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FORK GOLD VALVE INSTALLATION

STREET / ROAD RACE KYB 25mm

FK code

<IP FMGV S2530.doc> **FMGV S2530** P Thede © 2.4.14 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), 12mm Wrench, Fine Flat File, Hi-strength Loctite (included), Metric Calipers, 0-25mm Metric Micrometer.

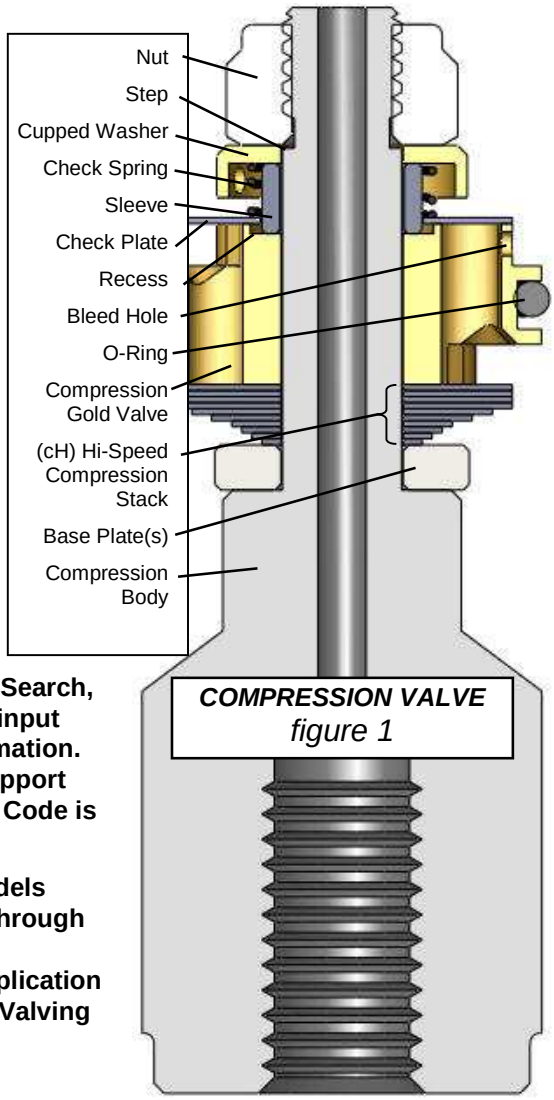
NOTE: Many riders require different fork springs. Please consult www.racetech.com or call Race Tech.

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 compression valve assembly**. It is located on the bottom of the cartridge. There are three basic styles of compression valve retainers. One is held in with a clip. This type is removed by pushing the compression valve holder farther into the cartridge which will expose the clip. The clip can then be removed with a small screwdriver. The second type has a threaded retaining ring which is unscrewed after the compression valve holder is pushed farther into the cartridge. The third type is bolted into the bottom of the cartridge tube. Be very careful when holding the cartridge tube. It can be damaged easily in the vise. Use a shaft holding tool. When disassembling the compression valve for the first time, the threads above the nut must be filed off flat before removal.

3 Remove the nut 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 may need some of the original valving for spacing purposes, do not discard.)* Lightly deburr the end of the threads.



COMPRESSION VALVE
figure 1

VALVING

4 **To obtain custom valving settings for your particular application log on to 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.**

5 **If your Custom Setup requires a Compression Bleed Hole (models without Compression Adjusters) - Drill one hole horizontally, through one of the port walls just above the step for the o-ring on the Compression Gold Valve. Placement is not critical. If your application is Racing please use the Bleed Hole size recommended in the Valving**

Notes section of the DVS Custom Setup Sheet. <u>If your application does not require a Bleed, ignore this step.</u>

6 Place the original base plate(s) *(thick washer)* on the shaft of the compression valve body. Put the valving on the shaft in the order listed, starting with the smallest diameter shim (clamping shim).

7 Make sure the O-ring is on the Gold Valve. **Place the Gold Valve on the shaft** with the recess on the piston facing up.

