part number GP2-0-200).

A couple of things to note here; with the bike sitting on the ground under it's own weight (no rider on it), make sure that the "Bottoming Control" chamber has at least 40 psi in it before riding the bike. Likewise, the "Ride Height" chamber should have a minimum of 10 psi in it as well. Another thing to note is due to the "high pressure" "low volume" nature of this system, each time you check the pressure in either one of the air chambers it will appear as though the pressure has dropped. This is due to the extra volume of the pump/gauge which can show a pressure drop of approximately 5 to 10 psi each time it is hooked up.

By varying the pressure in these chambers you can generate forces that far exceed those generated by a conventional coil type spring. For this reason, it is extremely important that you follow the proper, *two-step*, set up procedure to achieve the maximum performance from the AirTail suspension system.

Step 1: Set the Bottoming Control

This is the most important step and needs to be done first. Ideally, with the rear wheel off the ground take a measurement from the axle straight up to a fixed point on the fender (assuming the fender is mounted on the frame and not the swingarm). Then, with the motorcycle back on the ground and the rider on it, pressurize the "Bottoming Control" chamber until you get the same measurement—*less 1/4 to 1/2"*. For example, if your first measurement was 10.0" inches then your ending measurement should be between 8.50" and 8.75" inches. The difference between the two measurements is referred to as "sag", and it should equal approximately one third of your total wheel travel (see figure 3).



Another method of achieving the proper sag is it start with the bike on the ground—with no rider or load on it. Pressurize the "Bottoming Control" chamber to the highest pressure you can without exceeding 150 psi. At this point the rear wheel should be "topped out" and you need to measure from the axle straight up to a fixed point on the fender as described above. Take the same measurement with rider(s) on the bike—ready to ride. The second measurement should be 1/4" to 1/2" less than the first. If it isn't, then bleed off the pressure in the "Bottoming Control" chamber until the proper sag is achieved.

If you intend to ride the bike at this "full height" then make sure you still put about 10 psi into the "Ride Height" chamber anyway. This helps the piston that separates the two chambers to move more freely producing a smoother ride.

Step 2: Set the Ride Height

After you have set the "Bottoming Control" you can now adjust the "Ride Height" chamber. This is a much simpler and less crucial adjustment to make. Simply pressurize the "Ride Height" chamber until the bike is lowered to the desired height. To raise the ride height back up, release pressure in the "Ride Height" chamber. Remember, the pressure in this chamber "holds" the bike down—the more pressure the lower it goes.

Though the bike may feel "stiffer" the lower you go, do NOT re-adjust the "Bottoming Control" chamber. Essentially what's happening here is as you've reduced your wheel travel, you've proportionally increased the forces that keep you from bottoming out with what wheel travel you have left. If you do need to re-adjust the "Bottoming Control" due the addition (or subtraction) of a passenger or extra load, release the pressure from the "Ride Height" chamber first, then repeat step 1.

Fine Tuning

It has always been important to have the spring preload properly adjusted on the Softail chassis—a little too much and the ride is stiff and you "top out" everywhere, not enough preload and you "bottom out" rolling out of your driveway. Adjusting the preload on standard Softail shocks is neither convenient nor easy.

However, the AirTail suspension system allows for virtually unlimited adjustment when it comes to spring forces—and it's much easier to adjust. Small adjustments can make a big difference. We suggest making changes in 10 psi increments. For the smoothest ride, you'll want to run the least amount of pressure in the "Bottoming Control" chamber as possible—that is, without bottoming (or going below the recommended minimum of 40 psi). This may produce a slightly lower than stock ride height even with minimal pressure in the "Ride Height Control" chamber. Everyone's different and has their own personal preference. It will be worthwhile to do some experimenting to find what works best for you. If you know and understand how your Airtail suspension system works, you'll be able to easily adjust it to yield the best possible ride for you!

For a balanced suspension, we highly recommend installing a pair of Progressive Suspension fork springs or fork lowering kit. Also, you can make your Airtail suspension system even easier to adjust by adding Progressive Suspension's "Airtail Compressor Kit" electric compressor system ('89-'99 part number 30-5100, '00-'02 part number 30-5101).