



## **Ceriani Replica GP38/GP38R forks**

### **Technical description**

This is an advanced racing replica of the GP38 forks. The legs are made from 6061 aluminium, mounted with CNC machined fittings, the stanchions are from CR-MO tubes, hard chromed. Optional aluminium or magnesium triple clamps with 200 mm center hole distance. Fully adjustable spring preload, compression and rebound damping (GP38R). The damping system of this fork is more complex than the original Ceriani was. It works via shim stacks, in spite of a simple damping piston and rod of the old orifice constructions. CR GP38R fork is designed with an ultimate damping system similar to the modern superbikes big piston forks, as you can see on the explosion drawing.

### **Sizes**

Length: 720 mm (optional 800 mm)

Stanchion diameter: 38 mm

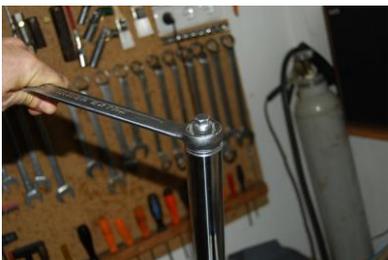
Spring rate: 40 lbs (optional 30 or 50 lbs springs are available)

Travel: 120 mm

Wheel axle size: 17/20 mm

Damping fluid: 250 ml each leg. Repsol Moto Fork Oil 10W recommended

### **Disassembling the fork**



Clamp the fork tube in a vise with soft jaws specifically designed to hold the fork tubes. Back off the spring preload adjuster. Loosen the cap, making sure to press down during the last few threads to prevent stripping or uncontrolled release.



Remove the parts from the fork tube (washer, spacer, another washer and the fork spring) Pour out the fluid, each leg consists 250ml.



Align the lock screw of the lower foot



Back off the compression and the rebound damping adjusters. Loosen the lower foot out of the slider. It is secured not only by the lock screw but by thread bound as well, maybe needs heating to remove it.



Now you can pull the lower foot with damping unit and the stanchion out of the slider.



Clamp the damping rod in a vise with soft tool (in our case it's two half of an aluminium tube with 17mm inner diameter). Loosen the lower foot.



Take the stanchion-damping unit out of the vise, remove the bottom-out cone from the damping rod.



Turn over the stanchion, so the damper can slide out of it.



Clamp the damping rod in a vise again and loosen the nuts of the damping piston



Remove the rebound valving and the damping piston



The rebound valving consists a certain collection of damping shims. Take care of their order, it can significantly influence the characteristic of the rebound damping.



The compression damping unit can be also removed from the lower foot.



The compression damping unit consists the damping piston with shim stack and the adjuster seat with screw.



The rebound damping adjuster unit adjusts the control rod by it's conical screw.



Dust seal, seal clip and oils seal can be removed from the slider for check and replace.

## Adjusting the GP38R forks

The GP38R is mounted with 40 lbs/inch springs. This is an optimal rate for a 120-140 kg lightweight racing bike with a 80 kg rider, a bit harder than a similar road legal bike, which have usually round 30 lbs springs. The springs are linear ones, progressive springs needs rather mx and road legal bikes. The damping valves via shim stacks working also linear, so it is easier to adjust it to the spring.

First have to adjust the spring preload. The static sag (moving of the front downward under the weight of the driver) should be 30 mm (1/4 of the total travel, which is 120 mm at the GP38R). Then adjust the rebound damping, with the lower adjusting screw on the slider. At the beginning adjust it to the middle of the possible 16 clicks, chose the 8-th. Check the damping pushing the bike at the triple clamp downwards. After it is compressed, will rebound and when reaches the top of it's stroke, it will barely overshoot and settle down to it's sag. If the rebound damping is too much, as it slowly reaches the top of the rebound stroke it stops all movement. If it too little, the fork rebound nearly as fast as you can remove your hand and when it reaches the top of its stroke, moves back down again and oscillates two or more times. The second and best way to go testing on the track. Check first the spring preload: fit a cable tie on to the stanchion and after a few laps extensive riding check its travel. The best if it use 80-90% of the whole travel. If it reaches 100% (bottoms on bumps or at brake distances), give more preload. Then take the damping. I usually turn 3 clicks at once, by one click you can't feel definite difference. After proving the direction was good, you can refine the adjustment. Start with the rebound. If you give more rebound damping (turn to „slow”), the fork can lead to packing. This means between two or more bumps the suspension doesn't return far enough, the travel becomes less and less, this can reduce traction as well as make for a harsh ride. Opposite direction (fast) makes less rebound, you feel loose control, handshakes, may be chatters.

Finally you adjust the compression damping with upper adjusting screw on the slider. You can't test it by pushing the fork by standing bike, only by riding on the track. When there is too much compression damping, you will feel the ride harsh over moderate and even small bumps. In the case of too little compression damping the front end will dive quickly under braking, can have an overall mushy or vague feel and may bottom easily.

It's hard to give objective advice on how to adjust a suspension: Each rider has different preferences. A perfect setup, that works for everyone, really does not exist. With tips above you would like to find the best setup for your own riding style. The proper setup also depends on the character of the race track: riding on purposeful built race track requires stiffer suspension with much rebound damping, while racing on country roads generally needs looser forks and shocks.

Finally an other important detail of the triple clamp. The original Ceriani had 65 mm offset, which fitted to the period 19 inch wheels and the relatively smooth 62-63 degree rake. But nowadays riders, riding on short circuits, are preferring 18 inch wheels and 66-67 degree rake, what results dramatically less (about 40-50mm) trail by using original size yokes. We recommend our triple clamps with 45 mm offset to keep about 90 mm trail designed for the modern 66-67 degree rake. Please consider this by constructing your frames.

### Parts list GP38R

item	description
1	lower foot
2	screw
3	rebound adjuster bushing
4	rebound adjuster screw
5	steel ball
6	small spring
7	adjustment nut
8	rebound adjuster seat
9	o ring
10	o ring
11	compression adjuster screw
12	compression damping piston
13	o ring
14	compression adjuster seat
15	lock screw
16	steel ball
17	small spring
18	one-way valve srew
19	o ring
20	control rod cone
21	control rod
22	rebound spring
23	sleeve
24	nut
25	control rod spring
26	bottom-out cone
27	damping rod
28	connecting shaft
29	teflon ring

item	description
30	piston
31	shim stack
32	nut
33	spacer
34	mudguard stay
35	dust seal
36	seal clip
37	oil seal
38	spacer of oils seal
39	outer bushing
40	fork slider
41	inner bushing
42	support sleeve
43	support seat
44	splinter
45	support ring
46	stanchion
47	o ring
48	o ring
49	spring preload adjustment seat
50	spring preload adjuster
51	shim
52	spring support seat
53	shim
54	circlip
55	spring support spacer
56	spring support washer
57	fork spring
58	fork leg

