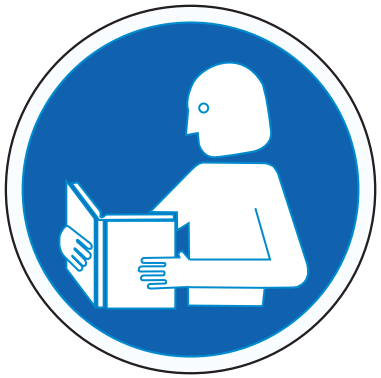
OWNERS MANUAL SUPPLEMENT

Lefty MAX™ / Lefty Jake™

P/N - 114864

10/1/02



READ THIS MANUAL CAREFULLY!
It contains important safety information.

IMPORTANT MANUAL INFORMATION

FAILURE TO FOLLOW THE WARNINGS CONTAINED IN THIS MANUAL CAN RESULT IN SERIOUS INJURY OR DEATH.

Information important to your safety is distinguished in this manual by the following notations:

	The safety alert symbol means..... **"ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED."**
	Indicates that DEATH or severe injury WILL result if the instructions are not followed.
	Indicates a potential hazard that could result in serious injury or death.
CAUTION :	A CAUTION indicates that special precautions must be taken to avoid damage to the machine.
NOTE:	A NOTE provides helpful information intended to make maintenance easier or the instructions presented clearer.

CONTENTS

ABOUT THIS OWNER'S MANUAL SUPPLEMENT

This manual adds important safety, maintenance, and proper use information to your Cannondale Owner's Manual for Multi-speed Bicycles.

This supplement does not replace your owner's manual.

It is important to your safety to read your owner's manual and all the owner's manual supplements for your particular bike and components.

You should have received the Cannondale Owner's Manual for Multi-speed Bicycles all applicable supplements from your dealer when you purchased your new bike.

If you did not receive an owner's manual and the supplements for it, or are not sure what supplements you should have received with your bike please call your Cannondale dealer immediately, or call us at one of the telephone numbers listed on the back cover of this manual.

Do not ride your new bicycle until you have received and read the owner's manual and all supplements for your particular bicycle.

Keep this supplement with your owner's manual.

Adobe PDF versions of the Cannondale Owner's Manual for Multi-speed Bicycles and any supplement can be downloaded free of charge from our website. Go to: http://www.cannondale.com/bikes/tech/manuals.html

SAFETY INFORMATION

⚠ WARNING

POTENTIAL HAZARD
Riding high performance bicycles and suspension systems beyond your skills and abilities

WHAT CAN HAPPEN
Advanced bicycle suspension systems can increase the handling and stability of most high-performance bicycles.
You could have a bad accident if your skill is not up to handling an advanced suspension. If you lack the skills and experience necessary to travel at higher speeds and maneuver over difficult terrain at the greatly increased performance level, you can travel faster than your abilities. You can lose control of the bike in these conditions and crash. Anytime you lose control of the bike, especially at high speed and in advanced terrain, you risk severe injury or death in a crash.

HOW TO AVOID THE HAZARD
Ride at reduced speeds.
Learn the performance characteristics of your bike and suspension components before trying any downhill or very fast biking.
Ride within your skills and abilities.
Take a bicycle training course.

⚠ WARNING

POTENTIAL HAZARD
Riding on a damaged fork

WHAT CAN HAPPEN
If the suspension fork ever begins to...

1. Make “knocking” or “clunking noises
2. Show unexplained increase in travel,
3. Increase in fork extension or travel
4. A sudden loss of lock out ability on equipped forks.
5. Or, a sudden loss of adjustment features

... continued use can result in a separation of the fork from the bicycle frame. You can be severely injured or killed in an accident.

HOW TO AVOID THE HAZARD
If you observe any of the above, DO NOT RIDE. Take the fork to an Authorized Cannondale Dealer to have it inspected and serviced.

PRODUCT FEATURES

LEFTY MAX TPC+

- Manitou TPC+ damping with External Compression and Clicker Rebound Adjustment.
- Internal Pre-load Adjustment
- Titanium Coil Spring
- Golden Spectro Cartridge Fork Fluid 85/150 (2.5W)
- 130 mm of travel with a crown height of 500 mm
- 10mm of negative travel for improved small bump performance
- International Disc Brake Compatible
- 8" Rotor Compatible Boot

LEFTY JAKE

- Manitou Fluid Flow damping with External Rebound Adjustment
- Internal Pre-load Adjustment
- Chrome Vanadium Coil Spring
- Golden Spectro Cartridge Fork Fluid 85/150 (2.5W)
- 100 mm of travel with a crown height of 470 mm
- 10mm of negative travel for improved small bump performance
- International Disc Brake Compatible
- 8" Rotor Compatible Boot

FORK PRE-RIDE CHECKLIST

Your Cannondale Owner's Manual (Cannondale Owner's Manual for Multi-speed Bicycles) includes a vitally important Pre-ride Inspection Checklist you MUST follow before every ride.

You must check the following items of your fork system in addition to the checklist found in your owner's manual.

Before each ride check the following items:

Stem bolts tightness

Make sure that the stem bolts that clamp the stem to the fork are tight.

TORQUE : Stem bolts - 85.0 lbf•in (9.0 N•m).

1. Stem bolts
2. Handlebar clamp bolts

You can check that the stem bolts are tight enough by standing in front of your bike, holding the front wheel between your knees, and trying to twist the handlebars from side to side. The bars should not move.

Front wheel attachment

Make sure the front wheel is attached correctly. Is the Lefty hub correctly installed and the hub bolt tightened to the specified torque? Refer to "Installing the front wheel" starting on page 8.

Check the brakes

Are your brakes functioning properly? With disc brakes, the brake pads must be properly installed and free from grease or oil contamination. Also, brake pads must contact the braking surface firmly with out the brake lever hitting the handlebar.

The Lefty fork must be used with a compatible disc brake system and it must be fitted correctly; the disc brake mounted on a Lefty fork acts a secondary wheel retention device.

⚠ WARNING

POTENTIAL HAZARD

(1) Using the wrong disc brake system

(2) Incorrectly fitting/mounting brake discs

WHAT CAN HAPPEN

(1) The disc brake acts a secondary wheel retention device. An improperly installed rotor could allow the front wheel to come off of the axle spindle if the hub axle bolt is loose. A rider would be at risk of injury or death if the wheel were to come off of the axle spindle while the bike is being ridden.