8 **Place the check valve sleeve on the shaft**, then the check valve plate *(large ID washer)* and the spring. Be sure the sleeve fits into the recess in the piston and the plate is free.

9 **Put the cupped washer on the shaft dished down. This is a critical part of the installation**. You must be very sure that the nut does not run out of threads onto the straight part of the shaft. If it does, the nut will not tighten down on the valving. This will cause incorrect operation or the nut will come off. To get the proper total valve stack thickness you may place some of the original shims on the shaft below the base plate. Be sure the nut is fully engaging the threads!

10 **Check to see that the check valve plate *(large ID washer)* is free** and can move up and down against the spring.

11 ***CAUTION! The threads can be damaged without extreme care. They are made out of aluminum and strip easily. To install the nut you <u>must</u> use Loctite. The 8mm nut (12mm wrench) <u>must</u> be torqued with a torque wrench to 48 in-lbs (4 ft-lbs or 0.56 kgf-m), <u>NO MORE</u>! Do not take this step lightly.***

12 **Inspect your work**. Hold the compression stack up to the light and look for the shims sitting flat on the Gold Valve face. If it isn't, disassemble the stack and look for burrs to surface and/or dirt in the valving. Reassemble and check again.

ASSEMBLY

13 **Reassemble the forks according to the procedure in your manual.** Torque the compression valve body to manufacturers specs. Consult owners manual for specs. **Bleed the cartridge and set the oil level** with the forks and the damping rod completely bottomed according to the DVS Setup Sheet.

14 **Set the spring preload** according to the DVS Setup Sheet.

15 **Install the cap**. Use Loctite on the damping rod threads at the cap and torque it to manufacturers 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 15 to 20 (or 4 turns if there are no "clicks"). Consult owners manual for the proper procedure.

On most **KYBs**, screw the adjuster in all the way and back it out 2 clicks with the cap off. On other models there's no stop when you screw the adjuster in, so the procedure is a little different. Screw the adjuster out all the way, 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 5 clicks (so the needle isn't damaged when the slop is taken up in the threads) and torque the jam nut to proper specs (consult manual). Check to see you have the proper number of clicks.

16 ***Adjust the compression and rebound adjusters*** according to the DVS Setup Sheet.

17 **Install the forks 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. **If you have any questions** call our Technical Support Hotline at 951.279.6655.

BUILDING the VALVING STACK - STREET / ROAD RACE KYB 25mm

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

1. **Log on to 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 cH43:

Starting from the Gold Valve piston face

Compression Stack – cH43

(3) 0.15x21
(1) 0.10x19
(1) 0.10x17
(1) 0.10x14
(1) 0.10x13
(1) 0.10x12
(1) 0.10x11

Visit 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.

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. If there is a number in parentheses that means quantity. If there is no number in brackets 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 KYB 25mm

<2508S-044> © P Thede ***STIFFER →***

cH40	cH41	cH42	cH43	cH44	cH45	cH46	cH47	cH48	cH49
.10x21	.15x21	(2).15x21	(3).15x21	(4).15x21	(5).15x21	(6).15x21	(7).15x21	(8).15x21	(9).15x21
.10x19	.10x19	.10x19	.10x19	.10x19	.10x19	.10x19	.10x19	.10x19	.10x19
.10x17	.10x17	.10x17	.10x17	.10x17	.10x17	.10x17	.10x17	.10x17	.10x17
.10x14	.10x14	.10x14	.10x14	.10x14	.10x14	.10x14	.10x14	.10x14	.10x14
.10x13	.10x13	.10x13	.10x13	.10x13	.10x13	.10x13	.10x13	.10x13	.10x13
.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12
.10x11	.10x11	.10x11	.10x11	.10x11	.10x11	.10x11	.10x11	.10x11	.10x11

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

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, pre-load 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.
- If you would like assistance, please contact the Race Tech Technical Support Hotline 951.279.6655.