

# WARP

## Model Year 2004

### Owners Manual

August 2003



#### Dual Suspension bike

- FluidForm™ AluxX 6061 aluminium frame material
- Cantilever rear suspension system
- Sealed bearings in main pivots
- 2 rear shock positions for 4.6" and 5.3" rear wheel travel
- Coil spring oil damping rear shock

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## **1. Introduction.**

Giant's products are designed to provide years of recreation and enjoyment.

The Giant WARP has been designed primarily as sports and recreation bike, with lightweight, comfort, and high efficiency riding features.

Warp is NOT a heavy duty or competition off road mountain bike. It's a "fun" bike that can be ridden off road as well.

However, in order to fully understand all the bicycle features, you must read this bicycle manual, the suspension fork manual and other manuals provided by Giant and parts suppliers. If you do not understand any information in the manuals or if you misplace any of them, please contact your authorised Giant dealer immediately.

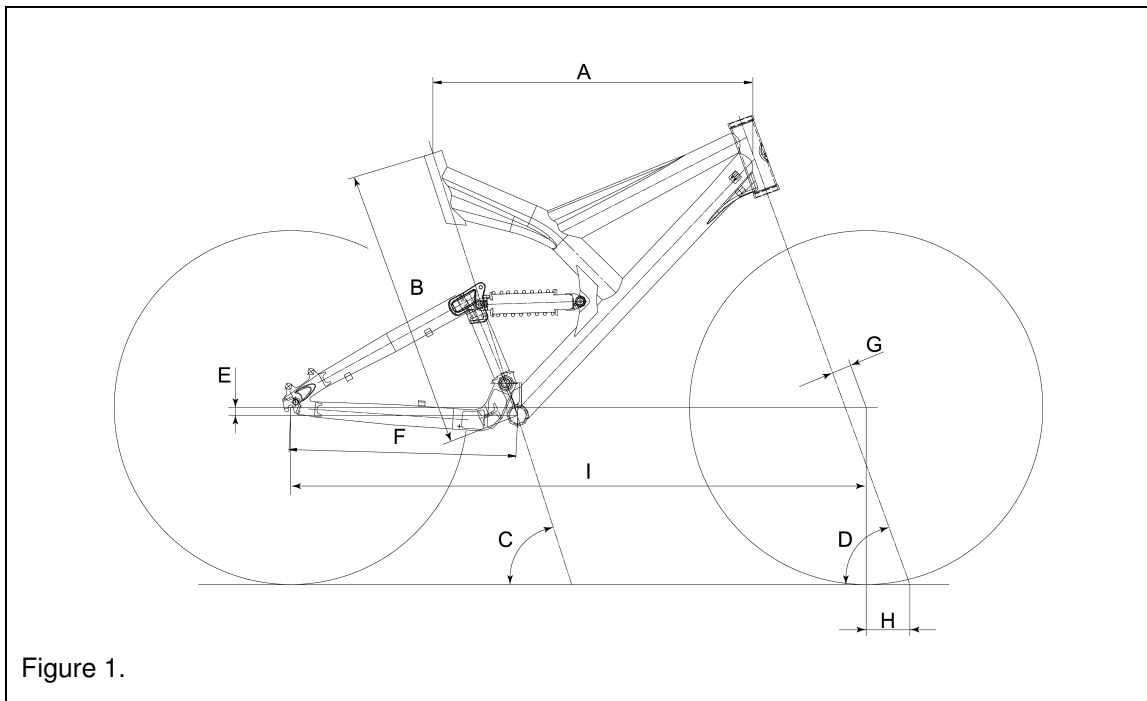
Please take the time to read and understand this material to help limit the possibility of serious injury.

**ALWAYS** read and follow all instructions in this manual.

It is very important that your dealer carries out any repair or maintenance, which is not described in this manual.

## 2. Sizing.

The actual frame measurements and geometries are listed below (see figure 1).



Size	S - 16.5"	M - 18.5"	L - 20.5"
A Top Tube [mm.] (measured horizontally)	570	590	605
B Seat Tube [mm.]	420	470	520
C Seat Angle	72 degrees		
D Head Angle	70 degrees		
E B.B. Drop [mm.]	15		
F Chain Stay [mm.]	430		
G Fork Rake [mm.]	45		
H Trail [mm.]	76		
I Wheel Base [mm.]	1058	1080	1095
Front wheel travel [mm.]	100 mm.		
Rear wheel travel [mm.]	4.6 ~ 5.3 inches or 115 ~ 135 mm.		

