

# Lefty Oliver (40mm)

## Owner's Manual Supplement

 **WARNING**

**READ THIS SUPPLEMENT AND YOUR  
CANNONDALE BICYCLE OWNER'S MANUAL.**  
Both contain important safety information. Keep  
both for future reference.

## Safety Messages

In this supplement, particularly important information is presented in the following ways:

**WARNING**

Indicates a hazardous situation which, if not avoided, may result in death or serious injury.

**NOTICE**

Indicates special precautions that must be taken to avoid damage.

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## Cannondale Supplements

This manual is a “supplement” to your [Cannondale Bicycle Owner’s Manual](#).

This supplement provides additional and important model specific safety, maintenance, and technical information. It may be one of several important manuals/supplements for your bike; obtain and read all of them.

Please contact your Authorized Cannondale Dealer immediately if you need a manual or supplement or have a question about your bike. You may also contact us using the appropriate country/region/location information.

You can download Adobe Acrobat PDF versions of any manual/supplement from our website: <http://www.cannondale.com>.

## Contacting Cannondale

### Cannondale USA

1 Cannondale Way  
Wilton, CT 06897, USA  
1-800-726-BIKE (2453)

### Cannondale Europe

Geeresteinselaan 57  
3931JB Woudenberg  
The Netherlands

## International Distributors

Consult our website to identify the appropriate Cannondale Dealer for your region.

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## Your Cannondale Dealer

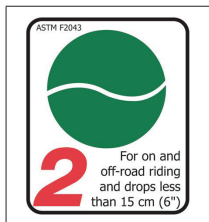
To make sure your bike is serviced and maintained correctly, and that you protect applicable warranties, please coordinate all service and maintenance through your Authorized Cannondale Dealer.

### NOTICE

Unauthorized service, maintenance, or repair parts can result in serious damage and void your warranty.

## SAFETY INFORMATION

### Intended Use



#### Condition 2, General Purpose Riding

For Bikes and E-Bikes designed for riding Condition 2, plus smooth gravel roads and improved trails with moderate grades where the tires do not lose ground contact.

#### INTENDED

For paved roads, gravel or dirt roads that are in good condition, and bike paths.

#### NOT INTENDED - DO NOT USE:

No large drops, drop-offs, wooden structures, or dirt embankments requiring long suspension travel or heavy duty components.

For Extreme forms of jumping/riding such as hard core mountain, Free riding, Downhill, North Shore, Dirt Jumping, Hucking etc.

No Tandems

No Motorcycles

No Engine (fueled) powered vehicles.

#### WARNING

Using the Lefty the wrong way is dangerous.

Please read your Cannondale Bicycle Owner's Manual for more information about Intended Use ASTM Conditions 1-5, and riding conditions defined by each.

The intended use and riding conditions defined by on-product markings and owner's manual for the specific Lefty fork model MUST match those of the frame.

A mis-match between a Lefty fork and a frame can lead to failure of the frame or Lefty fork. Such a failure can lead to a loss of control, with the risk of serious injury or death to the rider.

If you have any questions consult a Cannondale Dealer or professional bike mechanic with experience in Intended Use conditions in the bicycle industry.

**You can be severely injured, paralyzed or killed in an accident if you ignore this warning.**

## Important Composites Message

### WARNING

Your bike (frame and components) is made from composite materials also known as “carbon fiber.”

All riders must understand a fundamental reality of composites. Composite materials constructed of carbon fibers are strong and light, but when crashed or overloaded, carbon fibers do not bend, they break.

For your safety, as you own and use the bike, you must follow proper service, maintenance, and inspection of all the composites (frame, stem, fork, handlebar, seat post, etc.) Ask your Cannondale Dealer for help.

We urge you to read PART II, Section D. “Inspect For Safety” in your Cannondale Bicycle Owner’s Manual BEFORE you ride.

