

2002 Rear Shock Owners Manual

FLOAT - FLOAT R - FLOAT L - FLOAT RL

Vanilla - Vanilla R - Vanilla RL - Vanilla RC

FOX RACING SHOX 130 Hangar Way, Watsonville, CA 95076 831.768.1100 FAX 831.768.9342 E-Mail: service@foxracingshox.com Website: www.foxracingshox.com

Table of Contents

Introduction	
General Informati	ion
	Contact Info 3
	Service / Warranty
	International Service Centers
	Warranty Policy
	Methods of Payment
	Method of Shipping
	Disclaimer
	Consumer Safety
	Shock Terminology 5
General Set-Up Ir	
	Measuring Sag 6
	General Maintenance 6
FLOAT Shocks	
	Pump7
	Adjusting Sag
	FLOAT Drawing & Features
	FLOAT R Drawing & Features
	Rebound Adjustment
	FLOAT L Drawing & Features
	Compression Adjustment
	FLOAT RL Drawing & Features
	Air Sleeve Maintenance 10
Vanilla Shocks	
	Adjusting Sag 12
	Installing and Removing Springs
	Vanilla Drawing & Features 14
	Vanilla R Drawings & Features 14
	Rebound Adjustment 15
	Vanilla RL Drawing & Features 15
	Compression Adjustment
	Vanilla RC Drawing & Features
	Compression Adjustment
,	
Italiano	
Deutsch	
Español	

Introduction

Thank you for choosing FOX Racing Shox for your bicycle. In doing so, you have chosen the number one shock absorber in the industry! All FOX Racing Shox products are designed, manufactured and assembled by the finest professionals in the industry. As a consumer and supporter of FOX Racing Shox products, you need to be aware of the importance of setting up your new shock correctly to ensure maximum performance. This manual will provide you with the step-by-step instructions of how to set up your shock. It is a good idea to keep your receipts with this manual and refer to it for service and warranty issues.

General Information

FOX Racing Shox 130 Hangar Way Watsonville, CA 95076	Phone: 831.768.1100 North America: 800.369.7469 Fax: 831.738.9312
E-mail:service@foxracingshox.com	Website: www.foxracingshox.com
Business Hours: Monday-Friday 8:00AM-5:00PM Pacific Time	

Service / Warranty

FOX is pleased to offer 48-hour* turnaround for product service, provided the following steps are taken.

1. Contact FOX Racing Shox at 831.768.1100 to obtain a Return Authorization (R.A.) Number and shipping address. For International Service Centers, please refer to the list below or contact FOX Racing Shox to determine the Service Center nearest you.

2. Satisfactory proof of purchase receipt is required for warranty consideration.

3. Mark the Return Authorization Number and the Return Address clearly on the outside of the package and send item to FOX Racing Shox or your International Service Center with shipping charges pre-paid by sender.

4. Include a description of the problem, bicycle information (manufacturer, year and model), type of FOX product, spring rate and return address with daytime phone number.

*International Service Centers operate independently. Service and Warranty turnaround times may vary.

International Service Centers				
Country	Name	Phone Number	E-mail	
Australia	Dirt Works	612-9679-8400	dirtworks@dirtworks.com.au	
Brazil	Plimax 2 Fast	5511-251-0633	Plimax@nw.com.br	
Canada West	Cycle Works	780-440-3200	mail@cycleworks.com	
Canada East	Velo Cycle	514-849-5299	info@velocycle.com	
France	F.M.F. France	33-494-54-1950	fmfsportgroup@wanadoo.fr	
Germany	Shock Therapy	49-6127 5322	shock-therapy@t-online.de	
Italy	Pepi Innerhofer	39-0473-56-3107	info@pepi.it	
Japan	Mom & Pop's	81-586-43-6810	mamapapa@mtg.biglobe.ne.jp	
New Zealand	Blue Shark Ent.	64-4589-4535	alastair@mountainbikes.co.nz	
Spain	Dirt Racing	34-91-663-71-25	mrojo.dirt@nexo.es	
Switzerland	FOX Racing Euro	41-31-809-3020	frs-europe@bluewin.ch	
United Kingdom	Mojo Suspension	44-1633-615-815	chris.porter@virgin.net	
United States	FOX Racing Shox	831.768.1100	service@foxracingshox.com	

