

PROGRESSIVE
S U S P E N S I O N
Installation Instructions

416 Air Shocks
For Harley Davidson FLH/FLT 97-later*.

ATTENTION

Statements in these instructions that are preceded by the following words are of special significance:

Warning

This means there is the possibility of injury to yourself or others.

Caution

This means there is the possibility of damage to the motorcycle.

Note

Information of particular importance has been placed in italics.

Warranty

Progressive Suspension warrants to the original purchaser this Part to be free of manufacturing defects in materials and workmanship for a period of one (1) year from the date of purchase. In the event warranty service is required, you must call Progressive Suspension immediately with a description of the problem.

If it is deemed necessary for Progressive Suspension to make an evaluation to determine whether the part is defective, a return authorization number will be given by Progressive Suspension. The parts must be packaged properly so as to not cause further damage and returned prepaid to Progressive Suspension with a copy of the original invoice of purchase and a detailed letter outlining the nature of the problem. If after the evaluation by Progressive Suspension the part was found to be defective it will be repaired or replaced at no cost to you. If we replace it, we may replace it with a reconditioned one of the same design.

Progressive Suspension shall not be held liable for any consequential or incidental damages resulting from the failure of a Progressive Suspension part. Progressive Suspension shall have no obligation if a part becomes defective as a result of improper installation or abuse.

Important Notice

Note: Please read the following instructions completely before starting installation!

These shocks are designed to operate with the air fitting at the top. Mounting the shocks with the air fitting at the bottom will cause the shock to perform poorly and to potentially fail.

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 falling over or dropping when the shocks are removed. Failure to do so can cause serious damage and/or injury.

The use of lowering or lifting blocks on Progressive Suspension shocks is not recommended. Use of a lowering or lifting kit may void the warranty and damage the shock/motorcycle.

Progressive Suspension 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.

Tire to fender clearance may be affected when tires other than original equipment are installed. If the tire diameter and/or width is larger than stock, the tire may touch the underside of the fender resulting in unexpected braking which could lead to an accident and or injury.

Be sure to refer to any instruction supplements provided in any included mounting hardware.

Note

A small amount of oil seepage from the air fittings may occur during shipment. This does NOT affect the performance. Under no circumstances should you add additional oil.

Note

The 416 Air Shocks are designed to be compressed using only the mounting eyes - do NOT attempt to compress the shocks using the body or air can as this will damage the shock resulting in a pressure leak.



CORRECT

WRONG

Installation

1. Place a quality jack or sufficient blocks under the motorcycle to securely lift the rear wheel slightly off the ground.
2. Referring to the correct Harley Davidson shop manual, release any air pressure then disconnect the air lines from the shocks by pushing in on the outer collar and pulling the lines out. Remove the stock shocks and note the location of the mounting hardware. If any additional accessories are installed on your motorcycle, please refer to their mounting instructions for removal to gain access to your shocks.
3. Install the supplied mounting sleeves into each shock eye per the illustration (**Photo 1**) - on both the top and bottom eyes the shouldered portion of the sleeve needs to be facing *in* towards the motorcycle thus offsetting the shock outward.

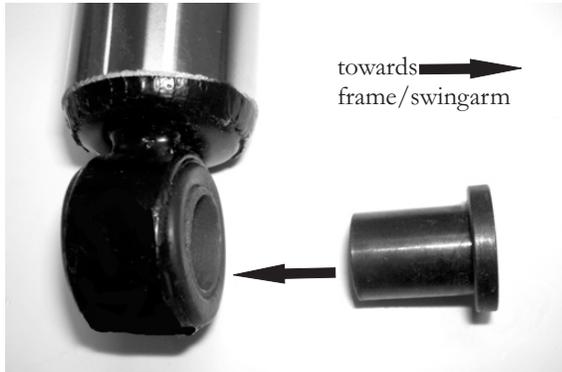


Photo 1 - Insert shouldered sleeves into eyes, note orientation.

