

Airtail I.A.S. Suspension System for Harley Davidson Setup Instructions & Troubleshooting Guide Manual Fill System

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 I.A.S is not recommended- or necessary. Use of a "lowering kit" may void the warranty or damage the shock/motorcycle.

Progressive Suspension Airtail I.A.S shocks are designed to work on the OEM (Original Equipment) frame and swing arm. Use of these shocks on a frame or swing arm 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 Suspensions Airtail I.A.S. suspension system is like no other motorcycle suspension. Though the dampers used on this system have vastly improved damping, what 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. The other chamber, referred to as the "Ride Height" control chamber, pushes the bike down, lowering the ride height.

To vary the pressure, you can use compressed air such as that produced by a compressor (not to exceed 65 psi) or a high-pressure, low-volume manual pump (such as Progressive Suspensions part number GP3-100)

A couple of things to note here; with the bike sitting on the ground under its own weight (no rider on it), make sure the "Bottoming Control" chamber has at least 10

psi in it before riding the bike. 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 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 setup procedure to achieve the maximum performance from the Airtail I.A.S. suspension system.

Step 1: Set the Bottoming Control

This is the most important step and needs to be done first. This particular measurement procedure takes two people to complete properly. Ideally, this is done with the bike off the ground, upright and level with one side saddlebag removed (where applicable). With shocks, air lines and fill valve installed correctly pressurize the Bottoming Control chamber to 45 psi. (Do not remove Progressive hand pump at anytime during this procedure). This will "top out" the shocks. It is necessary to "bleed" the Ride Height chamber as you pressurize the Bottoming Control chamber, as pressure will build up due to change of volume. Once the Bottoming chamber is filled to the correct pressure and the Ride Height chamber has been emptied, measure the vertical distance between the rear wheel axle and the fender or fender rail as shown below.



Our measurement fully extended is 11 1/2"
(your measurement may vary)

Step 1 (alternate setup)

With this measurement recorded, it is time to take the second measurement. Lower the bike onto the ground, do not release or add any air to either chamber. Have the appropriate rider(s) sit on the bike, bounce the suspension up and down slightly and let it settle under all the weight of the rider(s). Now take a measurement at the same location you did when the suspension was fully extended. You want a measurement that is 1" - 1 1/4" shorter than the first one, this is called ride sag. If the difference between the measurements indicates too little ride sag, let some air pressure out of the Bottoming Control chamber until you get the desired measurement. Or if you are sagging too much, add some pressure to the Bottoming Control chamber.



With bike on the ground and with rider weight, we released air from the Bottoming Control Chamber until we reached a measurement of 10 1/2"*** (1" lower than our first measurement)

Once you have achieved the proper ride sag, have the rider(s) step off the bike, put the bike on its center or side stand and pull the rear suspension to its full extension (Topped Out).

Note the air pressure you see in the positive chamber at this time. Record both measurements and air pressure; this will be your sag setting. When riding with a passenger or extra load a new sag setting must be determined using these same steps.

**This measurement may be different on some models.
The difference between the first and second measurement is what matters.

The alternate setup is ideal for a one-person sag setup. The precision of this setup is not that of the recommended first setup, therefore, ride quality may not be as satisfactory initially. With bike on side stand, pressurize the Bottoming Control chamber to 45 psi. while "bleeding" off Ride Height chamber air that has built up. Lightly lift up on rear end of bike to ensure shock is topped out. If for any reason the shocks have not topped out, continue to pressurize Bottoming Control chamber while bleeding Ride Height. Do NOT pressurize to more than 60 psi.

Now that the shocks are completely topped out, stand bike upright and release air from the Bottoming Control chamber until you see the rear end of bike begin to drop.

Check the pressure in the Bottoming Control chamber for a reference and note current air pressure. Test ride the bike and increase or decrease pressure to the Bottoming Chamber until a satisfactory ride quality has been achieved. Finally note the pressures in both chambers of the most desirable setup to help in an easy setup for your next 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 adjustment to make. Simply pressurize the Ride Height chamber until the bike is lowered to the desired height. To raise the height back up, release the 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 chamber due to 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

The Airtail I.A.S. suspension system allows for virtually unlimited adjustment when it comes to spring forces; and it's much easier to adjust. Small adjustments can make big differences. We suggest making your adjustments in 5 psi increments. We have found for the smoothest ride, you'll want to run your Airtail I.A.S. with the 1" rider sag (as explained in step 1) and no air in the Ride Height chamber. This may produce a slightly lower than stock ride height even with minimal air in the Bottoming Control chamber. Riding with 10 psi or less in the Bottoming Control chamber may lead to harsh bottoming conditions and is not recommended. Each rider is different and has their own personal preference. It will be worthwhile to do some experimenting to find what works best for you. Once you know and understand how your Airtail I.A.S. suspension system works, you'll be able to easily adjust it to yield the best possible ride for you, under any circumstance.

For a balanced suspension, we highly recommend installing a pair of Progressive Suspension fork springs or fork lowering kit. Also, you can make you Airtail I.A.S. suspension system even easier to adjust by adding Progressive Suspensions "Airtail I.A.S. Compressor Kit" or "E.C.C" (electronic control center). Visit www.progressivesuspension.com for further information.

Airtail I.A.S. Troubleshooting—Manual fill system

Certain questions and issues may arise while installing the Airtail I.A.S.

Please let this guide be the first step in troubleshooting. Any problems or questions not resolved or covered by this should be directed to Progressive Suspensions technical support at 714-523-8700. Thank you.

1. Problem: Bike doesn't go up or down.

Possible cause Air lines crossed.

Solution: The first step is to make sure no air lines are crossed. To simplify things, all blue air lines go into the same "T" fitting; all black air lines go into the other "T" fitting. Please refer to Fig. 5 in the Airtail I.A.S. Installation Instructions.

If lines are not crossed and are routed correctly (not pinched or bent at an extreme angle) the next step is to check your Schrader valve and pump.

Possible cause Faulty Schrader valve, faulty pump.

Solution: This can be checked easily by routing a small piece of air line (properly cut and inserted) from one air fill valve fitting to another. Connect pump and pressurize. Watch and see if the pressure leaks out, use soap and water here. If no bubbles are found but pressure still bleeds off, we suggest trying another low-pressure pump.

2. Problem: Bike will not stay up or down

Possible cause Leak in air lines

Solution: There are 8 possible leak paths in this system. Check each possibility with soapy water for air bubbles. If a leak is found continue checking all lines and fittings, more than one area may be contributing to your problem. Leak path possibilities: (1 & 2) Left shock air lines insertion into "T" fitting. (3 & 4) Right shock air lines insertion into "T" fitting. (5 & 6) Air fill valve air lines insertion into "T" fitting. (7 & 8) Air lines insertion into air fill valve. If leak is found there are two reasons for such events, the air line is not fully inserted into the fitting (when pressing air line in you will feel the line pass through a tight spot, this is the o-ring which seals the unit, keep pressing until the line stops. It may take a few times to get the feel), the second is the line is not cut properly, refer to Airtail I.A.S. Installation for tips on cutting air lines. In the event that all troubleshooting steps were taken and no problem was resolved please feel free to contact Progressive Suspensions technical support department.