(2) An approved disc brake system is very important to safely riding the Lefty fork. Cannondale strongly recommend that an Authorized Dealer perform any work to the brakes. When installing a disc brake to a Lefty fork, please consult the disc brake fitting instructions that are included with the brakes. Those instructions are provided for persons who have a good knowledge of bike specific mechanical procedures and who are equipped with the proper tools and equipment. Incorrect installation or service may reduce braking performance, and could lead to injury or death. If you have any doubts about your ability to perform any necessary procedures, contact you Authorized Dealer.

HOW TO AVOID THE HAZARD

(1) Don't service the brake system yourself. Always have your brakes serviced by an Authorized Cannondale Dealer.

(2) Consult the manufacturer's disc brake fitting instructions included with the brakes. Those instructions are provided for persons who have a good knowledge of bike specific mechanical procedures and who are equipped with the proper tools and equipment. If you have any doubts about your ability to perform any necessary procedures, contact your Authorized Cannondale Dealer.

Note also that there is a seal that is held against the disc side of the Lefty hub by the rotor. Whenever you

bolt the brake rotor onto the hub, be sure that the seals rests against the large cartridge bearing and that the rotor holds the seal in place. The seal keeps out water and dirt contamination, and a missing seal will result in premature bearing wear.

FORK SETUP

CABLE & LINE ROUTING

Front brake line

The front brake line routing should not pass between the headtube and fork leg. Rather, the brake line should pass from the lever through the two cable guides on the outside of the fork leg.

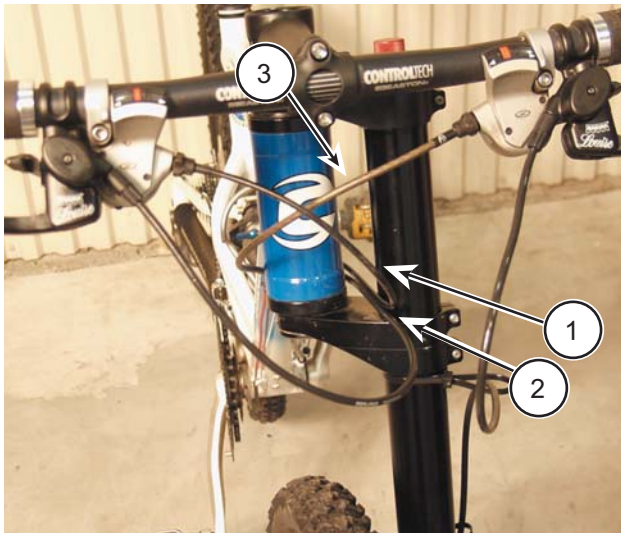
1. Front brake line
2. Front brake line guides
3. Front brake caliper
4. Front brake lever
5. Front derailleur cable
6. Rear derailleur cable
7. Rear brake line

NOTE :

The brake line should not be held tightly in the cable guides. The guide loops need to be loose enough to allow the brake line to slide freely up and down.

Rear brake line and rear derailleur cable

The rear brake line and rear derailleur cable should be run between the upper and lower fork clamps, between the bikes headtube and fork leg.



1. Rear derailleur cable
2. Rear brake line
3. Front derailluer cable

FRONT WHEEL

The Lefty fork front hub uses a self-extracting bolt to attach the wheel to the Lefty's axle spindle. The bolt is held into the hub by a cap that is screwed into the non-disc side of the hub using a pin spanner tool. The self-extracting bolt and cap combination is very similar to that used on a crankarm, except, a Lefty hub cap is reverse threaded. The cap should not be removed; it is there to hold the axle bolts into the hub. If you do need to remove the cap to replace the bolt or bearing be sure to reinstall the cap with a small amount of grease on the cap threads.

Remember that the cap is a left-hand thread.

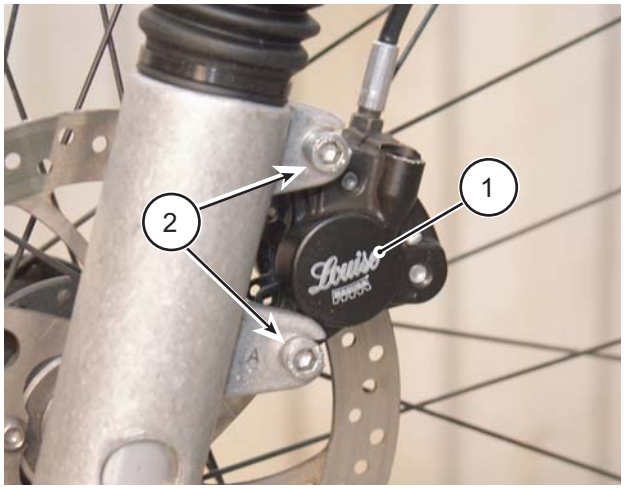
NOTE :

It is not necessary to remove the front wheel to change an inner tube or tire. Simply remove the tire from the wheel as you normally would, making sure to pull the tire off of the non-disc side of the wheel.

Removing the front wheel

1. Secure the bike upright on a work stand.

2. Loosen (but don't remove) both disc brake caliper bolts (5 mm Allen).



1. Brake caliper
2. Bolts

3. Remove the caliper from the mount and away from the brake disc (rotor). Take note of any shims present and be sure to reinstall them later during reassembly.

CAUTION :

Don't let the caliper hang. Support it carefully out of the work area.

4. Turn the axle bolt (5 mm Allen) counter-

clockwise to loosen it.

NOTE :

The bolt is held in the hub by the self-extracting cap, and will stay attached to the hub even when the wheel is removed from the axle spindle. There is no need to remove that cap from the hub.

5. Pull the wheel off of the axle spindle.

CAUTION :

Take extra measures to protect the Lefty axle spindle from damage when the wheel is removed. Dents, scratches, or other damage from a fall or drop to the ground could severely damage the spindle preventing the axle bolt from engaging the threads. The fork could be ruined beyond repair.

Installing the front wheel

NOTE :

Remove the front brake caliper from the Lefty first. The front wheel can not be mounted with the caliper installed.

1. Apply a light coat of high-quality bike grease to the inside diameter of the larger cartridge bearing located in the hub.

2. Apply a thin film of high-quality bike grease to the axle bolt threads inside the end of the spindle.

CAUTION :

Take care not to contaminate the brake caliper, pads, or disc with the grease.

3. Apply a light coat of high-quality bike grease to the inner spindle axle bolt threads.

   Greasing the threads aids removal if the bolt is over-tightened accidentally and can prevent seizure in corrosive or punishing environments.

