RACE TECH

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FORK GOLD VALVE COMPRESSION AND REBOUND INSTALLATION
HONDA GL1800 GOLD WING

FK code

TOOLS REQUIRED: In addition to the Service Manual along with common hand tools required for disassembly and assembly we recommend; TFOL 02 Oil Level Tool, TFBT 1014 Bleed Tool, TFSD 46 Seal Driver, Hi-strength Loctite (included), 400 grit (very fine) or finer Sandpaper, 8mm (5/16") drill and drill motor.

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.

CARTRIDGE LEG (RIGHT SIDE)
DISASSEMBLY

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

2 **Remove the compression valve**. Push the compression valves up into the fork about 25mm (1"). This will allow access to the retaining clips, remove them with a small screwdriver. Next screw the bottom retaining bolt into the base of the valves, pull them out.

3 **Remove the rebound rod from the cartridge.** Being very careful not to damage the rod or sealing bushing in the cartridge slide the rod out of the cartridge tube.

4 **Lightly file the peening off the end of the shaft that holds on the nut.** Remove the nut holding on the rebound valving and **disassemble the valving stack.** Lightly deburr the end of the threads.

*REBOUND VALVE*
figure 1

VALVING

5 **Assemble the Rebound Gold Valve**. Starting with the cupped washer, check spring, check plate, then the Rebound Gold Valve (with the recess towards the check plate). Note: bleed is already pre-drilled. Next install the **rH19** Rebound Valving Shim Stack (**in supplied shim packs).** Then the Base Plate and the Nut. Use Loctite and torque the nut to 30 in-lbs (0.35 kgf-m). Next install the Piston Band.

Note: ALL GOLD VALVES supplied in this kit come with bleeds PRE-DRILLED for the GL1800

Polish the damping rods with 400 grit (very fine) or finer sandpaper. This will drastically improve bushing life and will reduce drag as well. The important part is the lower half of the rod as that is the part that contacts the damping rod bushing.

6 The pre-assembled valving stack is cH33. Check the Compression Valving Chart for your preference. Change valving as desired.

1
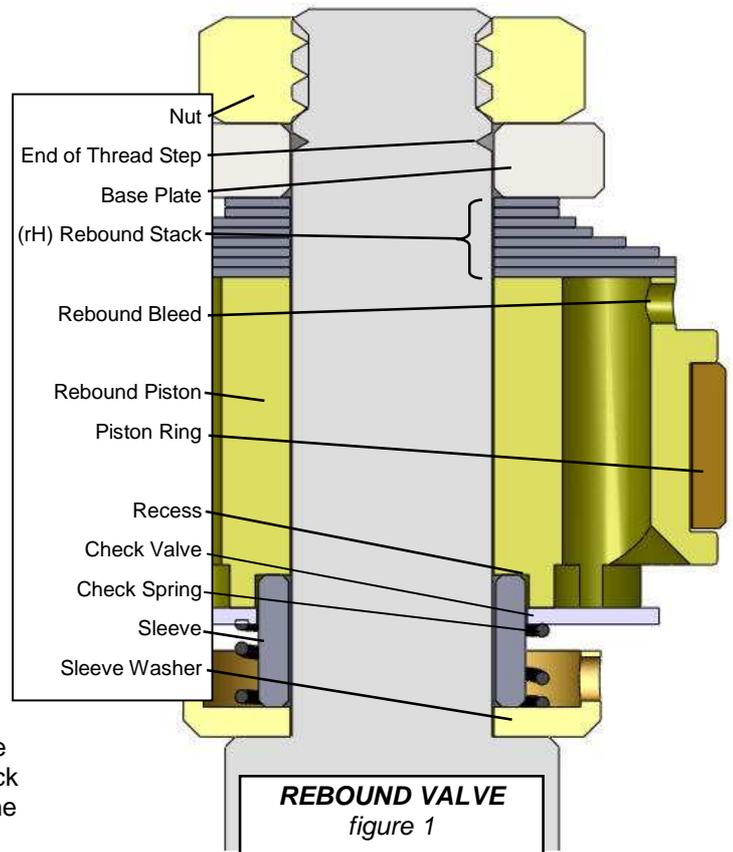
ASSEMBLY

1. **Install the Gold Valve Compression Assembly** into the cartridge. Insert the circlip into the groove, screw the bolt back in and pull to seat the assembly on the circlip.
2. **Reassemble the forks according to your manual.**
3. **Set the fork spring preload.**

   This is done per the instructions in your Race Tech Fork Spring Kit.