4. Using the stock bolts & lock-washers along with the supplied flat-washers, mount your new 416 Series shocks with the Air Fitting at the top in the same location as your stock shocks. We recommend that you mount your new shocks with the air connection fittings facing forward, the same direction as the stock shocks did. Note that you can rotate the Air Cylinder to position the fitting where it works best for you.
5. Before tightening the shock mounting bolts completely, check for adequate clearance around the shocks.
6. Completely tighten the shock mounting bolts according to the factory torque specifications of 35-40 ft-lbs (48-52 Nm).
7. Remove the Air Connection Plugs from your new 416 Series shocks by first pushing in on the outer collar of the fitting, this releases the locking fingers inside the fitting (**Photo 2**) While pushing in on the collar, pull the plug out of the fitting. Use this same method to remove air line from the fittings if necessary.

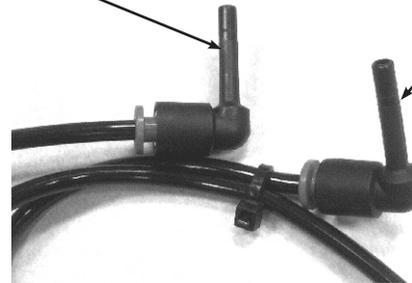


Photo 2 - Push in the collar to remove the plug or air lines.

8. Your new 416 Series Air Shocks are designed to work with the stock airlines already installed on your FLH-FLT, simply plug them into the fittings on the top of the shocks and you're done. Additional airline is supplied in case you decide to replace or relocate your stock airlines. Even if you reuse the stock airlines it's a good idea to trim about a quarter of an inch off the previously installed end, this will give a "fresh" end for the fitting to seal on and reduce the possibility of a leak. Something to be mindful of is you should use a razor blade when trimming the line, it is very important to make clean straight cuts on the ends of the airline, DO NOT use Dykes or scissors, as these will distort the ends of the line and cause leaks. Also be sure the airlines are routed where they cannot be cut, pinched, melted or snagged while the bike is being ridden.

Caution

DO NOT ATTEMPT TO CUT 90° FITTINGS
(if so equipped)



9. Pressurize the shocks to 50 psi. Apply a soap and water solution to all connection fittings and check for bubbles that would indicate a leak. If a leak is found at a fitting, it is likely due to the line not being inserted fully, cut crooked or perhaps the line or seal in the fitting has some debris. Disconnect the line by following the method outlined in step 7. Remove any debris from inside the fitting and cut approximately 1/4" off the end of the line. Cutting the 1/4" off the line is important because once the line has been installed into the fitting, there are locking fingers that grab the line to hold it in place. These fingers may scrape the line as it is pulled out and create a new leak path if re-installed. If you are unable to correct a leak, contact our Customer Service department for assistance.

Air Pressure Recommendations and Set Up

1. Minimum air pressure is 0 PSI. Maximum air pressure is 100 PSI All pressure readings should be taken statically with the rear suspension completely extended or with the rear wheel off the ground. We recommend using the same air pressure gauge consistently as readings may vary from gauge to gauge.
2. Maximum ride comfort is achieved with your new 416 Series shocks when the pressure is set to allow approximately .80"-1.20" of Ride Sag.
3. To check your Ride Sag, place the bike on a jack to fully extend the rear suspension. Take a measurement from the center of the axle to a vertical point on the fender. Record that measurement. Now take the bike off the jack and load the bike with rider(s) and any luggage and re-measure between the same points. This second measurement should be approximately .80"- 1.20" shorter than the first measurement when the air pressure is set correctly. Add or subtract air pressure accordingly to achieve .80" - 1.20" sag.

More Important Information

These 416 Series shocks are rebuildable. Contact your local dealer or Progressive Suspension for parts and information if rebuilding becomes necessary.

Fork Springs: For total suspension balance, we highly recommend installing a pair of Progressive Suspension Fork Springs or Monotube kit. Also available at your local dealer.