

1999 HEADSHOK® SILK PATH® D, FATTY® X, AND SILK PATH M OWNER'S MANUAL

Congratulations and thanks for your purchase of a HeadShok suspension fork. You have invested in a suspension system which features light weight, maximum adjustability, and absolute steering precision. This owner's manual contains important and useful information regarding the proper operation, care, and maintenance of your HeadShok Silk Path D, Silk Path M, or Fatty X fork. Please read and carefully follow these instructions for miles of safe, high performance riding. If you have any questions about your fork or this manual, don't hesitate to contact us. See back page for phone numbers and E-mail contacts.

STEM SELECTION

All HeadShok equipped bicycles come with a CODA® Suspension Stem that is designed to work specifically with the unique head tube arrangement of the HeadShok front suspension system. These stems are supplied in sizes proportional to the different bicycle frame sizes. There are a total of 14 different stem sizes available for flat mountain type bars, and all of these stems can be inverted, for a total of 28 possible unique rider positions. There are also 9 different stems for drop type handlebars (26.0mm clamp, for road or cyclocross use), each of which can also be inverted. This allows any rider to customize the fit of his or her bicycle. See your Authorized Cannondale Retailer for replacement CODA stems. Framesets and aftermarket forks do not include a stem.

REQUIRED MAINTENANCE

It is recommended that you take your Silk Path D, Fatty X, or Silk Path M fork to your Authorized HeadShok Service Center for a tune up every two months or 40 hours of riding. Your fork is a high performance suspension system and needs regular inspection, lubrication, and maintenance. Your mechanic will check the following items and service the fork as necessary. Between these tune ups, you should occasionally check the top bearing seal and boot as outlined below.

HEADSET BEARINGS:

Every few rides, or every time that the bicycle is exposed to water (rain, mud, or washing) a few drops of lightweight oil should be applied to the upper headset bearing seal (located just below the stem.) This seal must be kept lubricated, as it protects the headset cartridge bearings from contamination by water and dirt. Failure to keep this seal lubricated will result in premature bearing wear.

SUSPENSION FORK BOOT:

Frequently inspect the rubber boot at the headtube base for tears or cuts which could allow contamination. If the boot is damaged in any way, it must be replaced immediately. Since boot replacement requires the suspension fork be removed from the frame, this job should be performed only by an experienced bicycle mechanic at an Authorized HeadShok Service Center. Damage to the HeadShok due to contamination by water or dirt will not be covered under warranty.

HYDRAULIC CARTRIDGE OIL OR SEAL REPLACEMENT:

The oil in the HeadShok hydraulic DD25 (Silk Path D and Fatty X) cartridge should be replaced every 80 hours of riding, or at least once a year. The seals in the cartridge require less frequent attention, and should be replaced every two years or whenever significant oil loss occurs. These procedures require unique tools and substantial expertise and training with hydraulic suspension systems. Therefore, they should be performed only by an experienced mechanic at an Authorized HeadShok Service Center.

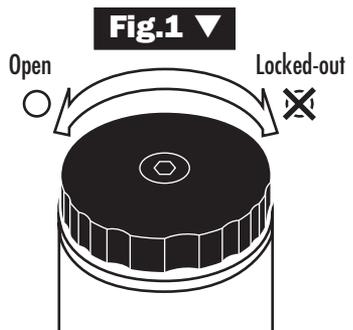
NEEDLE BEARING LUBRICATION:

The needle bearings which provide the smooth travel of the suspension in the HeadShok fork should be lubricated every two months or 40 hours of riding. This procedure requires partial disassembly of the suspension fork, and therefore must be performed only by an experienced bicycle mechanic at an Authorized HeadShok Service Center.

SILK PATH D

The Silk Path D suspension fork offers 25mm of travel using the HeadShok Advanced Spring System. This spring system is made up of a coil spring with a column of Micro-Cellular Urethane (MCU) running through its middle. It also features the shim-valved DD25 hydraulic damper cartridge which can be locked out “On-The-Fly” by turning the Damping Dial™, located atop the handlebar stem (See Fig. 1.)

WARNING: Use great care and pay close attention the road or trail in front of you while turning the Damping Dial. Adjusting the fork can be distracting, and it is possible to lose control of the bicycle if your eyes wander from the surface directly in your path. Also remember that your balance and steering control change as soon as you remove one hand from the handlebars, and that your hand is further from the brake lever. If you are at all unsure of your ability to control the bike while adjusting the suspension fork, or if you are on a rough surface or a busy road, please stop before attempting to adjust the fork.