   Note: You must have washers on both ends of the spacer. <u>The spacer must not rest directly on the spring or the cap</u>. If you are not installing Race Tech Fork Springs reuse the OEM parts in their correct order.
4. **Install the fork fluid.** Pump the cartridge rod using the TFBT 1014 Bleed Tool to bleed the air out. ***Set the oil level to 5.1" (130mm) using USF-05 Suspension Fluid*** (or equivalent) with the cartridge fork and cartridge rod completely bottomed and the spring out.
5. **Install Fork spring** with washer, spacer, and washer.
6. **Install the cap on the cartridge rod.** Use Loctite on the damping rod threads at the cap and torque it to manufacturers specs.

This kit is a result of extensive testing on the GL1800.
The supplied valving, bleed sizes, etc. have been predetermined for you.

Race Tech Fork Springs in the appropriate rate are strongly recommended to realize the full benefit of this kit
Please visit www.racetech.com for spring rates.

Race Tech Technical Support: 951.279.6655

Fork Cap
Nut
Spring Spacer Tube
Spring Compressor Holes (on some models, not all)
Spring Washer
Spring
Cartridge Rod
Set Length
Top-out Spring
Rebound Valve (figure 1)
(Gold Valve) Compression Valve Assembly
Bottoming Cone
Retaining Circlip
Bolt
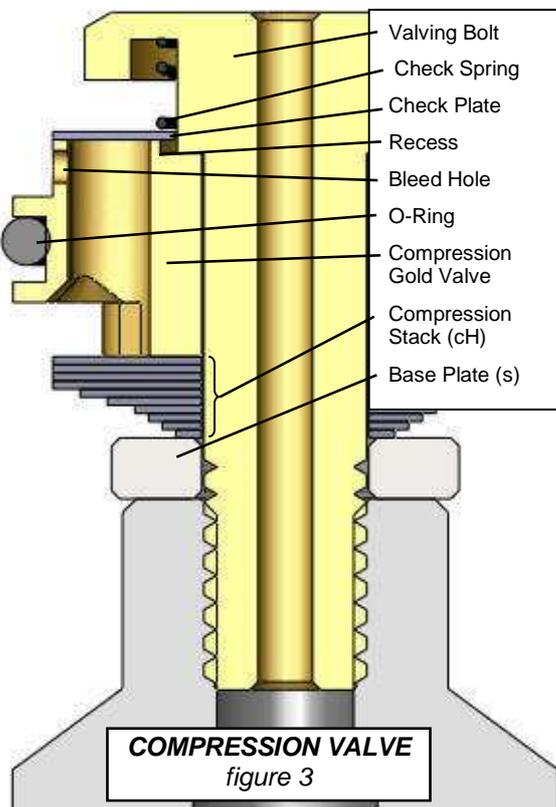
figure 2 Cartridge assembly

Valving Bolt
Check Spring
Check Plate
Recess
Bleed Hole
O-Ring
Compression Gold Valve
Compression Stack (cH)
Base Plate (s)

COMPRESSION VALVE
figure 3
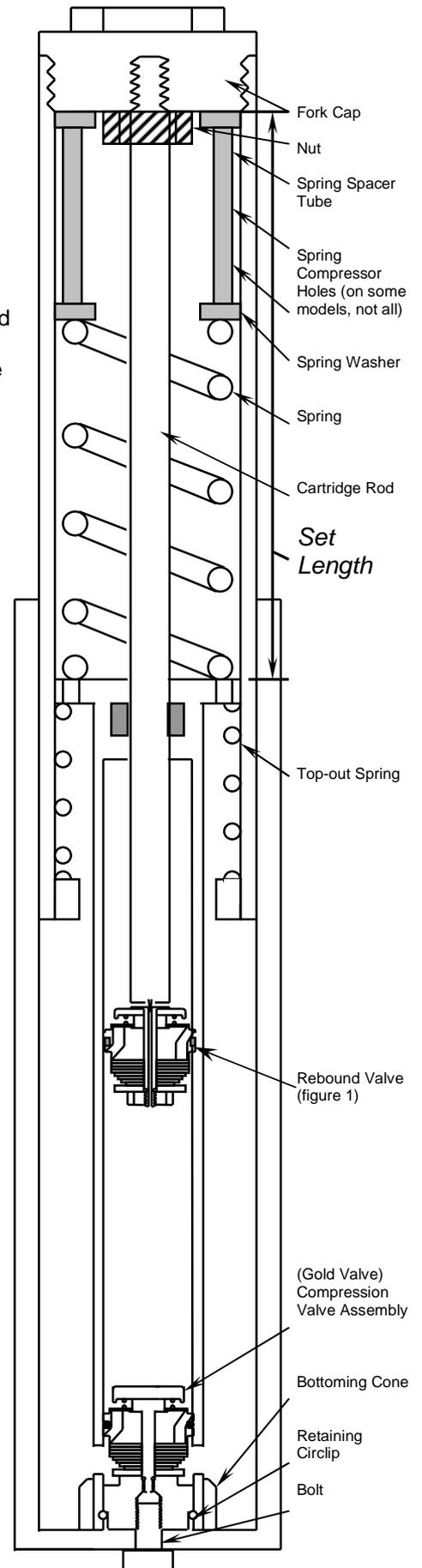
DAMPING ROD LEG (LEFT SIDE)

DISASSEMBLY

1 **Remove the damping rod.** An air impact and a long Allen socket helps a
lot. For stubborn bolts, use a drift and beat on the head of the damping rod bolt to
jar the threads loose.

