

AC

Owners Manual

July 2003.



ALL CONDITIONS MOUNTAIN BIKE

- Multi purpose, extreme Freeride mountain bike
- 4 bar linkage rear suspension
- Frame compatible for chain tension device, bash ring, 2.5" tires
- Disc brake compatible
- Manitou Swinger SPV Coil over rear shock unit (included)
- Chain guard, chain tension device (included)
- Optimized saddle height adjustment
- Sealed bearings on all pivots
- 2 rear shock positions
- Rear wheel travel: 5.3 ~ 6.6 inches (approx. 135 ~ 165 mm).

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1. Introduction.

Giant's products are designed to provide years of recreation and enjoyment. The GIANT AC have been designed primarily as "All Conditions" Freeride bikes.

However, in order to fully understand all the bicycle features, you must read this bicycle manual, the suspension fork and rear shock 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.

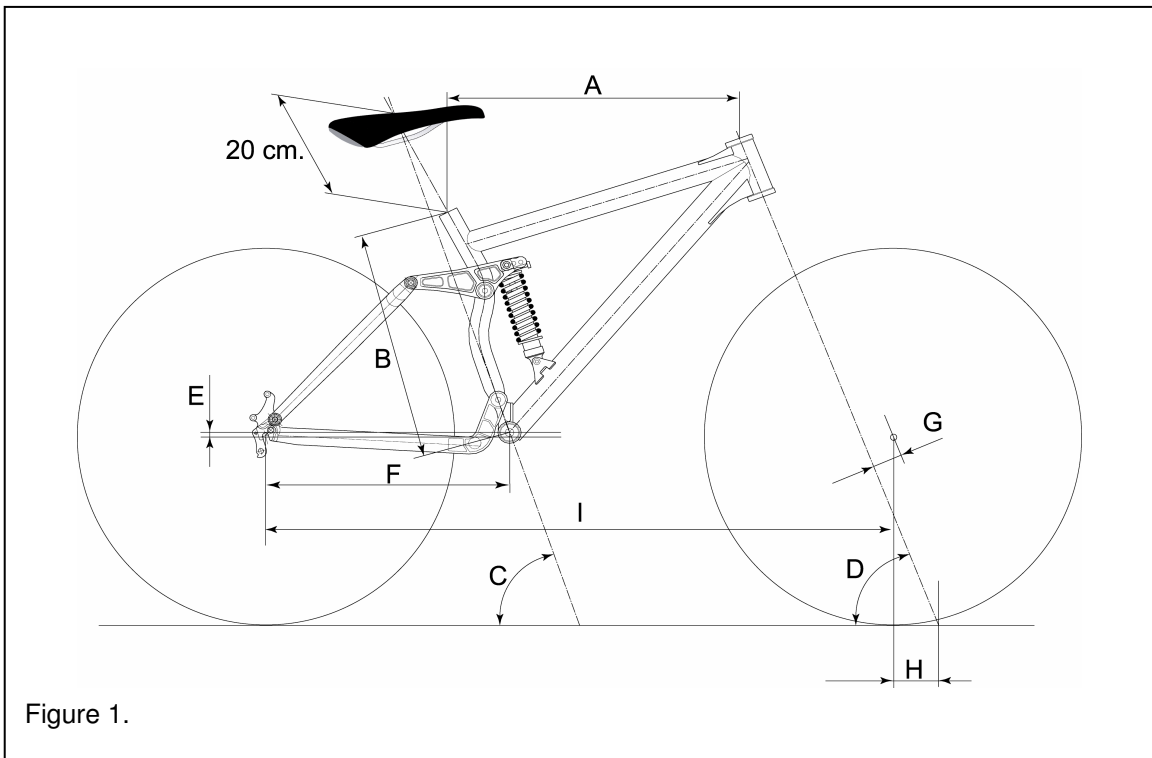
Please take the time to read and understand this material to help limit the possibility of serious injury.

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.