### 3. Exploded view.

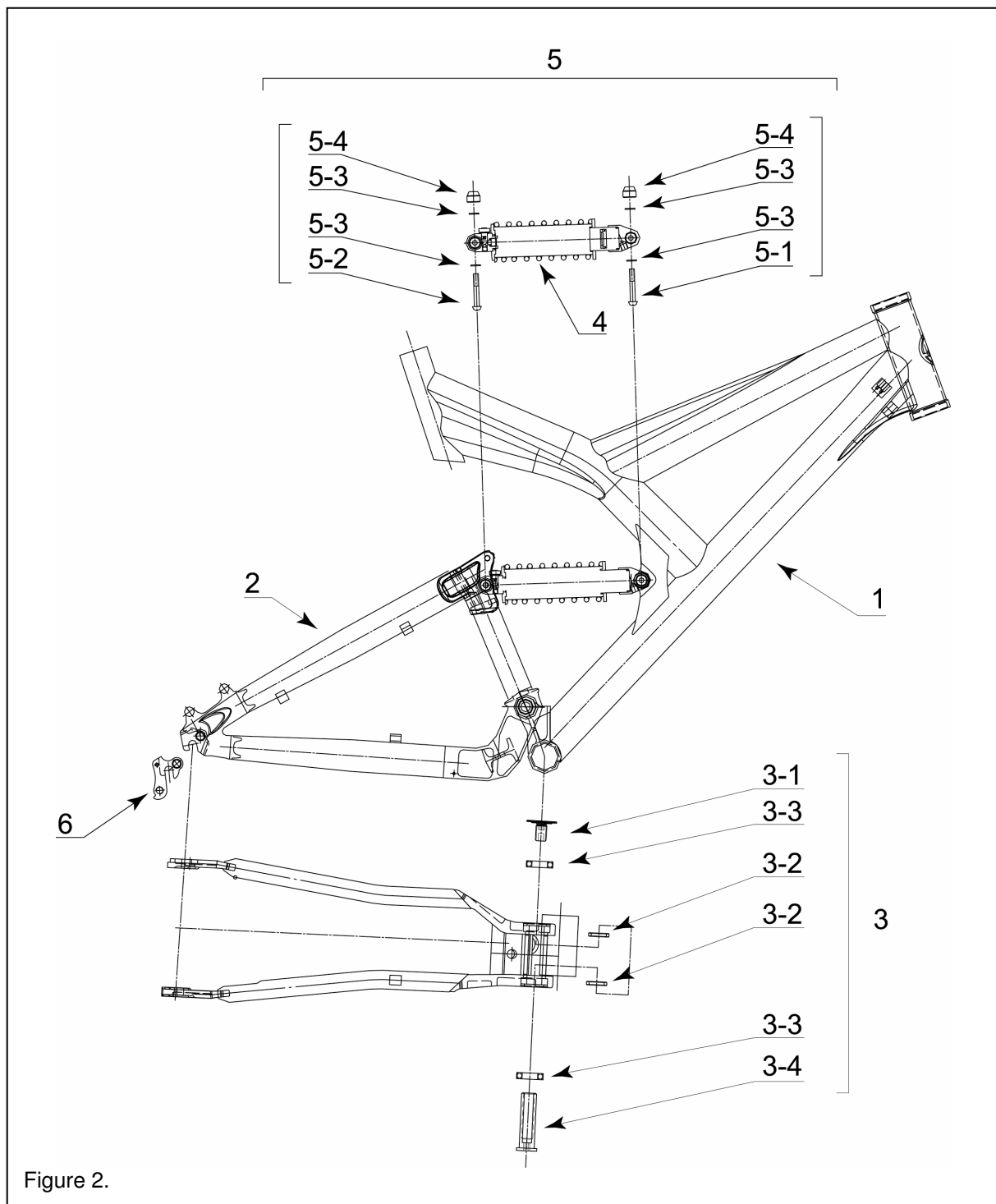


Figure 2.