   You will need to remove the Dust Seal, Circlip, Oil Seal, and Bushings as the
   Damping Rod will not slide out without complete fork leg disassembly. The fork tubes
   are "slide-hammered" apart after the Circlip is removed. Consult your owner's
   manual.

   On the Damping Rod, remove the 2 large washers at the bottom of the damping rod
   along with the spring and circlips that retain them. You will not need these for
   reassembly, leave them out. (This disables the anti-dive and is no longer necessary)

2 **Enlarge the top set of existing compression holes in the damping rod** to
8mm (5/16 inch) and add additional holes so you end up with four upper holes (2 sets
of 2 holes) (figure 4). **Leave the bottom set of holes alone.** When drilling the new
holes, space them lengthwise 7/16" (10mm). The new set of holes must be 90° to
the last set. Deburr the compression holes, inside and out. Do not modify the
rebound holes.

3 **Check the Emulator Valving**. The standard **pre-installed valving is a 64 lb/in
Emulator Valve Spring with 4 turns of Valve Spring Preload**. Check the
tightness of the jam nut on the Emulator.

ASSEMBLY

4 **Reassemble** the fork leg according to your manual. Remember to install the top-
out spring and aluminum bottom-out cone. Use manufacturers specs for damping
rod bolt torque.

5 **Set the fork spring preload** *by making the correct length spacer*.

   Preload is the amount the spring is compressed from fully extended
   when it is installed.

   Set Length is the installed length of the spring (with the fork fully extended).

   A **Measure the Set Length**:

      a. Drop the Emulator down the tube. It sits on top of the damping rod
      with the <u>Emulator Valve Spring facing up</u> and is held in place with the
      main fork spring (figure 4). Visually check to make sure the Emulator
      is sitting squarely on top of the damping rod.

      b. Extend the fork tube all the way. Use a Tape Measure and measure from
      the point the spring sits on the top of the Emulator to the top of the fork tube.

      c. Measure the Cap Height.

      d. Subtract the Cap Height from the distance to the top of the tube (step b). This is the
      Set Length.

   B **Cut a spacer** so the combined length of the spring, spacer and 2 spacer washers is 1" (25 mm) longer than the
   Set Length.

   C **Check the Preload**. Insert the fork springs into the fork tube on top of the Emulator. Install a fork spring washer.
   Place the new spring spacer tube into the fork leg. Then install another washer.

      Set the fork cap on the washer and measure from the top of the fork tube to the sealing lip on the fork cap
      ("preload" figure 1). This is a direct measurement of fork spring preload <u>for this leg only</u>.

   Note: You must have washers on both ends of the spacer. <u>The spacer must not rest directly on the spring or the cap</u>.

6 **Reassemble the forks** according to the procedure in your manual. This will include installation of the Seals and
Bushings. It is essential you use a Seal Driver (TFSD 46) or equivalent for proper installation.

7 **Install the fork fluid**. Bleed the fork by pumping the chrome tube. Install the Emulator and set the oil level to
5.1" (130mm) using 15wt fluid with the fork completely bottomed and the spring out.

Spring Preload

Fork Cap Height

Spacer Length
with Washers

Fork
Spring
Length

Emulator

Damping Rod

Rebound Holes
(leave stock)

Top-out Spring

Remove stock
Washers and
Spring

Compression
Holes (Drill to
four 8mm
Holes)

Bottom holes
(Stock)