Size	S - 17"	M - 18"	L - 19"
A. Top tube [mm.] (measured horizontally)	565	585	605
B. Seat tube [mm.]	430	455	480
C. Effective seat tube angle (*1)	71.6 degrees		
D. Head tube angle	69 degrees		
E. B.B. drop [mm.]	-14.8		
F. Chain stays [mm.]	430		
Center B.B. axle - center front wheel [mm.]	631	652	673
G. Fork rake [mm.]	43		
H. Trail [mm.]	88		
I. Wheel base [mm.]	1060	1080	1100
Front wheel travel (AC bikes)	90~130 mm.		
Rear wheel travel	5.3~6.6" or 135~165 mm.		

(*1) Effective seat tube angle:

Angle of centerline bottom bracket - saddle

(top of saddle 20cm above top seat tube, measured along the seatpost).

3. Exploded view.

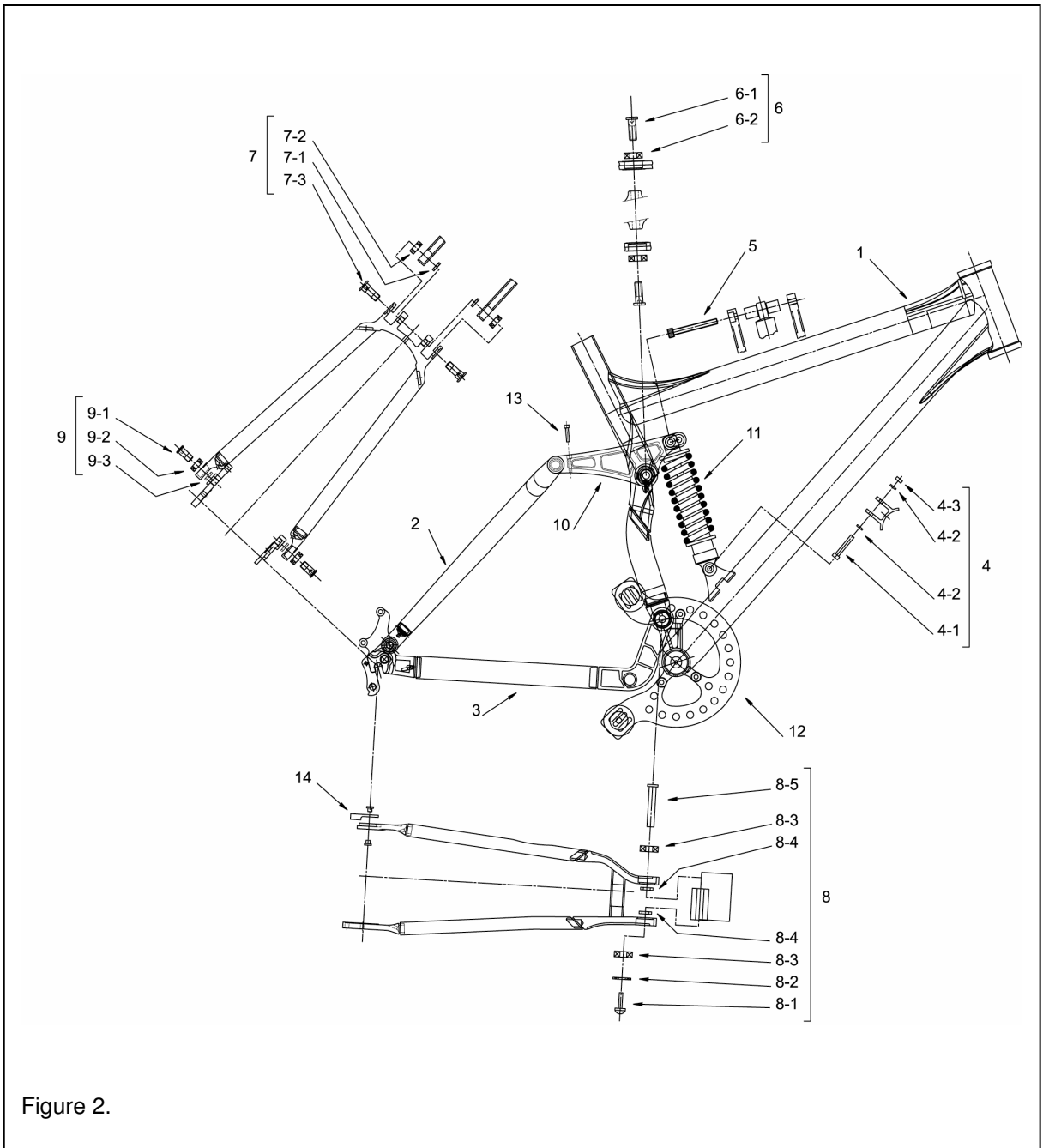


Figure 2.

NR.	DESCRIPTION	REMARKS	Q'TY PER BIKE
1	Front triangle		1
2	Seat stays		1
3	Chain stays		1
4	Lower shock mount	Set	1
	4-1 Fixing bolt M6x1x40mm.	1 pc. per set	
	4-2 Washer 13.5x6.4x1.2mm.	2 pcs per set, same as 8-2.	
	4-3 Nut M6	1 pc. per set	
5	Fixing bolt upper shock mount	M8x1.25x65mm.	1
6	Pivot parts set	Seat tube - linkage plates	2
	6-1 Bolt M10x1	1 pc. per set	
	6-2 Bearing	1 pc. per set	
7	Pivot parts set	Seat stays - linkage plates	2