NR.	DESCRIPTION	REMARKS	Q'TY PER BIKE
1	Front triangle		1
2	Rear triangle		1
3	Pivot parts set	Chain stays - bottom bracket	1
	3-1 Fixing bolt	1 pc. per set	
	3-2 Spacer	2 pcs per set	
	3-3 Bearing	2 pcs per set	
	3-4 Nut	1 pc. per set	
4	Rear shock	Incl. hardware and coil spring	1
5	Shock fixing set		1
	5-1 Fixing bolt front	1 pc. per set	
	5-2 Fixing bolt rear	1 pc. per set	
	5-3 Washer	4 pcs per set	
	5-4 Nut	2 pcs per set	
6	Replaceable dropout		1

## 4. Rear suspension.

The rear suspension for a Giant Warp bicycle is provided by a Giant HV coil spring shock. For a description of the HV coil spring shock, refer to section 4-2: "Giant HV coil spring shock".

**WARNING: Improper adjustment of rear suspension shock can result in unstable conditions or loss of control.**

There are no serviceable parts inside this rear shock unit. For maintenance, repair or service, return only to an authorised Giant dealer (or call the Giant distributor in your country) once a year or more often if the bike is used in extreme conditions.

This service is not necessarily free of charge!



**WARNING:**

**All service and maintenance of the rear shocks should only be performed with proper tools by an authorised Giant dealer or by the Giant distributor in your country. Do not disassemble or otherwise modify the shock unit or attachments. Doing so will not only void all warranties but can lead to serious injury or death.**

### 4-1 Selecting rear travel: 2 rear shock positions.

Warp bikes have 2 possibilities to mount the rear shock unit, to offer the rider the choice of 2 different rear suspension characteristics, depending on personal preference and the conditions of the course.

Lower shock position results in a 5.3" maximum rear wheel travel.

Upper shock position results in a 4.6" maximum rear wheel travel.

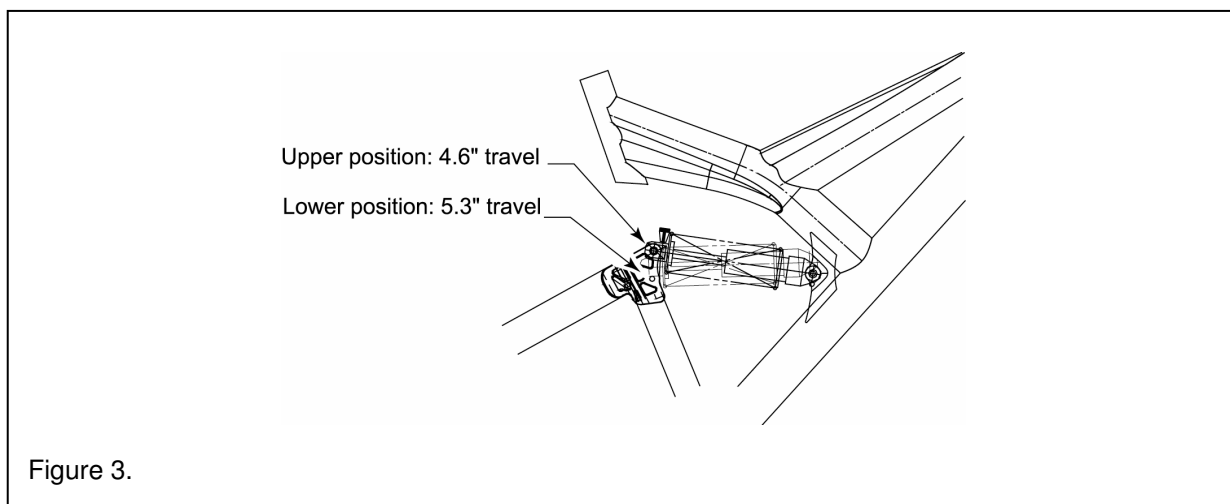


Figure 3.

How to change the position of the rear shock:

1. Use a 5 mm. Allen-key and a 10 mm. wrench to remove the bolt that holds the back side of the shock to the rear triangle. Take note of the position of each part when removing, to insure proper re-assembly.
2. Pivot the top of the shock towards the desired shock mounting holes in the linkage plates. See figure 3 which holes to use for 4.6" and 5.3" rear wheel travel.
3. Re-install all parts in reversed order.  
The threads of fixing bolt should be cleaned and re-set using Loctite™ Primer (#7649) and Loctite™ blue Removable Threadlock (#242) or similar material.  
Recommended tightening torque of the fixing bolts: 9~11 Nm.

