

Airtail Compressor Kit for the Airtail Suspension System Installation Instructions

Note: If you have not yet installed the Airtail Suspension system, be sure to read through both instructions before you begin to install the compressor kit. Doing so will result in saving several steps.

Caution: Follow instructions in an authorized shop manual or take the motorcycle to a competent dealer.

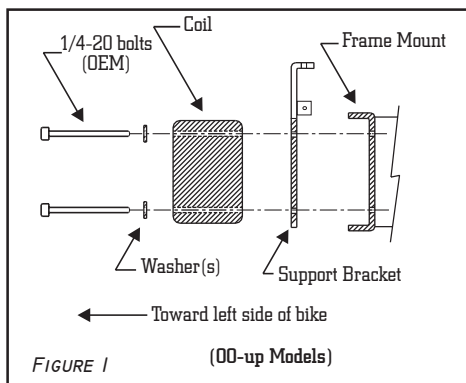
The motorcycle must be securely blocked to prevent it from tipping over when the shocks or rear wheel are removed. Failure to do so can cause serious damage and/or injury.

Progressive Suspension "Airtail Suspension System" and "Airtail Compressor Kit" are designed to work on the OEM (Original Equipment) frame and swingarm. Use of this system on a frame or swingarm other than OEM may produce an unsatisfactory ride and void the warranty.

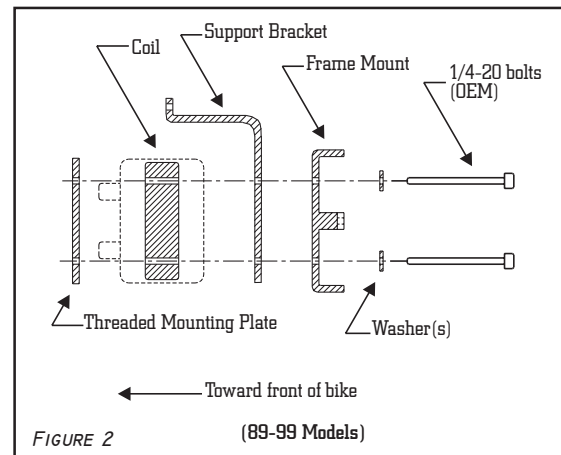
Lowering your motorcycle will decrease initial ground clearance. The motorcycle will be lower to the ground and care should be taken to avoid bottoming, especially over bumps or in turns. Lowering a motorcycle can change the handling characteristics. Always use extreme caution when riding after a change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

Installation

1. Jack the bike up and support it so you can access the shocks and remove the rear wheel.
2. Relieve all pressure from the air shock—both "ride height" and "bottoming control" chambers must be drained of pressure.
3. Remove the seat and disconnect the battery.
4. Remove the ignition coil cover, the coil, and the manual air-fill manifold. Disconnect the two airlines from that manifold and set it aside.



5. While reinstalling the ignition coil, you'll need to install the control coil cover support bracket. If you're installing this system on a 2000 or newer Softail the bracket goes between the coil and the frame and the use of the OE mounting bolts is required (*see figure 1*). Likewise, if you're installing it on an 1989-1999 model then you'll need to place the support bracket between the frame and the coil and you can use either the bolts supplied with the basic Airtail system (which are longer than stock) or the OE bolts (*see figure 2*).



6. Remove the rear wheel and the fender liner—which is called a "rear fender extension" (part number 60363-86C) on an 89-99 model, and a "splash guard" (part number 60363-00) on a 2000 and newer model.
7. Pull the two airlines that ran up to the manifold down from that area and out into the rear wheel area—leaving them connected to the air shock.
8. Cut three lengths of tubing long enough to run from the coil area to the lower right rear corner of the transmission—leaving extra length at both ends (about 3-5 inches) to be trimmed later. When you cut the airlines, it is vital that you use a sharp razor to get a square cut (do not use "dykes" or wire cutters) as failure to do so could result in a leak.
9. Plug one of the airlines (at the top) into the pressure gauge in the control coil cover. Then plug the other two airlines into the bleed valves in the control cover—noting which line is which down by the transmission, that is you need to know which line goes to the gauge, the upper bleed, and the lower bleed.

