

# RACETECH

## FORK GOLD VALVE INSTALLATION STREET / ROAD RACE Showa 25mm 92-94 CBR900

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**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 (included), Metric Calipers, 0-25mm Metric Micrometer, #53 (1.5mm) Drill Bit, Hand Drill.

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

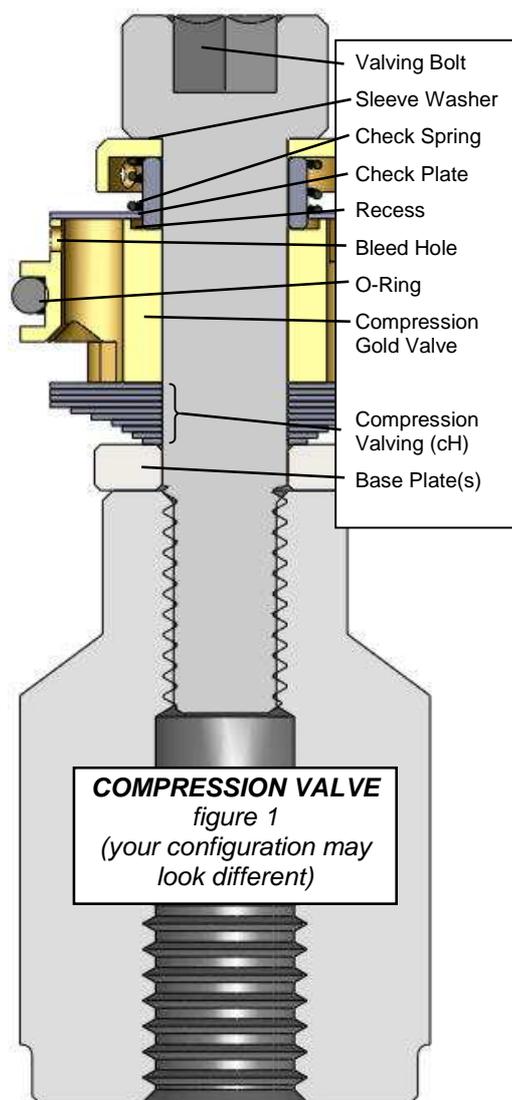
### DISASSEMBLY

- 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 from the cartridge.** It is located on the bottom of the cartridge. The compression valve is held in with a clip. Remove it by pushing the compression valve holder farther into the cartridge to expose the clip. The clip can then be removed with a small screwdriver. Be very careful when holding the cartridge tube. It can be damaged easily in the vise. Use a shaft holding tool.
- 3 Remove the Allen bolt 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.)

### VALVING

- 4 **Stock 92-94 CBR900s do not have an external compression adjuster.** You must make sure there is a low speed bypass (bleed) hole in the Gold Valve. (There should already be one drilled into the Gold Valve. If there is not, please call.)
- 5 Put the cupped washer, spacer, check spring and check plate (17mm OD by 8 ID) on the bolt. Install the O-ring on the Gold Valve and **place the Gold Valve on the shaft** (the side of the valve with the recess goes on first).
- 6 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.

Install the valving with the largest shim closest to the valve. Place the original base plate on the shaft.



- 7 **Build the correct total valve stack thickness. This is critical.** When the total valve thickness is correct the base plate will straddle the last thread on the shaft towards the shaft end. This is important because if the total valve stack thickness is too short the valve stack will not tighten down properly. If it is too tall you will not get correct thread contact. You may need to use the base plate provided and/or some of the original valving as a spacer to build up the correct total valve stack thickness.
- 8 **Inspect the check valve plate** (*large ID washer*) to make sure it is free and can move up and down against the spring.
- 9 Install the bolt assembly into the holder (1) 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.**
- 10 **Check your work.** 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 into the cartridge.** Install the retaining clip and seat the compression valve assembly.

## **ASSEMBLY**

- 12 **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. **Set the oil level** according to the Digital Valving Search Setup Sheet.
- 13 **Install the proper rate spring and set the spring preload** according to the Digital Valving Search Setup Sheet.
- 14 **Install the fork cap.** Use Loctite on the damping rod threads at the cap. If there are no adjusters simply thread the rod all the way in until it stops. CBR900s 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 be less clicks. If the cap is not threaded on far enough, it may not touch the adjuster and it could come off the shaft.  
Consult owners manual for the proper procedure. Here is an overview to set the total number of available clicks to 15 to 20 (or 4 turns if there are no "clicks"). On CBRs there's no stop when you screw the adjuster in. Screw the adjuster out all the way, then screw it in 3 to 4 turns. Then 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 1/2 turn (so the needle isn't damaged when the jam nut is tightened) and torque the jam nut to manufacturers specs. Check to see you have the proper number of clicks.
- 15 **Adjust the compression and rebound adjusters** according to the Digital Valving Search Setup Sheet.
- 16 NOTE: 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.

If you have **any questions** please call our Technical Support Hotline at 951.279.6655.

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# BUILDING the VALVING STACK - STREET / ROAD RACE Showa 25mm

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 cH23:

Starting from the Gold Valve piston face

### Compression Stack – cH23

- (3) 0.15x21
- (1) 0.10x19
- (1) 0.10x17
- (1) 0.10x14
- (1) 0.10x13
- (1) 0.10x12
- (1) 0.10x11
- (1) 0.10x9

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. 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 Showa 25mm

<2506S-044> © P Thede

STIFFER →

cH20	cH21	cH22	cH23	cH24	cH25	cH26	cH27	cH28	cH29
.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
.10x9	.10x9	.10x9	.10x9	.10x9	.10x9	.10x9	.10x9	.10x9	.10x9

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 the 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.