

RACE TECH

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FORK LENGTHENER INSTALLATION - 96-02 SUZUKI GSX R

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2 pgs

TOOLS REQUIRED: (In addition to those required for fork disassembly.) In-lb Torque Wrench that accurately measures 0 to 50 in-lbs, 5 mm Allen Wrench, Loctite 242 (Blue-Removable), Loctite 274 (Red - Permanent), 12" Length of 1/2" Electrical Conduit (to use as a removal tool for the bottom-out piston).

IMPORTANT NOTE: This Lengthener is best used in conjunction with Fork Gold Valves **and is included in the FMGV S2046 Kit.** The S2046 Kit also includes Rebound Valving and a Removable Bottom-out Piston (p/n FSRB 1202) which allows easy access to the internal cartridge parts including the rebound piston.

DISASSEMBLY

- 1 **CLEANLINESS IS CRITICALLY IMPORTANT.** Completely disassemble and clean your front forks. **If you are unfamiliar with this process, STOP!!!! Do not proceed. Seek out a qualified suspension technician to complete the installation.**
- 2 **Remove the damping rod from the cartridge.** Being very careful not to damage the damping rod (it is made of aluminum and is fairly easy to crush), hold the rod with the Shaft Holding Tool provided. Be careful as you can crush the rod if you are not careful. The stock bottom-out piston is held onto the rod with peening over a circlip on the rod (which is not visible until the piston is removed.) You must spread the peening over the circlip. Simply tap down on the piston using a hammer and a 12" length of 1/2" electrical conduit (or some other piece of pipe) as a driver (or you can use a small chisel). This will spread the peening. Save the circlip, it will be reused. Slide the rod out of the cartridge tube.
- 3 Lightly file the peening off the end of the shaft that holds on the nut. Remove the nut holding on the rebound valving and **disassemble the valving stack.** Lay out the pieces in the order they come off the shaft. Clean and inspect all the original parts. Be careful to maintain the original order and orientation of the parts. (You will need these original parts, do not discard.) Lightly deburr the end of the threads.

LENGTHEN THE FORK

- 4 **Remove the rebound holder** from the end of the damping rod. This must be done carefully to avoid damage. There are punch marks on the shaft that must be drilled out to remove the holder. Clamp the rod in the shaft holding tool. Be very careful not to scratch the rod as this will affect performance. Use a 5/64" (2 mm) drill and drill through just the punch marks on the aluminum rod (see drawing). **CAUTION: Drill through the aluminum rod only. Do not drill all the way through the damping rod.**
Clamp the shaft in the shaft holding tool at the top of the damping rod (near the cap). This eliminates the possibility of damaging the rod in a critical location. You may need to use a propane torch to mildly heat the rod at the holder to loosen the Loctite. Unscrew the holder with a 14 mm wrench being careful to keep track of the needle and the spring inside the rod. Clean the rod.
- 5 **Reinstall the spring and needle into the new rebound holder/fork lengthener.** Use Loctite 274 (Red-Permanent) on the threads and torque the holder to 15 ft-lbs. Use a punch and carefully re-punch the holder to the rod.
- 6 **Assemble the Rebound Valve in the reverse order of disassembly.** Starting with the cupped washer, sleeve, check spring, check plate, rebound valve (recess first, towards check plate). Next install the rebound valving shims. Then the base plate and nut. Use Loctite and torque the nut to 30 in-lbs.

NOTE: The stock rebound damping is too quick! Rebound valving is included in the FMGV S2046 Gold Valve Kit.

REASSEMBLY

- 7 **Reinstall the rod** into the cartridge tube and **install the Race Tech Removable Bottoming Piston**. To do this, first sliding the brass inner sleeve on the rod then reinstall the stock wire clip. Install the brass ring, chamfer first. Install the aluminum nut and tighten. Use 5/8" and 3/4" wrenches. If you are going to reuse the original bottom-out piston carefully re-peen the piston over the circlip.
- 8 Grease the o-ring and **install the compression assembly** into the cartridge. Install the retaining clip and seat the compression valve assembly.
- 9 **Bleed the cartridge and set the oil level** with the forks and the damping rod completely bottomed. The standard oil level is 110 mm. Use Ultra Slick US-1 Light (5w).
- 10 **Install the fork cap**. This step is important for proper operation of the rebound adjuster. If the cap is threaded too far onto the rod there will not be the full range of adjustment. If the cap is not threaded on far enough, it will not touch the adjuster and could come off the shaft.
To install the cap, screw the adjuster all the way out (counterclockwise), then screw it in 3 1/2 turns. Use Loctite 242 on the damping rod threads at the cap. Install the cap onto the rod until it starts to feel tight (the adjuster needle is bottomed out). Hold the position of the cap in relation to the rod. Back out the adjuster 1/2 turn (so the rebound adjuster needle isn't damaged when the jam nut is locked down) and tighten the jam nut to manufacturers specs. Check to see you have approximately 3 1/2 turns of total adjustment. Consult owners manual for proper procedure.
- 11 **Set the external adjustments**. Adjust the compression valve to 1 turn out from all the way in. Set rebound to 2 turns out. Check your spring preload, it should typically be 20 to 35 mm (0.78 to 1.38"). Race Sag ranges from 25 to 35 mm (1 to 1.38") depending on rider preferences. These are good starting points for most riders.
- 12 **Install the forks in the triple clamps**. Since the forks are longer by 10 mm you may want the top of the forks to extend up higher than the top of the clamps. Start at 5 mm above.
- 13 When the forks are put on the bike it is very important to **align the fork tubes**. This is done by first tightening the axle all the way, then the tubes are aligned by pumping the forks up and down with the right-hand axle clamp loose. This will line the tubes up so they won't bind. Finally, tighten the axle clamp.
- 14 If you have **any questions** please call our Technical Support Hotline at 951.279.6655.

Ask about new products include High Performance Springs, Gold Valves for Shocks and Gold Valve Cartridge Emulators for Damping Rod Type Forks.

Description:

- 1 Nut (use Red Loctite 272, 36 in-lbs torque)
- 2 Rebound Base Plate
- 3 Rebound Valving
- 4 Rebound Piston (recess toward check plate)
- 5 Check Plate (0.25 thick x 20od x 8id)
- 6 Check Spring
- 7 Spacer
- 8 Cupped Washer
- 9 Fork Extender
- 10 Rebound Needle Spring
- 11 Rebound Needle
- 12 Punch Marks
- 13 Rebound Rod
- 14 Rebound Adjusting Rod

