



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

LEFTY MAX PBR 130mm

Owner's Manual Supplement

122168.PDF

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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.

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

Intended Use

Lefty PBR 130mm is intended for Condition 4 (All Mountain) riding. Condition 4 symbol shown next figure.



Not Intended

The Lefty PBR 130 are 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.

Please read your Cannondale Bicycle Owner's Manual for more information about Intended Use and Conditions 1-5.

Front Brake

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.

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.

CAUTION

USE ONLY 16mm (Cannondale kit # LEFTYBOLTS). 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.

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, or air leakage.
6. Crash or impact damage (deep scratches, gouges, dents, or bending)

For next items 7-10 please read Inspect For Safety in PART II, Section D. of your Cannondale Bicycle Owner's Manual. **See figure on page 5 in this manual for inspection AREAS I-IV.**

7. AREA I - Small cracks under the bolt head of upper and lower clamp bolts. This inspection requires the removal of the bolts.
8. AREA II - 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.
9. AREA III - Horizontal cracks above and below the intersection of the upper and lower clamps with the outer tube portion of the Lefty structure.
10. AREA IV - Vertical cracks at the back of the Lefty spindle directly behind the roll-pin. This may happen in a big event crash and the spindle twists slightly.

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.

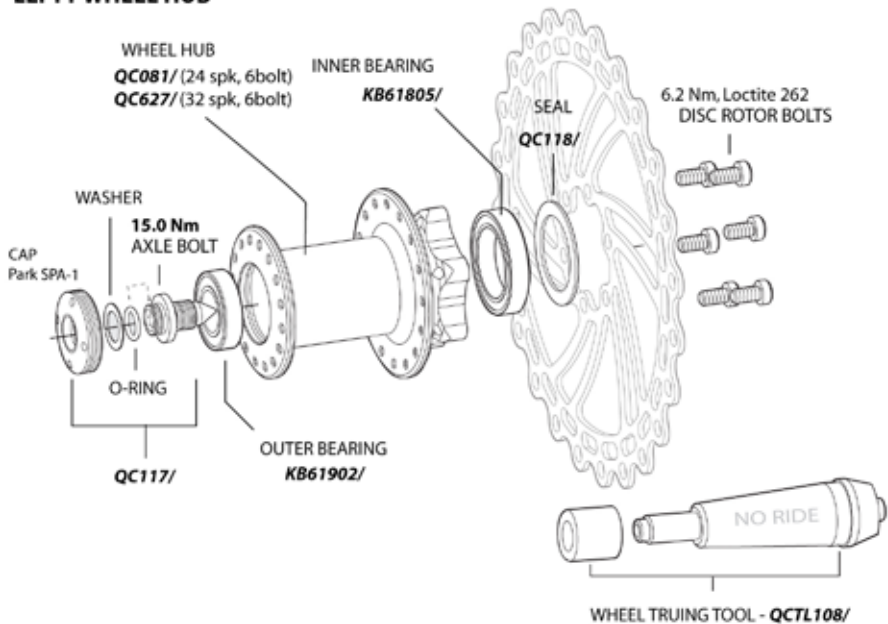
The maintenance section of this supplement includes information about regular maintenance practices that can keep your fork in good operating condition.