CAUTION :

Make sure the spindle (threads and the spindle shaft) are completely clean before applying any grease. A dirty spindle or dirt trapped in grease applied can contribute to excessive wear of the spindle greatly shorting its service life.

4. Slide the front wheel onto the axle spindle with the disc side of the hub closest to the fork leg.

   Be sure to press the wheel straight onto the spindle; so, the axle bolt threads will correctly engage with the threads in the spindle.

5. Tighten the front wheel axle bolt (5 mm Allen).

   TORQUE : Front wheel axle bolt - 133.0 Lbf•in (15.0 N•m).

NOTE :

It is sometimes easiest to install the front wheel by positioning the bike horizontally with the spindle facing up. Then place the hub straight down onto the spindle, and tighten the axle bolt.

6. Reinstall the brake caliper to the Lefty's disc brake mounts. You will first need to slip the caliper over the brake rotor so that the rotor runs between the brake pads.

7. Check to be sure that both brake pads are in the caliper. Then slide the top caliper bolt into the upper brake mount, and rotate the bottom

of the caliper clockwise into the bottom brake mount. Be sure that the spacing shims are on the inside of the disc brake mount (against the brake caliper body), not directly under the head of the caliper bolts.

8. Tighten the caliper mounting bolts.

TORQUE : Front brake caliper mounting bolts - 78.0 lbf•in (9.0 N•m).

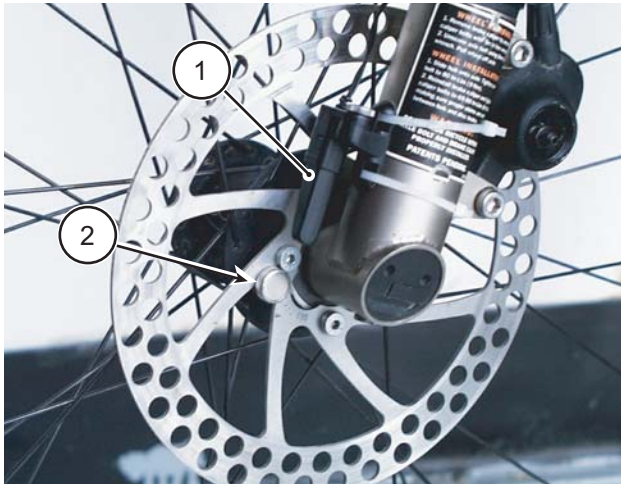
9. Spin the wheel to make sure it spins freely.

10. Test the brakes for proper operation before riding.

COMPUTER MOUNTING

The Lefty front fork will accept a wide range of available bicycle computers. Follow the manufacturer's installation instructions.

Mount the computer's pickup/sensor on the front side and the lowest point on the front of the fork leg. Now, securely attach the wheel magnet to the front rotor.



1. Pickup sensor
2. Wheel magnet

⚠ WARNING

POTENTIAL HAZARD
Improper pickup sensor or magnet installation

WHAT CAN HAPPEN
The pickup sensor or disc mounted magnet can get caught in the disc brake disc or rotating wheel. You could lose your brakes or be thrown from the bike if the wheel stops rotating or the bike become unstable.

HOW TO AVOID THE HAZARD
Do not mount the magnet in any manner that will interfere with the proper functioning of the front disc brake.
Consult the manufacturer's mounting instructions/
Have an Authorized Cannondale Dealer install a ride computer.

TUNING

Your Lefty front fork is very “tunable” to your weight and riding style. The results of the suspension adjustment you make will bring your Lefty into tune with your riding style and personal dynamics (weight, experience, and abilities). Suspension adjustment and the resulting “feel” of the ride is a very personal matter. And, so careful attention to detail is required to make adjustments successful.

SAG

Sag is the distance the fork compresses when you sit on the bike with your static weight. Adjusting preload affects the amount of sag. We recommend adjusting the sag so it is 25% of the forks overall travel.

	MAX	JAKE
Total Travel (mm)	130.0	100.0
Suggested Sag (mm)	32.5	25.0

To measure the sag

1. With the rider off of the bike, measure from the floor to the top of the handlebar closest to the stem intersection.

2. Now, sit on the bike in a natural riding position with both feet on the pedals. So that the bicycle suspension system is compressed under the static weight of the rider.

3. Measure the distance from the floor to the top of the handlebar closest to the stem intersection. The difference in these two measurements is the sag.

   Adjusting sag can be done in two ways; either by changing the number of installed preload shims, or by changing the installed spring.

Adding and removing preload shims

Adding and removing preload shims can increase or decrease sag.

CAUTION :

Four is the maximum number of preload shims recommend by Cannondale. If you need to further decrease the amount of sag, a stiffer spring kit will be needed.

To decrease sag, add preload shims.

To increase sag, remove preload shims.

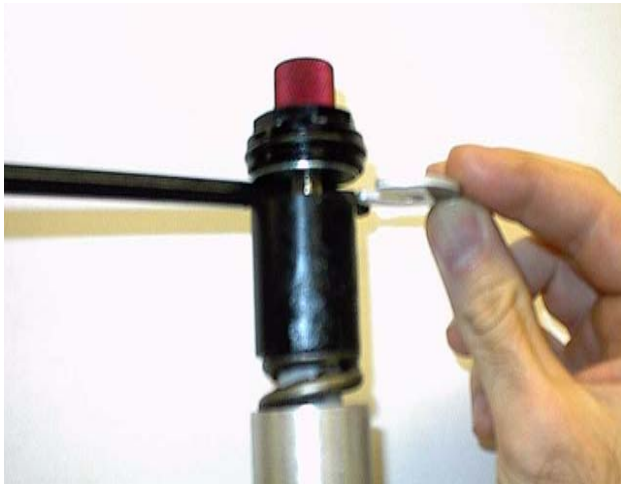
1. Loosen the upper clamp bolt using a 5mm Allen wrench.

2. Remove the upper collar using a 40mm headset wrench or green Park pin spanner.

3. Compress the fork to expose the preload assembly.

4. Chose the desired amount of shims to be added/removed.

5. Add or remove shims as indicated below.



   The shims are located between the top washer and preload spacer. Refer to "Illustrations" starting on page 20.

6. Extend the fork and reinstall the upper collar using a coat of grease on the threads.

   TORQUE : Upper collar - 250.0 Lbf•in (28.0 N•m).

7. Tighten the upper clamp bolt.

   TORQUE : Upper clamp 60.0 lbf•in (7.0 N•m).