10. Route the wiring harness from the control coil cover toward the battery area and mount the control cover on to the bracket and frame—taking up the slack in the airlines and wiring as you mount it. The extra airline should all be pulled towards the rear wheel area, and the wiring should remain under the seat.
11. At this point you need to test fit the pump assembly. The pump can rotate in the pump mount and the pump mount can rotate on the mounting point of the bike. Though the pump assembly should be very close to the proper angle, it is a good idea to test fit the assembly to make sure maximum clearance is achieved. The mount tightens down onto the pump with a single $\frac{3}{16}$ allen-wrench (1/4-20) bolt, and the clamp uses two $\frac{5}{32}$ allen-wrench (10-32) bolts. If you need to rotate the pump in the clamp, it will be necessary to back out the $\frac{9}{64}$ allen-wrench (8-32) screw that holds the “T” fittings to the bottom of the pump assembly—as this acts as a “set screw” into the pump bushing.

Note: If you are installing this system on a California model Softail equipped with a factory emissions control canister assembly (part number 27042-84A), it is necessary to relocate this assembly. It occupies the space needed to mount the pump assembly.

On a 2000 and newer Softail the pump mount clamps onto the right rear transmission mount spacer (referred to as a “spacer, rear fork”, part number 48049-00) with the pump head pointing forward (see figure 3). On an 1989-1999 model, it clamps onto the crossover bar (referred to as the “swing axis tube”, part number 48031-89A) and it is necessary to use the supplied bushing to get a proper “grip” on this mounting point (see figure 4).

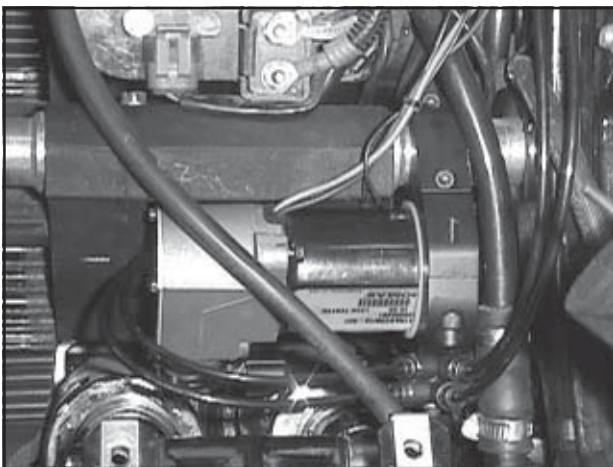


FIGURE 3

12. Once you are certain about the location of the pump assembly, it is time to cut and install the airlines. This is easiest when it is done before you install and tighten the pump assembly. Be sure to leave enough slack in the airlines that you can readily maneuver the pump assembly back into its proper position once all the lines are plugged in. The two airlines coming from the air shock, one from the “Ride Height” chamber and the other from the “Bottoming Control” chamber, need to be plugged into the