**You can be severely injured, paralyzed or killed in an accident if you ignore this warning.**

## Crash/Impact Damage Inspection

### WARNING

#### After A Crash Or Impact:

Inspect the entire bike, all parts; Look carefully for damage. See “Inspect For Safety” section in the Cannondale Bicycle Owner’s Manual. See Support at [www.cannondale.com](http://www.cannondale.com)

Any of the following conditions indicate that serious fork damage is present:

- Any “klunking,” creaking, knocking or unexplained noises.
- A change in travel, and/or function.
- Loss of adjustment features, oil or air leaks, or loose/broken parts.
- Crash or impact damage (cracking, deep scratches, gouges, dents, or bending)
- Carbon which has a soft feel or altered shape, or broken, splintered, or delaminated carbon fiber.)
- Visible cracks, a white or milky color present in carbon fiber section

**Continuing to ride a damaged frame / fork increases the chances of frame /fork failure, with the possibility of injury or death of the rider.**

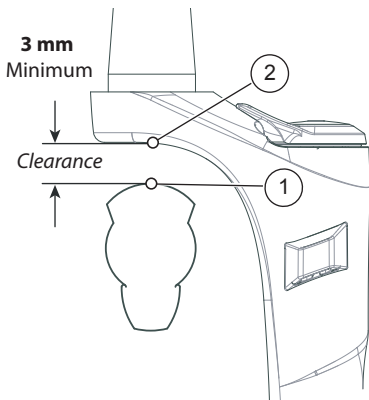
## Minimum Tire-to-Crown Clearance

### ⚠ WARNING

Modification or installation of damping cartridge/spacers other than specified; or installing over-sized tires can result in incorrect tire-to-crown clearance

Check for minimum tire fork/frame clearance with all air released from lefty and fully compressed.

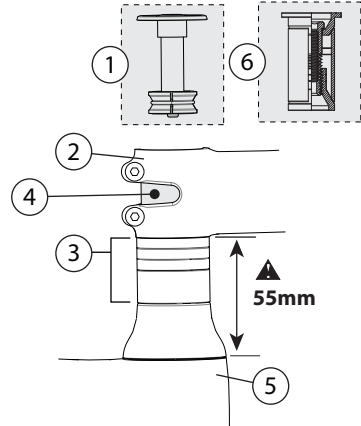
Measure between the top of the properly inflated tire (1) and the bottom of the fork crown (2).



If tire clearance is less than the minimum specified, the rotating tire could come into contact with the fork crown or frame causing the wheel to stop suddenly. This can throw a rider off the bicycle or result in a loss of control and crash.

## Compression Assembly

### ⚠ WARNING



For carbon steerer models, use only the headset compression assembly (1) or (6) specified for the model. See “Specifications.”

Do not use other headset compression/preload adjusters, shims, and do not modify the steerer.

Do not stack spacers (3) on top of the stem (2) or exceed the 55 mm Maximum Stack Height (total spacer height stacked between the top of the head tube (5) and the stem (2)). Exceeding maximum stack height with spacers (3) or locating spacers on top of the handlebar stem can place significant stress on the steerer tube (4). It could break.

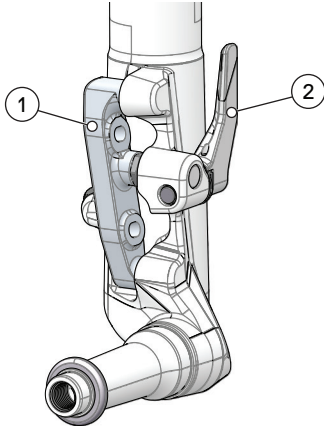
Follow the Cannondale compression assembly installation instructions.

Use a torque wrench to tighten. Follow stem manufacturer’s torque specifications.

## Front Brake

The brake mount (1) is compatible with flat-mount type brake systems.

### WARNING



Before riding, make sure the StopLock release lever is in the locked position (shown). See “Front Wheel” removal and installation instructions.

Follow brake manufacturer’s instructions when mounting the brake caliper.

Do not ride without a front brake system attached to the Lefty. A brake system (disc/caliper) is an important secondary wheel retention system. If the brake system is missing or improperly installed, and/or if the wheel hub axle bolt should loosen, the front wheel could slide off the spindle end.

**You can be severely injured, paralyzed, or killed in an accident if you ignore this warning.**

## Making External Adjustments

### WARNING

Make any external adjustments only when stopped. Attempting to adjust while riding can result in a loss of control.

**You can be severely injured, paralyzed, or killed in an accident if you ignore these warnings.**

## Disassembly or Modification

### WARNING

**Modifications can lead to serious fork damage or serious personal injury.**

Do not modify the Lefty in any way.

