



# Installation Instructions Lowered Monotube Cartridge Fork Kit 1997-Later\* Harley Davidson FLH/FLT

### 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 vehicle.

#### **Note**

*Information of particular importance has been placed in italics.*

### Limited Lifetime Warranty

Progressive Suspension warrants to the original purchaser this Part to be free of manufacturing defects in materials and workmanship with a Limited Lifetime Warranty. 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 expenses or 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.

#### **Warning**

Changing the chassis and/or suspension on any vehicle will change the handling characteristics of that vehicle. Care should be taken when operating the vehicle with such modifications while getting accustomed to the new handling characteristics.

### IMPORTANT NOTICE

**Caution:** Removing and replacing fork components must be performed by a qualified mechanic or according to steps outlined in a professional workshop manual that relates to your particular make, model and year motorcycle.

The 2002-2005 FLHT/FLT models are equipped with a damper-rod type fork on right side and a cartridge fork on the left side. The components included in this kit have been designed to replace both the damper-rod right fork, and the cartridge left fork OE components to deliver optimum performance.

This kit is designed to lower a standard FLH/FLT fork either 1" inch or 2" inches. Some models, such as SE or CVO models, have a 1" inch shorter fork from the factory – for these models the installation of the 1" inch configuration would maintain the original height and the 2" inch configuration would only lower the fork 1" inch from it's original length.

The vehicle must be securely blocked to prevent it from dropping or tipping when the forks are removed. Failure to do so can cause serious damage and/or injury.

Progressive Suspension Monotube Cartridge Fork Kits are designed to work with the OEM (Original Equipment) forks. Use of this product on any forks other than OEM may produce an unsatisfactory ride and void the warranty.

## Installation

- Read all the instructions carefully before installing this kit on your motorcycle. Use your factory authorized manual as a reference while installing this kit.
- Support and lift the motorcycle securely so the front wheel is off the ground. The balance point is toward the front of the engine.
- Remove forks according to instructions contained in your factory authorized shop manual.

#### **Warning**

*For maximum performance we highly recommend that the forks be disassembled, thoroughly cleaned, and inspected. When installing Progressive Suspension Monotube Cartridge fork kit, only a small amount (5oz.) of 20WT or Type H-D fork oil is required in each fork for lubricating the internal moving parts - the cartridge dampers are sealed. Changing the volume or viscosity of the oil is not recommended and could cause damage and/or loss of control.*

- The Progressive Suspension Monotube cartridge fork kit is a direct replacement of your stock internal fork components. However the procedure on the left fork (stock cartridge) for the 02-05 FLHT/FLT varies from the damper rod type forks. If installing this kit on one of these models, note the variance in the following steps.

**Caution**

While the installation of this Monotube Cartridge fork kit will not change the compressed length of the front forks, we have found that some bikes may not have adequate clearance between the fender, fairing and / or accessories. So we recommend with the fork springs removed from both forks, re-install the forks, fender, wheel and anything else you may have removed and lift the front forks, or lower the bike to completely compress the front forks. With the forks fully compressed, check for adequate clearance between the tire, fender, fairing, crash bar, accessories, etc. You must correct any clearance issues prior to installing this kit to avoid vehicle damage and / or vehicle control problems.

**Damper Rod Forks (including 02-05 FLHT/FLT right fork)**

- After removing both forks, start with one of the forks and remove the fork cap, then remove the fork spring.

**Warning**

**CAUTION** The fork cap is under spring pressure and care must be taken as it is removed to avoid injury! Keep downward pressure on the cap as you unscrew the final threads, this will minimize the spring "jump" that will occur as soon as the cap is fully un-threaded

**BE CAREFUL!**

- Drain the fork oil, and then with the fork completely compressed remove the damper rod & top-out spring by removing the bolt in the bottom of the fork. Keep the fork assembly fully compressed at this point to keep the stock bottoming cup properly located.

**Caution**

**DO NOT INSTALL THE SUPPLIED BOTTOMING CUP IN THE DAMPER ROD FORK, AS IT IS INTENDED FOR USE IN THE STOCK LEFT CARTRIDGE FORK ONLY.**

**Lowering 1" inch or 2" inches?...**

- \* - If lowering the fork 1" inch, install one of the **long** top-out springs on each Progressive Suspension Monotube cartridge assembly as shown (see figure 1) AND three of the supplied "C" shaped preload spacers between the top of the fork spring and the upper spring seat (see figure 2). Go to next step.
- \* - If lowering the fork 2" inches, install one **long** top-out spring AND one **short** top-out spring on each Progressive Suspension Monotube cartridge assembly as shown (see figure 1) – and install NO preload spacers. Go to next step.

- After installing the proper combination of supplied top out spring(s) & spacers onto the Progressive Suspension Monotube cartridge assembly, insert it into the fork assembly as shown (see figure 3).
- Put a drop of red thread-locking agent on the bolt that came out of the bottom of the fork and reinstall it, tightening it up into the Progressive Suspension Monotube cartridge. Torque the bolt to the factory recommended specification of 11-18 ft. lbs.
- Repeat the process on the other fork and proceed to "Both Forks" section of instructions - unless you're installing this kit on a 02-05 FLHT/FLT, then proceed to next step for left fork.

**Cartridge Fork (02-05 FLHT/FLT left side only)**

- Loosen the fork cap and slide the inner fork tube down far enough to be able to pour the fluid out of fork and drain the fork.
- Remove the bolt in the bottom of the fork and remove the stock cartridge, fork spring, and fork cap as an assembly.