SPECIFICATION

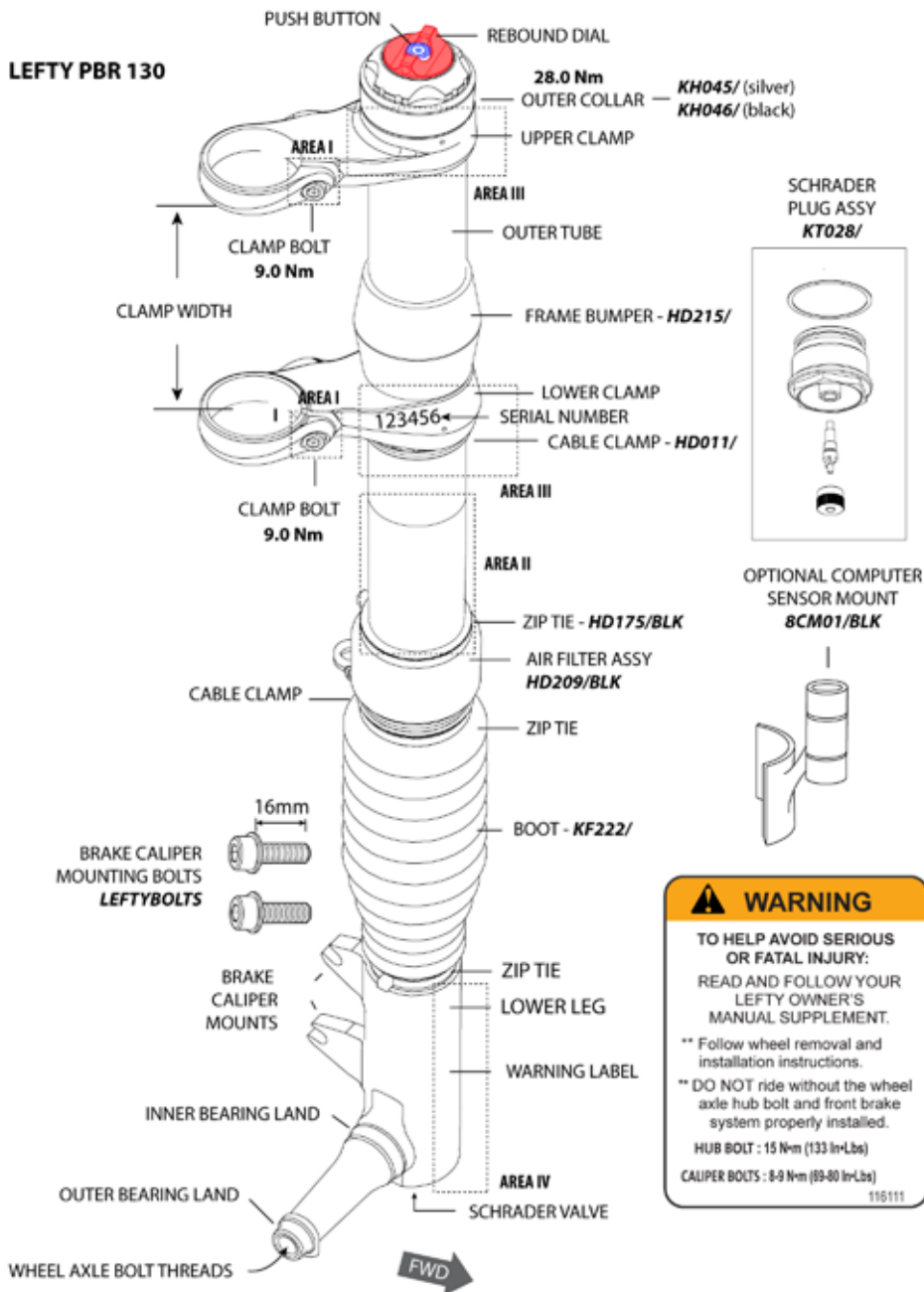
TRAVEL	130mm	
INTENDED USE	CONDITION 4	See page 2.
RECOMMENDED SAG	25-30%	32.5-39.0mm
AIR PRESSURE LIMITS	MINIMUM	50 psi, 3.4 bar
	MAXIMUM	225 psi, 15.5 bar
CLAMP WIDTH	137.6mm	4.5" Headtube
	163.0mm	5.5" Headtube
ADJUSTMENTS	REBOUND DAMPING DIAL	4.5 TURNS
	LOCKOUT	PUSH BUTTON LOCK/RELEASE
MAIN SPRING TYPE	SOLO AIR	
NEGATIVE SPRING	AIR AUTOMATIC	

Replacement Cannondale part numbers shown in **BOLD ITALIC**.

LEFTY WHEEL HUB



LEFTY PBR 130



ADJUSTMENTS

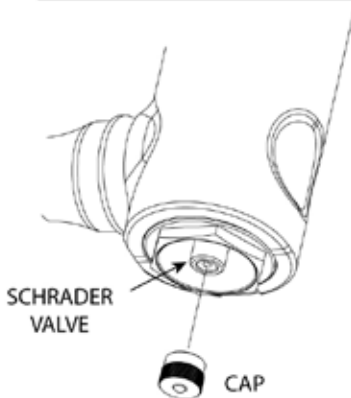
Air Pressure

For best performance, set the air pressure in your Lefty so the sag is 32.5-39mm. Sag is the distance the fork compresses when you sit on the bike. Sag is set by changing the air pressure in the fork. The table of values on the next page should be a good starting point. Fine tune sag by adding or releasing air in small amounts. Add air pressure to decrease sag. Add air pressure to decrease sag.

