

# RACE TECH

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## FORK GOLD VALVE INSTALLATION DIRT Showa 25mm & Marzocchi 26mm

<IP FMGV 2520w.doc> FMGV 2520, FMGV 2570 P Thede © 12-5-15

**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), 10mm wrench, Fine flat file, Hi-Strength Loctite (provided), Metric calipers, Metric micrometer.

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

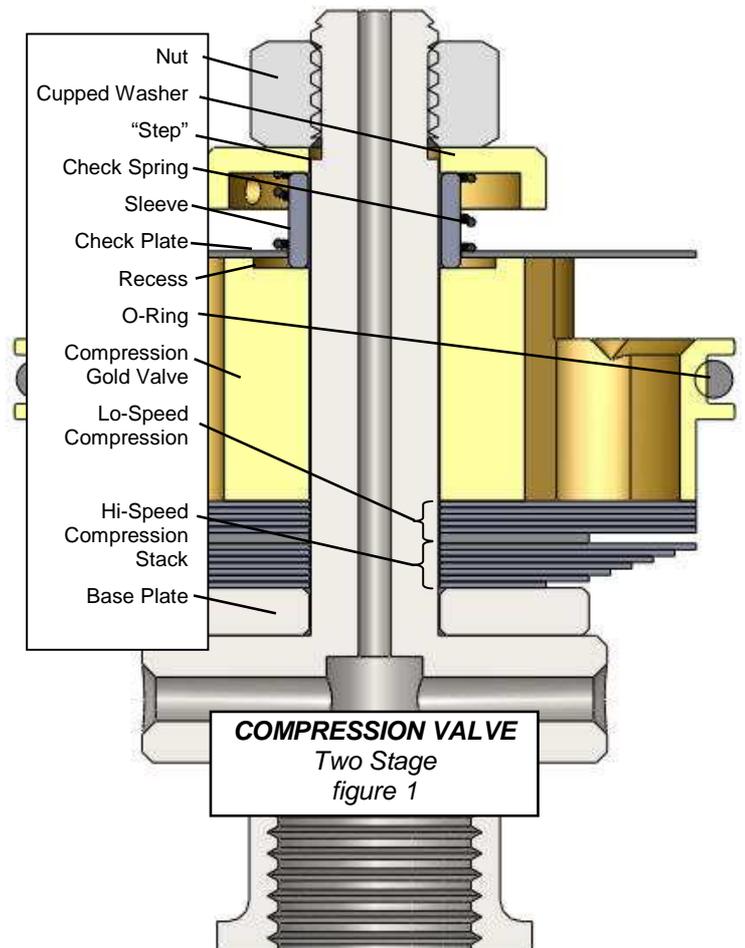
**CAUTION!** The threads can be damaged without using extreme care. They are made out of aluminum and strip easily. If you strip one we have a repair kit (FSRK 06).

### DISASSEMBLY

- D1 **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.** *NOTE: On most dirt bikes, simple installation is achievable without complete disassembly. The Gold Valve can be installed by removing the compression adjuster at the bottom of the forks.*
- D2 **Remove the nut.** When disassembling the compression valve for the first time, **the threads above the nut must be filed off flat.** Lightly deburr the end of the threads.
- D3 **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.*)

### VALVING

- V1 **To obtain custom valving settings go to Digital Valving Search, insert your Access Code, 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.**
- V2 Once you have selected your valving **begin assembling the valve.** (figure 1) Place the original Base Plate (*thick washer*) on the shaft of the compression valve.
- V2a **Single Stage** - Put the valving on the shaft in the order listed, starting with the smallest diameter shim (*clamping shim*) of the Hi-Speed Stack and ending with the largest diameter closest to the Gold Valve. You will not use a Lo-Speed Stack.



V2b **Two Stage** - For Two Stage Stacks the total valving stack is made up of a combination of a Lo-Speed Stack and a Hi-Speed Stack. Put the valving on the shaft in the order listed, starting with the smallest diameter shim of the Hi-Speed Stack. Then the Lo-Speed Stack gets placed on top of the Hi-Speed Stack starting with the small diameter and ending with the largest diameter shim closest to the Gold Valve. (see figure 1 - your exact configuration may look slightly different.)