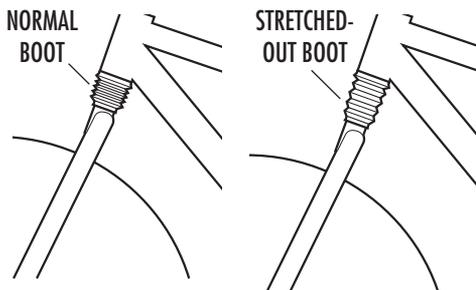
PRELOAD ADJUSTMENT

Before the bike is ridden, the spring preload must be adjusted to suit the weight of the rider. If too much preload is applied, the suspension will be stiff and unresponsive; too little preload and the rider may feel some amount of “bouncing” while climbing or sprinting, and may tend to bottom out the shock (compress it to the limit of its travel) on large bumps.

WARNINGS:

- **Any HeadShok fork should be installed and adjusted by a qualified mechanic. Brakes must also be installed and adjusted by a qualified mechanic. (This applies to either cantilever-type or disc brakes.) If the brakes are improperly installed or misadjusted, the bicycle will not be safe to ride. Improper installation, service, or adjustment of the fork or brakes will place the rider in danger of serious injury or death.**
- **Only use brakes designed to be mounted to existing cantilever bosses or disc brake mount on the fork. Do not attempt to add any brake mount or use any brake device that requires adapting the fork's existing brake mounts. Altering or adapting existing brake mounts or installing new brake mounts will void the fork's warranty, and may result in structural failure of the fork. Structural failure of fork will result in loss of control of the bicycle, placing the rider in danger of serious injury or death.**
- **If the suspension fork ever begins to make “knocking” or “klunking” noises, or if it ever shows an unexplained increase in travel, or looks like it is extended farther than it was originally, or if the fork loses its ability to lock-out (Silk Path D and Fatty X only), stop riding the bike and bring it to a HeadShok dealer for inspection. Possible indications of a problem are:**
 - * **An increase in the fork's extension or travel.**
 - * **A stretched-out fork boot (See below.)**
 - * **A stretched or strained front brake cable.**
 - * **“Knocking” or “klunking” noises coming from fork.**
 - * **A sudden loss of lock-out ability (Silk Path D and Fatty X only)**

If any of the above symptoms manifest themselves and are ignored, the result could be a separation of the fork from the bicycle frame, leading to an accident with risk of serious injury to, or death of the rider.



There are three different coil springs available, allowing the fork to be customized to suit riders of different sizes. Refer to Fig. 2 below for information on which spring came with your bicycle, and recommendations for custom tuning your fork's spring. The springs are interchangeable, and are color coded by stiffness. Each of these springs also allow fine tuning by adjusting the preload.

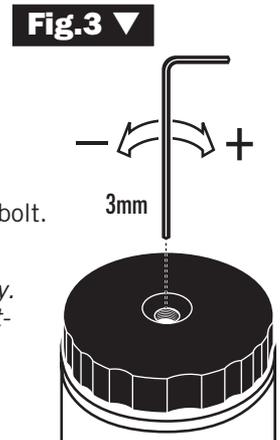
Fig.2 ▼

<i>BIKE SIZE</i>	<i>COMES WITH...</i>
16"	Green
18"	Blue
19"	Blue
20"	Blue
22"	Red
24"	Red

<i>RIDER WEIGHT RANGE</i>	<i>RECOMMENDED SPRING</i>	<i>SPRING KIT CODE</i>
150 lbs. or less	Green	HD110/GRE
140 - 200 lbs.	Blue	HD110/BLU
180 lbs. or more.	Red	HD110/RED

Beyond changing the coil spring in the Silk Path D fork, the spring preload can be fine-tuned to suit the rider's weight and riding style as follows:

1. Make sure that the Damping Dial is in the "Open" position by turning it to the left (counter-clockwise.)
2. Remove small bolt from center of Damping Dial.
3. With rider off of bike, measure from floor to center of one end of the handlebar with the bicycle standing perfectly upright. Then position the rider on the bike in a seated, natural riding position. With only the rear brake applied, again measure the distance from the floor to the center of one end of the handlebar.
4. The difference in these two measurements is the preload sag. Most riders find the best suspension performance with 1/8" or less sag compression. To change the amount of sag, insert a 3mm Allen wrench into the hole in the top of the fork. Turn the preload adjustment screw clockwise for greater preload (less sag compression) or counter-clockwise for less preload (more sag compression.) See Fig.3.
5. When desired preload is set, replace Damping Dial bolt.