**WARNING:**

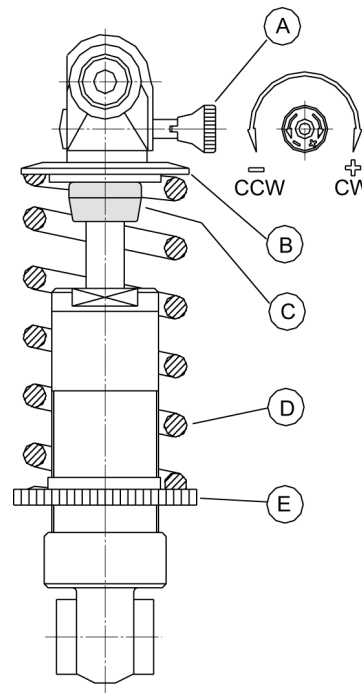
**IMPROPER (DIS)ASSEMBLY MAY RESULT IN DAMAGE TO THE BICYCLE OR IN AN ACCIDENT WHICH CAN CAUSE SERIOUS INJURY OR DEATH.**

## **4-2 Giant HV coil spring shock.**

Giant Warp bikes are equipped with Giant HV coil spring type rear shocks. The drawing below shows such a rear shock.

Figure 4.

- A = Rebound damping adjust knob
- B = Pre-load spring washer
- C = Bumper
- D = Pre-load spring (coil spring)
- E = Knurled compression ring



The shock has a compression adjustment ring (knurled compression ring E) to set “SAG” and to pre-load the spring (D). It has an external knob (A) to control an internal oil piston that regulates the rebound damping.

Softer and stiffer spring rates are available for these rear suspension shocks through your local authorised Giant dealer.

For service in your country please also contact your dealer or the Giant importer in your country.

## **4-3 Setting pre-load and “SAG” adjustment.**

Adjustment of the pre-load on the coil spring rear shock is simple. Looking at the front of the bike and the front of the shock, facing the rear of the bicycle, follow these procedures:

For a stiffer spring, turn the knurled compression ring (E) clockwise to compress or load the spring.  
For a softer spring, turn the knurled compression ring (E) anti-clockwise to relax or unload the spring.

“SAG” is the amount of shock travel that is used as the rider sits stationary on the bike and allows the bicycle to perform as it was designed to. Typically, SAG is 25 - 30 % of all available travel.

To properly set the SAG, you will need a flat screw driver, measuring tape and/or calliper.

Step 1. Prepare the bicycle. Set the saddle to the correct height for your riding style.  
Attach all accessories, bags, water bottles, etc. that you would normally ride with.

Step 2. Prepare yourself. Dress as you would for a normal ride, including helmet, cycling bag, etc.

Step 3. Use a flat screw driver or the like to slide bumper (C) of the shock piston against the main body of the rear shock unit.

Step 4. Measure the distance "L".

Step 5. Sit on your bicycle with your feet on the pedals in your normal riding position.

Step 6. Come off from your bike without causing too much movement in the bike. Check the rear shock and you will see that the bumper (C) has been moved along the piston.

Measure the distance between the main body and the bumper.

This distance should be approx. 25 - 30 % of the distance "L" measured during step 4.

Adjust the compression adjustment ring (knurled compression ring E) as described above and repeat steps 3 - 6 until you have reached this.

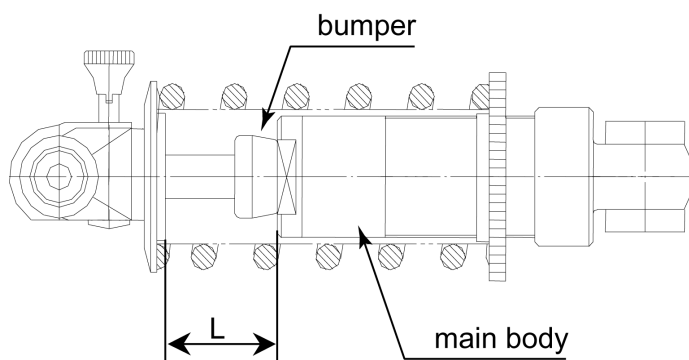


Figure 5.

**WARNING:**

**Never compress the spring so far as to leave less than 1/2" of threads showing (between the knurled compression ring E and the pre-load spring washer B). If the pre-load you require allows less than 1/2" of threads showing you may require a higher rated spring. Contact your authorised Giant dealer for optional replacement springs.**

#### **4-4 Changing the coil spring.**

Softer and stiffer spring rates are available for these rear suspension shocks through your local authorised Giant dealer or the Giant importer in your country.