8. Recheck sag.

If suggested sag can not be achieve by adding or removing shims, the installed spring must be changed.

NOTE :

If all preload shims have been removed, a softer spring kit will need to be used.

FORK SPRING

The fork spring in your Lefty fork can be changed. Refer to "Changing the fork spring" starting on page 17.

Stock Spring

Bike size	OEM Spring Color
Small	Green
Medium	Blue
Large	Blue
Extra Large	Red

Recommended Rider Weight/Spring Table

Rider Weight Range (lbs)	Spring Kit
<160	GRN
150 - 180	BLU
170 - 200	RED
>190	BRO

SPRING KITS

CAUTION :

When installing springs, be sure to use the appropriate Bottom-Out and Preload spacer which are included in the spring kits. See table below.

Spring Length + Preload Spacer Length = 267.6 for both Lefty Max and Lefty Jake.

LEFTY MAX

Cannondale Kit #	Stiffness	Spring Material	Spring Length	Bottom Out Spacer Length	Pre-load spacer length
QC092/GRN	soft	Titanium	231	109.6	36.6
QC092/BLU	Standard	Titanium	231	109.6	36.6
QC092/RED	Firm	Titanium	231	109.6	36.6
QC092/BRO	X-firm	Steel	241	109.6	26.6

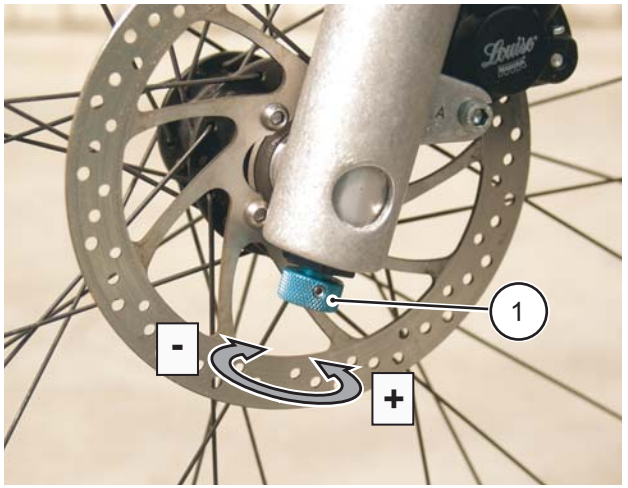
LEFTY JAKE

Cannondale Kit #	Stiffness	Spring Material	Spring Length	Bottom Out Spacer Length	Pre-load spacer length
QC091/GRN	Soft	Steel	185	139.6	82.6
QC091/BLU	Standard		185	139.6	82.6
QC091/RED	Firm		195	139.6	72.6
QC091/BRO	X-firm		195	139.6	72.6

COMPRESSION DAMPING

Compression damping - slows (or resists) the speed at which your Lefty compresses.

The blue compression adjuster of the Lefty Max™ is located at the bottom of the fork leg.



1. Compression adjuster (Lefty MAX)

Turning the blue compression damping adjuster clockwise increases compressing damping (more difficult to compress), while counter-clockwise reduces compression damping (easier to compress). The knob has 130 degrees of turning adjustment.

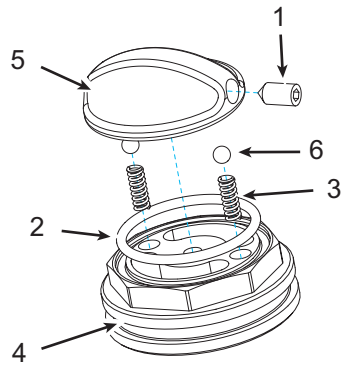
CAUTION :

Do not force the adjuster beyond the stops!

REBOUND DAMPING

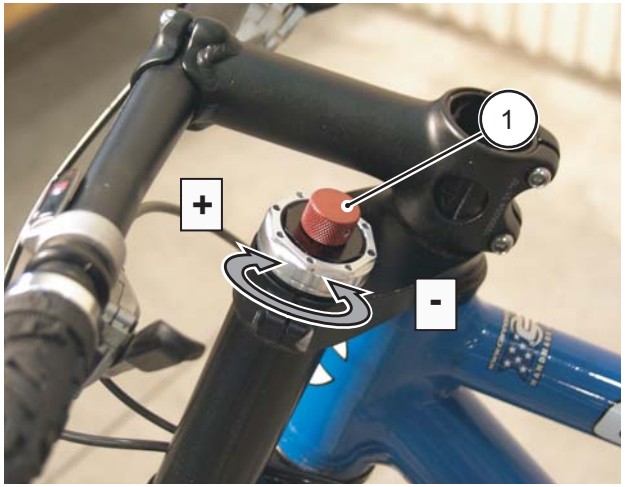
Rebound damping - slows (or resists) the speed your Lefty extends after being compressed.

The red rebound adjuster of the Lefty Max™ and Lefty Jake™ is located at the top of the fork leg.



Lefty MAX rebound adjuster assembly (exploded view)

1. Set screw
2. O-ring
3. Springs (2)
4. Outer cap
5. Adjuster knob (Lefty MAX)
6. Ball (2)



1. Rebound adjuster (Lefty JAKE)

Rebound adjustment makes your Lefty adaptable to a wide range of spring rates and riding condition.

The proper rebound setting is a personal preference and varies depending on your weight and riding style.

Determining the proper rebound setting may take a number of rides. During the first few rides, make small adjustments to the knob and note the different ride characteristics.

Turn the adjuster clockwise, for slower rebound.

Turn the adjuster counter-clockwise, for faster rebound.

The adjuster has 130 degrees of turning adjustment.

CAUTION :

Do not force the adjuster beyond the stops!

MAINTENANCE

REQUIRED TOOLS

The following tools are required to service the Lefty MAX and Lefty Jake front forks:

1. Metric Allen Wrench Set
2. 40mm Headset Wrench or Green Park Pin Spanner
3. 8mm Open End Wrench
4. 30mm Crows foot or Open End Wrench
5. Torque Wrench
6. 19mm Deep Well Socket
7. 12" Socket Extension
8. 3/8” Drive Ratchet
9. 22mm Socket

SCHEDULE

Regular Professional Service

High performance precision suspension systems, like the Lefty, require regular professional inspection, lubrication, and maintenance.

Have your Lefty fork serviceh by an Authorized Cannondale dealer. A suspension professional will check the following items and service the fork as necessary.

FRAME AND FORK - Once a month, or every few rides, clean and inspect the entire bicycle frame and fork for any dents, cracks, or other damage. If any damage to the frame or fork, is present, do not ride the bicycle. Have the damage inspected and assessed by an Authorized Cannondale Dealer.