10 mm

Damping Rod Allen
Bolt
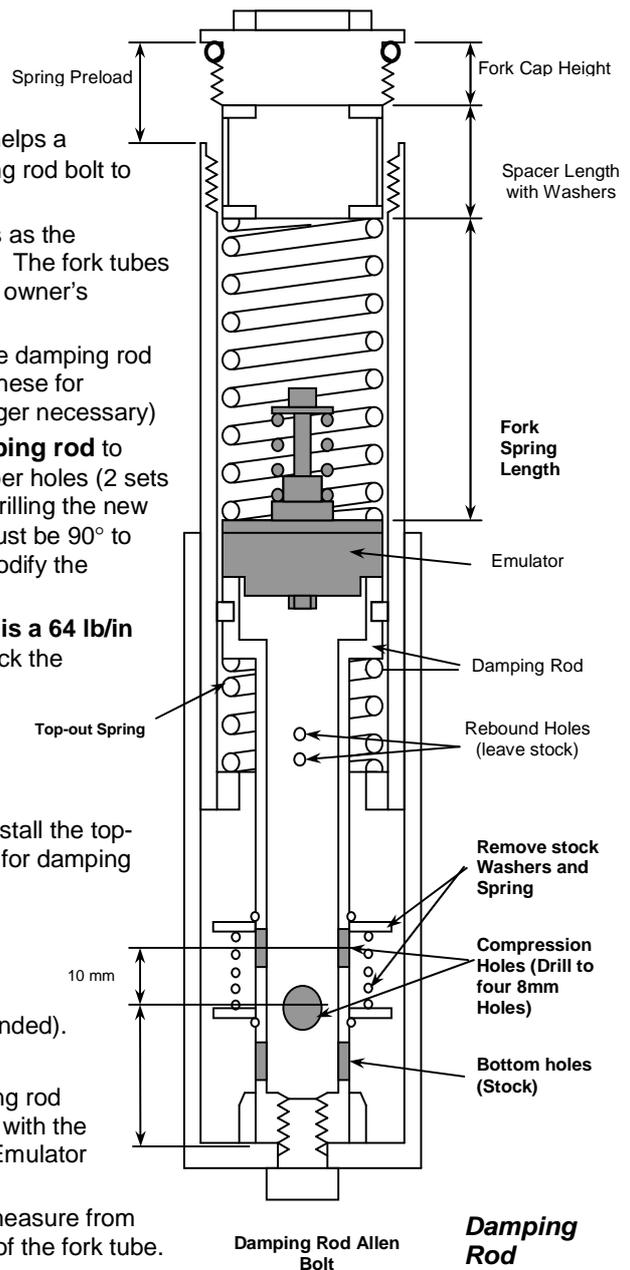
*Damping
Rod
figure 4*

8 **Finish reassembly** by installing the spring, washers and spacer. Before you install the cap, re-check the spring preload. This will indicate whether the Emulator is seated properly. Install the fork cap and, with the forks off the bike, push on it, checking for any unusual drag or bind that would indicate an improperly seated Emulator.

FORK INSTALLATION

When the forks are reinstalled on the bike it is very important to ***align the fork tubes on the axle*** so they won't bind. First, tighten the axle all the way, and then pump the forks with the right-hand axle clamp loose. Finally, tighten the axle clamp.

VALVING CHARTS - CARTRIDGE LEG

COMPRESSION VALVING - **pre-assembled with cH34** for aggressive

Sporting ride. *Adjust if desired using **optional cH32 valving** for more plush/softer ride.* **Stiffer →**

cH32 (plush)	cH33	cH34 (firm)	cH35
(2).15x17	(3).15x17	**(4).15x17**	(5).15x17
.10x15	.10x15	**.10x15**	.10x15
.10x13	.10x13	**.10x13**	.10x13
.10x12	.10x12	**.10x12**	.10x12
.10x11	.10x11	**.10x11**	.10x11
.10x10	.10x10	**.10x10**	.10x10
.10x9	.10x9	**.10x9**	.10x9

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

REBOUND VALVING - **rH19 is standard** contained in the included shim pack please verify correct order

upon installation at the rebound valve. ***Slower →***

rH17	rH18	rH19 (standard)	rH20
(6) .15x17	(7) .15x17	**(8) .15x17**	(9) .15x17
.10x15	.10x15	**.10x15**	.10x15
.10x12	.10x12	**.10x12**	.10x12
.10x9	.10x9	**.10x9**	.10x9

EMULATOR TUNING VARIABLES - DAMPING ROD LEG

VARIABLE	*Standard*	*Optional*	*Primary Effect*
Valve Spring Preload*	**4 Turns**	0 to 7 Turns	Overall firmness, controlling a mushy feel and the speed the front end dives under braking. ***Use 3 Turns for a softer ride or lighter riders on GL1800***
Oil Viscosity	**15wt**	10wt	Use oil viscosity to set rebound, this affects traction and stability: ***15wt in the left side Damping Rod Fork, 5wt in Right Side Cartridge Fork.***
Valve Spring Rate	**64 lbs/in**	40 lbs/in	Overall firmness and the ride on square shaped bumps

* Measured from zero preload (no tension) on the Valve Spring. To find zero preload back off on the adjuster bolt until the spring is loose then tighten it until the spring just touches. **EUMLATOR VALVE IS PRE-SET to 4 TURNS INITIAL SETTING**

If you would like assistance please contact the Race Tech Technical Support Hotline 951.279.6655