1. Remove the Schrader valve cap at the bottom of the fork. Attach a bicycle suspension pump to the valve end. Pressurize the fork according to your body weight.
2. To fine tune sag. Off the bike, measuring length (A). Next, have someone assist you. Sit on the bike with your feet on the pedals and hands on handlebar as if you were in a riding position; measure length (B), the fork compressed under your weight. To calculate the sag, subtract : $A - B = \text{SAG (mm)}$.

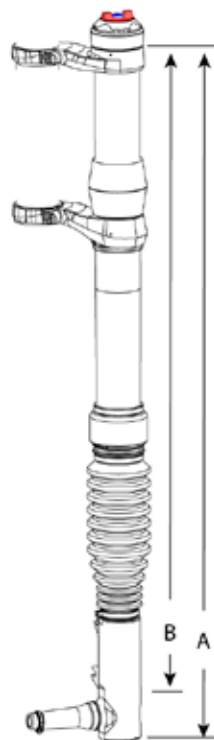
RIDER WEIGHT		STARTING PRESSURE	
Lb	Kg	psi	bar
75	34	45	3.1
100	45	60	4.1
125	57	75	5.2
150	68	90	6.2
175	80	105	7.2
200	91	120	8.2
225	102	135	9.3
250	114	149	10.3
275	125	164	11.3

PRESSURE LIMITS
 Minimum - 50psi, 3.4 bar
 Maximum - 225psi, 15.5



AT BOTTOM OF FORK

RECOMMENDED SAG
 25-30%
 32.5-39.0mm



CAUTIONS

CLEAN PUMP AND 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.

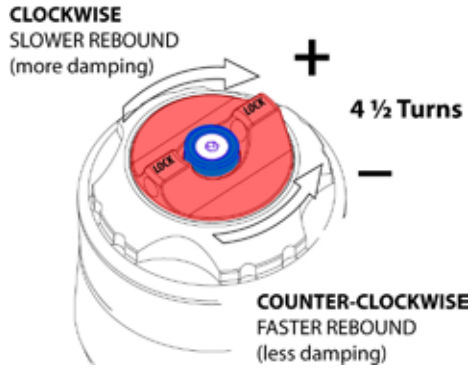
DO NOT FORCE THE REBOUND DIAL PAST THE STOP POINTS. USE ONLY YOUR FINGERS TO TURN.

Rebound

The red rebound dial at the top of the fork controls rebound speed, how fast the fork extends following compression. There are 4 1/2 turns of total adjustment.

Turn the dial **CLOCKWISE** for slower rebound.

Turn the dial **COUNTER-CLOCKWISE** for faster rebound.

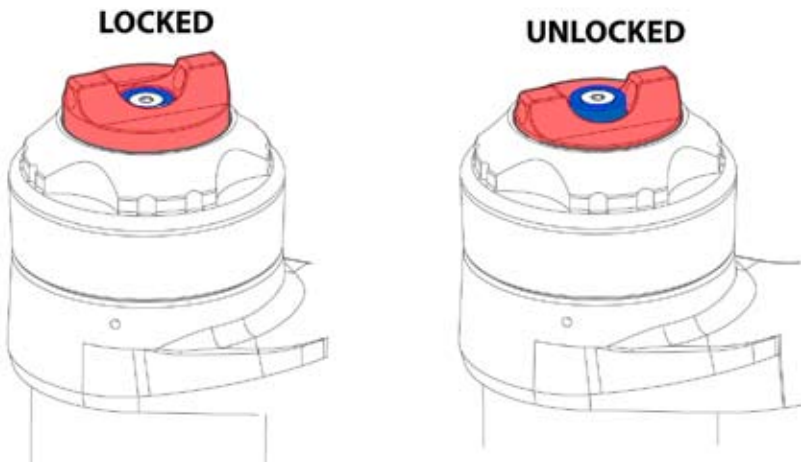


Lockout

To lockout the fork - Press the small blue button down with your finger tip. This will trigger the rebound dial to pop up. Fork travel is locked out when the dial is up. See **LOCKED**.

To unlock travel - Press the rebound dial down firmly. Fork travel is not locked out when the buttons are down. See **UNLOCKED**.

If button action begins to stick, (fork will not lock easily) it is likely due to dirt in the rebound and lockout knob seals. Remove the flat head screw in the center of the blue lock button. Pull the red rebound knob off the fork and remove the lock button and clean and grease the seal inside the upper collar and inside the rebound knob.