#### **WARNING:**

**Do not try to disassemble or to replace the rear shock coil spring by yourself!**

**Improper (dis)assembly may result in damage to the bicycle or in an accident which can cause serious injury or death. Only an authorised Giant dealer should replace the coil spring.**

#### **4-5 Damping adjustment.**

The rear shock includes a rebound damping adjust knob (figure 4).

Rebound adjustment:

The rebound controls the extension or return of the shock. The shock's rebound is quickest when the adjust knob (A) is in the full anti-clockwise position. Rebound is slowest when the adjust knob is in the full clockwise position.

Symptoms of too much rebound damping:

Slow shock return, where the shock feels good through the first few bumps and gets harder as you continue, means there is too much rebound damping. In addition, while braking, the rear wheel will tend to skip over the bumps ("pack up"). To adjust it for more consistency and better braking, turn the rebound knob a half turn anti-clockwise and test it again.

Symptoms of too little rebound damping:

Too little rebound damping is when the shock returns too fast and the bike seems to want to "buck you off" or the rear wheel skips easily over bumps. Turn the rebound knob a half turn clockwise to slow the rebound down for more consistency and better braking through the bumps.

#### **4-6 Rear suspension tuning.**

Giant Warp dual suspension bicycles are equipped with front and rear suspension that offer multiple adjustment and tuneability. Adjustment of your suspension is subjective and cannot be fully prescribed by Giant. If you need help, contact your local authorised Giant dealer.

Different riders require different performance characteristics from their suspension.

- A. Heavier or more aggressive riders need a stiffer spring and heavier (slower) damping.
- B. Lighter riders need a softer spring and lighter damping.
- C. For a firmer ride while descending or hill climbing on smooth surfaces, compress or load the spring.
- D. For a softer ride while riding cross country, relax or unload the spring.

#### **WARNING:**

**Never compress the spring so far as to leave less than ½" of threads showing (between the knurled compression ring E and the pre-load spring washer B). If the pre-load you require allows less than ½" of threads showing you may require a higher rated spring.**

Standard shock spring rates and recommended rider weight ranges.

Below is a chart showing the standard spring rates, and the recommended spring rates for different weight riders (shock model Giant HV, length 190 mm.).

Giant frame size	Spring rate	Range weight rider
16.5"	500 lb/in	50~70 kg (110~154 lb)
18.5"	600 lb/in	70~90 kg (154~198 lb)
20.5"	700 lb/in	90~110 kg (198~242 lb)

Frame size 16.5" comes with a 500 lb/in spring, frame size 18.5" with a 600 lb/in spring and frame size 20.5" with a 700 lb/in. spring. .

Softer and stiffer coil springs are available through your authorised Giant dealer.

#### **4-7 Removing the rear shock assembly or pivot.**

It is necessary to periodically check the rear shock unit and the suspensions' pivot points for damage or wear. The rear shock unit should be returned to an authorised Giant dealer or to the Giant distributor in your country to inspect and repair.

(Note: this is not covered under the terms of the warranty).

#### **WARNING:**

**Do not try to disassemble or to replace the rear shock or pivot by yourself !**

**Improper (dis-)assembly may result in damage to the bicycle or in an accident which can cause serious injury or death. Only an authorised Giant dealer should disassemble the rear shock or pivot.**

## 5. Tightening torque.

The bolts used for the rear suspension (rear shock and pivots) are high-grade products and have been tightened in the factory with specific torque. If it is necessary to remove or tighten the bolts, extreme care should be taken when re-tightening them.

All bolts should be cleaned and re-set using Loctite™ primer (#7649) and Loctite™ blue Removable Threadlock (#242).

For the location and tightening torque of all bolts please refer to the illustration below (fig. 6).

