




**LEFTY.
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.

cannondale

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



WARNING

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

NOTICE

Indicates special precautions that must be taken to avoid damage.

TIP

A TIP provides helpful information.

This manual meets EN standards
14764, 14766, and 14781.

Vélo certifié conforme aux exigences du décret
N 95-937 du 24 août 1995 norme NFR030

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Please note that the specifications and information in this manual are subject to change for product improvement. For the latest product information, go to http://www.cannondale.com/tech_center/

SAFETY INFORMATION

About This Supplement

Cannondale Owner's Manual Supplements provide important model specific safety, maintenance, and technical information. They are not replacements for your *Cannondale Bicycle Owner's Manual*.

This supplement may be one of several for your bike. Be sure to obtain and read all of them.

If you need a manual or supplement, or have a question about your bike, please contact your Cannondale Dealer immediately, or call us at one of the telephone numbers listed on the back cover of this manual.

You can download Adobe Acrobat PDF versions of any Cannondale Owner's Manuals or Supplements from our website: <http://www.cannondale.com/bikes/tech>.

- This manual is not a comprehensive safety or service manual for your bike.
- This manual does not include assembly instructions for your bike.
- All Cannondale bikes must be completely assembled and inspected for proper operation by a Cannondale Dealer before delivery to the owner.

WARNING

This supplement may include procedures beyond the scope of general mechanical aptitude.

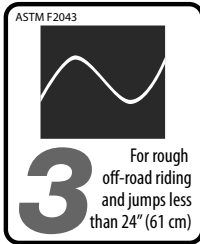
Special tools, skills, and knowledge may be required. Improper mechanical work increases the risk of an accident. Any bicycle accident has risk of serious injury, paralysis or death. To minimize risk we strongly recommend that owners always have mechanical work done by an authorized Cannondale retailer.

INTENDED FORK USE

**LEFTY SPEED 100 mm,
LEFTY 29'er 100mm, 90mm**

Cross-Country, Marathon, Hardtails

ASTM CONDITION 3



FORK INTENDED - For cross-country riding and racing which ranges from mild to aggressive over intermediate terrain (e.g., hilly with small obstacles like roots, rocks, loose surfaces and hard pack and depressions). There are no large “sick drop” or drop offs, jumps or launches (wooden structures, dirt embankments) requiring long suspension travel or heavy duty components. Cross-country and marathon equipment (tires, shocks, frames, drive trains) are lightweight, favoring nimble speed over brute force. Suspension travel is relatively short since the bike is intended to move quickly on the ground and not spend time in the air landing hard and hammering through things.

FORK NOT INTENDED - For use in extreme forms of jumping/riding such as hardcore mountain, Freeriding, Downhill, North Shore, Dirt Jumping, Hucking etc.

**Lefty MAX 140 mm,
Lefty Ultra 120 mm**

All Mountain, Overmountain

ASTM CONDITION 4



FORK INTENDED - For trail and uphill riding. All-Mountain bicycles are: (1) more heavy duty than cross country bikes or trail bikes, but less heavy duty than Freeride bikes, (2) lighter and more nimble than Freeride bikes, (3) heavier and have more suspension travel than a cross country bike, allowing them to be ridden in more difficult terrain, over larger obstacles and moderate jumps, (4) intermediate in suspension travel and use components that fit the intermediate intended use, (5) cover a fairly wide range of intended use, and within this range are models that are more or less heavy duty. Talk to your retailer about your needs and these models.

FORK NOT INTENDED - For use in extreme forms of jumping/riding such as hardcore mountain, Freeriding, Downhill, North Shore, Dirt Jumping, Hucking etc.

WARNING

UNDERSTAND YOUR FORK AND ITS INTENDED USE. USING YOUR FORK THE WRONG WAY IS DANGEROUS.

Industry usage Conditions 1 - 5 are generalized and evolving. Consult your Cannondale Dealer about how you intend to use your bike/fork. **Please read your *Cannondale Bicycle Owner's Manual* for more information about Intended Use and Conditions 1-5.**

FORK DAMAGE

WARNING

STOP RIDING A DAMAGED FORK IMMEDIATELY.

The following conditions indicate that serious fork damage is present:

1. Any unusual “klunking” or knocking noises.
2. A change in fork travel.
3. An over-extended, elongated, or compressed boot.
4. Changes from the way the fork had been working
5. Loss of adjustment features, oil leaks, or air leaks.
6. Crash or impact damage (deep scratches, gouges, dents, or bending)
7. Small cracks under the bolt head of upper and lower clamp bolts. This inspection requires the removal of the bolts.

Horizontal cracks above and below the intersection of the upper and lower clamps with the outer tube portion of the Lefty carbon structure.

Vertical cracks in the outer tube (where the races and needle bearings run). These may show as long, straight lines perhaps several lines parallel to each other.

Also, please read Inspect For Safety in PART II, Section D. of your *Cannondale Bicycle Owner's Manual*.

HAVE ANY DAMAGED FORK INSPECTED AND DAMAGE REPAIRED BY YOUR CANNONDALE DEALER. YOU CAN BE SEVERELY INJURED, PARALYZED OR KILLED IN AN ACCIDENT IF YOU IGNORE THIS WARNING.

The **MAINTENANCE** section of this supplement includes information about regular maintenance practices that can keep your fork in good operating condition.

DISASSEMBLY OR MODIFICATIONS

WARNING

DO NOT DISASSEMBLE OR MODIFY THE FORK.

Improper service or modification can lead to serious fork damage or serious personal injury. If your fork requires service, please take it to an Authorized Cannondale Dealer.

DO NOT:

1. Drill, file, cut or remove material from any fork part.
2. Weld, clamp, or bond anything to the fork.
3. Attempt to remove or add the damping cartridge or other internal fork parts.

The **MAINTENANCE** section of this manual indicates (*) service items to be completed through an Authorized Cannondale Dealer. Your dealer can arrange for the necessary service through our Factory Tech Room.

FORK UNDER HIGH-PRESSURE

WARNING

SERVICE BY PROFESSIONAL BIKE MECHANIC ONLY.

Special tools are required. All air pressure must be released before servicing any fork. Never attempt to work on a pressurized fork.

YOU CAN BE SEVERELY INJURED, PARALYZED, OR KILLED IN AN ACCIDENT IF YOU IGNORE THIS WARNING.

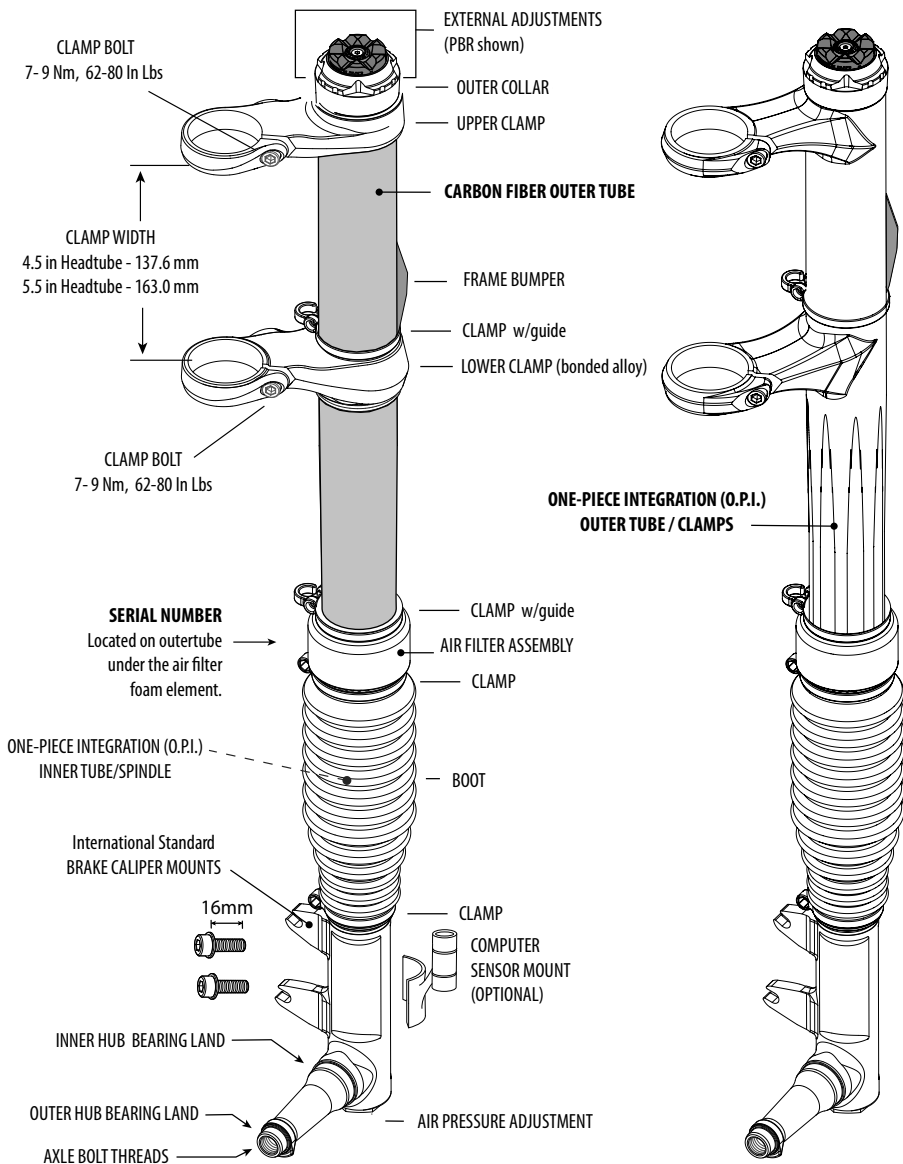
29'ER TIRE CLEARANCE CHECK

Please see the information starting on page 30.