MAINTENANCE

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 Don't ride if damage is found. See page 3.	BEFORE AND AFTER EVERY RIDE	
CHECK THE BOOT Replace the zip ties if loose.		
CHECK TIGHTENING TORQUES Upper/Lower clamp bolts: 9.0 Nm Wheel Axle Bolt: 15.0 Nm	AFTER FIRST RIDE CHECK EVERY 4-5 RIDES	
Grease telescope.	50	25
Needle Bearing Reset*	25	25
Clean air filter	25	10
Damping cartridge oil and seal change*	100	25
Inspect, Replace Bumper	AS NEEDED	
PROFESSIONAL SERVICE* ANNUAL (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.		



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.

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.

CAUTION

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.

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.

Wheel Removal

1. Loosen the brake caliper mounting bolts.

Tilt the lower caliper bolt out of the boss so the caliper is up out of the way of the disc. Snug up on the upper bolt to hold caliper in place.

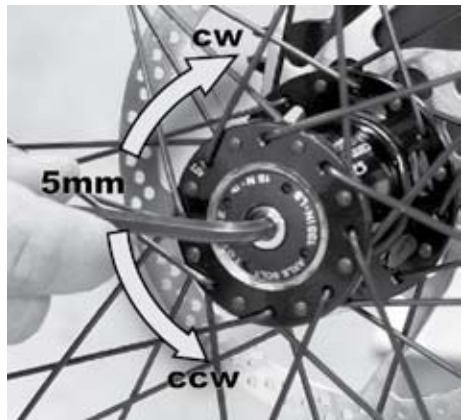
Take note of brake alignment shims between brake bosses and the caliper. Be sure to reposition correctly.

2. Turn the hub extraction bolt counter-clockwise (ccw) to remove the wheel.

CAUTION

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

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



Wheel Installation

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 and apply a high-quality bike grease to the spindle bearing lands and end threads. See next Figure.

2. Slide the wheel straight onto the spindle so, the larger hub bearing starts to position on it spindle seat. At this point, the axle bolt threads can correctly engage the threaded spindle if the wheel is held on straight.

NOTE: 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.

3. When the axle bolt threads engage the spindle, turn the bolt clockwise with finger force slowly to allow the hub bearings to slide onto the spindle bearing seats.

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).

4. Reinstall the brake caliper. Tighten bolts to 78.0 In•Lbf (9.0 N•m).
5. Spin the wheel to make sure it moves freely. Be sure to test the brakes for proper operation before riding.



WARNING

Do not contaminate brake caliper, pads, or rotor with grease.

CAUTION

LOCATE DISC 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 16mm (Cannondale kit # LEFTYBOLTS. 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.

Grease Telescope

1. Remove the front wheel.
2. Carefully release the upper and lower zip ties securing the fork boot. If the boot is secured with a band clamp, loosen and remove them.
3. Lift the unsecured boot up to expose the inner tube.
4. 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 Royal Purple Ultra Performance Grease NLGI #2 (ISO 46 BASE).

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

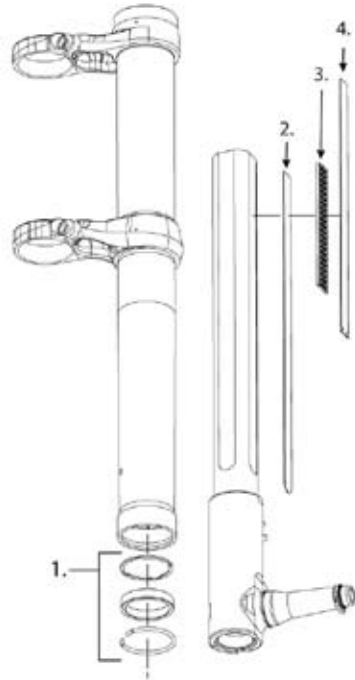
6. Reposition the boot and replace the zip ties. Make sure the zip ties are very tight. Loose zip ties may allow water or dirt to pass behind the boot.