Use only original equipment (OE) replacement parts. See “Replacement Parts.”

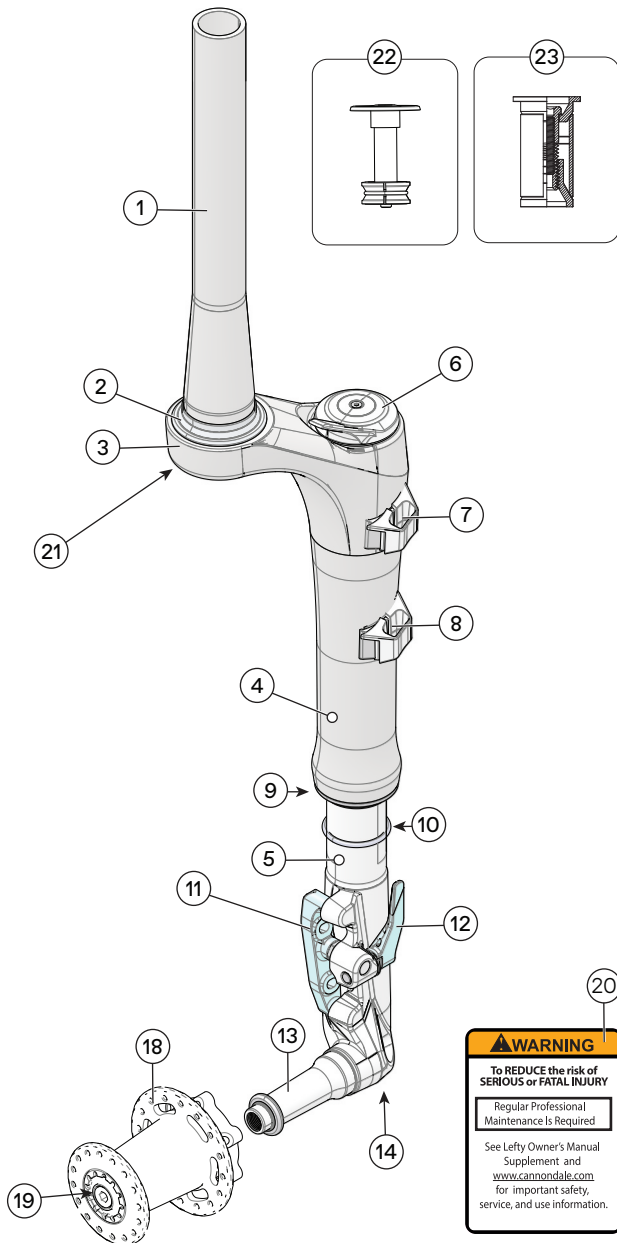
Do not attempt damage repair yourself. Have any required repair services or procedures perform by an Authorized Cannondale Dealer or Cannondale Authorized Service Center.

**You can be severely injured, paralyzed or killed in an accident if you ignore this warning.**

## IDENTIFICATION

### Parts of the Oliver

1. Steerer
2. Integrated crown race (carbon only)
3. Crown
4. Outer Tube
5. Inner Tube
6. Lockout Lever
7. Brake Cable Guide, Upper
8. Brake Cable Guide, Lower
9. Wiper Seal
10. O-ring, travel indicator
11. StopLock Brake Mount
12. StopLock Release Lever
13. Wheel Spindle
14. Rebound Adjuster
15. Air Valve
16. Serial Number (etched)
17. Wheel Size/Travel
18. Lefty 50 Hub
19. Bolt, axle
20. Label, Warning
21. Serial Number Label
22. Compression assembly standard stem (carbon only)
23. Compression assembly Conceal stem (carbon only)



**WARNING**

To REDUCE the risk of  
**SERIOUS or FATAL INJURY**

Regular Professional  
Maintenance Is Required

See Lefty Owner's Manual  
Supplement and  
[www.cannondale.com](http://www.cannondale.com)  
for important safety,  
service, and use information.