	7-1 Washer 14x10x3mm.	1 pc. per set, same as 9-3.	
	7-2 Bearing	1 pc. per set, same as 9-2.	
	7-3 Fixing bolt 10x27/29mm.	1 pc. per set	
8	Pivot parts set	Chain stays - bottom bracket	1
	8-1 Fixing bolt M6x1x14mm.	1 pc. per set	
	8-2 Washer 13.5x6.4x1.2mm.	1 pc. per set, same as 4-2	
	8-3 Bearing	2 pcs per set	
	8-4 Washer 18x10.1x3.5mm.	2 pcs per set	
	8-5 Nut 67mm. alu.	1 pc. per set	
9	Pivot parts set	Seat stays - dropouts	2
	9-1 Fixing bolt 10x20.5/22.5mm.	1 pc. per set	
	9-2 Bearing	1 pc. per set, same as 7-2.	
	9-3 Washer 14x10x3mm.	1 pc. per set, same as 7-1.	
10	Linkage plates	Set L and R	1
11	Rear shock	Incl. hardware	1
12	Chain guard	CG01	1
13	Bolt M4 for linkage plate bearing		2
14	Replaceable dropout	Incl. bolt and nut	1

4. Rear suspension.

The rear suspension for your Giant AC bicycle / frame kit is provided by a Manitou Swinger SPV 3-way adjustable coil spring shock.

For a description of the coil spring shock, see <http://www.answerproducts.com> or the Manitou owner's manual that comes with your bike or frame kit.

WARNING:

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

4-1 Adjusting travel.