WARNINGS

**CHECK THE BOOT BEFORE EACH RIDE.
DON'T RIDE IF IT IS DAMAGED.
HAVE IT REPLACED WITH A NEW ONE.**



NO.	ORDER NO.	KIT DESCRIPTION
1	KF209/	KIT,COLLAR,LOWER,CRB,CLIP+BUSH
2	HDR2M/020	RACE INNER 11.378 X .020in [289.0 X .53mm] (Qty 4)
	HDR2M/021	RACE INNER 11.378 X .021in [289.0 X .56mm] (Qty 4)
	HDR2M/022	RACE INNER 11.378 X .022in [289.0 X .58mm] (Qty 4)
	HDR2M/023	RACE INNER 11.378 X .023in [289.0 X .61mm] (Qty 4)
	HDR2M/024	RACE INNER 11.378 X .024in [289.0 X .635mm] (Qty 4)
3	HD161/	LEFTY NEEDLE BEARINGS (QTY 4)
4	HDR2N/024	RACE OUTER



Air Filter

To clean, release the upper and lower clamps or zip tie and slide the filter cover up off the foam. Slide the foam up the outer tube and cover the two small holes in the outer tube to prevent water from getting inside the fork. Clean with warm soapy water. Rinse with clean water and allow the foam to dry completely. Then, massage in a high-quality foam air filter oil before re-assembly.

NOTE: The small holes at the base of the filter cover should remain clear and be positioned to the sides of bike and not to the front or back to minimize the chance dirt thrown by the wheels will plug the holes.

Bumper Replacement

Replace the frame bumper with a new one if it ever becomes damaged, torn, or missing. To remove it, remove the band from the bumper groove and unwrap the bumper.

Needle Bearing Reset

Needle bearing resets must be performed as maintenance. Migrated needle bearings are bearings that are no longer aligned together. Riding a fork with migrated needle bearings for extended periods can result in damage.

TO BE PERFORMED ONLY BY A PROFESSIONAL BIKE MECHANIC:

Annually as part of your annual fork overall maintenance. See schedule on page 8.

Whenever free length is less than specified

If the fork produces a top out noise when fully extended

If normal fork travel becomes reduced

To reset

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

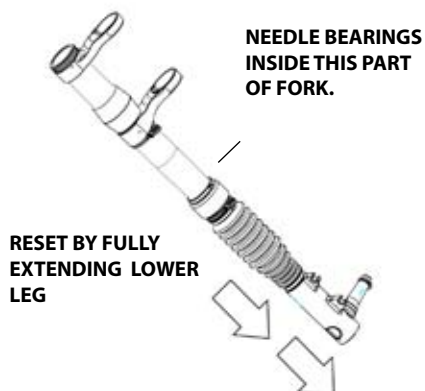
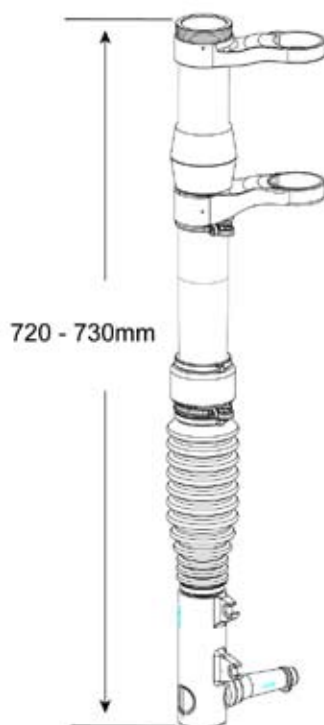
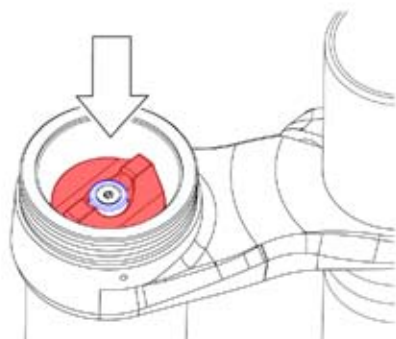
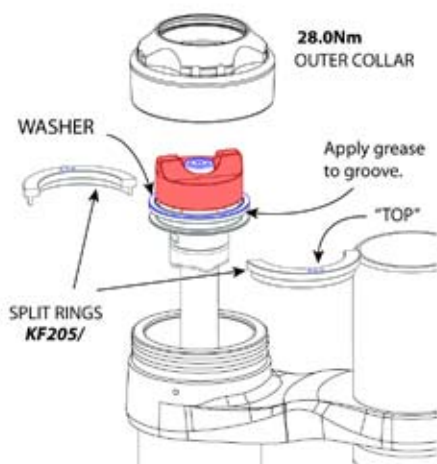
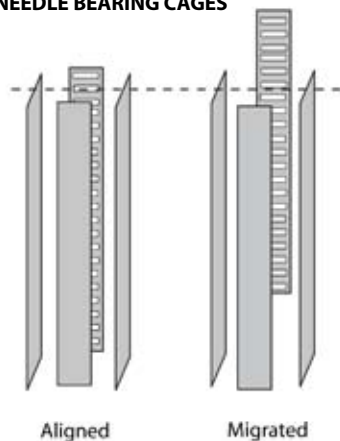
CAUTION

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.