V3 Make sure the o-ring is on the Gold Valve.

**Showa 25mm**– Use the thin o-ring.

**Marzocchi 26mm** - Use the thick o-ring.

**Place the Gold Valve on the shaft** with the recess on the piston facing up.

V4 **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 check valve plate is free.

V5 **Showa 25mm**– (figure 1) **Put the spring cup on the shaft dished down. This is a critical part of the installation. You must be very sure that the spring cup straddles the step at the end of the threads. If it does not one of two things will happen. Either the nut will tighten down on the step instead of the valving causing it to come loose or not damp properly. Or the spring cup will catch on the step and not tighten properly, also creating the possibly that the valve will loosen. 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 that the spring cup is straddling the step!!!**

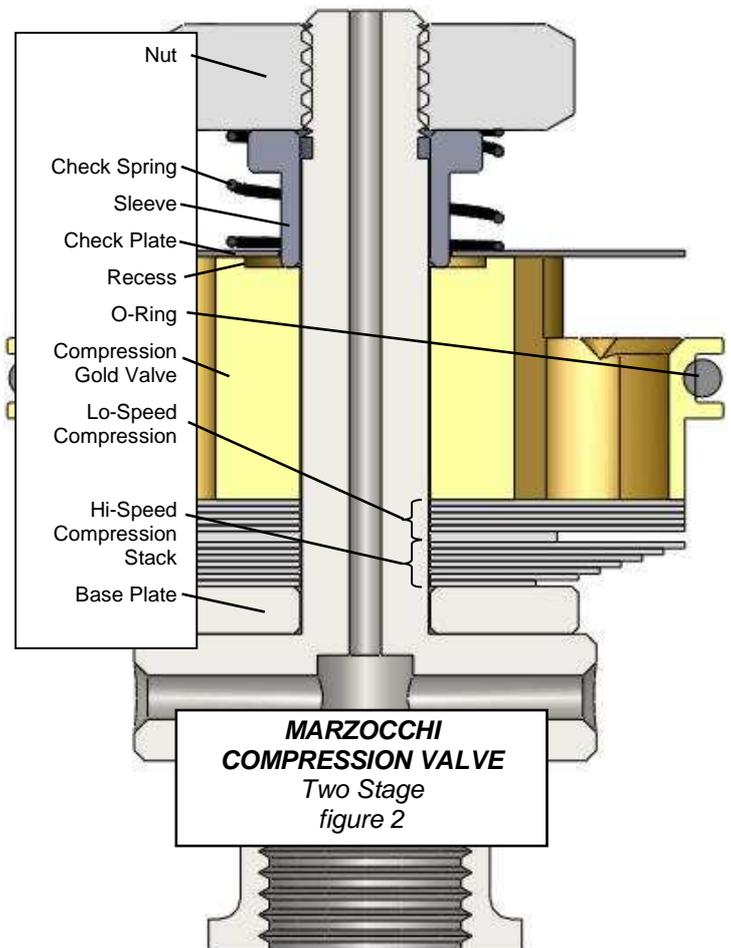
Note: The 93 Honda Gold Valve is 11mm tall. It is shorter than the older style valves. For models with taller valves (12.5mm) you may need to put the extra base plate provided, beneath the original base plate to make up the proper height.

**Marzocchi 26mm**– (figure 2) This Kit uses 6mm ID shims. The stock valving uses 8mm ID shims. This means that the new Base Plate will sit at a slightly different place on the shaft. You may have to use shims to get the proper total valve stack height as with Showa's. Be sure to use the thick o-ring.

V6 **Check to see that the check valve plate (*large ID washer*) is free** and can move up and down against the spring.

V7 **CAUTION! The threads can be damaged without extreme care. They are made out of aluminum and strip easily. To install the nut you must use Loctite. The 6mm nut (10mm wrench) 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.**

V8 **Check your work.** For two stage stacks, hold the compression stack up to the light and look for the gap at the cross-over between the low speed and high speed stack (*the small shim near the top of the stack*). This gap should be visible, if it isn't, disassemble the stack and look for burrs to surface and/or dirt in the valving. Reassemble and check again.