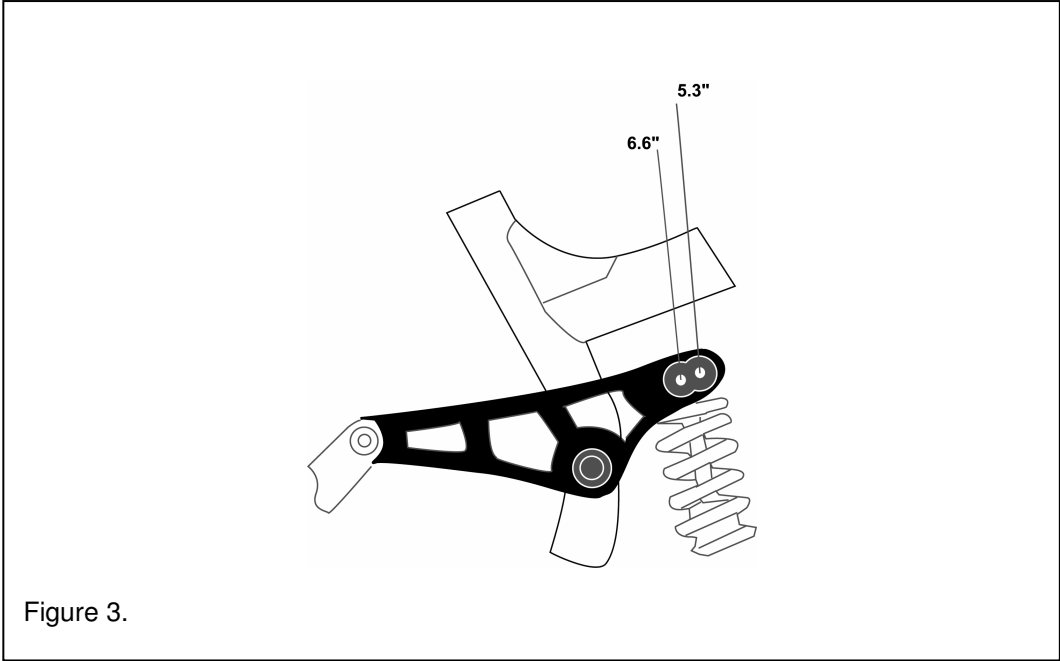
Your Giant AC bicycle gives you the ability to change the rear wheel travel with minimal effort. This is accomplished by multiple positions for the upper shock pivot bolt (see figure 3 below).

To change the travel:

1. Using a 6 mm. Allen-key, remove the upper shock mounting bolt.
2. Pivot the shock backward or forward to align the eyelet with one of the holes.
 - The most forward position is for 5.3" travel.
 - The position closest to the seat tube is for 6.6" travel.
3. The threads of fixing bolt should be cleaned and re-set using Loctite™ Primer (#7649) and Loctite™ blue Removable Threadlock (#242) or similar material.
Install the bolt and tighten to the proper torque of 10-12 Nm.
4. After any adjustment is made to travel, you will need to readjust all spring pre-load settings described in the following sections.

WARNING:

Improper (dis-)assembly may result in damage to the bicycle or in an accident which can cause serious injury or death.



4-2 Coil over shock.

Below is a chart showing the standard spring rates for different frame sizes.

Giant frame size	Manitou Swinger SPV spring rate
17"	400 lbs./in.
18"	450 lbs./in.
19"	500 lbs./in.

Softer and stiffer spring rates are available for these rear suspension shocks either through your authorised Giant dealer or directly from the manufacturer (Manitou).

If you need to change your spring, contact your local authorised Giant dealer or the Giant importer in your country.

The rear shocks are serviceable and must be returned for maintenance, repair or service, only to an authorised Manitou dealer (or the Manitou 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 Manitou dealer or by the Manitou distributor in your country.

4-3 Changing the coil spring.

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.

4-4 Removing the rear shock assembly or pivots.

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 Manitou dealer or to the Manitou 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 a 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 pivots.**