FORK IDENTIFICATION

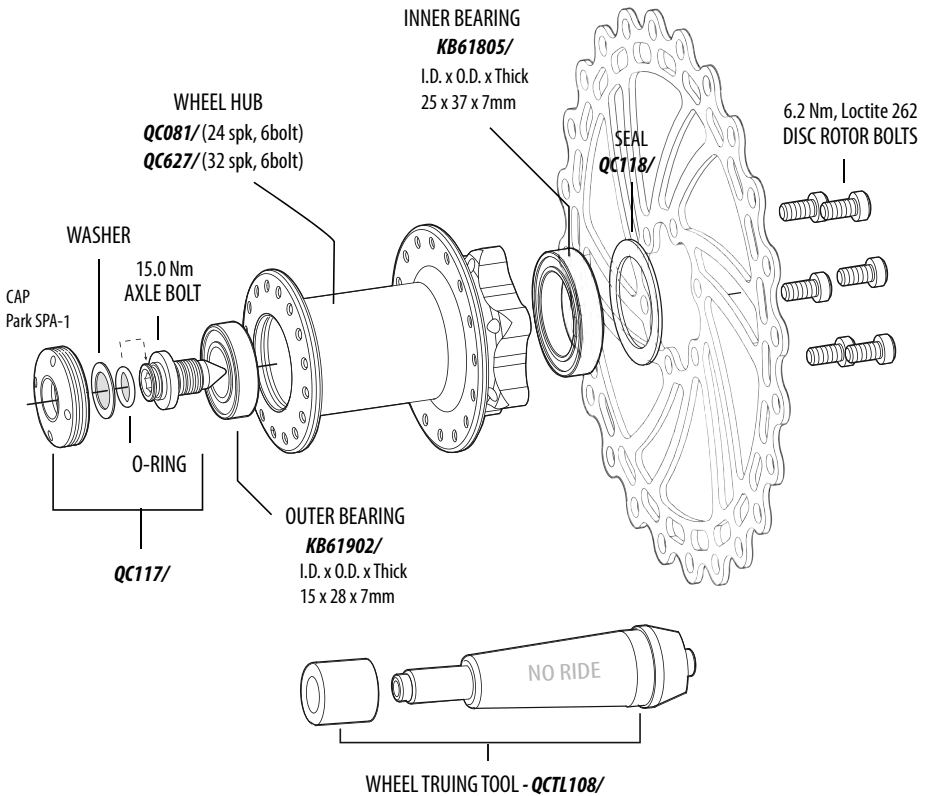
CARBON

OPI



WHEEL HUB

Lefty 24 And 32 Spoke Hub Dimensions	
Disc Flange Diameter	58 mm
Non Disc Flange Diameter	44.5 mm
Disc Flange To Center	35 mm
Non Disc Flange To Center	20 mm



FRONT WHEEL

To remove the wheel:

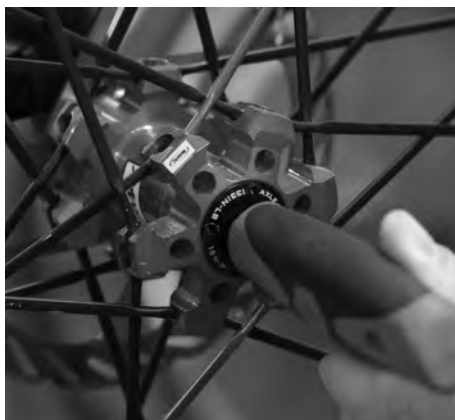
1. Use a 5 mm Allen key to loosen the brake caliper mounting bolts enough to remove the brake caliper from the mounting tabs.

Note brake alignment shims between brake bosses and the caliper. Replace correctly during reinstallation.



2. Insert a 5 mm Allen key into the axle hub bolt and turn the the hub extraction bolt counter-clockwise.

Continue turning the extraction bolt until the wheel can be removed easily from the spindle end.



NOTICE

- Make sure the bolt is completely disengaged before attempting to remove the wheel. Never try to pull the wheel off forcefully.
- When the wheel is off, to keep dirt out, cover the hub opening.
- Protect spindle from damage when wheel is removed.



To install the wheel:

1. Inspect inside the wheel hub for contamination and the condition of the hub seal. Take corrective action if necessary.

Wipe the spindle clean with a dry shop towel.

Apply a high-quality bike grease to I.D. of the bearings inside the hub.

2. Slide the wheel straight onto the spindle.
3. Turn the axle bolt clockwise to engage the spindle threads.

Make sure the wheel and spindle are supported while tightening the hub bolt.

4. Once the hub has been drawn onto the hub completely, use torque wrench to tighten to final 15.0 N·m (133.0 In·Lbs).
5. Reinstall the brake caliper. Tighten bolts to 78.0 In·Lbf (9.0 N·m).
6. Spin the wheel to make sure it moves freely. Be sure to test the brakes for proper operation before riding.


WARNING

DO NOT RIDE WITHOUT A PROPERLY MOUNTED, ADJUSTED, AND FUNCTIONING FRONT BRAKE SYSTEM.

The Lefty (disc/caliper) acts as an integral secondary wheel retention system. If the system is missing or improperly installed, or if the wheel hub axle bolt should loosen, the front wheel could slide off the spindle end.

When mounting IS compatible brake systems:

Follow brake manufacturer's instructions when mounting the brake caliper to the spindle brake bosses. Do not modify the fork in any way.

PLEASE ASK YOUR CANNONDALE DEALER FOR HELP WHEN INSTALLING COMPATIBLE FRONT BRAKE SYSTEMS.


WARNING

DO NOT CONTAMINATE BRAKE CALIPER, PADS, OR ROTOR WITH GREASE.

NOTICE

- **LOCATE BRAKE ROTOR BETWEEN THE PADS.**

Replace shims that are in use, be sure the shims are positioned between the caliper (adapter if any) and inner face of the fork mounts, not under the head of the caliper bolts.

- **USE ONLY THE LEFTY 16mm CALIPER BOLTS TO MOUNT THE BRAKE.**

Longer bolts can result in contact with the brake rotor causing severe damage. Check clearance between the bolt tips and rotor after remounting the caliper. Order replacement bolts - Cannondale p/n *LEFTYBOLTS/*.

- **MAKE SURE THE BRAKE DISC CAN NOT MAKE CONTACT WITH THE FORK BOOT.**

A rotating brake disc can wear through the boot allowing contaminants into the fork.

LOCKOUT ADJUSTMENT

XLR Hydraulic Remote



OPEN POSITION

Push black button to engage lockout.



LOCKED POSITION

Push black button again to return to open.

* NOTICE

DO NOT ROTATE THE GOLD DIAL! This is not an adjustment when used with Lefty. This dial has been set at the factory.

PBR



OPEN POSITION

Press blue button to engage lockout.



LOCKED POSITION

Press red knob to return to open.

REBOUND ADJUSTMENT

XLR Rebound Dial



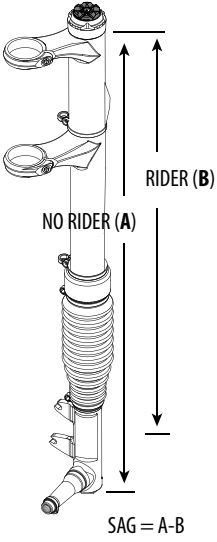
ROTATE DIAL IN THE "--" DIRECTION (COUNTER-CLOCKWISE) TO INCREASE REBOUND SPEED (FASTER).
ROTATE DIAL IN THE "+" DIRECTION (CLOCKWISE) TO DECREASE REBOUND SPEED (SLOWER).

PBR Rebound Dial



ROTATE DIAL IN THE "--" DIRECTION (COUNTER-CLOCKWISE) TO INCREASE REBOUND SPEED (FASTER).
ROTATE DIAL IN THE "+" DIRECTION (CLOCKWISE) TO DECREASE REBOUND SPEED (SLOWER).

Recommended Air Pressure



"Attack"
Weight Distribution
50/50

Recommended Air Pressure

To set air pressure

1. Make sure the bottom of the fork is clean. Remove the Schrader valve cap. Attach a bicycle suspension pump to the valve end.
2. Pressurize the fork to an initial starting air pressure of 65-75% of rider weight.
3. Add or release air to achieve 20-30% sag.

MODEL	MAX	ULTRA	SPEED	29'ER	29'ER
TOTAL TRAVEL (mm)	140	120	100	90	100
MINIMUM SAG 20% (mm)	28	24	20	18	20
B (mm)	660	640	635	645	655
MAXIMUM SAG 30% (mm)	42	36	30	27	30
B (mm)	645	630	625	635	645

B = Overall Lefty length at sag . Measure the distance between bottom of outer collar to bottom of spindle.

PRESSURE LIMITS

Minimum: 50 psi, 3.4 bar
Maximum: 225 psi, 15.5 bar

SUGGESTED SAG RANGE

XC - 20-25%
TRAIL 20-30 %

2. Now, to fine tune the sag. Without a rider, measure the fork from the bottom edge of the outer collar to the bottom edge of the spindle. Next, have someone assist you. Sit on the bike with your feet on the pedals and hands on handlebar as if you were in the "Attack" riding position shown on previous page; measure length (B), the fork compressed under your weight. To calculate the sag, subtract : $A - B = \text{SAG (mm)}$.

Add air pressure to decrease sag.

Release air pressure to increase sag.

NOTICE

MAKE SURE THE SUSPENSION PUMP AND FORK SCHRADER VALVE ARE CLEAN. Attaching to a dirty valve or with a dirty pump end can result in pumping the dirt into the fork. This could result in damage and air loss.

OPI STEM

The following procedure should only be completed by a professional bike mechanic.

Before installation, make sure all part surfaces are clean. Apply a high-quality bicycle bearing grease to the surfaces indicated. See shaded areas in illustration, next page. Make sure both upper and lower head tube bearings are fully seated in the headtube.