5. Reassemble.

NOTE: 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.

4 NEEDLE BEARING CAGES



DAMPING CARTRIDGE

NO.	DESCRIPTION
1	SPECTRO 85/150 OIL (cc)
2	2-006 O-RING 2.90 ID X 1.78 W
3	2-010 O-RING 6.07 ID X 1.78 W
4	2-011 O-RING 7.65 ID X 1.78 W
5	2-012 O-RING 9.25 ID X 1.78 W
6	2-013 O-RING 10.82 ID X 1.78 W
7	2-014 O-RING 12.42 ID X 1.78 W
8	2-018 O-RING 18.77 ID X 1.78 W
9	2-112 O-RING 12.37 ID X 2.62 W
10	2-117 O-RING 20.29 ID X 2.62 W
11	O-RING 2.00 ID X 1.00 W
12	O-RING 9.00 ID X 1.00 W
13	O-RING 8.00 ID X 1.50 W
14	SHCS M2 5 X 5
15	BLEED SCREW M2 5 X 4 FHP
16	SFHS M X 8
17	COMPRESSION SHIM STACK (SEE TABLE)
18	REBOUND SHIM STACK (SEE TABLE)
19	CHROME STEEL BALL 3MM
20	DLR 110 OIL CAP
21	DLR 110 PRESSURE COMP PISTON
22	DLR 110 PRESSURE COMP SPRING
23	DLR 110 PISTON SPACER
24	DLR 110 BUMPER
25	DLR 110 PISTON RING
26	DLR 110 MAIN PISTON
27	DLR 110 OIL CYLINDER WASHER
28	07 DLR 100 OUTER CAP
29	BALL LOCK UPPER SHAFT
30	BALL LOCK POPEP
31	BALL LOCK INNER SHAFT
32	BALL LOCK KNOB SHAFT
33	BALL LOCK REBOUND KNOB
34	BALL LOCK RELEASE BUTTON
35	BALL LOCK THRU SHAFT
36	BALL LOCK LOCKOUT PISTON
37	BALL LOCK LOCKOUT ROD

38	BALL LOCK NEEDLE PINNED
39	BALL LOCK PISTON CONNECT
40	BALL LOCK LOWER SHAFT 130
41	BALL LOCK CONNECT BUSHING
42	SOLO AIR MAIN PISTON R3
43	SOLO AIR PISTON SUPPORT R3
44	SOLO AIR UPPER SEAL 130
45	SOLO AIR BUMPER PLATE
46	SOLO AIR NEGATIVE BUMPER
47	RETAINING RING EXT. M10
48	PIN ROLL M2 x 10
49	M1.6 x 16 PAN HEAD SCREW
50	LOCKOUT ROD SPRING
51	BALL LOCK SPRING RELEASE
52	#5 WASHER
53	CRESENT SHAPE SPRING WASHER
54	BALL LOCK OIL CYLINDER 130
55	1/2" U-CUP PARKER #N4180-A80-8404-00500
56	WASHER
57	SPLIT RING

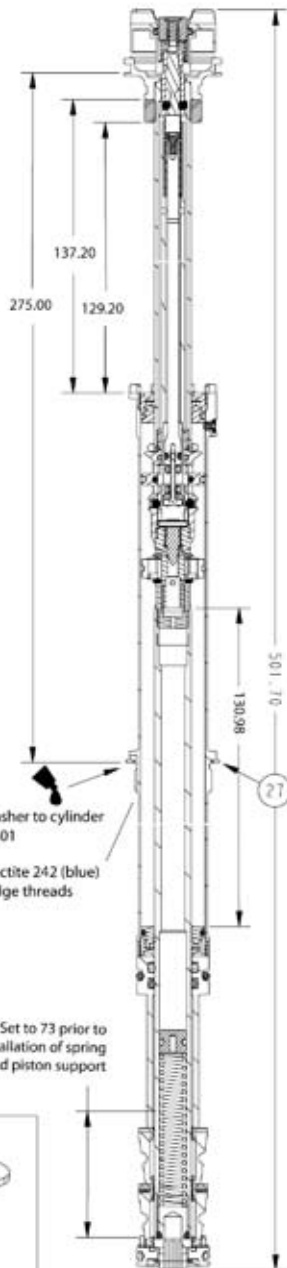
SHIM STACKS FROM PISTON OUT	
COMPRESSION	REBOUND
16 X 0.152	18 X 0.102
18 X 0.102	16 X 0.102
14 X 0.152	14 X 0.102