HEADSET BEARING SEAL - All Lefty forks which come with the new lightweight Headshok stem (which can be identified by its two clamp bolts) use a secondary black rubber seal on top of the top headset bearing. For the Lefty fork, this seal goes below the top clamp, against the headset bearing. This seal will keep water and dirt out of the headset bearing. Have your Authorized Cannondale dealer replace the seal if it is damaged.

SUSPENSION FORK BOOT - Frequently inspect the rubber boot at the base of the leg of the Lefty fork for tears, cuts, or broken zip ties that could allow contamination. The fork boot protects the needle bearings and races from water, dirt, and other contaminants. Make sure that the disc brake tubing has not rubbed a hole into the boot. If the tubing is rubbing on the boot, you should reroute it to eliminate the contact. Your Cannondale retailer can assist you with this procedure.

If the boot is damaged in any way, it must be replaced immediately. On the Lefty fork, it is necessary to remove the front brake, loosen the leg clamps using a 5mm Allen wrench, remove the upper collar from the top of the Lefty leg (using a 40mm headset wrench or Green Park pin spanner), drop the fork leg out of the clamps, and replace the boot. To reinstall the leg, see the “Head Tube Angle Adjustment” section of the manual. Your local Cannondale dealer can assist you with these procedures. Damage to the Headshok due to contamination by water or dirt will not be covered under warranty.

The upper collar with 40mm wrench flats on the top of the Lefty is not for any kind of adjustment. It is to allow for the removal and service of the internal components and removal of the leg from the clamps. It should not be necessary to loosen or remove this upper collar. If the collar is loosened or removed, it should be lightly greased on the threads and reinstalled and torqued to 250 lbf•in(28 N•m).

Initial Service

When your bike is brought in for its 30-day tune-up, the following procedures should be performed:

Boot inspection

Inspect the entire boot carefully for any cracking, tears, rips or other damage that might allow dirt, water, or other contaminants inside. A damaged boot will allow corrosion and destroy the delicate fork bearings and races. Always replace the boot with a new one and make sure it is secured properly.

Needle bearing and stanchion tube inspection and lubrication

Several times a year, or if the suspension boot has been damaged, or if the fork has taken a large or unexpected impact, you should inspect the inner stanchion tube, bearing races beneath the boot.

You will need to replace the upper and lower boot zip ties following the inspection procedure. These inexpensive ties should be available from your local Cannondale Retailer.

1. Carefully cut and remove the upper and lower zip ties securing the boot to the fork.

2. Slide the boot downward exposing the inner bearing races.

3. Inspect the condition of the inner stanchion tube and the exposed inner races. The stanchion tube and races should be clean, well lubricated and silver in color. If the races or inner tube are corroded, pitted or damaged, DO NOT CONTINUE TO RIDE THE FORK.

   Contact an Authorized Cannondale Dealer for service.

   If there are no signs of damage or corrosion are present, thoroughly lubricate the inner tube and races with Royal Purple grease, Finish Line White Teflon grease, or Slick 50 One Grease.

⚠ WARNING

POTENTIAL HAZARD
Riding a damaged fork

WHAT CAN HAPPEN
A damaged fork - one that shows signs of a bent or damaged inner tube, dry or corroded needle bearing or races, a cracked or damaged boot - severe structural damage inside the fork can lead to a complete structural failure while you are riding. You can be severely injured or killed in an accident.

HOW TO AVOID THE HAZARD
Inspect the boot, inner tube, and races regularly.
Make sure your fork is inspected and serviced by an Authorized Cannondale Retailer at least every other month or after 40 hours - more frequently if you ride aggressively or in wet or dusty condition.

4. Position the boot and secure the boot new zip ties. Make sure the zip ties are installed tightly.

Bi-Monthly Service

Every other month, the boot inspection and needle bearing lubrication routine descibed under the initial service interval should be followed.

It is advised to perform the above maintenance steps every other month as well as checking for needle bearing migration.

Annual Service

In addition to the bi-monthly maintenance, it is advised to remove and inspect the cartridge from the fork structure, thoroughly inspect the telescope for proper bearing function, corrosion, fatigue, etc., replace the boot, and replace the seals and oil in the cartridge.

If corrosion or misplaced bearings and races are found, it will be necessary to have the fork repaired. Your Authorized Cannondale Dealer can assist with any of the necessary maintenance and/or repairs.

MECHANICAL ADJUSTMENTS

ABOUT MECHANICAL ADJUSTMENTS

This section describes how to properly perform adjustments. However, this section makes no attempt to be a comprehensive shop or service manual on bicycle mechanics. If you are not a very experienced mechanic, don't perform any mechanical adjustment to your bicycle. Take your bicycle to an authorized Cannondale retailer where a professional mechanic can do the job safely and correctly.

⚠ WARNING

POTENTIAL HAZARD
Performing adjustment incorrectly

WHAT CAN HAPPEN
If you perform a mechanical adjustment the wrong way, you can damage the bike or component and it can fail while you are riding. You can be severely injured or killed in a crash.

HOW TO AVOID THE HAZARD
Don't perform a mechanical adjustment yourself.
Have an Authorized Cannondale Dealer perform mechanical adjustments.

All Cannondale bicycles must be fully assembled and mechanically adjusted by an Authorized Cannondale Retailer before delivery to the consumer.

CHANGING THE FORK OIL

NOTE :

Fork oil is removed through the bottom of the fork. Remove the Lefty fork leg from the clamps before starting the oil change procedure.

1. Remove the fork leg. Refer to "Fork Removal" starting on page 16.

2. Ensure that the upper collar and red rebound knob are properly installed onto the top of the fork after removal from the clamps.

3. If your fork is a Lefty Jake, proceed to step 7.

   If your fork is a Lefty MAX, with it upside-down, rotate the blue compression knob counter-clockwise until it stops. This will completely open the compression circuit. Remove the compression knob by loosening (not removing) the 2mm set screw located on the side of the knob.

4. Slowly remove the bleed screw, located on the bottom of the fork, to relieve any pressure that may have developed in the damper.

5. Use a 22mm socket to carefully remove the lower cap. Hold the bottom of the fork up when removing the cap. Once unthreaded, slowly pull up on the cap to remove the compression damper.

CAUTION :

Use a clean shop towel to wipe up any spilled oil.

6. Turn the fork right side up and pour the old oil into a suitable container.

   Slowly cycle (compress and extend) the fork to expel all of the old oil.