Follow these steps carefully:

1. Install the upper bearing seal onto the upper headtube bearing. The open side of the seal faces the bearing.
2. Position the Lefty onto the headtube by sliding the Lefty clamps over the head tube and seal.
3. Slide the nylon washer onto the OPI stem with rounded side facing the shoulder of the stem.
4. Apply grease to fully cover stem bearing surface and the internal steerer threads. Also apply grease to the inner race of the upper and lower headtube bearings. Slide the desired number of spacers onto the stem. You may use 0-3 spacers onto the OPI stem. Use only OPI spacers. See the warning below.
5. Make sure the Lefty is aligned over the head tube bearings, insert stem (with nylon washer, and desired spacers) through upper clamp/seal and onto the bearing. With a soft mallet, carefully drive stem straight down until fully seated.
6. Next, install the nylon washer onto steerer with the rounded side of the washer facing the steerer bottom flange. Grease entire steerer lower bearing surface and the steerer threads.
7. Insert steerer into bearing and carefully hand thread into stem. Do not use a tool. Continue hand threading until the steerer contacts the lower clamp surface.
8. Tighten the steerer to 12 Nm using the Shimano TL-FC33 bottom bracket tool and a torque wrench. This step draws the stem and spacer stack to the upper clamp. When tightened, align the stem and only hand tighten the upper clamp bolt.
9. Re-tighten the steerer to 12 Nm, ensuring the stem and Lefty do not move relative to each other. Then, hand tighten the lower clamp bolt.
10. Finish by tightening both the upper and lower Lefty clamp bolts to the final torque of 7 - 9 Nm.
11. Apply Loctite 242 and tighten the handlebar clamp bolts evenly and equally in a cross pattern to 6 Nm.



WARNING

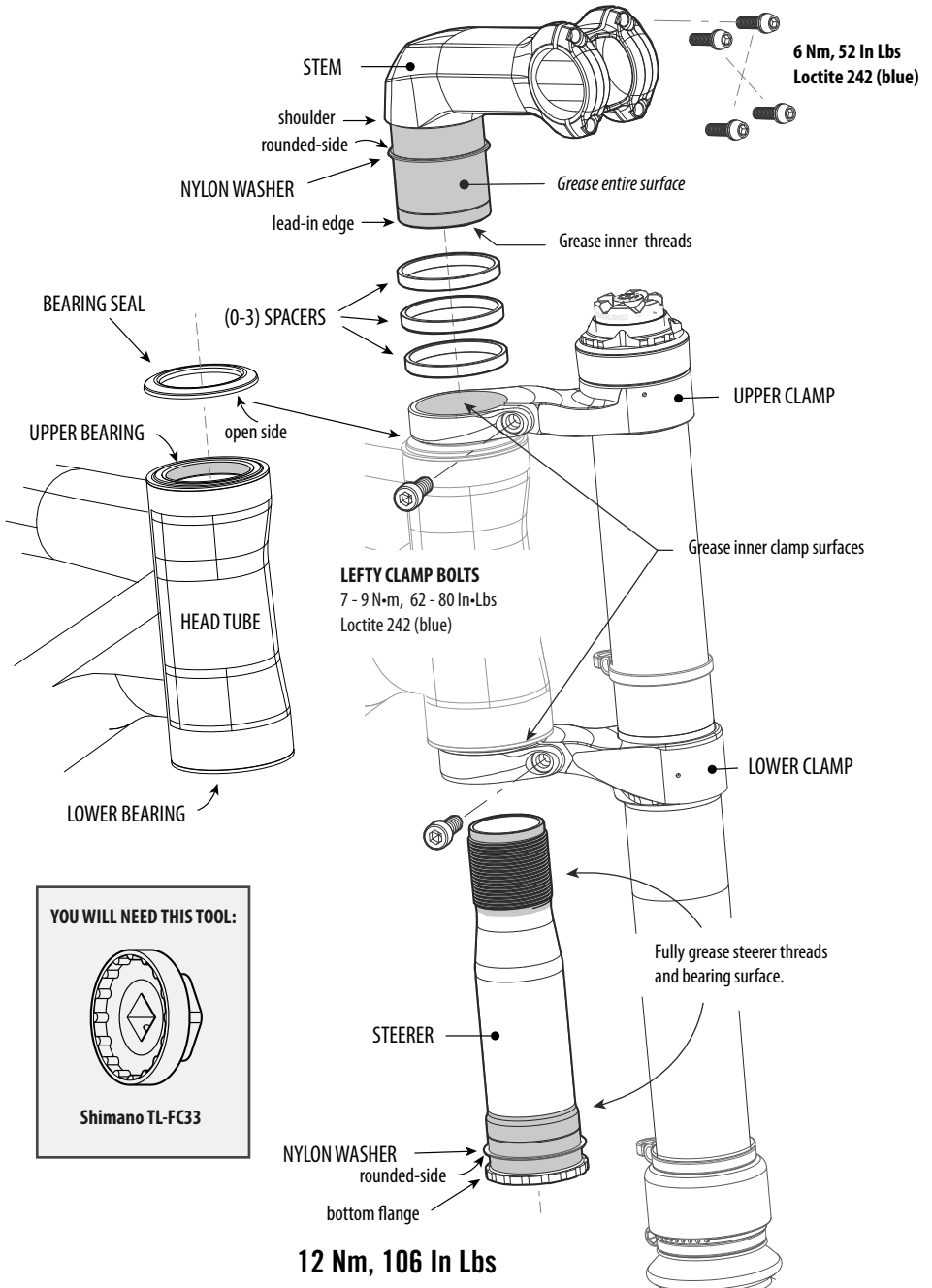
USE ONLY 0-3 OPI SPACERS. DO NOT USE OTHER SPACERS. Installing extra or different spacers will result in inadequate thread engagement between the stem and steerer resulting in serious damage. A damaged stem/steerer can break without warning and you could lose control of your bicycle.

NOTICE

USE A TORQUE WRENCH.

The recommended tightening torque for Lefty clamp bolts with the OPI stem system is 7 Nm. Do not exceed 9 Nm.

Over-tightening can damage the OPI steerer parts.



1 1/8 in STEERER ADAPTER

Four different 1 1/8 steerer adapter kits are available. The kits enable the installation of a Lefty onto a bicycle with an 1 1/8 in headtube. **The adapter system must be installed by a professional bike mechanic.**

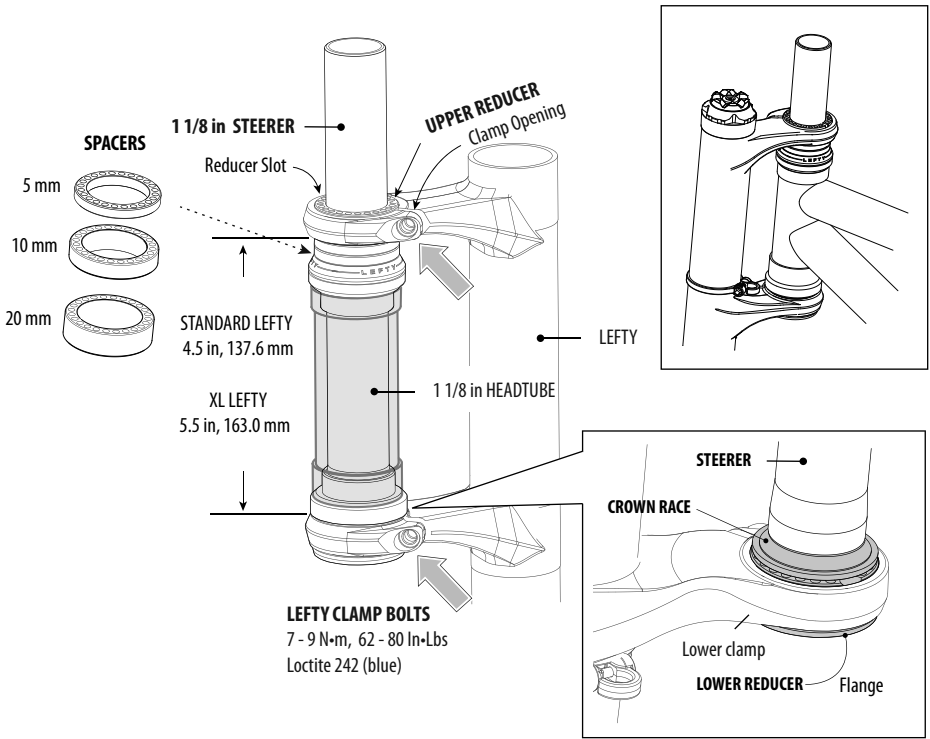
Here are some important points to remember about the kits:

- The bike frame must be compatible with the fork. See the WARNING below.
- The LOWER REDUCER must be inserted completely into the Lefty lower clamp so that the lower flange contacts the clamp. See the detail in the illustration.
- The upper Lefty clamps should only clamp to the UPPER REDUCER, not the SPACERS below it. The UPPER REDUCER is slotted and designed to compress. Clamping on SPACERS will result in insufficient clamping force. You should locate the UPPER REDUCER slot 180° opposite the Lefty upper clamp slot.
- The kits include (5 mm, 10 mm, and 20 mm) spacers in order to close the gap between the headset top cap and the upper reducer.
- Install all handlebar stem spacers above the upper reducer. Don't use them below the upper clamp.
- Tighten the upper and lower Lefty Clamp bolts AFTER the stem top cap has been installed and preload set.
- Use Loctite 242 on the bolt threads and tighten the Lefty clamp bolts to the specified torque, 7-9 Nm.



WARNING

Before installing the adapter system, **YOU must confirm with the frame manufacturer that the frame can be safely used with the adapter system and fork. This is YOUR responsibility and important to your safety. A long travel fork may create too much force on a frame designed for a shorter fork. If you ignore this warning, then the frame can break while your are riding it. YOU CAN BE SEVERELY INJURED, PARALYZED OR KILLED IN A RESULTING ACCIDENT.**



KIT	DESCRIPTION	STACK HEIGHT	STANDARD LEFTY CLAMP WIDTH	XL LEFTY CLAMP WIDTH
			1/18 HEADTUBE HEIGHT	
KH075/	KIT,STEERER,LEFTY 11/8" NO HSET (No headset)	--	--	--
KH058/	KIT,STEERER,LEFTY 11/8"-STD (Standard headset)	UPPER CUP 13.8 mm LOWER CUP 11.5 mm TOTAL 25.3 mm	≤ 112.3 mm	≤ 137.7 mm
KH059/	KIT,STEERER,LEFTY 11/8"-HSET (Hidden set headset)	UPPER CUP 11.3 mm LOWER CUP 2.0 mm TOTAL 13.3 mm	≤ 124.3 mm	≤ 149.7 mm
KH060/	KIT,STEERER,LEFTY 11/8"-OSTACK (Zero Stack headset)	UPPER CUP 10.0 mm LOWER CUP 0.5 mm TOTAL 10.5 mm	≤ 127.1 mm	≤ 152.5 mm

MAINTENANCE SCHEDULE

This schedule is intended as a guide only. You must establish a schedule appropriate to your riding style and conditions.