Warranty Policy

The factory warranty period for your shock is one year from the original date of purchase of the bicycle or shock. A copy of the original purchase receipt <u>must</u> accompany any shock being considered for warranty service. Warranty is at the full discretion of FOX Racing Shox and will cover only defective materials and workmanship.

This warranty is void when damage to the shock has occurred from the following:

- Abuse
- Seal damage due to power washing.
- Damage to the exterior finish caused by improper cable routing, rocks, crashes, seat post dents.
- Any attempt to disassemble damper assembly
- Modifications
- Non-Factory oil changes or improper service
- Shipping damages or loss (purchase of full value insurance is recommended)
- Coil Bind / Excessive spring preload (two turns maximum)

FLOAT, FLOAT R, FLOAT L, FLOAT RL Warranty: To maintain high performance and product longevity, periodic maintenance is required. (See the Maintenance Schedule for further instructions)

To ensure peak performance, repairs and service to the shock must be performed by FOX Racing Shox in the USA or outside the USA by a FOX Racing Shox Authorized Service Center.

FOX Racing Shox reserves the right to all final warranty or non-warranty decisions.

Metho	ds of Payment	
Visa	MasterCard	Cashier's Check

Method of Shipping

We use UPS ground service within the USA.

Disclaimer

FOX Racing Shox is not responsible for any damages to you or others arising from riding, transporting, or other use of your shock or bicycle. In the event that your shock breaks or malfunctions, FOX Racing Shox shall have no liability or obligation beyond the repair or replacement of your shock, pursuant to the terms outlined in the Service and Warranty provisions of this Manual.

Consumer Safety

RIDING A BICYCLE IS DANGEROUS AND CAN RESULT IN DEATH OR SERIOUS INJURY. TAKE YOUR RESPONSI-BILITY TO YOURSELF AND OTHERS SERIOUSLY.

- Maintain your bicycle and suspension
- Wear protective clothing, eye protection and a helmet
- Ride within you limits
- Tread lightly

Your bike is equipped with FOX Racing Shox rear suspension. Before riding, take the time to read the FOX Racing Shox manual on set-up, use, and service of your shock. If you have questions, call your Authorized FOX Racing Shox Service Center or call FOX Racing Shox directly at 831.768.1100.

If your shock ever loses oil, or if it makes unusual noise, stop riding immediately and have the shock inspected by a dealer, Service Center or contact Fox Racing Shox. RIDING WITH A BROKEN OR MALFUNCTIONING SHOCK CAN RESULT IN LOSS OF CONTROL, CRASHING, AND POSSIBLE DEATH OR SERIOUS INJURY.

Never modify your bike frame or shock. Only use genuine Fox Racing Shox parts for your shock. Any modification, improper service, or use of after-market replacement parts will void the warranty and could damage the shock or cause loss of control of the bike resulting in serious injury or death.

Follow the scheduled service recommendations in this Manual. Always have your shock serviced by Fox Racing Shox in the USA or an Authorized FOX Racing Shox Service Center outside the USA.