5. Chain tension device.

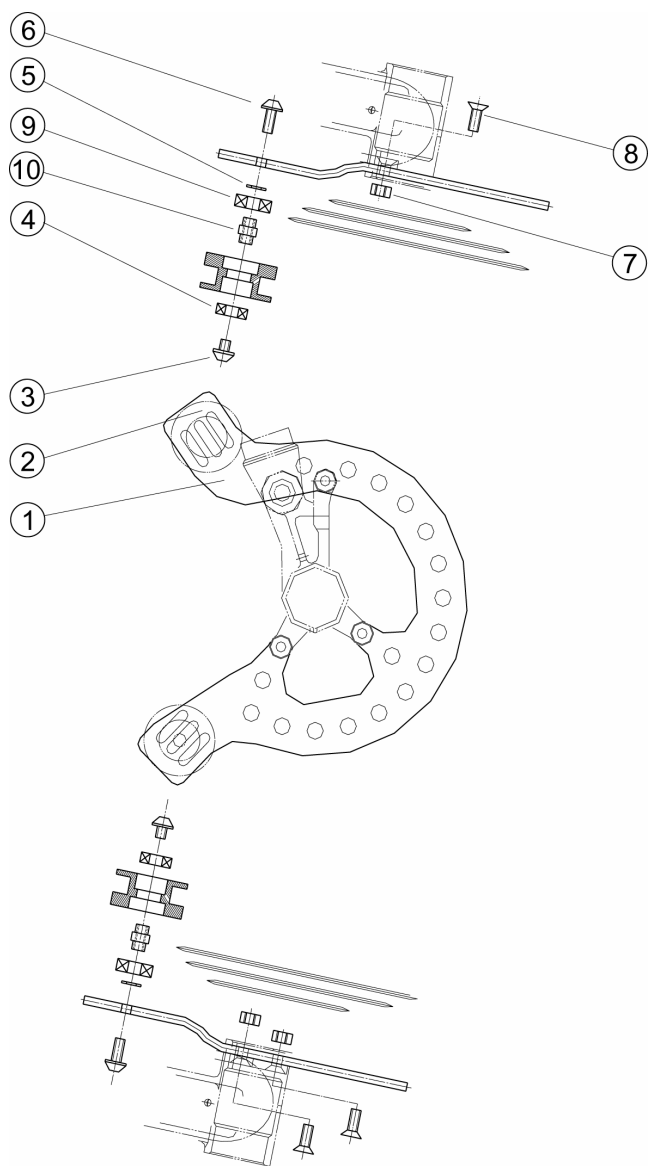


Figure 4.

Nr.	Description	Qty.
1	Body, aluminium	1
2	Roller (pulley)	2
3	Bolt M6x8mm. with washer	2
4	Roller bearing 6x19mm.	2
5	Washer 13x6.4x1.2mm.	2

Nr.	Description	Qty.
6	Bolt M6x16mm. with flat washer	2
7	Nut M6 with nylon ring	3
8	Taper bolt M6x17.5mm.	3
9	Roller bearing 7x22mm.	2
10	Shaft, steel	2

5-1 Assembly.

The AC chain tension device is designed to be easily installed and removed to/from the frame. It can be installed with all 3 chain rings (chain on the largest ring) or a single chain ring on the crank arm. To insure proper chain and (rear) shifting function, keep the chain line at 57mm.

Installation:

1. Insert the taper bolt (8) through the bottom bracket shell mount and aluminium body (1).
The bolt must come in from the non-drive (LH) side.
2. Install nut (7) and tighten firmly.
3. Repeat step 1 and 2 for additional two bolt assemblies.
4. With the chain in the largest sprocket on the rear cassette, the upper roller's groove should just rub the top of the chain.
5. The lower roller's groove should have the chain wrap smoothly around it after exiting the chain wheel (about 7 o'clock position).
6. Do not put any tension on the top of the chain, the bottom roller will supply the chain tension.
The top roller serves only as a guide.

Warning!