   Remember to dispose of the old oil properly.

7. Next, using a measuring cup, measure out the appropriate amount of new oil.

8. Pour the specified oil volume into the bottom of the fork.

	MAX	JAKE
Recommended Fork Oil	Golden Spectro Cartridge Fork Fluid 85/150 (2.5W).	
Oil Volume (cc)	175	150

9. It is required to compress the fork slightly to purge trapped air from the rebound damper piston.
   To this, place the top of the fork on a soft surface and carefully compress the fork several times by pushing down on the spindle.

   Continue this process until air no longer

appears in the oil.

CAUTION :

To protect the rebound knob and tuning shaft, position the fork on a soft surface (work mat) when purging.

10. Clean the compression damper if necessary before reinstallation.

11. Slowly slide the compression damper down into the fork leg. It may be necessary to gradually cycle the damper up and down while installing it into the oil.

12. Carefully, start to thread the lower cap into the fork leg until the oil starts to escape through the bleed screw hole.

13. Install the bleed screw.

TORQUE : Bleed screw - 20.0 lbf•in (2.3 N•m).

14. Tighten the lower cap.

TORQUE : Lower cap - 89.0 Lbf•in (10 N•m)

CAUTION :

Be careful not to pinch the O-ring seal between the lower cap and the leg.

15. Clean the entire lower portion of the spindle with contact cleaner or a mild detergent on a rag.

Lefty Jake oil change is complete.

16. Install the blue compression knob onto the Lefty MAX.

TORQUE : Set screw - 9.0 Lbf•in (1.0 N•m).

17. Reinstall the fork leg. Refer to "Fork installation" starting on page 16.

FORK REMOVAL

1. Position the bike upright in a work stand.

2. Remove the front wheel. Refer to "Removing the front wheel" starting on page 7.

3. Remove the upper collar using a 40 mm headset or Green Park pin spanner.

4. Loosen the upper and lower fork clamp bolts and slide the fork down out of the clamps.

FORK INSTALLATION

1. Make sure that the upper collar has been removed.

2. Align thefork leg keyway with the groove in the clamps and slide the fork into the lower and upper clamps.

3. Reinstall the upper collar on to the fork leg using a 40 mm headset wrench or Green Park pin spanner.

TORQUE : 250 lbf•in (28.0 N•m).

4. Then slide the fork downward until the bottom of the upper collar meets the top of the upper clamp.

CAUTION :

Make sure the minimum tire clearance is correct..

Minimum Tire Clearance (mm)	MAX	Jake
	135	105

5. Tighten the upper and lower clamp bolt unifiormly. Tighten to the specified torque.

TORQUE : 60.0 lbf•in (7.0 N•0)

6. Reinstall the front wheel. Refer to "Installing the front wheel" starting on page 8.

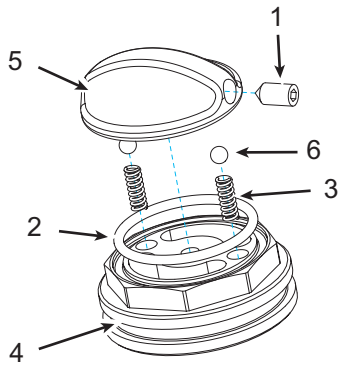
CHANGING THE FORK SPRING

To remove the fork spring:

1. Secure the bike on a work stand.
2. Loosen theupper clamp bolt.
3. Remove the red rebound adjustment knob using a 2mm Allen wrench.

NOTE :

If you are working on a Lefty MAX, be sure to note the springs and balls under the adjustment knob. Be sure to reinstall them during reassembly later.



Lefty MAX rebound adjuster assembly (exploded view)

1. Set screw
2. O-ring
3. Springs (2)
4. Outer cap
5. Adjuster knob (Lefty MAX)
6. Ball (2)

4. Remove the upper collar from the outer tube using a green Park pin spanner or a 40mm headset wrench.
5. Compress the fork exposing the spring assembly.
6. Push the bottom out assembly down below the top of the spring.
7. Slightly pull down on the spring so that you can remove the black aluminum sleeve, the plastic preload spacer nested behind it, and any metal preload shims that may have been added.

NOTE :

Metal preload shims are not installed at the factory.

8. Once the two sleeves are removed, take notice of the 8mm wrench flats.
9. Using an 8mm open ended wrench, hold the shaft on the flats and unthread the outer cap using a 30mm open ended wrench.
10. Remove the top washer and spring by pulling up on it.

Installing a new spring

1. Compress the telescope while pulling up on the shaft by hand until it is fully extended.
2. Next, install the new spring making sure that the colored shrink-wrap is positioned on the top half of the spring. Lubricate the spring.
3. Make sure that the bottom out assembly is pushed down below the top of the spring.
4. Slip the washer over the shaft and onto the top of the spring.
5. Before installing the outer cap, place a small drop of Loctite #242 (blue) onto the shaft threads. Tighten using an 8mm open ended wrench and a 30mm crows foot on a torque wrench.

TORQUE : Outer cap - 89.0 lbf•in (10.0N•m).

6. With the washer against the underside of the outer cap, slightly compress the spring and install the new corresponding preload spacer and aluminum damper sleeve. Refer to "Spring Kits" starting on page 11.

CAUTION :

It is important to position the washer up against the underside of the outer cap. If this washer is below the preload assembly, you will significantly reduce the amount of travel in the fork. The washer will prematurely bottom-out on the bottom-out assembly.

7. Extend the fork and reinstall the upper collar using a coat of grease on the threads.

TORQUE : Upper collar - 250.0 lbf•in (28.0N•m).

8. Tighten the upper clamp bolts.

TORQUE : Upper clamp bolts - 60.0 lbf•in (7.0 N•m).

9. 9. Install the red rebound knob.

   MAX - to install the red clicker rebound adjustment knob onto a Lefty MAX, install both springs into the black outer cap.

   Apply a small drop of grease to the spring ends to keep the balls in position and place a ball bearing on top of each spring.

   Lightly grease the O-ring and place it into the o-ring groove in the outer cap.

   JAKE - go to the next ste.p

10. Install the red clicker rebound clicker adjustment knob using a 2mm Allen wrench.

TORQUE : Rebound knob set screw - 9.0 lbf•in (1.0 N•m).

CHECKING NEEDLE BEARING MIGRATION

Migration of the needle bearings in medium and long travel Headshok forks may occur over time and is a regular service item and generally not a warranty issue. All linear bearing systems will experience migration over a period of time, and even million dollar industrial applications require periodic resetting, or disassembly and rebuilding.

