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FORK REBOUND GOLD VALVE INSTALLATION - STREET / ROAD RACE 20mm

<IP FRGV S01.doc> **FRGV S01, FRGV S03** P Thede © 6-15-22

TOOLS REQUIRED: In addition to the tools required for disassembly and assembly. TFSH 20 Shaft Holding Tool, Hydraulic Press (some stubborn cartridges), Hack Saw, Hi-strength Loctite (included), 400 grit (very fine) or finer Sandpaper, [Some models including 91-95 ZX7/R, 94-97 ZX9R, 01+ FZ1000 - Lathe (or Hand Drill with a steady pair of hands) and a Number "1" (5.8mm) Drill Bit]. **OPTIONAL (but highly recommended on models through 2000) - FKRB 1015P Damping Rod Bushings**

CAUTION: THIS PROCEDURE SHOULD ONLY BE DONE BY A QUALIFIED SUSPENSION TECHNICIAN. IF YOU ARE NOT FAMILIAR WITH THIS PROCEDURE, STOP! CONTACT RACE TECH OR A QUALIFIED SUSPENSION TECHNICIAN.

DISASSEMBLY

1 **Disassemble the forks** and remove the cartridge.

2 **Remove the compression valve**. If you are installing compression Gold Valves at this time, follow the instructions for installation included in the kit.

3 **Remove the Rebound Damping Rod Assembly from the Cartridge.** If it cannot slide out of the bottom of the cartridge **remove the cartridge seal head assembly** (at the top of the cartridge) from the cartridge tube. It is Loctited in. It is sometimes beneficial to heat the seal head assembly at the threads (internal) to loosen the Loctite. It should be heated just slightly above 250° F (121 degrees Celsius) (just above boiling). Use the TFSH 20 shaft holding tool at the bottom of the cartridge with the compression valve installed to give it support. You may have to hold the shaft holding tool in a hydraulic press to keep it from spinning.

4 **The stock adjusting rod will be shortened. Get the stock measurement.** Insert the rebound adjusting rod into the hollow damping rod. **Fully compress the adjusting rod into the damping rod (the Rebound Needle Spring must be compressed). Measure the amount the adjusting rod extends from the end of the damping rod ("A").**

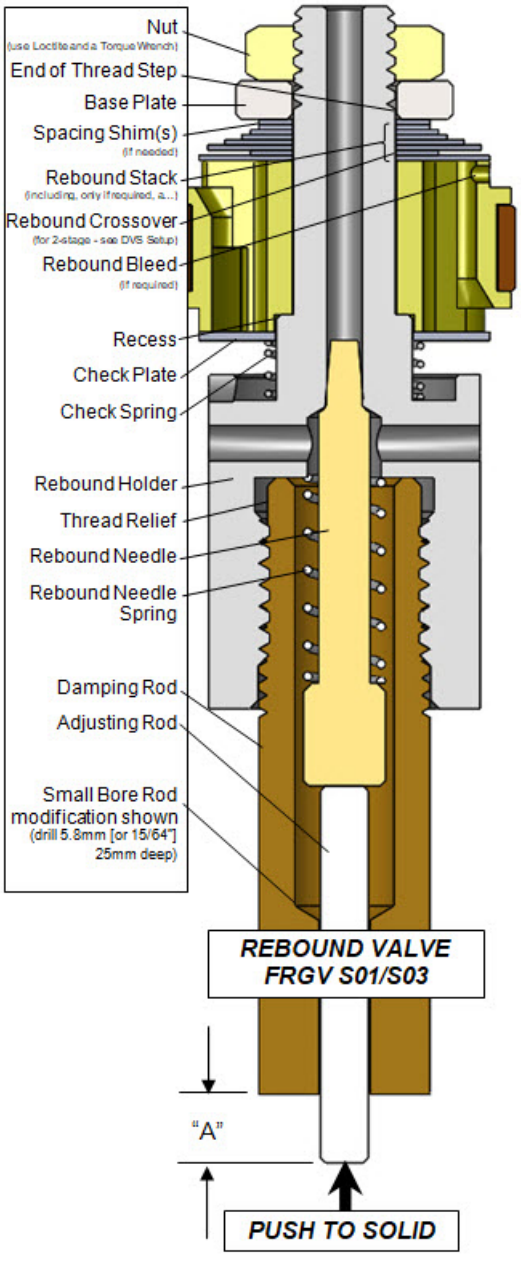
5 **Remove the stock rebound valve assembly from the shaft** using the tool supplied in the kit to hold the shaft. Use heat to loosen the Loctite. You may need to clamp the shaft holding tool in the press to keep it from spinning.

6 **There are two types of damping rods, large and small bore.** At this point you must **determine which type you have** and handle them accordingly.

6a **Large bore rods** have a 5.7mm (0.225") diameter adjusting rod and are found on 89-90 ZX7, 94-95 YZF 750. Nothing has to be done to large bore rods.

6b **Small-bore rods** have a 2.9mm (0.115") diameter adjusting rod and are found on 91-95 ZX7, ZX7R and 94-97 ZX9R and 01+ FZ1000. Small-bore rods must be modified.