## TECHNICAL INFORMATION

### Specifications

Item	Specification	
	Carbon	Alloy
Wheel Size	700c	700c
External Adjustments	Air Pressure, Rebound, Lockout	
Remote Compatibility	n/a	
Recommended Sag - 0%	0 mm	
Travel Length	40mm	40mm
Axle-to-Crown (mm)	429mm	429mm
Minimum Tire-to-Crown Clearance	3 mm	
Fork Offset	55 mm	
StopLock Brake Adapter Mount (disc dia./ adapter)	160mm/ K53011	
Hub Compatibility	Lefty 50	
Brake Rotor Maximum Size	180 mm	
Maximum Tire Size: (Dia. x Width)	700c x 45mm	700c x 45mm
Headset Compression Assy.	Only Cannondale K35009 - Standard stem K35114 - Conceal stem	1 1/8 in Star Nut Aheadset - ASN8
Maximum Stack Height	55 mm	
Stem Clamp Dia.	28.6 mm	
Steerer: Type/ Taper Length/ Overall Length	Tapered 1.5in - 1 1/8in/ 86mm/ 330mm	
Crown Race: Type/Bearing/Degree	Bonded 1.5in/ 36 degree	1.5in/ 45 degree
Manual Reset Length +/- 3mm	5mm	5mm
Air Pressure Limits	Minimum: 50 psi/ 3.5 bar Maximum: 200 psi/ 13.75 bar	
Intended Use	ASTM CONDITION 2: General Purpose Riding	
Max. Weight Limit Total (Rider+All Equipment)"	330 lbs/150 Kg	

## External Adjustments

### Air Pressure

Set the initial air pressure according to your weight (including the weight of riding gear) based upon the following table. Then, adjust air pressure in small amounts for your riding preference.

Adding more air will result in a stiffer suspension feel. Less air pressure will result in a softer suspension feel. Stay within the minimum and maximum air pressure limits.

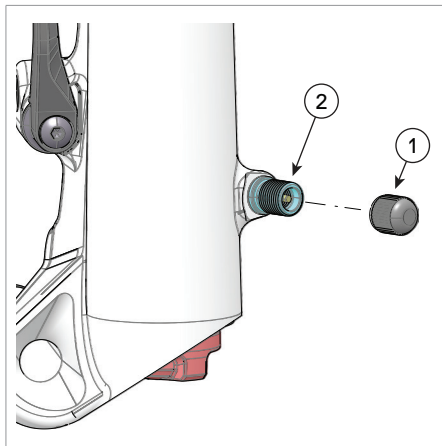


Figure 2

#### To set air pressure:

1. Clean the area around the valve and the pump end to remove dirt or contaminants.
2. Remove the valve cap (1), attach a high-quality suspension pump to the valve (2).

3. Pressurize to the recommended air pressure.
4. When completed, remove the pump; return the valve cap.

### Air Pressure/Rebound Recommendation

Rider + Gear Weight		Analog-Bike			E-Bike		
		Air Pressure		REB clicks	Air Pressure		REB clicks
Lbs	Kg	psi	Bar		psi	Bar	
120	55	63	4.3	11	69	4.8	10
130	59	67	4.7	11	74	5.1	9
140	64	72	5.0	10	79	5.5	9
150	68	76	5.3	9	84	5.8	8
160	73	81	5.6	9	89	6.1	8
170	77	85	5.9	8	94	6.5	7
180	82	90	6.2	8	99	6.8	6
190	86	94	6.5	7	104	7.1	6
200	91	99	6.8	6	109	7.5	5
210	95	103	7.1	6	113	7.8	5
220	100	108	7.4	5	118	8.2	4
230	105	112	7.7	5	123	8.5	3
240	109	116	8.0	5	128	8.8	3
250	114	121	8.3	4	133	9.2	2

#### Air Pressure Limits:

Minimum: 50 psi/ 3.5 bar, Maximum: 200 psi/ 13.75 bar

#### NOTICE

- Stay within Air pressure limits.
- Attach pump only if valve and pump are clean.

## Rebound

The Rebound adjuster (3) is located at the bottom of the Lefty. Rebound controls the speed that Lefty returns after being compressed.