1. With the bike in a work stand, loosen the 5mm Allen bolt of the top clamp.

2. MAX - Remove the red rebound adjustment knob by loosening (not removing) the 2 mm Allen screw and lifting off the adjuster knob. Be sure to note the two small springs, balls, and O-ring.

   JAKE - Remove the red rebound adjustment knob by loosening (not removing) the 2mm Allen wrench and lifting the knob off.

3. Remove the upper collar from the outer tube using a green Park pin spanner or a 40mm headset wrench.

4. Compress the fork exposing the spring assembly.

5. Push the entire bottom out assembly down below the top of the spring.

6. Slightly pull down on the spring so that you can remove the black aluminum sleeve, the plastic preload spacer nested behind it, and any metal preload shims that may be installed.

NOTE :

Metal preload shims are not installed at the factory.

7. Once the two sleeves are removed, take notice of the 8mm wrench flats.

8. Using an 8mm open ended wrench, hold the shaft on the flats and unthread the black anodized outer cap and remove it using a 30mm open ended wrench.

9. Remove the top spring washer and spring from inside the fork.

10. Carefully remove the O-ring from the black anodized outer cap and reinstall the cap hand-tight onto the shaft.

11. Next, place just the black, 30mm, aluminum damper sleeve onto the black anodized outer cap.

12. Now, fully extend the telescope to its maximum length. If 1 mm of the aluminum damper sleeve is exposed above the top of the outer tube, the bearings have not migrated and you may begin reassembly of the fork. Go to **Reassembly.**

    If more than 1 mm of the sleeve is visible bearing migration has occurred; the bearings must be reset before reassembly. Go to

Resetting migrated needle bearings.

Resetting (following migrated needle bearings inspection)

1. To reset the needle bearings when migration has occurred, start by remove the black anodized outer cap.

2. Firmly extend the outer tube. This action will reset migrated bearings back to their original location. Procedure is complete when a solid top out feel is achieved.

NOTE :

Very little force is needed to properly reset the bearings, and excessive force may break the cages of the needle bearing strips in the telescope. This procedure usually takes a few repetitive motions.

3. Recheck for migrated needle bearing. Repeat steps 11 and 12 of the checking procedure.

Reassembly (following resetting of the needle bearings)

1. With the black outer cap removed, compress the telescope and then pull up on the shaft by hand until it is fully extended.

2. Clean and lubricate the fork spring.

3. Install the spring into the fork making sure that the colored shrink-wrap is positioned on the top half of the spring.
   Make sure that the bottom out assembly is below the top of the installed spring. If the bottom-out assembly is above the top of the spring, the preload spacer can not be installed in the next step.

4. Install the washer.

5. Make sure the shaft threads are clean. Place a small drop of Loctite #242 onto the shaft threads. and reinstall the black outer cap.

6. Hold the shaft flats with an 8mm open end wrench and tighten the black outer cap with a 30 mm crows foot on a torque wrench.

   TORQUE : Outer cap - 89.0 Lbf•in (10.0 N•m).

7. With the washer against the underside of the black outer cap, slightly compress the spring and reinstall the preload spacer and aluminum sleeve.

8. Apply a thin film of a high-quality bicycle grease to the outer tube threads.

9. Extend the fork and reinstall the upper collar.

   TORQUE : Upper collar - 250.0 lbf•in (28.0 N•m).

10. Tighten the 5mm upper clamp bolt to 60.0 lbf•in (7.0 N•m).

11. Install the red rebound knob. Tighten the set screw to 9.0 lbf•in (1.0 N•m).

CLEANING

- When cleaning, avoid harsh detergents and chemical solvents. Use mild solutions of ordinary dish soaps and clean water.

- Rinse with plenty of clean water to remove any detergent residue.

CAUTION :

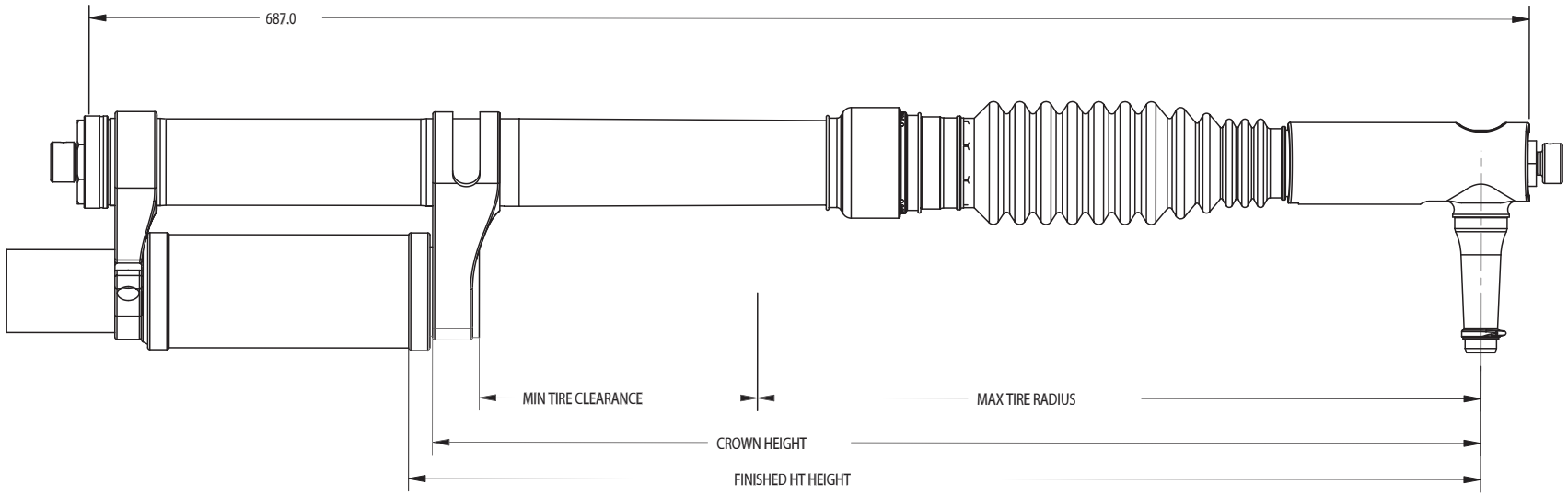
Don't use high-pressure power washers or compressed air to clean your bike or fork. The pressure will force dirt, water, and other contaminants into the fork promoting rust and corrosion. Severe damage can result. Use an ordinary garden hose and only enough water pressure to do the job.

