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## FORK GOLD VALVE INSTALLATION STREET / ROAD RACE 20mm – 06+ R6 w/Hi-Speed Adjuster

<IP FMGV S2049.doc> FMGV S2049 P Thede © 1.31.14 3 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), Hi-strength Loctite (included), Metric Calipers, 0-25mm Metric Micrometer.

**SPECIAL TOOLS REQUIRED:** Compression Adjuster Socket (TFCA 02), Fork Spring Compressor (TFSC 01), Cartridge Holding Tool (TFCH 04) only if working on the Rebound.

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

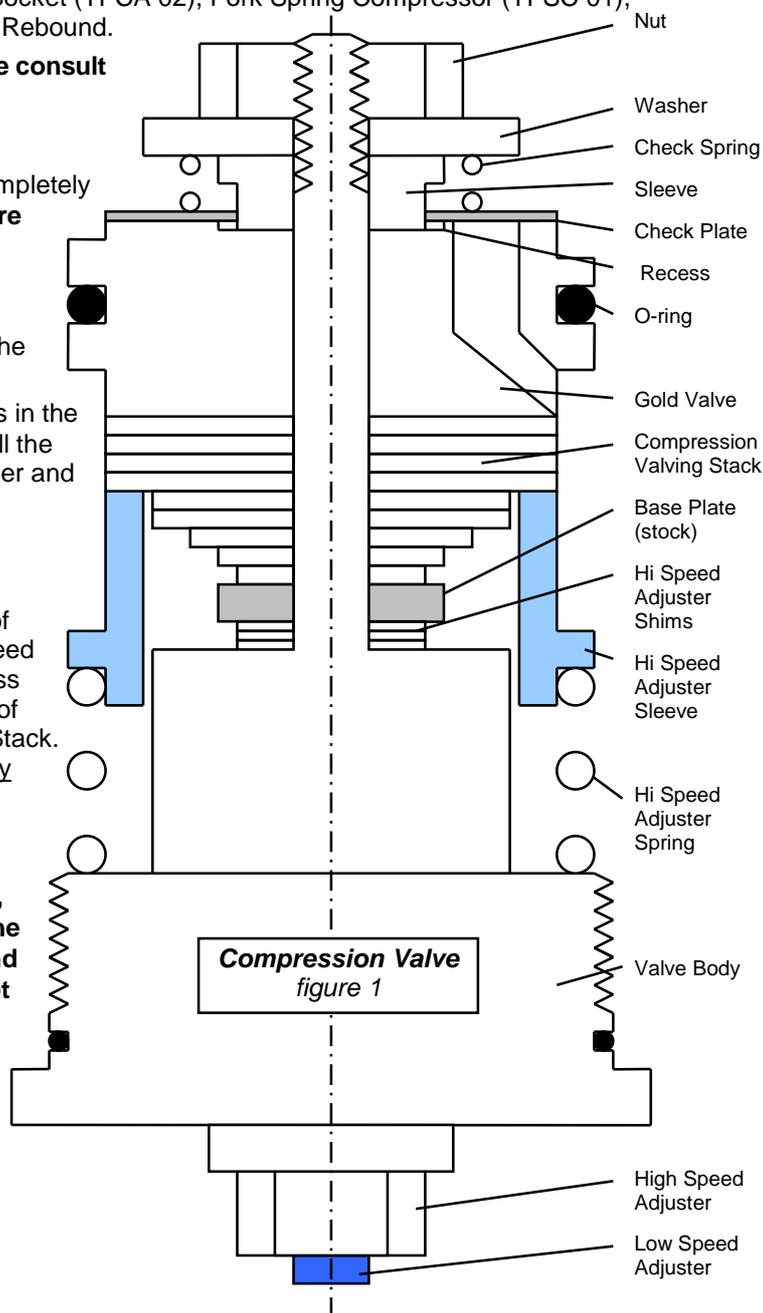
### DISASSEMBLY

- 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.
- Unscrew the compression valve assembly** from the fork leg using TFCA 02.
- 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 to re-use the original Base Plate, do not discard.)