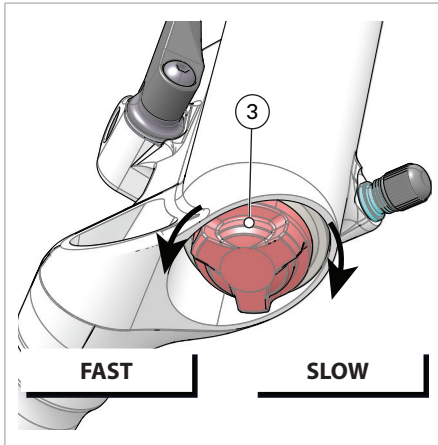


Figure 3

### To set rebound:

1. Close the adjuster by rotating it clockwise toward the “SLOW” direction with your fingers until the adjuster stops.
2. Determine the number of “clicks” according to the table.
3. From closed, turn the adjuster counter-clockwise toward the “FAST” direction with your fingers and count the “clicks” as you hear or feel them until you reach the desired setting.

### To fine tune rebound:

Each click towards the “SLOW” direction decreases rebound speed which results in a more planted ride.

Each click toward the “FAST” direction increases rebound speed which results in a more lively ride.

## Lockout

Use the lockout lever (4) to change between climb and active modes.

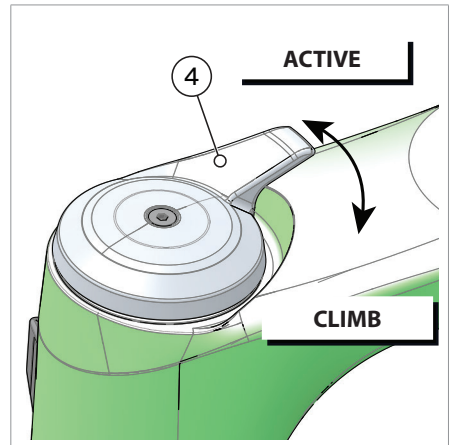


Figure 4

## Climb

In climb mode, compression damping is significantly increased making it more difficult to compress the suspension unless large bumps are encountered. Climb mode is a firmer more efficient pedaling platform.

## Active

In active mode, travel suspension is actively absorbing changes in terrain by compressing and extending.

## Front Wheel

### Removal

1. Secure the bike in a work stand with the front wheel off the ground slightly.
2. Rotate the StopLock release lever 180 degrees so it is pointing downward (un-locked).

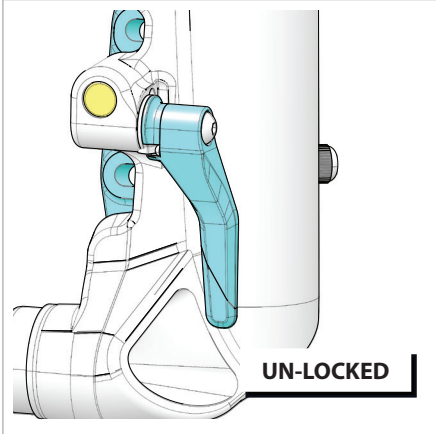


Figure 5

3. Pull the brake mount with attached brake caliper backwards until caliper is clear of the brake rotor.

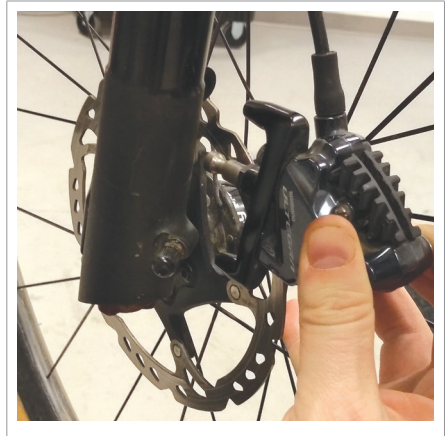


Figure 6

### NOTICE

- Do not allow the brake to hang by the brake line.
- Support the removed brake mount/caliper to prevent damage of the brake system while it is detached.

4. Insert a 5mm hex key into the Lefty hub axle bolt on the drive side of the bike. Turn the axle bolt counter-clockwise. Continue turning until the axle bolt is completely disengaged from the spindle.



Figure 7

#### NOTICE

- Make sure the axle bolt is completely disengaged before attempting to remove the wheel.
- Never pull the wheel off forcefully. If the axle bolt is still engaged this will damage the threads.

5. Slide the wheel off the spindle end.

#### **Important:**

While the wheel is off, take steps to prevent damage to the spindle .

Allow the bike to remain in the stand until the wheel is re-installed.

Likewise, while the wheel is removed, be sure to protect the wheel, hub, and brake rotor from damage or contamination. Cover the hub opening to prevent contamination of the inside of the hub.