Be sure to thoroughly dry the fork with a clean towel after washing.
Do not use compressed air to dry .

ILLUSTRATIONS

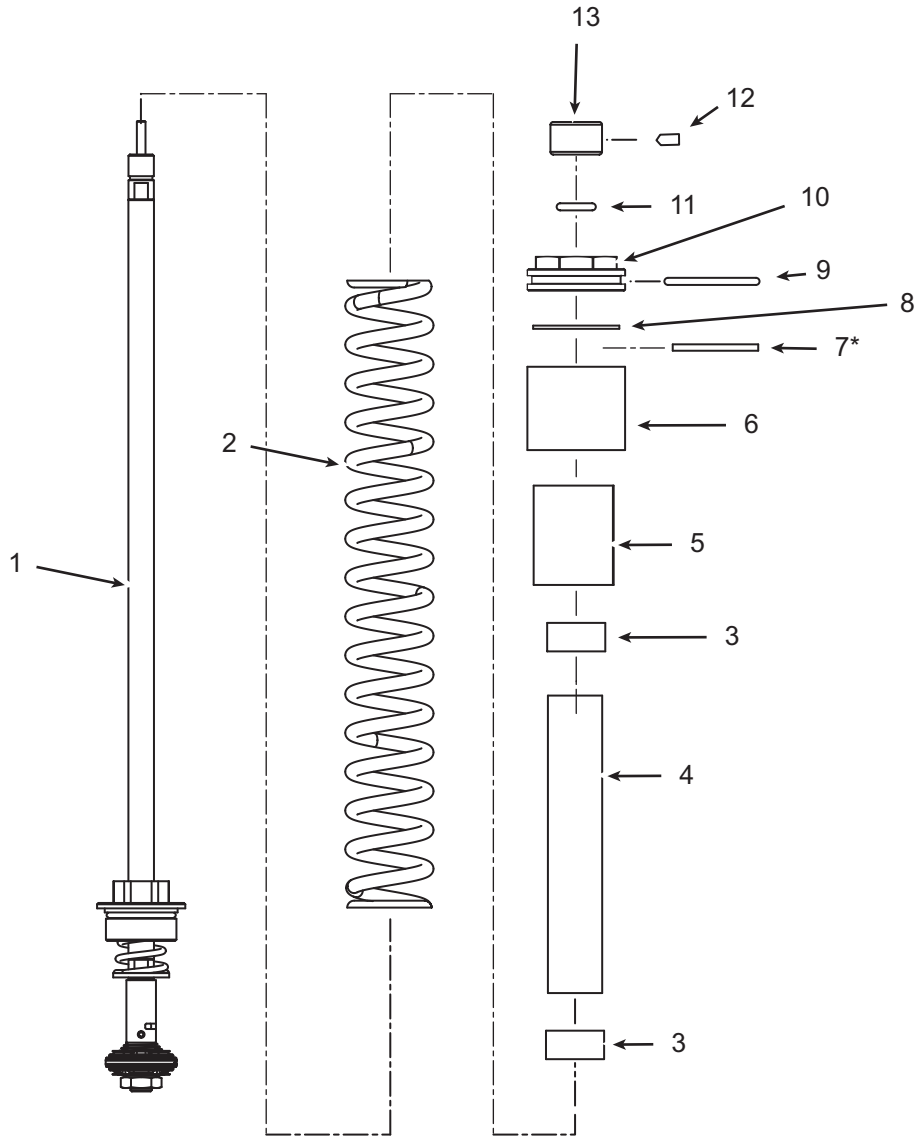
TIRE SIZE / CLEARANCE

	100mm TRAVEL	130mm TRAVEL
CROWN HEIGHT	470	500
FINISHED HT HEIGHT	481	511
MAX TIRE RADIUS	345	345
MIN TIRE CLEARANCE	103	133



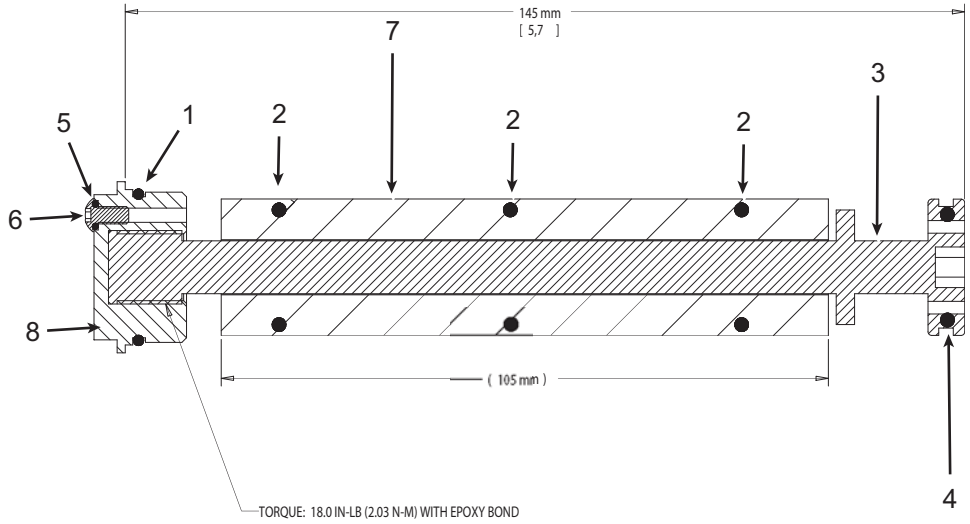
REBOUND DAMPING ASSEMBLY

REF	QTY	DESC
1	1	REBOUND SHAFT ASSEMBLY
2	1	SPRING
3	2	BOTTOM OUT BUMPER
4	1	BOTTOM OUT SPACER
5	1	PRELOAD SPACER
6	1	DAMPER SLEEVE
7		PRELOAD SHIM
8	1	WASHER
9	1	#123 O-RING
10	1	OUTER CAP
11	1	#110 O-RING
12	1	SET SCREW
13	1	REBOUND KNOB (JAKE)



COMPRESSION DAMPING ASSEMBLY

REF	QTY	DESC
1	1	O-RING (-021)
2	3	O-RING (-115)
3	1	COMPRESSION VALVE
4	1	O-RING (-114)
5	1	5-632 O-RING, .110 X .040
6	1	BLEED SCREW
7	1	FOAM COMPENSATOR
8	1	BOTTOM BLEED CAP



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