WHAT TO DO	NORMAL	RACE
	(In Hours)	
CHECK FOR DAMAGE - See page 3.	BEFORE AND AFTER EVERY RIDE	
BOOT INSPECTION - See page 18.		
TIGHTENING TORQUE CHECK - Use a torque wrench: Upper/lower clamp bolts: 7-9 Nm, 62-80 In Lbs Wheel axle bolt: 15.0 Nm, 133.0 In Lbs	AFTER FIRST RIDE CHECK EVERY 4-5 RIDES	
CLEAN/RE-OIL AIR FILTER - See page 18.	50	25
CLEAN/ RE-GREASE TELESCOPE - See page 20.	50	25
NEEDLE BEARING RESET * See page 21.	25	25
Damping cartridge oil and seal change *	100	50
Inspect, replace frame bumper	AS NEEDED	
SCHEDULE PROFESSIONAL FORK SERVICE * ANNUALLY (Minimum) Annually, or when problems are indicated you must have your Lefty fork serviced through a Cannondale Dealer or an Authorized Headshok Service Center. Your fork should be disassembled by a suspension professional and evaluated for internal and external part wear and damaged parts replaced with new ones. It should also include any work described in any technical bulletins or product recalls. PLEASE NOTE: Cannondale provides professional services through Cannondale dealers for Headshok /Lefty suspension forks. Please ask your dealer about the service programs available for your model fork.		



WARNING

FREQUENT MAINTENANCE AND INSPECTION IS IMPORTANT TO YOUR SAFETY. YOU CAN BE SEVERELY INJURED, PARALYZED OR KILLED RIDING ON A BROKEN OR POORLY MAINTAINED FORK. Ask your Cannondale Dealer to help you develop a complete fork maintenance program, one that suits where and how you ride.

IMPORTANT INFORMATION ABOUT RIDING IN WET, HUMID, OR COASTAL CONDITIONS

Before and after rides, frequently, inspect and renew grease under fork boot and service the air filter. Inspect the boot for rips and tears. Check the folds. If the boot is damaged or not attached securely by the clamps/zip ties, water or contaminants can enter. The boot should be removed and the fork should be immediately dried and re-greased to stop any damage occurring due to moisture.

ANYTIME THE FORK BECOMES SUBMERGED

Stop riding it. The fork is not water tight. A moving submerged fork can accumulate water inside. If your fork has been submerged, you should perform checks immediately.

DO NOT STORE YOUR LEFTY FOLLOWING A WET RIDE WITHOUT FIRST PERFORMING THE CHECKS ABOVE. SERIOUS DAMAGE CAN OCCUR.

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.** Use a low pressure garden hose. Power washing will force contaminants into the fork promoting corrosion, immediately damaging, or result in accelerated wear.
- **DON'T DRY WITH COMPRESSED AIR FOR THE SAME REASON.**

Frame Bumper

The Lefty frame bumper is located on the outer tube between the clamps. The bumper cushions the frame from contact with the fork. Replace it with a new one if it ever becomes damaged, torn, or missing.

REPLACEMENT: Before replacement, gently clean the Lefty outer tube with warm soapy water and wipe dry. Remove the backing from the new bumper, position and affix by pressing firmly against the outer tube.

IMPORTANT: Be sure to position the bumper so that when the handlebar is rotated to the left, the bumper prevents fork contact with the the frame. Frame damage can result from using the wrong bumper or positioning a bumper incorrectly. Ask your Cannondale Dealer for help.



ORDER NO.	KIT DESCRIPTION
HD215/	KIT,FRAME BUMPER, LEFTY STD (for standard clamp width Lefty)
KH074/	KIT,FRAME BUMPER, LEFTY XL (for tall clamp width Lefty)

Boot Inspection

The fork boot protects the internal parts (inner tube, races, lubricant, needle bearings, and other internal parts) from contamination and damage. It is a barrier to water, dirt, dust, mud, or grit encountered while riding. If the boot is loose or damaged; dirt, water, dust, salt spray or other contaminants will quickly ruin the fork.

The boot is an important protection, so before every ride do the following:

1. Check the boot for damage cracking, splits, or tears. Be sure to check in the folds of the boot.

Check carefully in the folds.

Check for any cables or lines rubbing the boot.

Make sure the brake rotor does not rub or contact the boot.

2. Check the attachment of the boot at the top and bottom. The upper and lower boot lips should be fitted over the lower collar and fork lip. **NO PART OF THE FORK INNER TUBE (lower leg) SHOULD BE EXPOSED.**
3. Replace clamps as required. Always tighten securely, but do not over-tighten the clamps. Replacement cable clamps are available through a Cannondale Dealer.

IMPORTANT:

If you find boot damage, the area under the fork should also be inspected for damage. And, the damaged boot must be replaced with a new one before riding. Do not try to fix it.



Clean/Re-Oil Air Filter

The air filter assembly is located over breather air holes in the outer tube. The air filter assembly stops the passage of dirt and water which would damage the internal fork components.

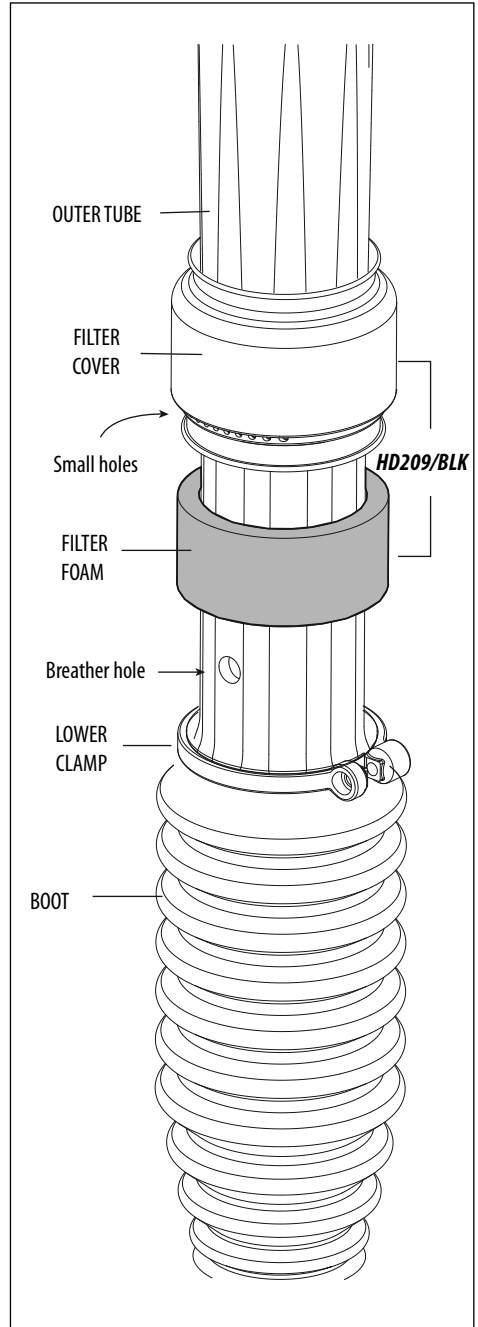
The cleaning procedure is the same for carbon or alloy outer tube forks.

To clean and re-oil air filter

1. Loosen and remove both the upper and lower clamps.
Return the lower clamp to the top of the boot and secure it to seal out water.
2. Slide the air filter cover off the foam element.
3. Slide the foam element up off the breather hole.
4. Cover the breather hole by applying a ring of vinyl tape around the tube.
5. Using warm clean soapy water, massage the foam air filter element. Preventing water or soap from entering the holes in the outer tube or into top of the boot. This will clean the foam of accumulated dirt or dust.
6. Repeat the process with clean warm water to rinse the foam. Gently squeeze the foam element to remove the water.
7. Allow the foam element to dry completely, and massage in a high-quality foam air filter oil.
8. Remove the tape covering the hole and slide the foam element back into position over the breather hole.
9. Slide the boot back over the foam element. The lower filter cover lip should be lapped over the top of the boot. The small holes in the filter cover should be positioned on the fork so they are at the sides to prevent plugging from dirt or debris thrown by the front wheel.

NOTICE

- DO NOT USE SPRAY CLEANERS.
- COVER BREATHER HOLE. MAKE SURE THE BOOT LOWER CLAMP IS SECURE.



Clean/Re-Grease Telescope

Periodically, or whenever the fork is ridden in extreme conditions or is submerged, perform the following procedure.

To clean and re-grease

1. Release all air pressure through Schrader valve in bottom of fork.
2. Remove the front wheel.
3. Carefully release the upper and lower zip ties securing the fork boot. If the boot is secured with a band clamp, loosen and remove the clamp.
4. Lift the unsecured boot up to expose the inner tube.
5. Wipe off the old grease with a dry shop towel.
5. Re-apply a fresh heavy coating of grease. Any clean high-quality bicycle bearing grease selected for riding temperatures and environment can be used.

We assemble forks at our factory using

LUBRIPLATE GR-132.

http://www.lubriplate.com/pdf/pds/3_4%20GR-132.pdf

Cycle the fork several times between applying grease to the new grease is worked into the bearings.