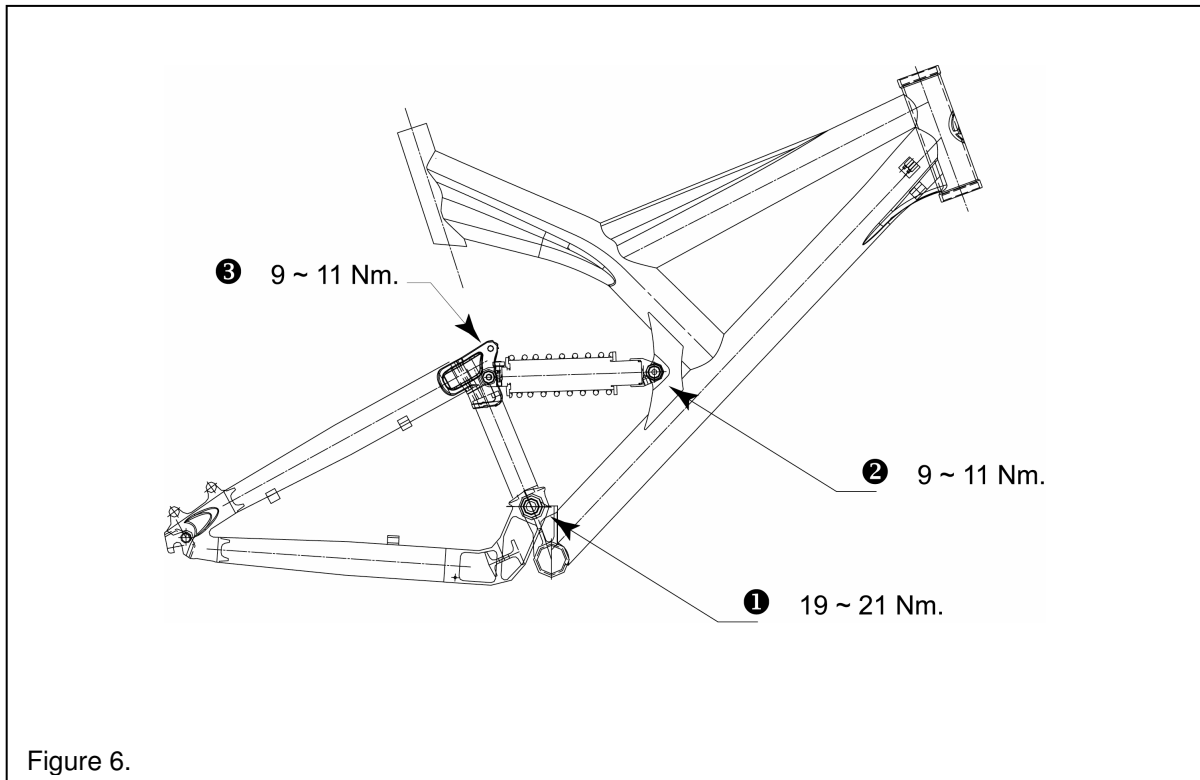


Figure 6.

Location	Tools needed	Recommended tightening torque
❶ Main pivot (BB - chain stays)	8 mm. Allen-keys, 2x	19~21 Nm.
❷ Front shock mount	5 mm. Allen-key, 10 mm. wrench	9~11 Nm.
❸ Rear shock mount	5 mm. Allen-key, 10 mm. wrench	9~11 Nm.

## 6. Cleaning and maintenance.

Proper maintenance of a GIANT WARP dual suspension bicycle is important to insure years of trouble free safe riding and enjoyment.

We recommend taking this bike to your authorised Giant dealer for periodic service and inspection of suspension systems. Parts such as seals, elastomer bumpers and bearings can be adversely affected by use, dirt and ultraviolet radiation.

The rear shock unit should be returned to an authorised Giant dealer every year for inspection.

DO NOT use high-pressure water or air hoses to clean bike. This can force dirt into areas, which may cause damage.

DO NOT lubricate any of the pivot points. These are high quality self lubricating Teflon™ or similar surfaced pivots.

See also the manuals of the suppliers of the suspension fork and other parts that come with this Giant bike.

Bicycles and bicycle components are more complex than ever before. It is very important that your dealer carries out any repair or maintenance, which is not described in this manual. Consult your dealer for help in determining your maintenance needs.

How much of your bike's service and maintenance you can do depends on your skill and experience, and whether you have the special tools required. If you want to learn how to work on your bicycle ask your dealer for advice on a suitable book and local bicycle repair courses.

### **Warning.**

**Many bicycle service and repair tasks require special knowledge and tools. Do not begin any adjustments or service on your bicycle if you have the slightest doubt about your ability to properly complete them. Improper adjustment or service may result in damage to the bicycle or in an accident which can cause serious injury or death.**