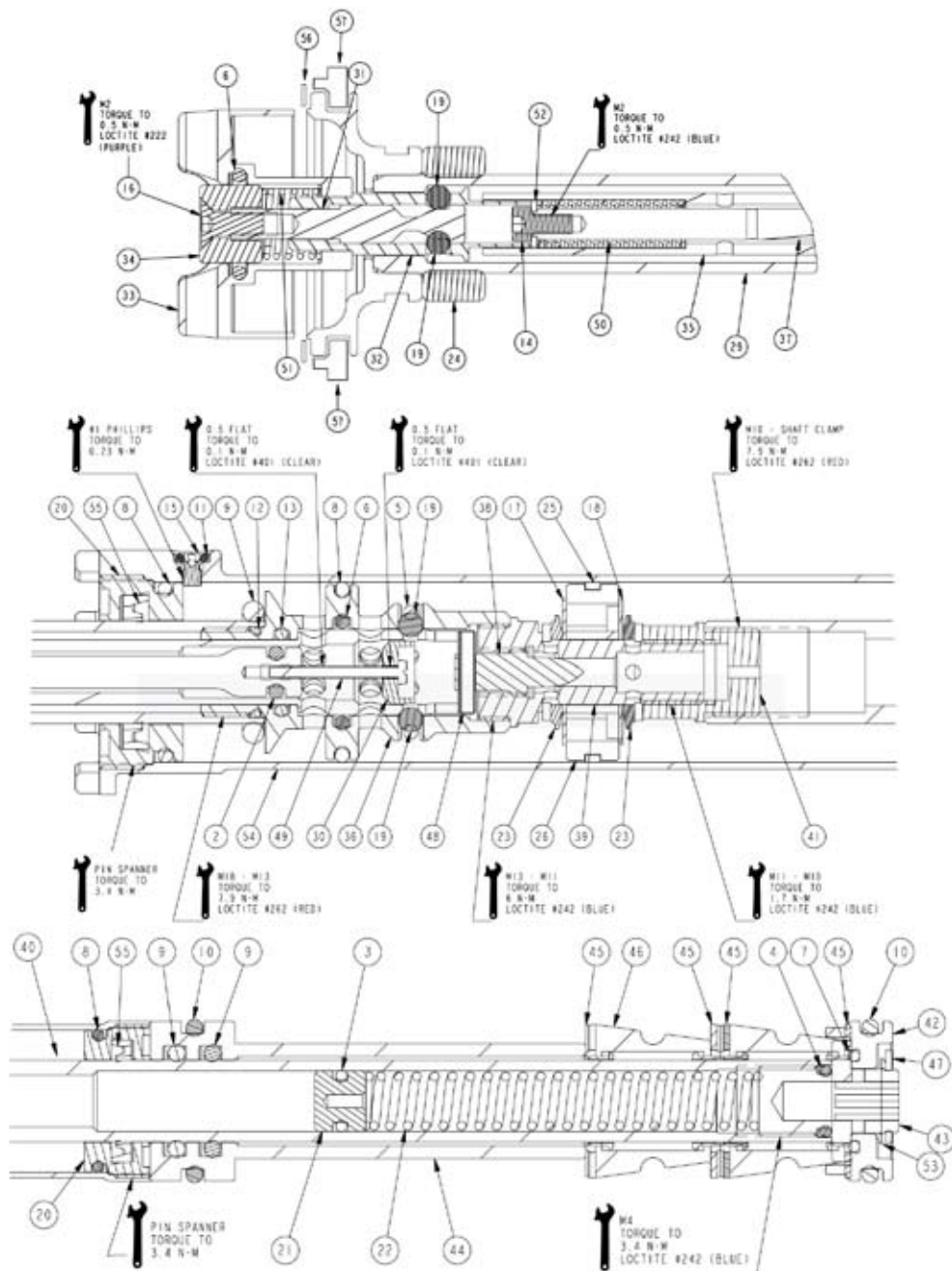
AIR SPRING VOLUMES:
 MAIN SPRING = 94905mm³
 NEGATIVE SPRING = 33405 mm³

EFFECTIVE LENGTH:
 MAIN SPRING = 190.0mm
 NEG SPRING = 66.9mm

Assembly Note
 NLGI 2 synthetic grease is to be applied to all seal grooves, surfaces, and glands.