7. Reposition the boot and replace the upper and lower clamps.

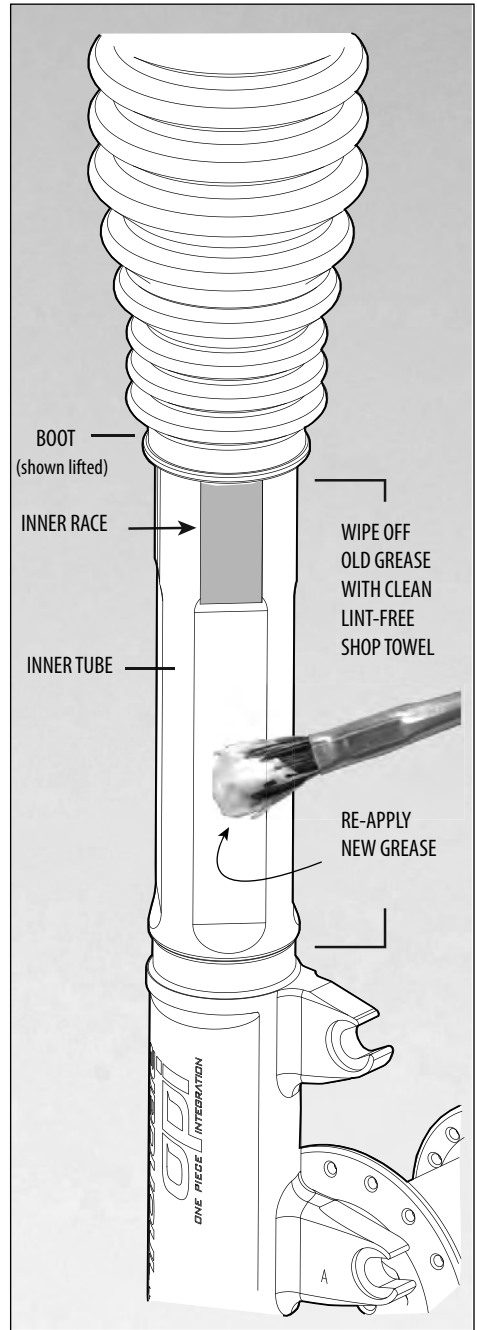
NOTICE

- DO NOT USE SPRAY CLEANERS OR ABRASIVES. USE A CLEAN SHOP TOWEL ONLY.

NOTE: Make sure the clamps are secure without over-tightening. A loose clamp may allow water or dirt to pass behind the boot. If the clamps are too tight, boot damage can occur.

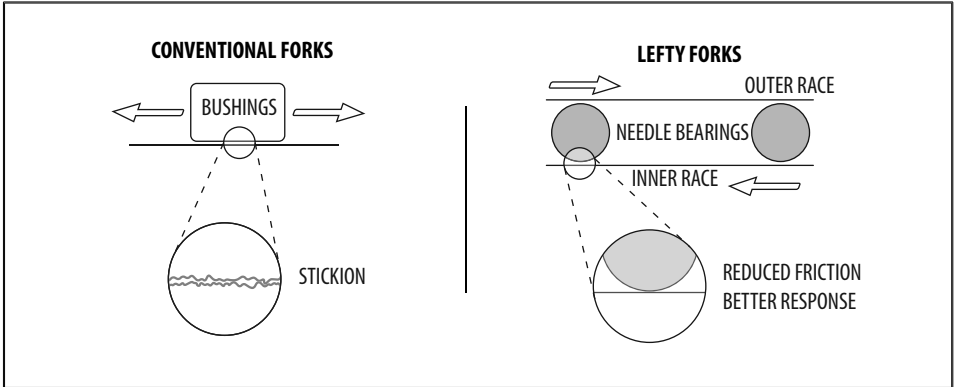
HD225/

KIT,GREASE,LUBRIPLATE



LEFTY NEEDLE BEARING RESET

The unique advantage of the Lefty telescopic fork structure is the utilization of 4 needle bearing cages. Each cage contain 22 precision stainless steel needle bearings. The use of needle bearings requires less surface area to make the telescope perform smoothly and efficiently. This is accomplished through rolling versus sliding and results in less friction. Less friction means smoother travel, pure and simple. Compare that with conventional forks that use bushings in their stanchions. These bushings have more contact with the sliding part of the scope, which generates friction. That friction causes a heat build-up within the fork and robs performance.

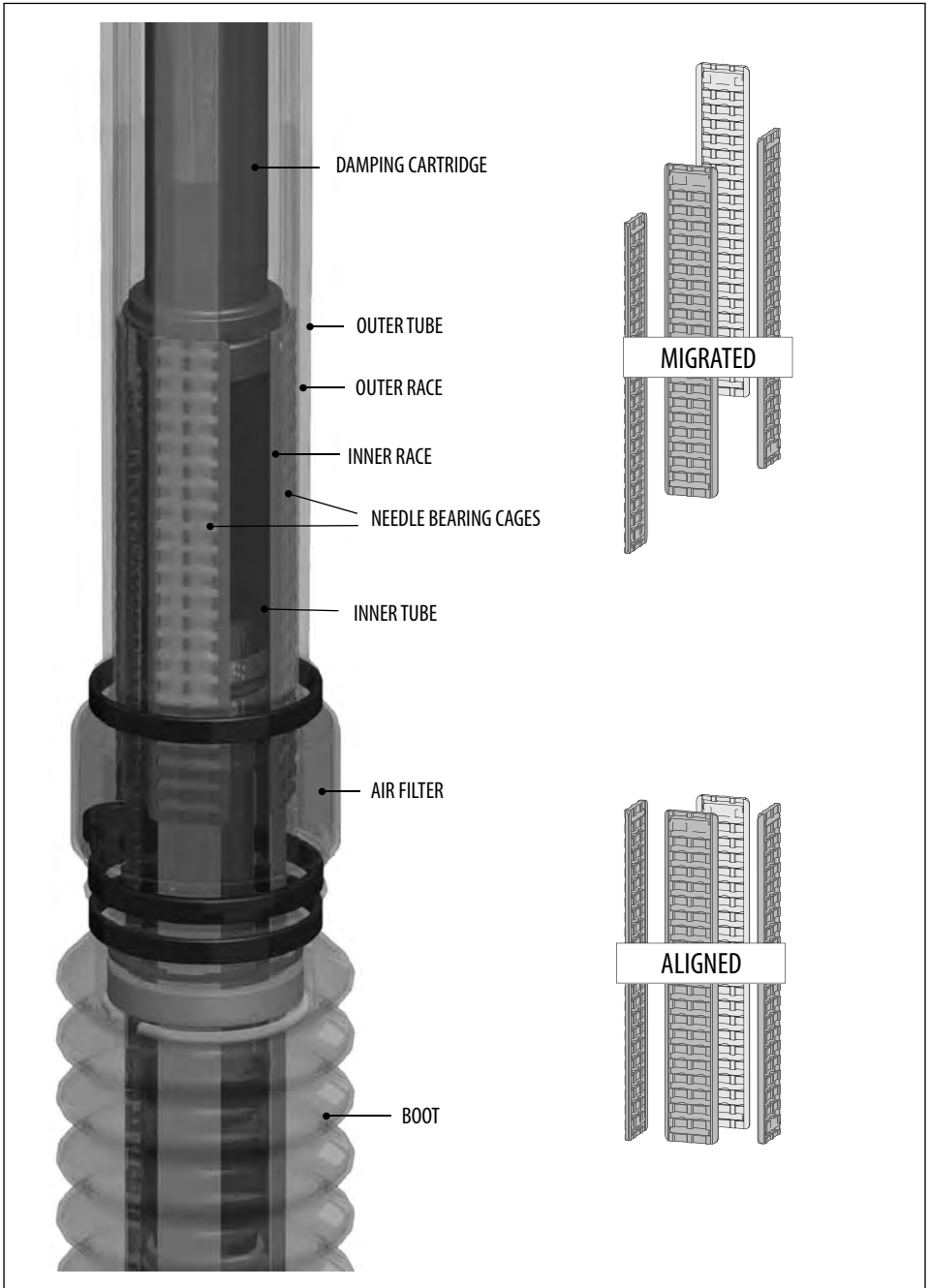


The system requires simple periodic maintenance to ensure proper bearing alignment. Why? Inside the fork the four needle bearing cages of the telescope move independently up and down between each inner and outer race pair. Bearing cage migration happens when a cage or cages shifts out of alignment up or down in relation to the others. Very slight migration would not affect travel noticeably, however, as a cage continues to move out of position relative to the others, the available travel will be reduced.

Needle bearing migration is normal and to be expected. However, if the fork in this state for extended periods, the fork can be damaged. Indications of migration are: An usual "top out" noise, reduced travel.

RESETTING NEEDLE BEARING MIGRATION

The procedure for resetting your specific Lefty needle bearings is described in the section of the supplement specific to your fork. The techniques of resetting is the same for all forks, however, dis-engaging the damping cartridge differs. We provide the information in the supplement, however, we recommend that you always have this procedure performed by your Cannondale Dealer. If migration re-occurs frequently (immediately after resetting), the cause could be damage present in the inner or outer races, bearings/cages or other fork parts. Inspection and replacement of damage parts will be required to correct a persistent problem with bearing migration.



PBR/XLR Needle Bearing Reset

The following procedure should only be completed by a professional bike mechanic.

To reset

1. Release all air pressure through Schrader valve in bottom of fork.
2. **PBR** - Remove the outer collar with the Shimano tool TL-FC32. Turn counter-clockwise.