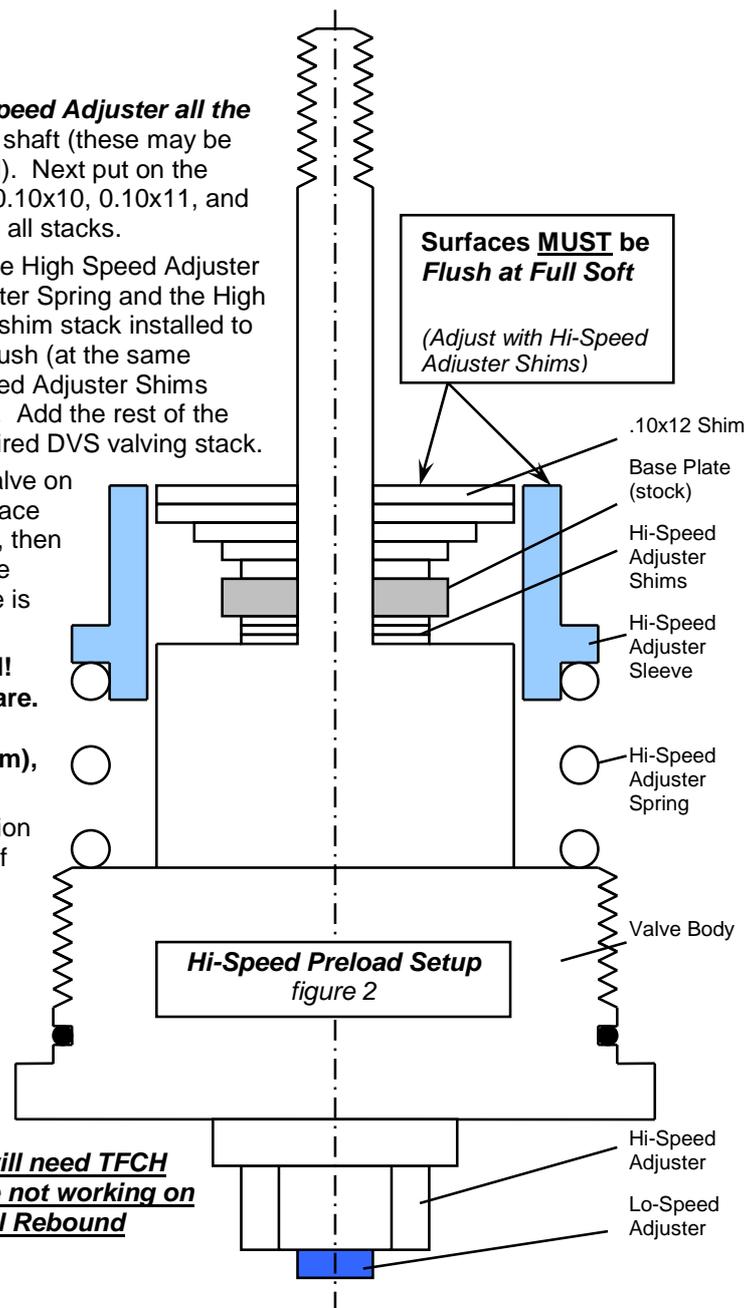
### COMPRESSION VALVING

This Compression Valve design allows adjustment of both Lo-Speed and Hi-Speed Damping. The Lo-Speed Adjuster controls the amount of flow through a bypass circuit. The Hi-Speed Adjuster controls the amount of Spring Tension added to the Compression Valving Stack. It is vitally important to set the spring tension properly (see step 7).

- To obtain custom valving settings for your particular application log on to [www.racetech.com](http://www.racetech.com), go to Digital Valving Search, insert your Access Code (printed on the top of the first page), input your personal specifications and print the custom setup information. If you do not have access to the web, contact our Technical Support Hotline 951.279.6655 for recommendations. Note: The Access Code is good for one limited-time use.