## Installation

1. With bike in a work stand, clean the spindle , and axle threads. Apply light grease to the threads and outer and inner hub bearing lands.



Figure 8

3. Check the inside of the Lefty wheel hub for dirt or contamination, wipe clean if necessary. Apply light grease to the hub bearing inner races.
4. Align and slide the wheel straight on to the spindle. Using a 5 mm hex key by hand, start engagement of the axle bolt to a few threads to confirm correct thread engagement. Once confirmed, tighten the axle bolt to 15 N·m with a torque wrench.

6. With the StopLock release lever turned down, slide the brake mount/caliper into the Lefty.

As you do this, make sure the brake rotor locates between the brake pads.

7. With the brake mount firmly seated to the Lefty, turn the StopLock release lever up to lock the brake adapter/caliper onto the lower leg.

8. Spin the wheel to make sure it rotates freely.

9. Be sure to test the brakes for proper function before riding.

**WARNING**

Use a torque wrench to tighten.

Prevent grease contamination of brake caliper, pads and brake rotor.

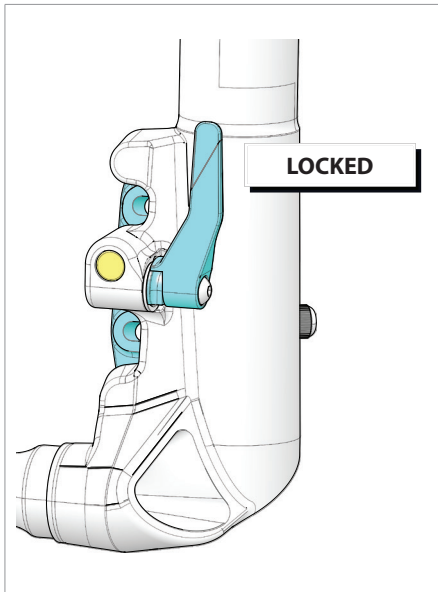


Figure 10

## Manual Bearing Reset

Perform the following procedure with the front wheel on the floor.

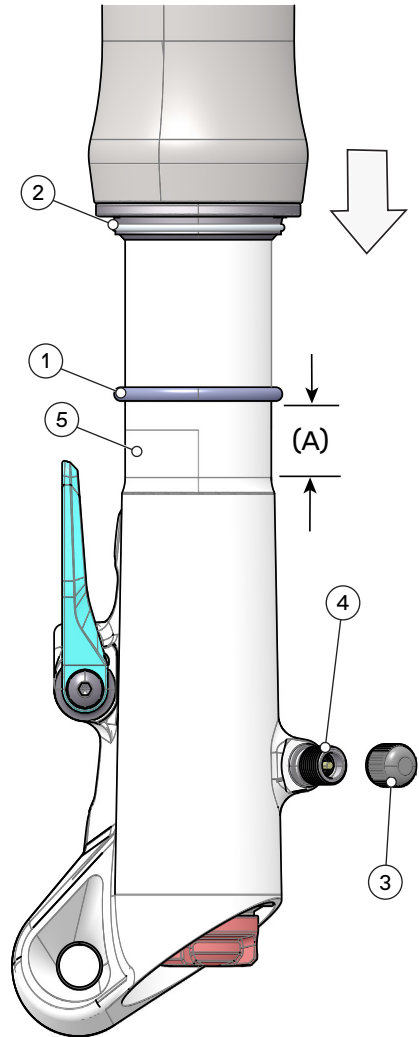
1. Slide the travel indicator O-ring (1) against the wiper seal (2).
2. Remove the valve cap (3) and attach a suspension pump to the valve (4). Record the air pressure, then release all the air with the pump bleed valve.

NOTE: Due to the small air chamber volume, the suspension pump may read 15-35psi lower than the original fill pressure. Original fill pressure, travel, and ramp ring configuration will influence this effect.

3. Hold the shock pump bleed valve open and fully compress the Lefty by pushing down on the handlebars.
4. Firmly bottom out the Lefty several times.
5. Measure the glossy stanchion tube (5) below the travel indicator o-ring (1). Repeat step 4 until that measurement matches the stanchion length that corresponds to your Lefty in the table below.

Travel	Wheel Size	(A) Reset Length +/- 3 mm
40	700c	5 mm

6. Set the air pressure recommended for your riding weight or original recorded air pressure. See "Air Pressure."
7. Remove the shock pump;reinstall the valve cap.