XLR - Remove the outer collar with the Shimano tool TL-FC32. Turn counter-clockwise. After the outer collar is disconnected from the outer tube, lift the XLR hydraulic assembly up and out of the damper. **(During Re-installation) Make sure the hex end of the XLR assembly is properly aligned and engaged inside the damper before the collar is threaded back on.**

3. Compress the telescope and remove the two split rings from the top cap.
4. Fully extend the fork, and measure from top edge of outer tube to bottom edge of spindle. See right. If the length is out of specification do the following:

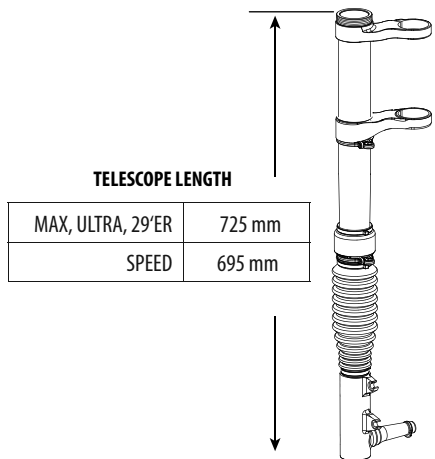
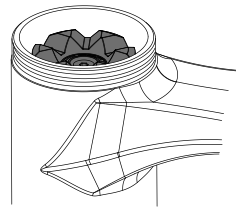
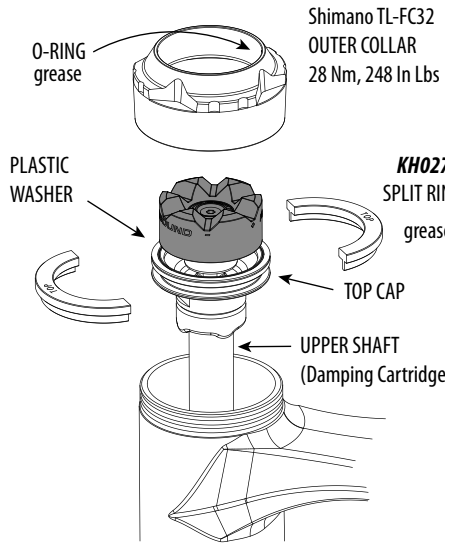
Firmly extend the telescope until it stops (tip - listen for the knocking at full extension to change from a hollow sound to a solid sound - this indicates full extension has been achieved). Do this several times using only moderate force, extend the lower fork leg using a pumping action.

After, you have performed this action several times, re-measure.

NOTICE

If fork is out of range following reset attempt, it may be damaged internally. The fork should be disassembled and inspected by a professional mechanic before it is ridden.

TIP: If migration re-occurs frequently (immediately after resetting), the cause could be damage present in the inner or outer races, bearings/cages or other fork parts. Inspection and replacement of damage parts will be required to correct a persistent problem with bearing migration.



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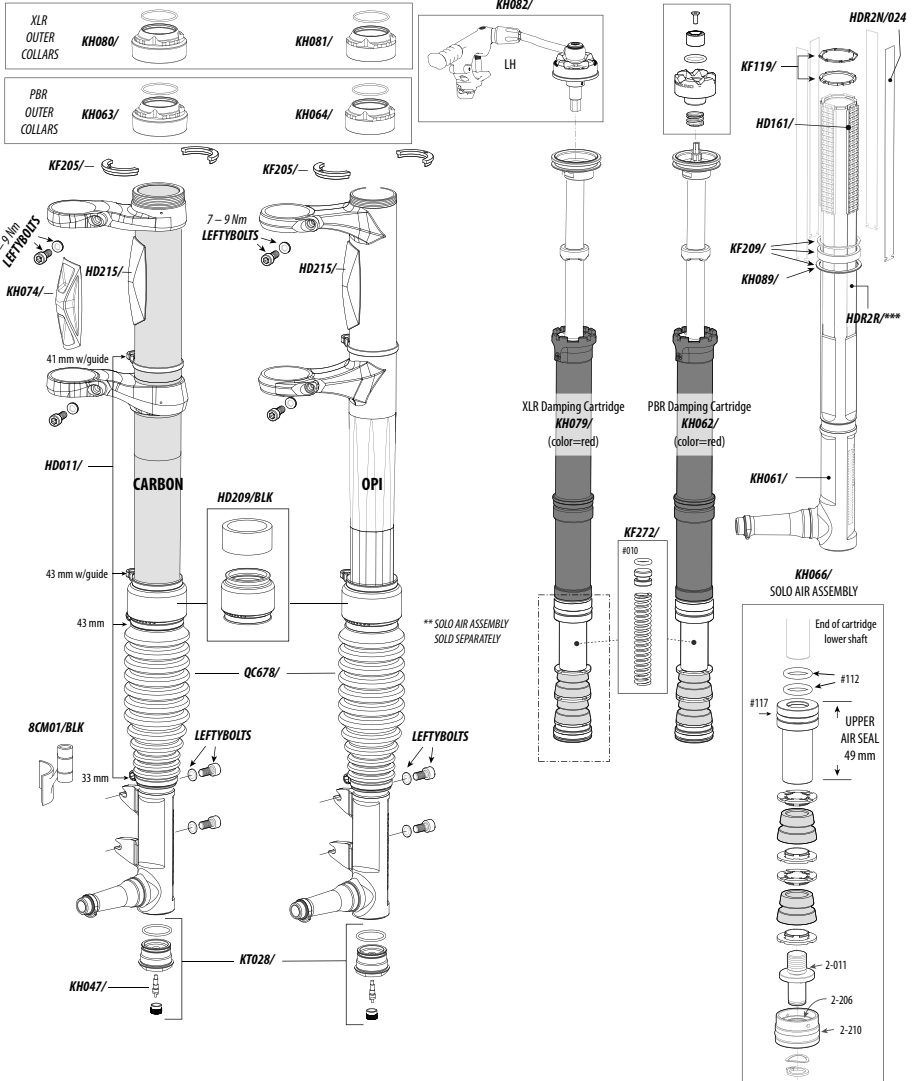
REPLACEMENT PARTS

The following replacement part kits are available through a Cannondale Dealer:

CODE	TELESCOPE PARTS	MAX 140	ULTRA 120	SPEED 100	29'ER 100	29'ER 90
<i>HD161/</i>	KIT.NEEDLE BEARINGS	X	X	X	X	X
<i>HDR2N/024</i>	KIT.RACE.OUTER.LEFTY--8.11" x .024" (206mm x .61mm)	X	X		X	X
<i>HDR2R/020</i>	KIT.RACE.INNER.LEFTY--8.310" x .020" (211mm x .51mm)	X	X		X	X
<i>HDR2R/021</i>	KIT.RACE.INNER.LEFTY--8.310" x .021" (211mm x .53mm)	X	X		X	X
<i>HDR2R/022</i>	KIT.RACE.INNER.LEFTY--8.310" x .022" (211mm x .56mm)	X	X		X	X
<i>HDR2R/023</i>	KIT.RACE.INNER.LEFTY--8.310" x .023" (211mm x .58mm)	X	X		X	X
<i>HDR2R/024</i>	KIT.RACE.INNER.LEFTY--8.310" x .024" (211mm x .61mm)	X	X		X	X
<i>HDR2R/025</i>	KIT.RACE.INNER.LEFTY--8.310" x .025" (211mm x .64mm)	X	X		X	X
<i>HDR2R/026</i>	KIT.RACE.INNER.LEFTY--8.310" x .026" (211mm x .66mm)	X	X		X	X
<i>HDR16/024</i>	KIT.RACE.OUTER.LEFTY--7.480" x .024" (190mm x .61mm)			X		
<i>HDR2P/020</i>	KIT.RACE.INNER.LEFTY--7.520" x .020" (191mm x .51mm)			X		
<i>HDR2P/021</i>	KIT.RACE.INNER.LEFTY--7.520" x .021" (191mm x .53mm)			X		
<i>HDR2P/022</i>	KIT.RACE.INNER.LEFTY--7.520" x .022" (191mm x .56mm)			X		
<i>HDR2P/023</i>	KIT.RACE.INNER.LEFTY--7.520" x .023" (191mm x .58mm)			X		
<i>HDR2P/024</i>	KIT.RACE.INNER.LEFTY--7.520" x .024" (191mm x .61mm)			X		
<i>HDR2P/025</i>	KIT.RACE.INNER.LEFTY--7.520" x .025" (191mm x .64mm)			X		
<i>HDR2P/026</i>	KIT.RACE.INNER.LEFTY--7.520" x .026" (191mm x .66mm)			X		
<i>KF209/</i>	KIT.COLLAR LOWER LEFTY	X	X	X	X	X
<i>KH089/</i>	KIT.CIRCLIP LEFTY RETAIN.(10)	X	X	X	X	X
<i>KF119/</i>	KIT.RACE CLIP.METRIC	X	X	X	X	X
<i>KT029/</i>	KIT.INNER LEG LEFTY OPI 110/100			X		
<i>KH061/</i>	KIT.INNER LEG LEFTY OPI 140/120	X	X		X	X
<i>QC678/</i>	KIT.BOOT LEFTY SPEED			X		
<i>KF222/</i>	KIT.BOOT LEFTY MAX	X	X		X	X
<i>HD209/BLK</i>	KIT.AIR FILTER LEFTY	X	X	X	X	X
<i>HD011/</i>	KIT.BAND CLAMPS CABLE GUIDE	X	X	X	X	X
<i>HD215/</i>	KIT.FRAME BUMPER LEFTY STD	X	X	X	X	X
<i>KH074/</i>	KIT.FRAME BUMPER LEFTY XL	X	X	X	X	X
CODE	DAMPER PARTS					
<i>KH086/</i>	KIT.DAMPER.XLR100 --SOLO AIR ASS'Y SOLD SEPERATELY--			X		
<i>KH087/</i>	KIT.DAMPER.PBR100 --SOLO AIR ASS'Y SOLD SEPERATELY---			X		
<i>KH079/</i>	KIT.DAMPER.XLR140/120/29'ER ---SOLO AIR ASS'Y SOLD SEPERATELY---	X	X		X	X
<i>KH062/</i>	KIT.DAMPER.PBR140/120/29'ER ---SOLO AIR ASS'Y SOLD SEPERATELY---	X	X	X	X	X
<i>KH080/</i>	KIT.COLLAR UPPER.XLR.CRB.BLK	X	X	X	X	X
<i>KH081/</i>	KIT.COLLAR UPPER.XLR.OPI.BLK	X	X	X	X	X
<i>KH063/</i>	KIT.COLLAR UPPER.PBR.CRB.BLK	X	X	X	X	X
<i>KH064/</i>	KIT.COLLAR UPPER.PBR.OPI.BLK	X	X	X	X	X
<i>KF205/</i>	KIT.SPLIT RING 7/2 LEFTY	X	X	X	X	X
<i>KH082/</i>	KIT.LEVER.XLR	X	X	X	X	X
<i>KH065/</i>	KIT.KNOBS.PBR 2 0	X	X	X	X	X
<i>KF272/</i>	KIT.PRESSURE COMP SYSTEM.LEFTY	X	X	X	X	X
<i>KT028/</i>	KIT.SCHRADER PLUG LEFTY	X	X	X	X	X
<i>KH047/</i>	KIT.VALVE CORES /10	X	X	X	X	X
<i>KH070/</i>	KIT.AIR PISTON.PBR/XLR120		X			
<i>KH052/</i>	KIT.AIR PISTON.PBR/XLR100			X		
<i>KH091/</i>	KIT.AIR PISTON.PBR/XLR100 29'ER				X	
<i>KH085/</i>	KIT.AIR PISTON.PBR/XLR100 29'ER					X
<i>KH066/</i>	KIT.AIR PISTON.PBR/XLR140	X				
<i>KH088/</i>	KIT.AIR PISTON.SOLO AIR (PISTON ONLY)	X	X		X	X
<i>HD010/</i>	KIT. CLIPS, TRAVEL REDUCERS (QTY 3)				X	X
<i>KH042/</i>	KIT.SEALS.PBR/XLR	X	X	X	X	X
<i>KF204/</i>	KIT.SHIM VALVING.DLR2/PBR/XLR	X	X	X	X	X
<i>KH076/</i>	KIT.REDUCER.SOLO AIR TUNE OPTIONAL	X	X	X	X	X
<i>KH083/</i>	KIT.CHECK VALVE.LC TUNE OPTIONAL	X	X	X	X	X
<i>KH084/</i>	KIT.LOCKOUT WASHER.L/O TUNE OPTIONAL	X	X	X	X	X
CODE	SERVICE TOOLS					
<i>KH031/</i>	KIT.TOOL.CASTLE TOOL-SUPER	X	X	X	X	X
<i>KH004/</i>	KIT.TOOL.OIL CAP WRENCH	X	X	X	X	X
<i>HDTL168/</i>	KIT.TOOL.BULLET.1/2"	X	X	X	X	X
<i>HDTL187/</i>	KIT.TOOL.SHAFT CLAMP 1/2",BLK	X	X	X	X	X
<i>KH023/</i>	KIT.TOOL.SHAFT CLAMP 17-21,BLU	X	X	X	X	X
<i>KT016/</i>	KIT.TOOL.BEARING RESET.ENGLISH & METRIC	X	X	X	X	X
<i>KT002/</i>	KIT.TOOL LEFTY RACE RETAINER."DIGGLER"	X	X	X	X	X
<i>KT020/</i>	KIT.TOOL LEFTY INSTALL	X	X	X	X	X
<i>KH057/</i>	KIT.TOOL LEFTY THREAD REPAIR	X	X	X	X	X
<i>KH225/</i>	KIT.GREASE LUBRIPLATE	X	X	X	X	X
<i>HD226/</i>	KIT.OIL.GOLDEN SPECTRO	X	X	X	X	X
<i>KH090/</i>	KIT.TOOL.XLR BLEED TOOL	X	X	X	X	X