- Remove the fork seal retaining clip then carefully remove the fork seal by sliding the inner fork tube out of the outer slider with a light tapping motion. Remove the stock bottoming cup from the outer slider. Inspect fork bushings and seal, replacing them if needed.
- Reinstall the supplied bottoming cup (with the cup facing up) into the outer fork slider and carefully insert the inner fork tube back into the outer slider. Maintain the orientation of the bottoming cup while doing this - the bottoming cup must seat in the outer slider as the stock cup did. Once seated, keep the assembly compressed to maintain it's position during assembly. Per you factory authorized manual reinstall the fork seal using a proper fork seal driver tool, and then reinstall the fork seal retaining clip.

**Lowering 1" inch or 2" inches?...**

- \* - If lowering the fork 1" inch, install one of the **long** top-out springs on the Progressive Suspension Monotube cartridge assembly as shown (see figure 1) AND three of the supplied "C" shaped preload spacers between the top of the fork spring and the upper spring seat (see figure 2). Go to next step.
- \* - If lowering the fork 2" inches, install one **long** top-out spring AND one **short** top-out spring on the Progressive Suspension Monotube cartridge assembly as shown (see figure 1) – and install NO preload spacers. Go to next step.

- After installing the proper combination of supplied top out spring(s) & spacers onto the Progressive Suspension Monotube cartridge assembly, insert it into the fork assembly as shown (see figure 3). Be sure the newly installed bottoming cup receives the new cartridge assembly.

- Once you are certain the new bottoming cup is centered and seated, put a drop of red thread-locking agent on the bolt that came out of the bottom of the fork and reinstall it, tightening it up into the Progressive Suspension Monotube cartridge. Torque the bolt to the factory recommended specification of 11-18 ft. lbs.

- Proceed to "Both Forks" section of instructions to complete installation.

**Both Forks (stock damper-rod type & cartridge)**

- Secure the fork assembly so you can fill it with fluid. This may require stroking the assembly to draw fluid from the inner fork tube in to the outer fork slider.

**Warning**

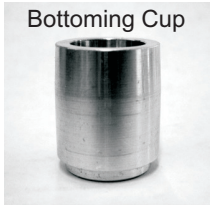
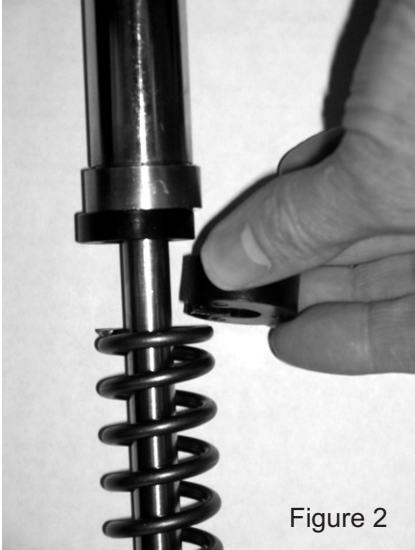
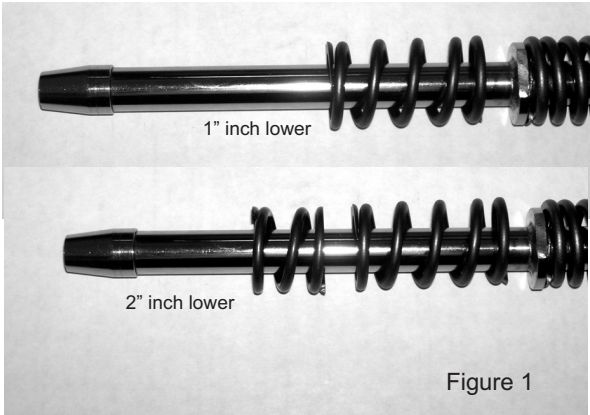
**DO NOT USE MORE THAN 5 FLUID OUNCES OF FORK OIL IN EACH FORK LEG WITH THE INSTALLATION OF THIS KIT. FILLING EACH FORK WITH MORE THAN 5 FLUID OUNCES OF FORK OIL MAY CAUSE THE FORKS TO HYDRAULIC LOCK, WHICH MAY CAUSE SEAL FAILURE, POOR PERFORMANCE AND/OR LOSS OF CONTROL.**

- Pour 5 ounces of 20WT or Type H-D fluid in each fork, pausing to stroke the assembly to get the fluid into the outer fork slider. Failure to do this will cause the required amount of fluid to overflow (see figure 4). This fluid is just to lubricate moving parts and has no effect on the actual damping action of the sealed Monotube cartridge fork insert.
- Once the proper amount of fluid is in the fork assembly, slide the inner fork tube up and install the supplied fork cap. Torque the cap the factory recommended specification of 50-60 ft. lbs.
- Reinstall the forks and all other components on the motorcycle per your factory authorized manual being sure to double check all fasteners for proper torque per said manual.
- Pre-load fine tuning: Spacer length can be decreased to lower the ride height and soften the ride or increased to raise the ride height and

stiffen the ride. Adjust in 1/4" increments.

- Technical info: Our technical staff will assist you if you have any problems or questions. Call (714) 523-8700 from 8 am to 4 PM Pacific time.
- To compliment your suspension, we recommend installing a pair of our 412 Series Gas Shocks, 430 shocks, 440 Series IAS Shocks or 812 Series Gas Shocks.
- The operator must use extreme caution when operating a modified motorcycle, particularly while getting familiar with its altered handling characteristics.

# Illustrations



**DO NOT INSTALL THE SUPPLIED BOTTOMING CUP IN THE DAMPER ROD FORK, AS IT IS INTENDED FOR USE IN THE STOCK LEFT CARTRIDGE FORK ONLY ON 02-05 FLH/FLT MODELS.**