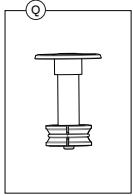
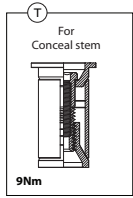
## REPLACEMENT PARTS

### Parts List

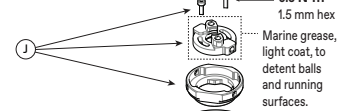
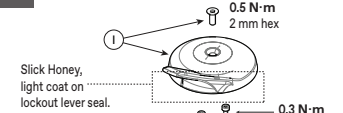
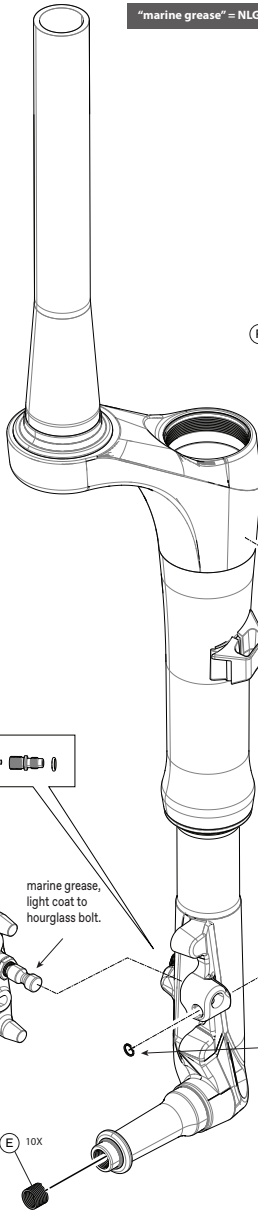
ID	Part Number	Structure Parts
A	K53089	Lefty Cable Guide
B	K53011	Lefty Oliver StopLock Brake Adapter
C	K53021	Lefty Oliver StopLock Release Lever
D	K53031	Lefty StopLock Hourglass Bolt 32mm
E	K54128	Lefty Helicoils Qty 10
ID	Part Number	Damper and Air Spring Parts
F	K53001	Lefty Oliver Bottom Cap
G	K51001	Lefty Iso Ramp Rings
H	K51011	Lefty Iso Upper Air Seal 34mm
I	K52001	Lefty Chamber Lockout Lever No LSC
J	K52011	Lefty Lockout Detent Assembly
_	K57001	Lefty Iso 100 Hour Seals
K	K52005	Lefty Gen 2 Chamber Damper All-Over <b>40</b>
M	K51031	Lefty Iso Air Piston 717 OD
O	K51039	Sidecar Valve Assembly
P	K36029	Lefty Rebound Knob Assy
ID	Part Number	Steerer and Headset Parts
Q	K35009	SL Compression Plug w/ Top Cap
T	K35114	MTB Conceal/SystemBar Lefty Expander for Conceal stems
ID	Part Number	Service Tools
R	CK9108U000S	39mm 18 Point Lefty Damper Tool
S	CK9158U000S	Lefty 10mm Bullet Tool



Parts Illustration

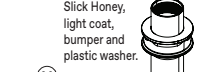
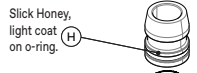


"marine grease" = NLGI #2 Marine Grease



Slick Honey,  
light coat to  
entire cylinder  
and damper  
shaft. Do not  
grease sealhead  
threads.

Marine grease,  
light coat on  
threads. Avoid  
excessive grease  
on or around  
o-ring seal.



⚠  
assemble air  
piston assembly to  
damper shaft  
using  
CK9158U0005  
Lefty 10mm Bullet  
Tool after grease  
application.

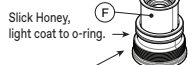
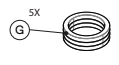
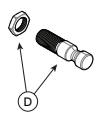
**10.0 N-m**  
14 mm 6 Point Socket

⚠  
Do not adjust hourglass  
bolt or jam nut.  
See your dealer.

**B**

marine grease,  
light coat to  
hourglass bolt.

marine grease,  
light coat to  
cam bolt.