Illustration for part reference only, not assembly instructions.

REPLACEMENT PARTS - 2012 LEFTY MAX XLR/PBR 140



REPLACEMENT PARTS - 2012 LEFTY ULTRA XLR/PBR 120

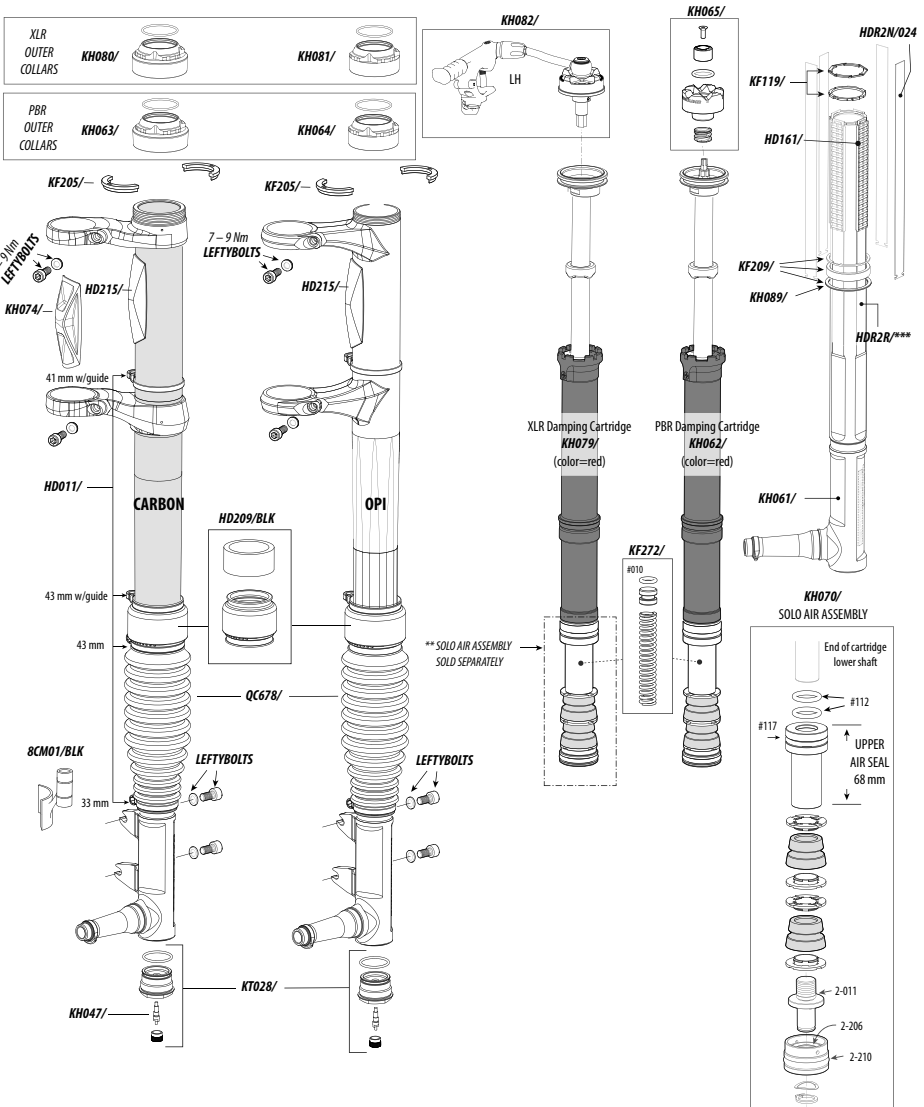


Illustration for part reference only, not assembly instructions.

REPLACEMENT PARTS - 2012 LEFTY 29'ER XLR/PBR 100

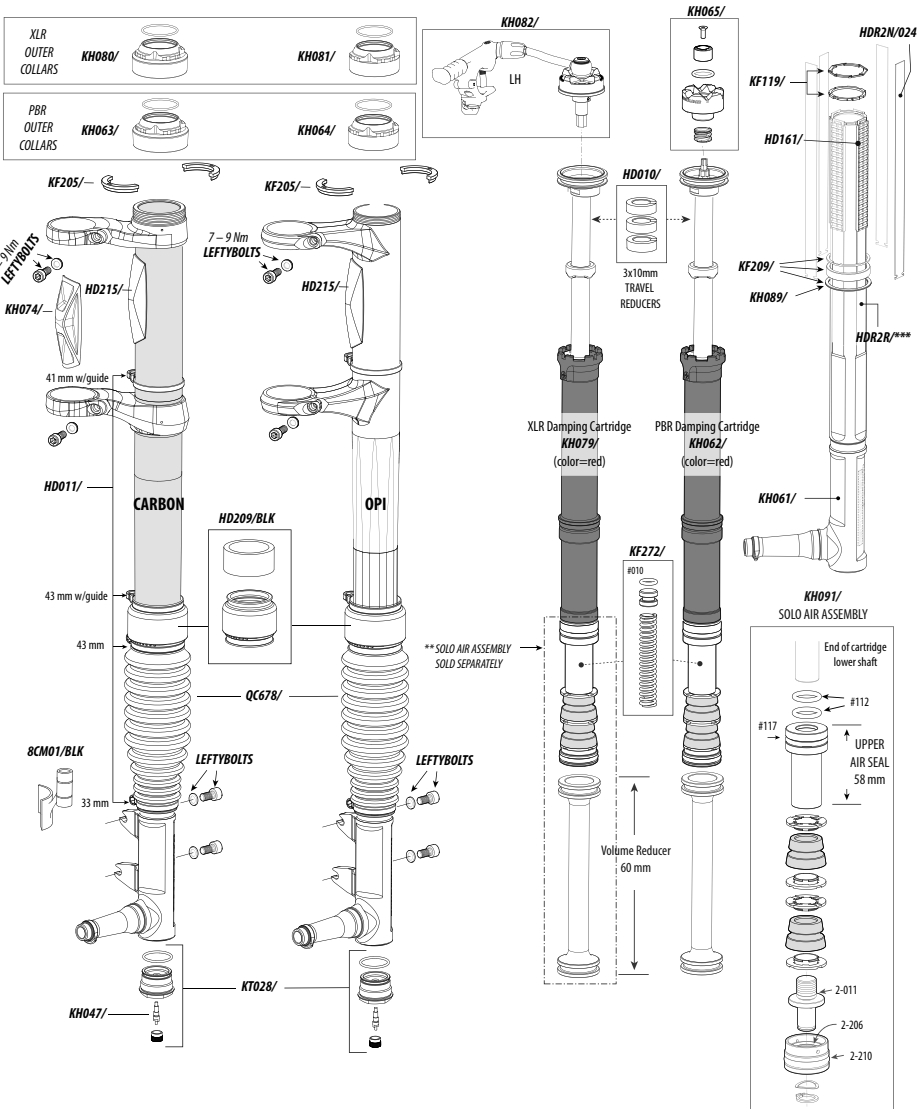


Illustration for part reference only, not assembly instructions.