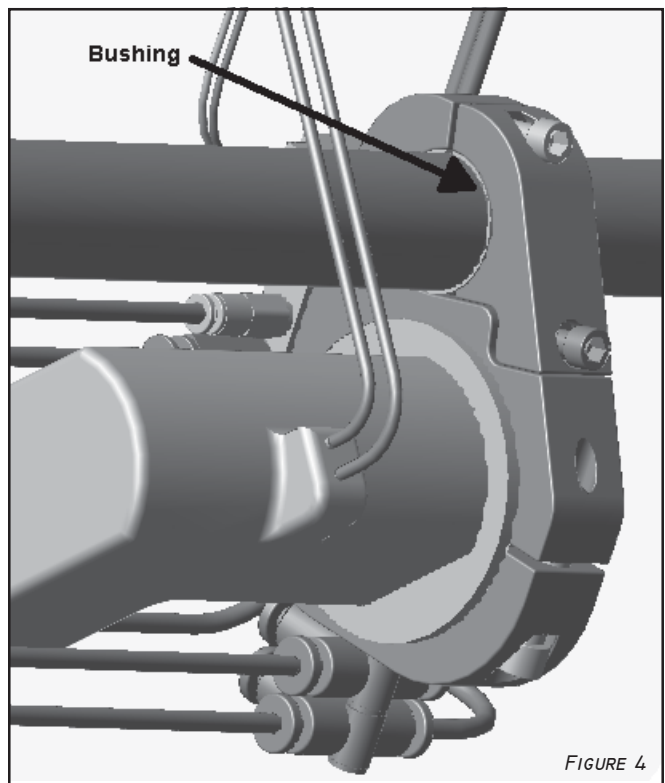


FIGURE 4

“T” fittings on the bottom of the pump assembly. It is crucial that the proper line is plugged into the appropriate fitting. The “Ride Height” line (the one coming from the damper end of the shock) needs to go in the upper (closest to the mount) fitting and the “Bottoming Control” line needs to go into the lower fitting. The “bleed” valve airlines need to be plugged into the same “T” fittings with the upper “bleed” line plugging into the upper “T” fitting (the one shared with the “Ride Height” chamber) and the lower “bleed” line plugging into the lower fitting (the one shared with the “Bottoming Control” chamber). Finally, the “gauge” airline needs to be plugged into the remaining “T” fitting, the one that is attached to the solenoid and already has a line plugged into it (see figure 5). Be sure that all airlines are pushed all the way in—“bottoming out” in the proper fittings.

13. Once all the airlines are plugged in, it is time to install and tighten the pump assembly. Make sure the wires from the pump and solenoid are free and directed towards the battery area where they are to be connected. Carefully install and tighten the pump assembly making sure not to kink or pinch any of the airlines.
14. Route the wires from the pump and solenoid up to the battery area where they are to be plugged into their proper connectors and plug them in (see figure 6). Plug the pump to switch wire in last. The reason for doing this is to make sure you’ve plugged the solenoid valve into the proper lead coming from the switch. Once you’ve plugged in the negative connections, the switch to fuse connection, and attached the system to the battery, plug the solenoid valve into the switch (black wire to black) and rock the toggle switch down momentarily. You should hear the

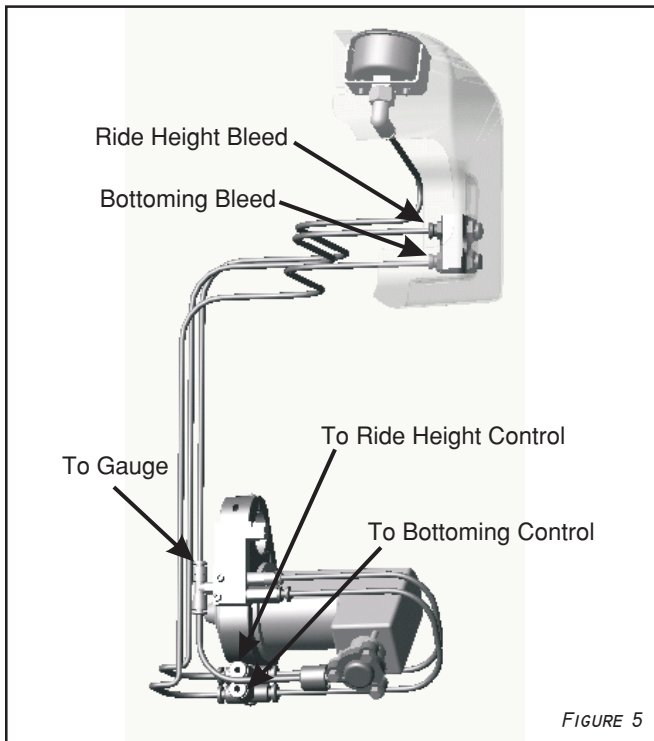


FIGURE 5

solenoid “click”—which means it is plugged into the correct lead. Plug the compressor into the other lead (orange wire to orange). Once all the wires have been connected, test the system by rocking the toggle switch up and down briefly. You should here the pump run in both directions and the pressure gauge should start to register pressure. **Note:** If you pressurize the “Ride Height” chamber first, by pressing the toggle switch down, you will

notice that the pressure gauge rises to a specific pressure, then drops to nearly zero when the switch is released. This is normal, and the actual pressure in that chamber is what the gauge read while the switch was energized. The same is true with the “Bottoming Control” chamber, however the backpressure in the lines bleeds off much slower, leaving the pressure reading nearly unchanged when the toggle switch is released.

