FORK GOLD VALVE INSTALLATION

FK code

STREET 20mm-Single Cartridge FMGV S2050C

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), 5mm Allen Wrench, 1/2" Wrench, Hi-Strength Loctite (included), Metric Calipers, 0-25 mm Metric Micrometer.

NOTE: Many models require different fork springs.

DISASSEMBLY

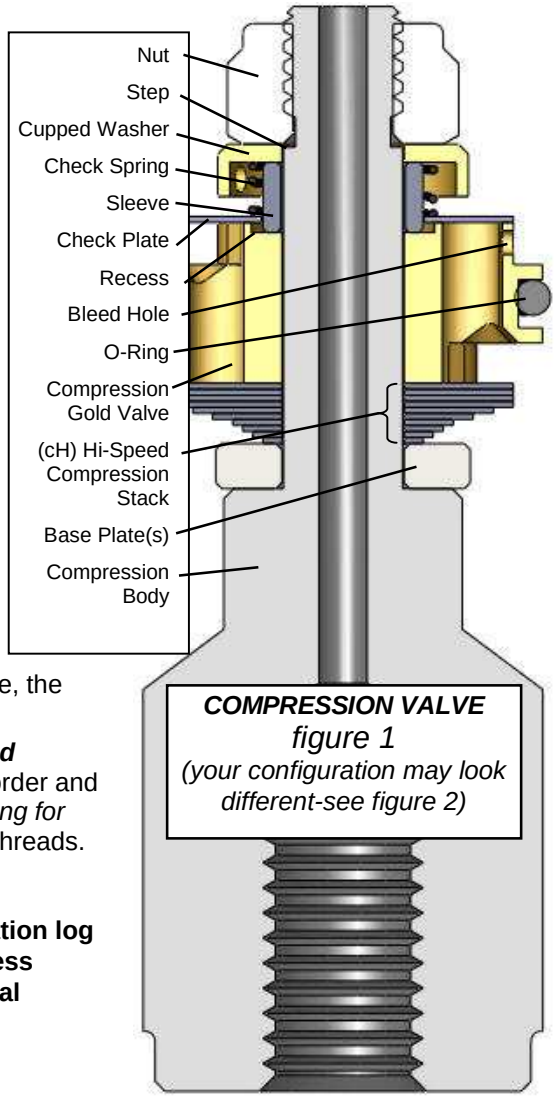
1 ***CLEANLINESS IS CRITICALLY IMPORTANT.*** Completely ***disassemble and clean your front forks.*** **If you are unfamiliar with this process, STOP!!!! Do not proceed. Seek out a qualified suspension technician to complete the installation.**

2 ***Remove the compression valve body*** from the cartridge. On some models there are punch marks at the bottom of the cartridge approximately 15mm (0.6") up from the bottom. If this applies to your model, these must be drilled out with a 3/16" (4.8mm) 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 5mm (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.

3 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.

4 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
(your configuration may look different-see figure 2)

COMPRESSION VALVING

5 **To obtain custom valving settings for your particular application log on to racetech, 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.**

Note: The Access Code is good for one limited-time use.

6 **If your DVS Custom Setup requires a Compression Bleed Hole – check to see that one is pre-drilled. If it is not, drill one hole <u>horizontally</u>, through one of the port walls just above the step for the o-ring on the Compression Gold Valve. Placement is not critical.**

7 ***Begin assembly (figure 1).*** Place the original base plate(s) *(thick washer)* on the shaft of the compression valve body. **Put the compression valving on the shaft** in the order listed, starting with the smallest diameter shim. 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 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.

Note: if your Compression Assembly looks like figure 2 install on the Valving Bolt in reverse order of above.

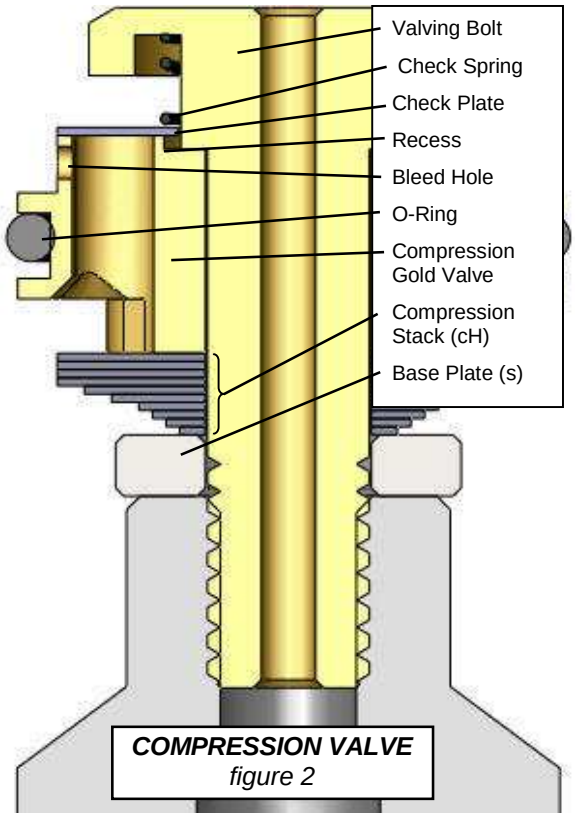
8 ***Put the spring cup on the shaft*** (if applicable), dished down. ***This is a critical part of the installation (on Showa particularly, this does not apply on some models). If there is a step at the end of the threads you must be very sure that the spring cup straddles this step (see drawing). If 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 or an additional spacer on the shaft below the base plate. Be sure that the spring cup is straddling the step!!!***

9 ***Install the nut or the bolt*** and tighten it. **CAUTION! The threads can be damaged without extreme care. You <u>must</u> use Loctite. It <u>must</u> be torqued with a torque wrench to 30 in-lbs (2.5 ft-lbs or 0.35 kgf-m), <u>NO MORE</u>! 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.