- 6 **Before you begin assembly back out the High Speed Adjuster all the way (figure 1).** Next place (4) 0.10x9 shims on the shaft (these may be changed when the High Speed Adjuster is shimmed). Next put on the original base plate (2.0x10). Then add the 0.10x9, 0.10x10, 0.10x11, and (3) 0.10x12. This part of the valving is the same on all stacks.
- 7 **Shim the High Speed Adjuster (figure 2).** With the High Speed Adjuster backed out all the way, install the High Speed Adjuster Spring and the High Speed Adjuster Sleeve. Compare the height of the shim stack installed to the height of the Adjuster Sleeve – they should be flush (at the same height). If they are different, add or subtract Hi-Speed Adjuster Shims below the Base Plate until they are the same height. Add the rest of the 17mm diameter shims as are called out by the required DVS valving stack.
- 8 Put the o-ring on the Gold Valve. Place the Gold Valve on the shaft with the recess on the piston facing up. Place the check valve plate (*large ID washer*) on the shaft, then the Check Valve Sleeve and the Spring. Be sure the Sleeve fits into the recess in the piston and the plate is free.
- 9 **Install the nut or the bolt** and tighten it. **CAUTION! The threads can be damaged without extreme care. You must use Loctite. It must be torqued with a torque wrench to 30 in-lbs (2.5 ft-lbs or 0.35 kgf-m), NO MORE! Do not take this step lightly.**
- 10 **Inspect the assembled stack.** Hold the compression stack up to the light and look for proper assembly. If there are any problems, disassemble the stack and look for burrs to surface and/or dirt in the valving. Reassemble and check again.
- 11 **Install the compression assembly back into the fork tube.**



## REBOUND VALVING

**R6s benefit from rebound damping changes. A Rebound Gold Valve Kit is available (FRGV S02). Follow the instructions included with the kit. You will need TFCH 04 Cartridge Holding Tool for installation. If you are not working on Rebound you don't have to disassemble the internal Rebound Cartridge.**

## ASSEMBLY

- 12 **Reassemble the forks according to the procedure in your manual. 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.** Start by unscrewing the adjuster all the way. Thread the stock Special Nut on the Damping Rod all the way. Add the Washer. Use Loctite on the damping rod thread at the cap. Install the Cap on the Damping Rod and tighten it all the way until it stops. Tighten the Jam Nut and torque it to manufacturer's specs.
- 14 **Adjust the Lo and Hi-Speed 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.

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at [www.racetech.com](http://www.racetech.com).**

# BUILDING the VALVING STACK - STREET / RR 20mm - HS Adjuster

Welcome to the wonderful world of Gold Valving. To obtain your personal Custom Suspension Settings:

1. Log on to [www.racetech.com](http://www.racetech.com)
2. Go to Digital Valving Search (DVS)
3. Input your Access Code (on top of page 1) when prompted
4. Input your personal specifications
5. Print your DVS Custom Suspension Setup Sheet

If you do not have access to the Internet, contact our Technical Support Hotline 951.279.6655 for recommendations. Note: The Access Code is good for one bike, limited-time use.

Once you have your valving settings, build your valving stacks.

## EXAMPLE:

The Total Valving Stack is cH53:

Starting from the Gold Valve piston face

### Compression Stack – cH53

- (3) 0.15x17
- (3) 0.10x12
- (1) 0.10x11
- (1) 0.10x10
- (1) 0.10x9
- (1) 2.0x10 (stock)
- (4\*) 0.10x9 (\*Adjust quantity for zero preload on Hi Speed Adjuster)

Visit [www.racetech.com](http://www.racetech.com), go to Digital Valving Search with your Access Code (from the top of page 1) for your personal computer calculated valving setup!

**OIL LEVEL, EXTERNAL ADJUSTERS, SPRING RATE, and PRELOAD are all listed on the Digital Valving Search on [www.racetech.com](http://www.racetech.com).**

NOTE: All measurements are metric (for inches divide by 25.4). The valving list starts at the piston face and goes towards the base plate. Valve specs are listed by (QUANTITY) THICKNESS x DIAMETER. A number in parentheses means quantity. If there is no number in parentheses the quantity is one. Example: (2).15x17 means quantity two, 15 hundredths of a millimeter thick by 17 millimeters in diameter.

## FORK GOLD VALVE CHART - STREET / ROAD RACE 20mm

<2049S-072> © P Thede

STIFFER →

cH50	cH51	cH52	cH53	cH54	cH55	cH56	cH57	cH58	cH59
.10x17	(1).15x17	(2).15x17	(3).15x17	(4).15x17	(5).15x17	(6).15x17	(7).15x17	(8).15x17	(9).15x17
(3).10x12									
.10x11									
.10x10									
.10x9									
2.0x10 (stk)									
(4*).10x9									

Shim Dimensions - (QUANTITY) THICKNESS x DIAMETER in mm (for inches divide by 25.4)

\*Adjust quantity for zero preload on Hi Speed Adjuster

### 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 adjusters. 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.
- The "High Speed Adjuster" adds preload to the Valving Stack. Increasing the High Speed will slow down "dive" during braking especially when the Low Speed Adjuster is close to being closed off.
- 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 10mm (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.