15. You now need to check for any possible leaks before you reinstall the rear wheel. To do this, press the toggle switch down to pressurize the “Ride Height” chamber to its maximum pressure of 150 psi. Then, without bleeding off the pressure in that chamber, pressurize the “Bottoming Control” chamber (by pressing the toggle switch up) to 150 psi as well. Soak all the fittings with a solution of soap and water, and then look for any leaks in the form of bubbles. If you do find a leak, be sure to release all the pressure in the system (in both chambers) before attempting to repair it. Typically, if you find a leak it’s the result of an improperly trimmed and/or installed airline. Remove the line in question by pressing in the outer collar on the fitting while you pull out on the line. Whenever you disconnect an airline, it’s a good idea to trim a small amount (approximately 1/8 of an inch) off the end you pulled out as a freshly cut and installed line is less likely to leak.
16. Once you’re certain there are no leaks, tie off all the airlines and wires to the appropriate locations, making sure none of them will be kinked, pinched, or exposed to excessive heat. Reinstall the fender liner (*rear fender extension/splash guard*) and the rear wheel. Lower bike back onto the ground and reinstall the seat.
17. Read the “Set Up” instructions before attempting to ride the motorcycle.

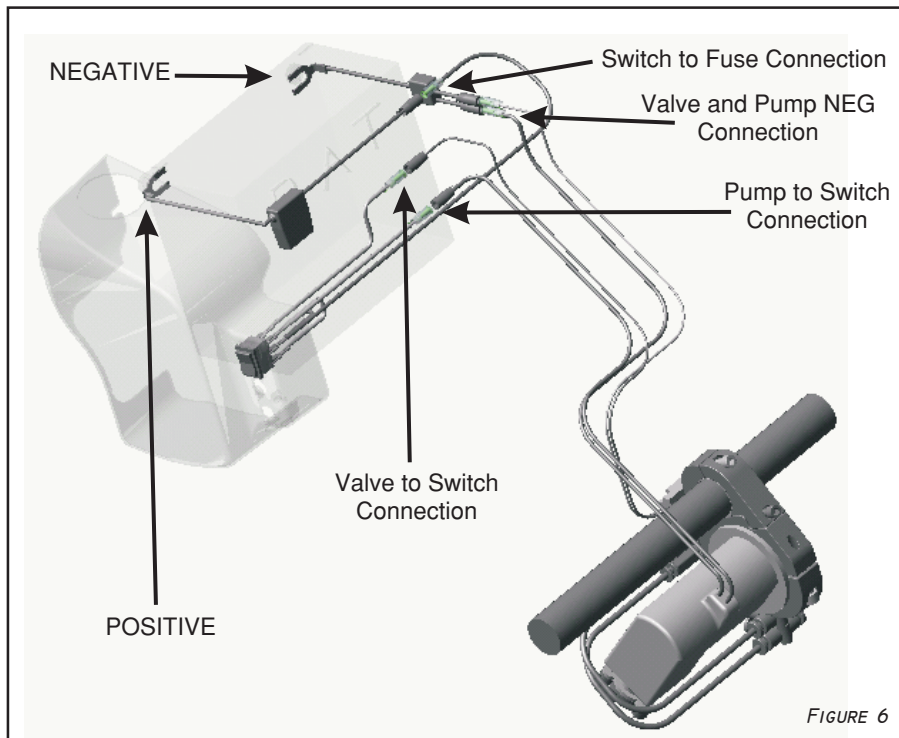
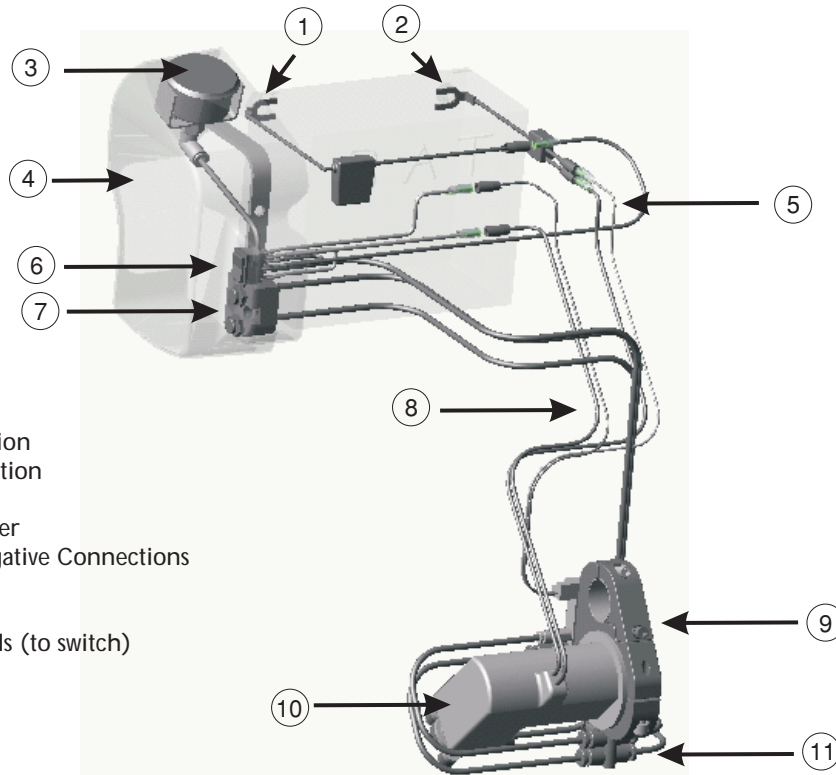
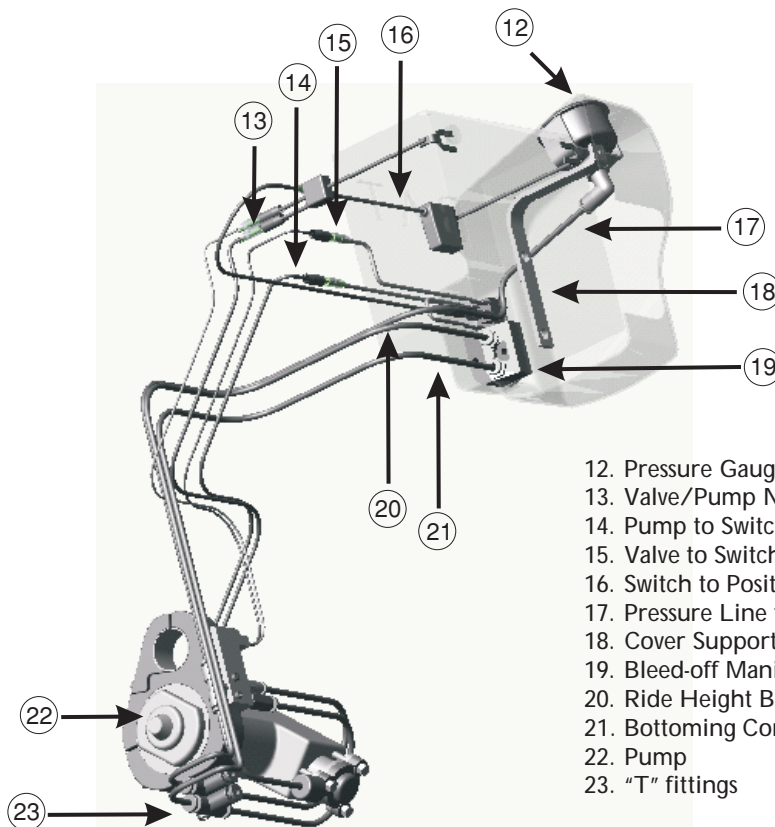


FIGURE 6



- 1. Positive Connection
- 2. Negative Connection
- 3. Pressure Gauge
- 4. Control Coil Cover
- 5. Valve/Pump Negative Connections
- 6. Pump Switch
- 7. Bleed-offs
- 8. Valve/Pump leads (to switch)
- 9. Pump Mount
- 10. Pump
- 11. "T" fittings



- 12. Pressure Gauge
- 13. Valve/Pump Negative Connections
- 14. Pump to Switch Connection
- 15. Valve to Switch Connection
- 16. Switch to Positive Connection (fused)
- 17. Pressure Line to Gauge
- 18. Cover Support Bracket
- 19. Bleed-off Manifold
- 20. Ride Height Bleed Line
- 21. Bottoming Control Line
- 22. Pump
- 23. "T" fittings