NOTE: This procedure is to be used as a guideline only. We encourage riders to experiment with preload adjustment. Some prefer a stiffer suspension, some a softer, more compliant suspension. Replacement springs are available from your Authorized HeadShok Retailer.

DAMPING ADJUSTMENT

Damping controls the speed at which the suspension moves. Compression and rebound damping of the Silk Path D fork can be adjusted by changing the viscosity of the hydraulic oil within the cartridge. Since this procedure requires several unique tools and expertise with hydraulic suspension systems, it should only be performed by an experienced bicycle mechanic at an Authorized HeadShok Service Center. See your dealer for more information regarding the fine tuning of your HeadShok fork.

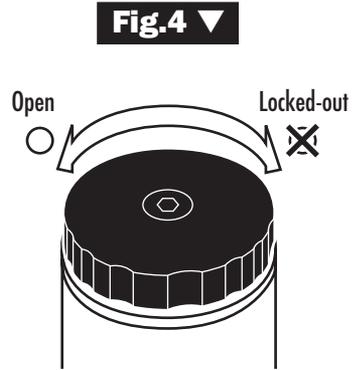


Fig.4 ▼

FATTY X

Fatty X suspension forks provide 25mm of plush suspension action, using a slightly different spring /MCU combination designed for optimal cyclocross use. It also features a shim-valved DD25 hydraulic damper cartridge which can be locked out “On-The-Fly” by turning the Damping Dial, located on the handlebar stem (Fig.4.)

WARNING: Use great care and pay close attention to the road or trail in front of you while turning the Damping Dial. Adjusting the fork can be distracting, and it is possible to lose control of the bike if your eyes wander from the surface directly in your path. Also remember that your balance and steering control change as soon as you remove one hand from the handlebars, and that your hand is further from the brake lever. If you are at all unsure of your ability to control the bike while adjusting the suspension fork, or if you are on a rough surface or a busy road, stop before attempting to adjust the fork.

PRELOAD ADJUSTMENT

Before bike is ridden, spring preload must be adjusted to suit the weight of the rider. If too much preload is applied, suspension will be stiff and unresponsive; too little preload and rider may feel some amount of “bouncing” while climbing or sprinting, and may tend to bottom out the shock (compress it to the limit of its travel) on large bumps.

Fatty X preload can be fine-tuned to rider weight and riding style as follows:

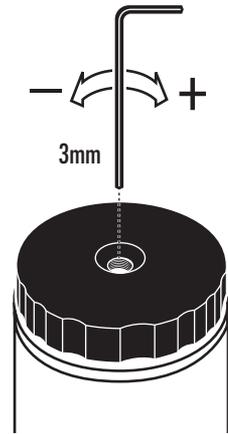
1. Make sure that Damping Dial is in “Open” position by turning it left (counter-clockwise.)
2. Remove the small bolt from center of Damping Dial.
3. With the rider off of the bike, measure from the floor to the center of one end of the handlebar with the bicycle standing perfectly upright. Then position the rider on the bike in a seated, natural riding position. With only the rear brake applied, again measure the distance from the floor to the center of one end of the handlebar.

4. The difference in these measurements is preload sag. Most riders find the best suspension performance with 1/8" or less sag compression. To change the amount of sag, insert a 3mm Allen wrench into the hole atop the fork. Turn preload adjustment screw clockwise for greater preload (less sag compression) or counter-clockwise for less preload (more sag compression.) See Fig.5.

5. When the desired preload is set, replace the Damping Dial bolt.

NOTE: This procedure is to be used as a guideline only. We encourage riders to experiment with preload adjustment. Some prefer a stiffer suspension, some a softer, more compliant suspension.

Fig.5 ▼



DAMPING ADJUSTMENT

Damping controls the speed at which the suspension moves. Compression and rebound damping of the Fatty X fork can be adjusted by changing the viscosity of the hydraulic oil within the cartridge. Since this procedure requires several unique tools and expertise with hydraulic suspension systems, it should only be performed by an experienced bicycle mechanic at an Authorized HeadShok Service Center. See your dealer for more information regarding the fine tuning of your HeadShok fork.

SILK PATH M

The Silk Path M suspension fork utilizes the HeadShok Advanced Spring System to provide 25mm of suspension travel. This system uses a coil spring with a column of MicroCellular Urethane (MCU) running through its middle, and an air damper to control compression and rebound.