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.
- 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").



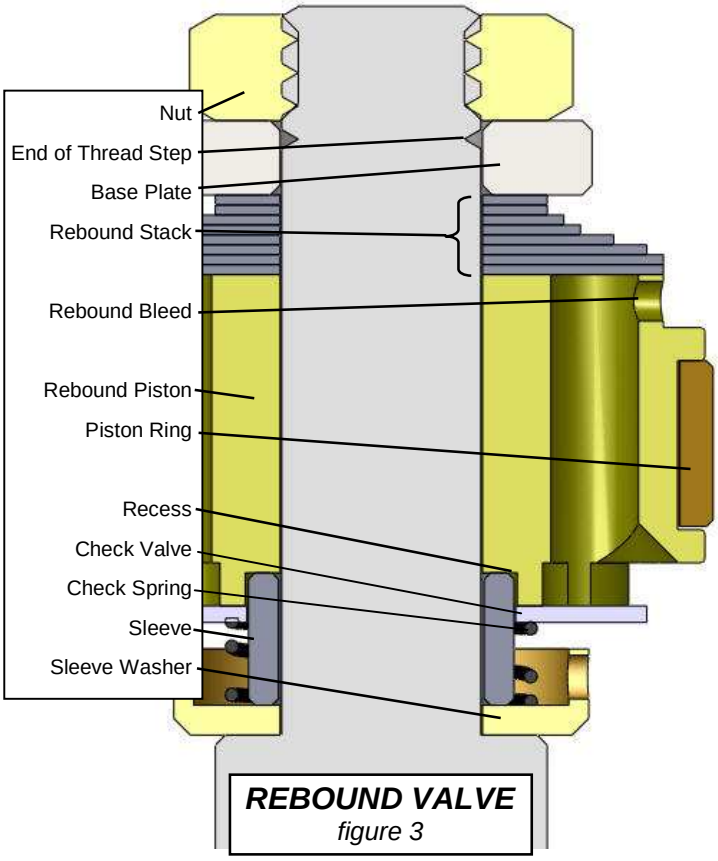
COMPRESSION VALVE
figure 2

REBOUND VALVING – *figure 3*

A Remove the damping rod from the cartridge. ***Disassemble the rebound stack.*** File the peening off the end of the shaft that holds on the nut (just as on the compression valving stack). Lay out the parts in the order they come off the shaft. You will reuse some of them.

B ***Assemble*** starting with the Cupped Washer, Check Sleeve, Check Spring, Check Plate and Gold Valve Rebound Piston with the recess on the piston face toward the Check Plate. **NOTE: If the DVS requires a Rebound Bleed, drill one hole horizontally, through one of the port walls just above the step for the Piston Band.** Select a valving stack according to the Rebound Valving Chart using the spring rate your guide. ***Create a valving stack*** starting from the piston face with the 17mm OD shims. Then install the new Base Plate and the Nut. Be very careful to stack up the total valving thickness as in Step 8.

C ***Install the nut*** and tighten it. **CAUTION! The threads can be damaged without extreme care. You must use Loctite. The 6mm bolt 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.**



REBOUND VALVE
figure 3

REASSEMBLY

11 ***Install the rebound damping rod assembly then the compression assembly into the cartridge.*** Install the retaining clip and seat the compression valve assembly if it is that type.

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 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 15 to 20 (or 4 turns if there are no "clicks"). Consult owner's 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 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 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.

14 ***Adjust the compression and rebound adjusters*** according to the DVS 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.

BUILD the VALVING STACK - STREET 20mm-Single Cartridge

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

1. **Log on to racetech**
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**

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

EXAMPLE:

The **Total Valving Stack** is cH39:

Starting from the Gold Valve piston face

Compression Stack – cH39

(9) 0.15x17
(1) 0.10x15
(1) 0.10x13
(1) 0.10x12
(1) 0.10x11
(1) 0.10x10
(1) 0.10x9

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 COMPRESSION GOLD VALVE CHART - STREET 20mm

Chart #20SS--1107 © P Thede ***STIFFER →***

cH36	cH37	cH38	cH39	cH40	cH41	cH42	cH43	cH44	cH45
(6).15x17	(7).15x17	(8).15x17	(9).15x17	(7).15x17	(8).15x17	(9).15x17	(10).15x17	(11).15x17	(12).15x17
.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15
.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
.10x10	.10x10	.10x10	.10x10	.10x10	.10x10	.10x10	.10x10	.10x10	.10x10
.10x9	.10x9	.10x9	.10x9						

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

FORK REBOUND GOLD VALVE CHART – 20mm Single Cartridge

Single-060726 © P Thede ***SLOWER →***

rH18	rH19	rH20	rH21	rH22	rH23	rH24	rH25
(7) .15x17	(8) .15x17	(9) .15x17	(10) .15x17	(11) .15x17	(12) .15x17	(10) .15x17	(11) .15x17
.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15
.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12	.10x12
.10x9	.10x9	.10x9	.10x9	.10x9	.10x9	.10x10	.10x10