**0.7 N-m**  
2.5 mm hex  
Loctite® 222 (purple)

## MAINTENANCE

### Schedule

This schedule is intended as a guide only. You must establish a schedule appropriate to your riding style and conditions. All service items indicated as "Owner" are found in this supplement.

Service Item	Frequency/Interval	Performed By
Damage Inspection	Before Every Ride	Owner
Check Fastener Torque	First Ride & Every 4-5 Rides	Owner
Manual Bearing Reset	Every 50 Hours	Owner
100 Hour Service : (Air Spring Service, Damper Inspection)	Every 100 Hours/ Annually	Authorized Cannondale Dealer or Authorized Headshok Service Center
Full Service: (Telescope Rebuild, Air Spring Service, Damper Service)	Every 200 Hours/ Bi-Annually	Authorized Headshok Service Center

#### Schedule Professional Fork Service Annually (Minimum)

Annually, or when problems are indicated you must have your fork serviced through an Authorized Cannondale Dealer or a Headshok Service Center. Disassembly and inspection by a suspension professional is required to evaluate the internal and external parts, identify wear or damage. Damaged parts must be replaced with new ones and the work must also include any work described in any technical bulletins or product recalls.

**Please Note:** Shorter service intervals are recommended for riders seeking the highest possible performance or who experience the following situations: (1) High frequency of riding, (2) Adverse conditions while riding, (3) Bicycle storage in an area of high humidity, large temperature changes or outdoor conditions

#### WARNING

**Frequent maintenance and inspection is important to your safety.** Ask your Cannondale Dealer to help you develop a complete maintenance program, one that suits where and how you ride. **You can be severely injured, paralyzed or killed riding on a broken or poorly maintained fork.**

## Cleaning

Clean using only a mild soap and water solution. Clean water and common liquid dish washing soap will work best. Be sure to cover the adjusters with a clean plastic bag secured with a rubber band or masking tape. Spray off heavy dirt before wiping. Spray indirectly.

### NOTICE

**Do not use a pressure washer. Don't dry with compressed air.** Use a low pressure garden hose and dry with a clean shop towel. Power washing/drying will force contaminants into the fork promoting corrosion, immediately damaging the fork, or resulting in accelerated wear.

## Tightening Torques

Correct tightening torque for the fasteners (bolts, screws, nuts) on your bicycle is very important to your safety, the durability and performance of your bicycle. We urge you to have your dealer correctly torque all fasteners using a torque wrench. If you decide to tighten fasteners yourself always use a good torque wrench!

## LIMITED WARRANTY

### Cannondale Limited Warranty

Cannondale (HEADSHOK, LEFTY, FATTY, SOLO) suspension products are covered under the terms and conditions of the Cannondale Limited Warranty. It is available on the Policies page of our website at: [www.cannondale.com](http://www.cannondale.com) Be sure to read the exclusions listed in the limited warranty. For example, damage from accidents and improper maintenance are not covered.

### Definitions related to forks:

The fork structure is covered in the FRAMES section of the Cannondale Limited Warranty. "Fork structure" means certain structural parts of the fork, specifically the fork legs, outer tube, the steerer tube, steerer tube clamps and the inner tubes with attached dropouts or spindle. Cable clamps, needle bearings, races, and bushings which are part of the telescopic assembly are normal wear and tear items and ARE NOT covered by the limited lifetime warranty.

The internal fork are covered by the 1 year (2 years in EU countries) warranty against defects in materials or workmanship described in the COMPONENTS section of the Cannondale Limited Warranty. "Internal fork parts" are defined as items such as damping cartridges and their internal parts, seals, o-rings, air cylinders, air pistons, springs, elastomers, bumpers, bushings, needle bearings, races, and oil. Normal wear and tear on these items is NOT covered by this 1 year (2 in EU) warranty. Like brake pads on a car, you should expect to have these items professionally replaced or renewed as you use the fork and they wear.

### Fork Warranty Claims

For any warranty claim to be considered, the bicycle/fork must be brought into an Authorized Cannondale Retailer on the continent on which the bicycle/fork was purchased. The bicycle/fork must be in assembled condition and accompanied by the original, dated sales receipt for the bicycle/fork.

Dealer Locator at: [www.cannondale.com/Dealerlocator](http://www.cannondale.com/Dealerlocator)



[www.cannondale.com](http://www.cannondale.com)

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Lefty Oliver (40mm) Owner's Manual

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