NO.	ORDER NO.	KIT DESCRIPTION
	KH041/	130 PBR CARTRIDGE
	HD226/	GOLDEN SPECTRO 1 US QT.
2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 55	KH042/	PBR 130 SEAL KIT
4, 7, 9, 10, 42, 43, 44, 45, 46, 47, 53	KH043/	PBR 130 AIR PISTON KIT
6, 16, 33, 34	KH044/	PBR 130 KNOBS
57	KF205/	2 SPLT RINGS
58	HD187/	1/2" SHAFT CLAMP
59	HDTL168/	OIL CAP INSTALL
60	KH004/	OIL CAP WRENCH
61	HDTL146/	CARTRIDGE REMOVAL





XC3 STEM-STEERER

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

Installation

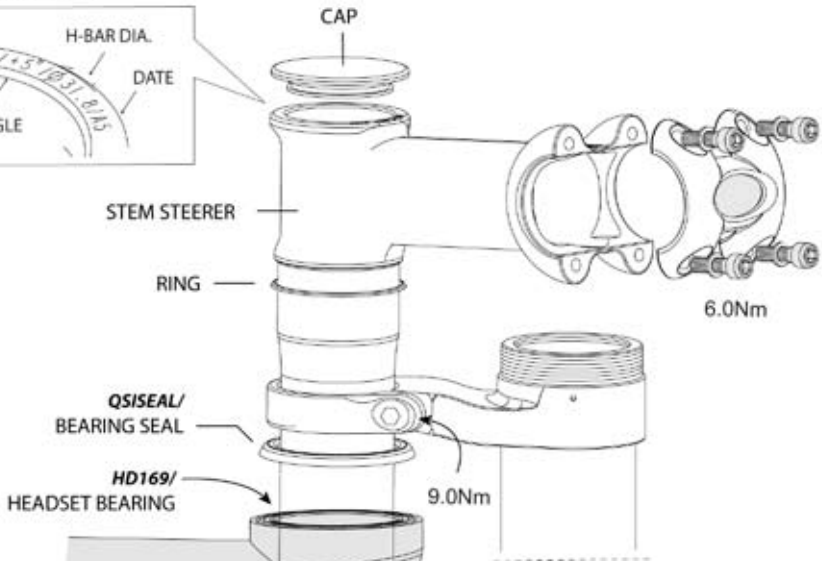
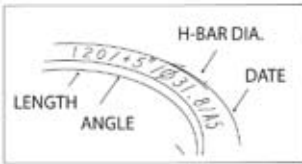
1. Loosen both clamp bolts .
3. Position the Lefty clamps onto the headtube assembly as shown.
4. Insert Cannondale tool KT020/ through the bottom clamp, into the head tube, and out the upper clamp.
5. Make sure the plastic ring is on the stem. Insert the bottom of the stem-steerer onto the top of the tool.
6. Remove the cap from the top of the steerer. Use a rubber mallet to drive the stem-steerer into the head tube until it stops. Return the cap.
7. Clean and apply grease to the steerer bolt threads and install into the bottom of the stem-steerer. The bolt is a structural part that threads into the bottom of the stem-steerer. Align handlebar and tighten the bolt to 9 N•m.
- 8.. Tighten the upper and lower clamp bolts to 9 N•m.

Removal

- 1 Loosen upper and lower clamp bolts.
2. Remove steerer bolt. Use a 5mm Allen key; turn counter-clockwise.
3. Insert the small end of KT020/ into the bottom of the stem-steerer and drive the stem-steerer up out of the head tube.



STEM SIZE MARKING



XC3 Stem-Steerer kits in various sizes are available through your Cannondale Dealer.

NOTES:

1. When removing or installing steerer bolt, insert 5mm Allen key completely to prevent stripping the bolt.
2. The drain hole enables accumulated moisture to drain out. Use a toothpick to keep it clear.

HD169/
HEADSET BEARING

9.0Nm

WARNING

The steerer bolt is a structural part and must be installed.



Keep hole clear
for drainage

STEERER BOLT - **HD152/**
Apply grease to threads
before installing!
Tighten to 9.0Nm

OWNER RECORD

Record maintenance history, service, or set up information .

DATE	WORK PERFORMED