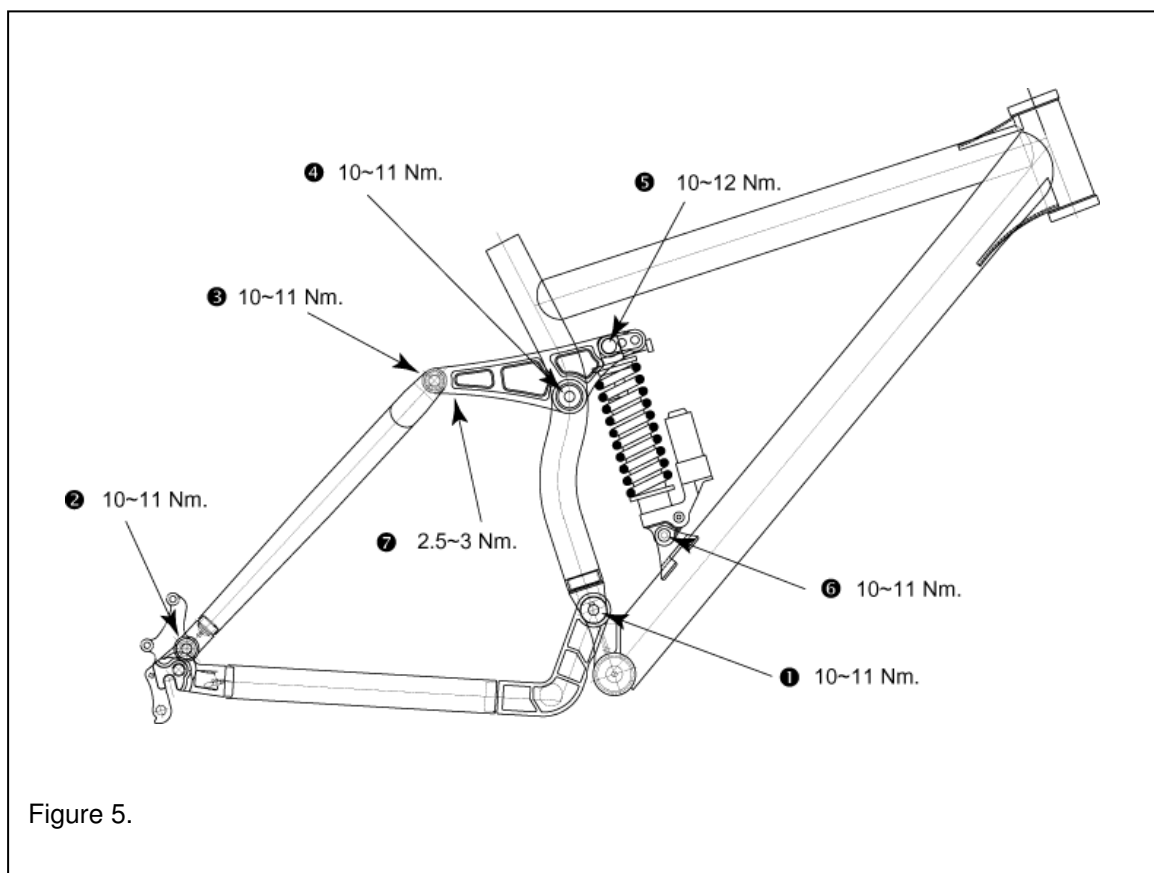
- Rollers need to be tightened on both sides simultaneously before each use.
- Check and adjust all hardware.
- All bolts should be cleaned and re-set using Loctite™ primer (#7649) and Loctite™ blue Removable Threadlock (#242).

6. 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. 5).



Location		Tools needed	Recommended tightening torque
①	Main pivot (BB - chain stays)	5 mm. Allen-keys, 2x	10~11 Nm.
②	Chain stays - seat stays pivots	5 mm. Allen-key	10~11 Nm.
③	Seat stays - linkage plates pivots	5 mm. Allen-key	10~11 Nm.
④	Linkage plates - seat tube pivot	5 mm. Allen-key	10~11 Nm.
⑤	Upper shock mount	6 mm. Allen-key	10~12 Nm.
⑥	Lower shock mount	5 mm. Allen-key, 10 mm. wrench	10~11 Nm.
⑦	M4 bolts linkage plate bearings	4 mm. Allen-key	2.5~3 Nm.

7. Cleaning and maintenance.

Proper maintenance of a Giant AC 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 bike should be returned to an authorised Giant dealer for front fork and rear shock inspection and adjustment once a year or more often if the bike is used in extreme conditions.

(Note: this is not covered under the terms of the warranty and is not necessarily free of charge!).

DO NOT use high-pressure water or air hoses to clean bike. This can force dirt into areas that 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, rear shock, and other parts that come with this Giant AC bike / frame.

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.