

# RACE TECH

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## FORK GOLD VALVE INSTALLATION STREET / ROAD RACE 20 mm G2-R

<IP FMGV S2040G.doc> FMGV S2040G, FMGV S2043G P Thede © 4.28.9

4 pgs

**TOOLS REQUIRED:** (In addition to those required for fork disassembly.) In-lb Torque Wrench that accurately measures 0 to 50 in-lbs (0.58 kgf-m), 5 mm Allen Wrench, 1/2" Wrench, Loctite 271 (Red), Calipers, 0-25 mm Metric Micrometer.

**NOTE:** Many models require different fork springs. Please consult [www.racetech.com](http://www.racetech.com) or call Race Tech.

### DISASSEMBLY

- 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.
- Remove the compression valve body** from the cartridge. On some models there are punch marks at the bottom of the cartridge approximately 15 mm (0.6") up from the bottom. If this applies to your model, these must be drilled out with a 3/16" (4.8 mm) drill. Drill only through the steel cartridge tube not all the way through the aluminum valve body. Push the compression valve holder into the cartridge about 5 mm (0.2") to allow access to the wire retaining clip. Remove the clip with a small screwdriver, it comes out easily. Once the clip is out, pull the holder out by screwing the bolt back in and pulling.

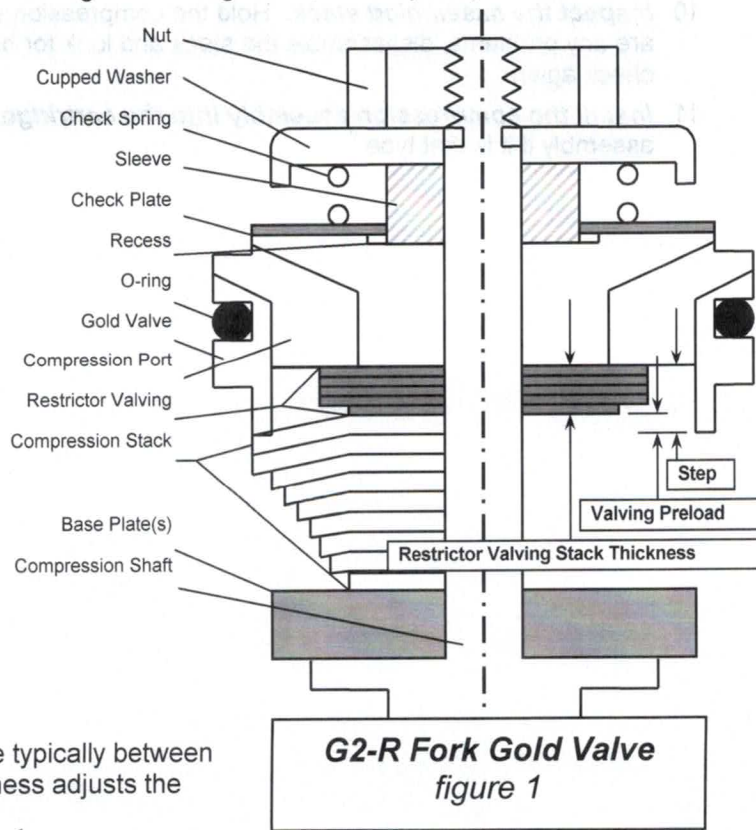
On some models the compression adjuster assembly screws into the bottom of the cartridge tube. This type uses a thread locking compound. Heat can be very helpful in disassembly to loosen the Loctite. Light tapping with a small ball peen hammer on the outside of the cartridge tube at the threads also works. Loctite must be used on reassembly on this type as well. Be very careful when holding the cartridge tube, it is very easy to dent or distort.

- If you had to drill out punch marks, **deburr the cartridge tube** so it doesn't damage the new o-ring. If there is an Allen bolt remove it and **disassemble the valving stack**. If there is a nut and you are disassembling the compression valve for the first time, the threads above the nut must be filed off flat before removal.
- 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 may need some of the original valving for spacing purposes, do not discard.) Lightly deburr the end of the threads.

### COMPRESSION VALVING

**G2-R Theory** - There are many ways to setup the valving with G2-R's. They can be preloaded (digressive) or restricted (progressive). This adds a little complexity but makes them extremely versatile.

The piston face has a 0.5 mm step on it. This means if you put on a standard valving stack the shims will be bent 0.5 mm without opening. We call this a 0.5 mm preloaded stack. The best preloads are typically between zero and 0.1 mm. The Restrictor Valving Stack thickness adjusts the



## REBOUND VALVING

Most models benefit from rebound damping changes. Some models require a Rebound Gold Valve Kit see [www.racetech.com](http://www.racetech.com) for applications. Follow the instructions included with those kits.

## REASSEMBLY

- 12 **Reassemble the forks according to the procedure in your manual. Please use the proper spring rate.** Bleed the cartridge and **set the oil level** with the forks and the damping rod completely bottomed. **Set the oil level and spring preload** according to the Digital Valving Search Setup Sheet.
- 13 **Install the cap.** Use Loctite 271 on the damping rod threads at the cap and torque it to manufacturer's specs. Some models require careful positioning of the rod in the cap so the proper number of rebound clicks are available for adjustment. If the rod is threaded too far into the cap there will not be the full number of clicks. If the cap is not threaded on far enough, it will not touch the adjuster and it could come off the shaft. On this type, set the total number of available clicks to 16 to 20 (or 4 turns if there are no "clicks"). Consult owner's manual for the proper procedure.  

On most KYB's, screw the adjuster in all the way and back it out ¼ turn with the cap off. On most Showa's, there's no stop when you screw the adjuster in, so the procedure is a little different. Screw the adjuster out all the way, and then screw it in 3 to 4 turns.

Then for either type, 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 turn (so the needle isn't damaged when tightened) and torque the jam nut to proper specs (consult manual). Check to see you have the proper number of clicks.

For Öhlins fork caps follow the instructions in the Öhlins manual. Back out the Rebound Adjuster all the way. Screw in the Rod all the way until it bottoms. Tighten the Jam Nut.
- 14 **Adjust the compression and rebound adjusters** according to the Digital Valving Search Setup Sheet.
- 15 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, and 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.
- 16 If you have **any questions** please call our Technical Support Hotline at 951.279.6655.

**Sign up for Race Tech News for  
the latest innovations like the  
ShockClock Suspension Setup Tool  
at [www.racetech.com](http://www.racetech.com).**

## TUNING NOTES

- Damping is sensitive to vertical wheel velocity, not position in the stroke. If your valving needs to be stiffer, move to the right. This will improve bottoming resistance by increasing damping overall, making it stiffer through the entire speed range. If the forks are too firm, go the opposite direction, to the left.
- Please feel free to use the compression damping adjuster. It controls the lowest speed damping and affects the entire range. The closer to maximum damping (*full clockwise*) the more effect one click makes. In other words going from 3 to 2 has a lot more effect than going from 14 to 13.
- Spring rate is dependent mostly on rider and bike weight. Spring rate, preload and low-speed compression damping; affect dive, wallow and bottoming.
- Oil level can drastically alter bottoming resistance and only affects the last part of the travel (*near bottoming*). If you like the action, but the forks bottom too easily, raise your oil level by 10 mm (0.4").
- If the forks feel too soft all the way through, increase compression damping with the external adjuster (if available). If that's not enough, change the compression stack internally.

**Visit [www.racetech.com](http://www.racetech.com), go to Digital Valving Search with  
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