REPLACEMENT PARTS - 2012 LEFTY 29"ER XLR/PBR 90

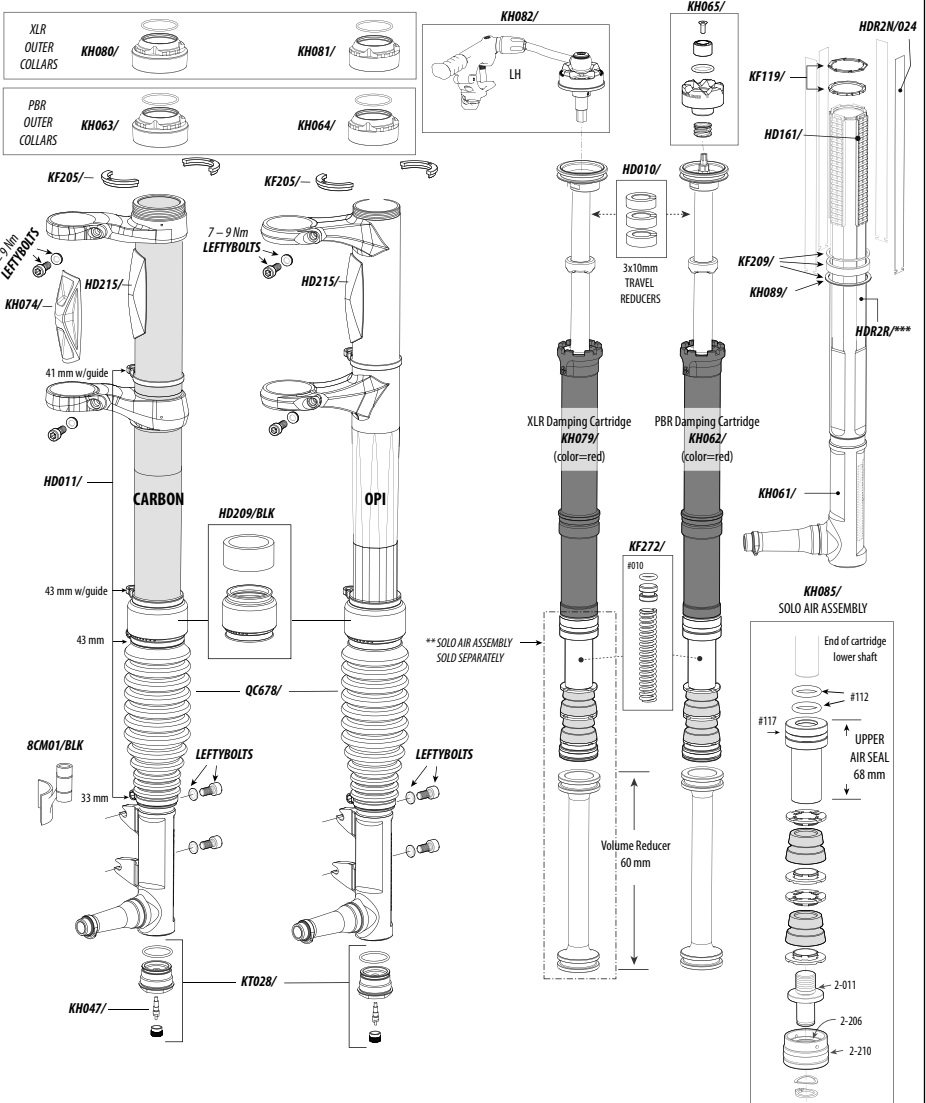
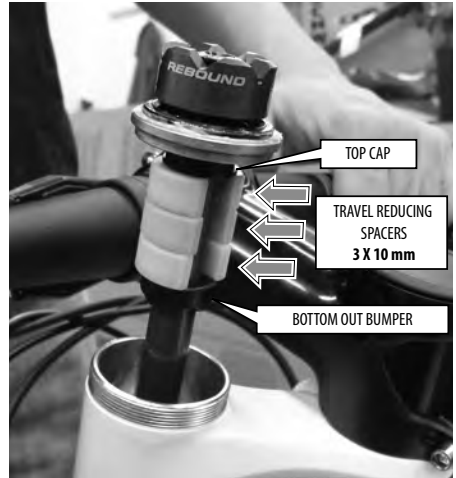


Illustration for part reference only, not assembly instructions.

ALL LEFTY 29'ERs Tire-to-Fork Crown Pre-Ride Clearance Check



Travel reducing spacers are present to physically limit telescope travel in order to maintain wheel-to-frame clearance for 29" inch diameter wheels. **See Figure 1.** Spacers should not be removed and additional spacers should not be added.

We want to stress that the three 10mm travel reducers installed in Lefty 29'ER forks on the upper damping cartridge shaft between the top cap and bottom out bumper are not optional. **See Figure 2.**

WARNING

DO NOT REMOVE 29'ER TRAVEL REDUCERS. If the three 10mm travel reducers (above left) are not installed properly, and the air spring pressure is lost or too low, and the fork is loaded in a large compression event, a rotating tire could come into contact with the frame causing the wheel to stop suddenly. This can throw a rider off the bicycle or result in a loss of control and crash.

CHECK FOR MINIMUM TIRE FORK/FRAME CLEARANCE (10 mm) WITH ALL AIR RELEASED FROM LEFTY AND FULLY COMPRESSED. Measure between the top of the properly inflated tire and the bottom of the fork steerer. See above right.

YOU CAN BE SEVERELY INJURED, PARALYZED OR KILLED IN AN ACCIDENT IF YOU IGNORE THIS WARNING.

To check for proper 29"ER tire/frame clearance:

1. Inflate the front tire of the 29" wheel to the recommended pressure noted on tire sidewall.
2. At the bottom of the fork, remove the Schrader valve cap. Figure 3.
3. Cover the brake disc with a shop towel to prevent the small amount of fork fluid that might be expelled from contaminating the brake disc. Press and hold the Schrader valve open to release all air pressure. Figure 4.
4. Press down on the handlebars until the fork travel stops at its lowest point. The fork should not rebound when you remove your hands from the handlebar. Again, to make sure no residual air pressure is present inside the fork, press and hold open the Schrader valve.

Hold the fork in this lowered position and measure the distance between the top of the tire and the bottom of the fork steerer.

This measurement must be 10 mm or greater. Figure 5.

If it is, the fork clearance is OK.

If the tire clearance between the fork steerer/or any part of the bike frame and tire is less than 10mm or touches, (Figure 6.) the clearance is NOT OK. The fork must be checked for spacers.

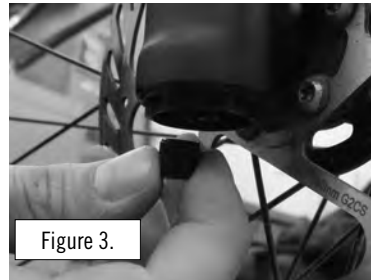


Figure 3.

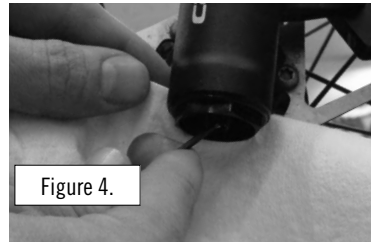


Figure 4.

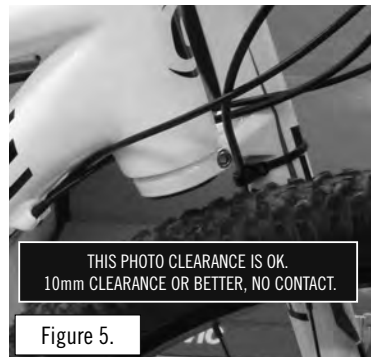


Figure 5.

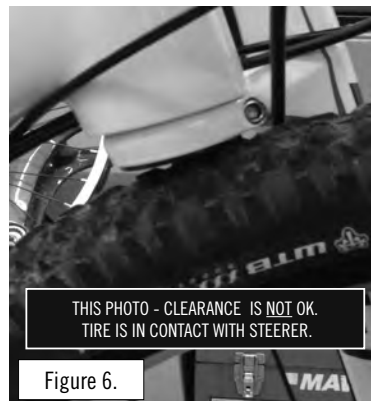


Figure 6.

To check /install travel reducers:

1. Remove the Lefty outer collar with a Shimano Bottom bracket tool - TL-FC32. Turn the wrench counter-clockwise to loosen the outer collar. Figure 7.

When loose, unscrew the collar with your fingers.

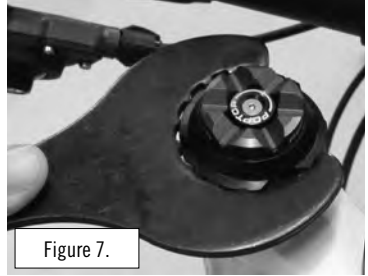


Figure 7.

2. When the outer collar is removed, compress the fork causing the upper damping cartridge shaft to be exposed. Be sure to note the two split rings in the top cap groove. Figure 8.



Figure 8.

3. You should see the three 10mm spacer located on the upper damping cartridge shaft, located between the shaft top cap and the bottom out bumper.

To obtain travel reducers required, order kit no:
HD010/ - KIT,CLIPS,TRAVEL REDUCERS



Figure 9.

If spacers are missing or less than three are installed, you can install the required spacers easily at this point. Simply snap the opening of a spacer onto the upper shaft between the bottom out bumper and the shaft top cap. Install only three spacers. Figure 10. You will need to apply some force to snap them on. But use only your fingers, do not use tools as this may damage the damping cartridge shaft.

4. When you are finished slide the bottom out bumper against the spacers. Apply some fresh grease to the split rings and lower the top cap and split rings back into the outer tube. Reinstall the outer collar and tighten it securely with the bottom bracket tool.



Figure 10.

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: <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. The boot, air filter assembly, 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 internal parts 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: <http://www.cannondale.com/Dealerlocator>



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