SMALL-BORE RODS ONLY. **The bottom end (rebound piston end) of the rod must be drilled** to provide room for the new rebound needle. Drilled to a depth of 25mm (1") using a Number "1" (5.8mm) drill. This is best accomplished with a lathe but can be done with a skilled operator and a hand drill.



7 **Polish the damping rods with 400 grit (very fine) or finer sandpaper**. This will improve bushing life and reduce drag.

8 **OPTIONAL (but highly recommended)** - The damping rod bushings serve two functions, as both a bearing surface and a seal. On some models the stock bushing is made of aluminum while the damping rod is made of steel. Steel on aluminum is neither a good bearing surface nor a good seal. RT Hi-Performance PTFE Bushings (part number FKRB 1015P), have excellent bearing and sealing qualities. Install them now.

9 The threads on both ends of the shaft are M10x1.0mm for models using FRGV S01. In case you get them mixed up, the rebound piston end of the shaft is the end with the thread relief on the first 3mm. FRGV S03 has M10x1.25 thread.

Insert the new rebound adjusting needle into the rebound piston end of the shaft with the point facing outward. Insert the needle spring and install the new rebound assembly onto the shaft **(refer to the figure, the point of the needle goes into the inner diameter of the small spring)**. Make sure everything is clean and use Loctite on the threads. Torque the body to 15 ft-lbs (40.8 NM).

10 **The adjusting rod must be shortened**. Calculate the amount it must be cut by inserting the rebound adjusting rod into the damping rod. **Fully compress the Rebound Needle Spring by pushing the adjusting rod into the damping rod until it stops. Measure the amount the adjusting rod extends from the end of the damping rod ("A2").** Shorten the adjusting rod by the difference between the original measurement ("A") and the new one ("A2"). The amount it needs to be shortened is usually approximately 22mm (0.87").

VALVING

11 **To obtain custom valving settings log on to racetech.com, go to Digital Valving Search, input your personal specifications and print the custom setup information.**

12 **Assembly order:** Check Spring, Check Plate, Rebound Gold Valve (recess first, towards check plate), Rebound Valving, Base Plate,Nut. Use Loctite and torque the nut to 30 in-lbs (0.35 kgf-m).

ASSEMBLY

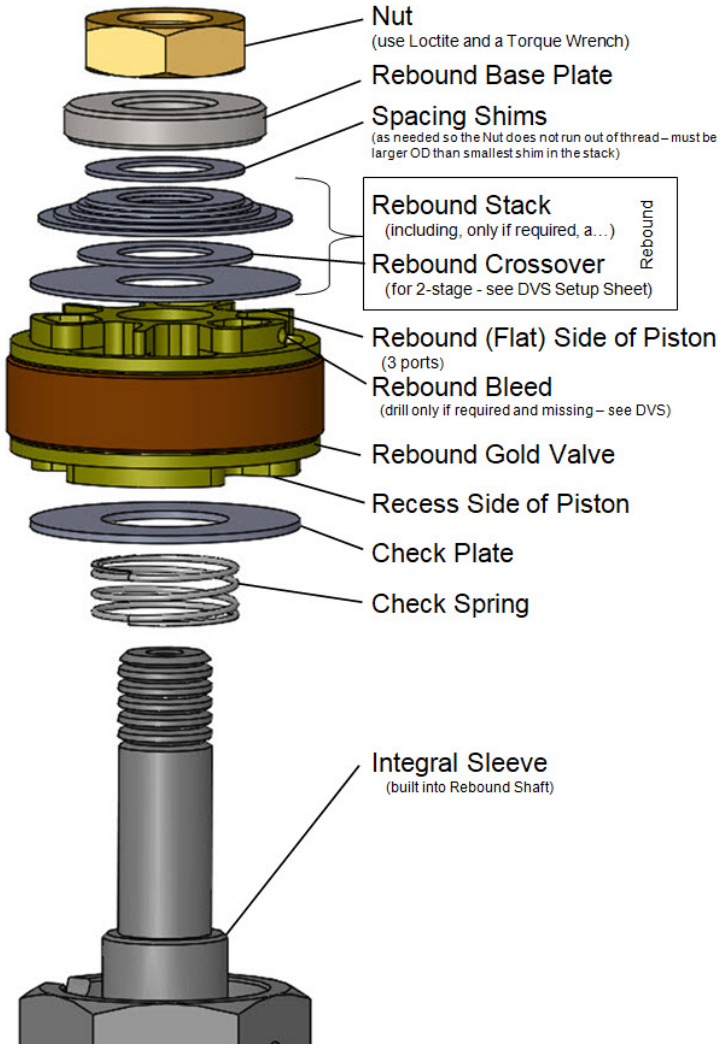
12 **Assemble the cartridge according to the procedure in your manual**. Use Loctite on the threads of the cartridge seal head assembly and torque to 36 ft-lbs (48.9 NM).

13 Install the compression assembly and **reassemble the forks**. Be sure to use USF-05 Fluid (5w) as it is designed for this Valve.

14 **Install the fork 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. 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 models, screw the adjuster in all the way and back it out 2 clicks with the cap off. On some 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 and torque the jam nut to proper specs (consult manual). Check to see you have the proper number of clicks.



15 **Set the external adjustment, preload, and oil level** according to the DVS Setup Sheet. Enjoy!