PRELOAD ADJUSTMENT

Before the bike is ridden, the spring preload must be adjusted to suit the weight of the rider. If too much preload is applied, the suspension will be stiff and unresponsive; too little preload and the rider may feel some amount of “bouncing” while climbing or sprinting, and may tend to bottom out the shock (compress it to the limit of its travel) on large bumps.

There are three different coil springs available, allowing the fork to be customized to suit riders of different sizes. Refer to Fig.2 on page 4 for information on which spring came with your bicycle, and recommendations for custom tuning your fork's spring. The springs are interchangeable, and are color coded by stiffness. Each of these springs also allow fine tuning by adjusting the preload.

Beyond changing the coil spring in the Silk Path M fork, the spring preload can be fine-tuned to suit the rider's weight and riding style as follows:

1. Unscrew the plastic mud cap from the top of the fork.

SUSPENSION UPGRADES AND OPTIONS

The HeadShok is a modular cartridge system, and there are several different suspension systems which may be installed in your HeadShok suspension fork. See your Authorized HeadShok retailer about the different options currently available.

SILK PATH D SPECIFICATIONS

<i>Weight</i>	3.40 lbs.
<i>Steerer Tube</i>	HeadShok telescoping with 88 needle bearings
<i>Travel</i>	25mm
<i>Blades</i>	TIG-welded 6061-T6 aluminum
<i>Spring</i>	Advanced Spring System, coil with nested MCU
<i>Damper Cartridge</i>	DD25 hydraulic with shim valve and “On-The-Fly” lockout
<i>Adjustments</i>	Preload, spring rate, and shock oil weight
<i>Damping Dial</i>	2 position lockout

FATTY X SPECIFICATIONS

<i>Weight</i>	3.25 lbs.
<i>Steerer Tube</i>	HeadShok telescoping with 88 needle bearings
<i>Travel</i>	25mm
<i>Blades</i>	TIG-welded 6061-T6 aluminum, swaged and tapered
<i>Spring</i>	Advanced Spring System, coil with nested MCU
<i>Damper Cartridge</i>	DD25 hydraulic with shim valve and “On-The-Fly” lockout
<i>Adjustments</i>	Preload and shock oil weight
<i>Damping Dial</i>	2 position lockout

SILK PATH M SPECIFICATIONS

<i>Weight</i>	3.30 lbs.
<i>Steerer Tube</i>	HeadShok telescoping with 88 needle bearings
<i>Travel</i>	25mm
<i>Blades</i>	TIG-welded 6061-T6 aluminum
<i>Spring</i>	Advanced Spring System, coil with nested MCU
<i>Damper Cartridge</i>	MC25 Mechanical with air damping
<i>Adjustments</i>	Preload and spring weight
<i>Upgrades</i>	DD25 hydraulic cartridge with “On-the-Fly” lockout

2. With the rider off of the bike, measure from the floor to the center of one end of the handlebar with the bicycle standing perfectly upright. Then position the rider on the bike in a seated, natural riding position. With only the rear brake applied, again measure the distance from the floor to the center of one end of the handlebar.

3. The difference in these two measurements is the preload sag. Most riders find the best suspension performance with 1/8" or less sag compression. To change the amount of sag, insert a 4mm Allen wrench into the hole in the top of the fork. Turn the preload adjustment screw clockwise for greater preload (less sag compression) or counter-clockwise for less preload (more sag compression.) See Fig. 6.

4. When desired preload is set, replace the mud cap.

NOTE: This procedure is to be used as a guideline only. We encourage riders to experiment with preload adjustment. Some prefer a stiffer suspension, some a softer, more compliant suspension. Replacement springs are available from your Authorized HeadShok Retailer.

MUD CAP

The plastic mud cap of the Silk Path M fork, located atop the stem, must be kept in place at all times. Never ride without the mud cap in place. The mud cap protects the inner workings of the suspension fork from water, dirt, and other contaminants that could damage the suspension fork. Any damage resulting from riding with a missing mud cap will not be covered under warranty.

HEADSHOK WARRANTY

All HeadShok forks and their internal assemblies are warrantied against manufacturing defects in materials and/or workmanship for a period of one year from the date of original retail purchase.

Not covered under warranty is damage resulting from improper adjustment or maintenance, lack of maintenance, crashes, or use judged by HeadShok to be excessive or abusive.

GETTING IN TOUCH WITH HEADSHOK

For warranty related questions or for more information on this or any HeadShok product, please feel free to contact us.

USA and Canada:	(888) HEAD-SHK
Europe (EC):	(31) 5415-89898
Japan:	(81) 722-99-9399
Australia:	(612) 9979-5851

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