## ASSEMBLY

- A1 **Reassemble the forks according to the procedure in your manual.** Torque the compression valve body to manufacturer's specs. For most forks this is 43 to 60 ft-lbs (58 - 82 NM). Consult owner's manual for specs. Bleed the cartridge and set the oil level using Ultra Slick USF-05 (5w). NOTE for Twin Chamber Forks: To protect the cartridge seal deburr both ends of the thread. Next, coat the threads with heavy grease and push the rod out. (Shaft seals are available if needed.)
- A2 Use Loctite on the damping rod threads at the cap and **torque it to manufacturer's specs** (typically 16 to 21 ft-lbs [21.7 – 28.5 NM]). Consult owner's manual for specs.
- A3 **Adjust the compression and rebound adjusters, spring preload, and oil level** according to the Digital Valving Search Setup Sheet.
- A4 **Install the forks on the bike.** 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.
- A5 **If you have any questions** please call our Technical Support Hot-line at 951.279.6655. Feel free to experiment and please call if you need us. Have fun!

### **NOTE FOR 43 and 45mm UPSIDE-DOWN SHOWA FORKS**

*43 and 45mm Showa forks need a different bushing design to work properly. When your front wheel hits a bump the forks bend backwards. They bend where they have the most leverage, which is right below the triple clamp. This means that you have a relatively straight tube going into one with a kink in it. The amount of force required to create a bind is incredibly small. **The best cure available is Race Tech Ultra Slick Bushings.** They have a different design, which helps the upper bushing get through the kink without increasing clearances. The difference is substantial.*

### **NOTE FOR 91 CR250R**

*There are some models, most notably the 91 CR250, having slightly different hardware. The compression valve is not attached to the compression valve body. It is attached to the end of the cartridge and the bolt that holds the forks together has the adjustment screw in it. To get to the compression valve remove the cartridge. Then unscrew the retaining ring from the bottom of the cartridge. Push the compression valve holder into the cartridge about 5mm to allow access to the retaining ring. Unscrew the retaining ring and pull out the holder by screwing the bolt back in and pulling it out. That's it.*

## **TUNING NOTES**

- **Damping depends on vertical wheel velocity, not position in the stroke.**
- **If the forks feel too soft all the way through,** increase compression damping with the external adjuster. If that is not enough, change the compression stack internally.
- **The compression damping adjuster** controls the lowest speed damping and affects the entire range. NOTE: The closer to maximum damping (full clockwise) the more effect one click makes. In other words going from 3 to 2 out has a lot more effect than going from 14 to 13. Adjusters are numbered from all the way clockwise (the slowest or firmest setting).
- **Spring rate affects ride height, dive and bottoming.** Typical spring preload should be 3-5mm (0.1–0.2").
- **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 10cc.

## ***BUILDING the VALVING STACK - DIRT 25mm Showa & 26mm Marzocchi***

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

- 1. Go to Digital Valving Search (DVS)**
- 2. Input your Access Code when prompted**
- 3. Input your personal specifications**
- 4. 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.

**Single Stage** - the total valving stack is just a Hi-Speed Stack. NO Lo-Speed

**Two Stage** - made up of a Lo-Speed Stack on top of a Hi-Speed Stack.

### ***EXAMPLE Single Stage:***

Starting from the Gold Valve piston face

#### **Lo-Speed Stack**

(3) 0.15x21

#### **Hi- Speed Stack**

(1) 0.10x21

(1) 0.10x19

(1) 0.10x17

(1) 0.10x14

(1) 0.10x13

(1) 0.10x12

(1) 0.10x11

### ***EXAMPLE Two Stage:***

Starting from the Gold Valve piston face

#### **Lo-Speed Stack**

(3) 0.15x21

#### **Crossover**

(1) 0.10x12

#### **Hi- Speed Stack**

(1) 0.10x21

(1) 0.10x19

(1) 0.10x17

(1) 0.10x14

(1) 0.10x13

(1) 0.10x12

(1) 0.10x11

**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 parenthesis the quantity is one. Example: (2).15x17 means quantity two, 15 hundredths of a millimeter thick by 17 millimeters in diameter.