- Your FOX Racing Shox IS PRESSURIZED WITH NITROGEN.
- THE CHARGED PORTION OF THE SHOCK SHOULD NEVER BE OPENED EXCEPT BY AN AUTHORIZED SERVICE CENTER.
- IF YOU HAVE AN AIR SHOCK, THE PORTION OF THE SHOCK THAT IS CHARGED WITH NITROGEN DOES NOT NEED TO BE OPENED IN ORDER TO PERFORM CLEANING AND LUBRICATION OF THE AIR SLEEVE CHAMBER.
- OPENING A NITROGEN PRESSURIZED SHOCK CAN BE DANGEROUS AND CAN RESULT IN INJURY. DO NOT DO IT.
- WARNING: DO NOT ATTEMPT TO PULL APART, OPEN, DISASSEMBLE OR SERVICE A SHOCK IF IT IS COMPRESSED OR HAS NOT RETURNED (WILL NOT RETURN) TO ITS ORIGINAL NEUTRAL LENGTH (WITH NO LOAD ON THE SHOCK). SERIOUS INJURY CAN RESULT.

Shock Termin	ology	
Shock Sag:	The amount the shock compresses with rider sitting on bike in normal riding position. This is usually 15% to 33% of total shock travel. Cross country: 15% to 25% suggested, Downhill 25% to 33% suggested.	
Compression Damping:	The oil damping resistance felt when trying to compress the shock.	
Rebound Damping:	Rebound damping controls the rate at which the shock will extend.	
Preload:	The initial amount of force placed on an air or coil spring.	
Spring rate:	The force needed to compress the spring one inch.	
FLOAT:	FLOAT is air technology. This air negative spring technology self adjusts the air negative chamber to optimum performance based on the positive air chamber pressure. This technology delivers the performance of a coil with the ease of adjustability and light- weight of an air shock.	
Vanilla:	Vanilla is coil spring technology. Coil spring technology offers the utmost in bump performance and is the standard against which all other technologies are measured.	

General Set-Up Instructions

Measuring Sag

To get the best performance from your FOX Racing Shox, it is necessary to adjust sag. Sag is how much the shock compresses or "sags" when you sit on the bicycle.

Use this procedure to measure the sag on your FOX Racing Shox FLOAT and Vanilla shocks.

Measurement #1

1. Before sitting on the bicycle, measure and record the distance from the center of one mounting bolt to the center of the other mounting bolt. This is known as the "eye to eye" measurement.

Measurement #2

2. Sit on the bicycle in a normal riding position. Your weight should be distributed on the saddle and pedals. It may be necessary to hold yourself up against a wall or post to steady yourself. Do not bounce on the pedals or saddle.

3. Have an assistant measure and record the eye to eye distance.

Subtract Measurement #2 from Measurement #1. The difference is the sag.

General Maintenance					
Maintenance Schedule	New	Every Ride	Every 8 Hours	Every 40 Hours	Every 1000 Hours
All Shocks					
Set Shock SAG	x				
Set rebound adjustment to desired speed	x				
Clean aluminum reducer, Check for Wear, Grease				x	
Send to service center for oil change and inspection.					x
Clean Shock Body		x			
Air Sleeve Maintenance (FLOAT Shocks Only)					
Riding Conditions: Dry Dusty				x	
Riding Conditions: Extreme Mud			x		

General Maintenance

Other Maintenance Considerations

Grease will leak past the wiper seal when the shock is cycled. The grease may look like oil but it is, in fact, grease. This is normal.

If you ride in extreme conditions, service your shock more frequently.

Wash your shock with soap and water.

DO NOT USE A HIGH PRESSURE WASHER ON YOUR SHOCK!

Extensive internal service should be performed by FOX Racing Shox or an Authorized FOX Racing Shox Service Center.

FLOAT Shocks

Pump

A Fox high pressure air pump is available for your FLOAT shock. It is used to add and release air pressure from your FLOAT shock.



Remove the air valve cap from the shock.

Thread the pump's valve chuck onto the shock's air valve until pressure registers on the pump gauge. This takes approximately 6 turns. Do not over-tighten pump on air valve as this will damage the pump chuck seal.

Stroke the pump a few cycles. The pressure should increase slowly. If pressure increases rapidly check to make sure the pump is properly fitted and tightened onto the air valve.

Note: If shock has no air pressure, the gauge will not register pressure.

Pump to desired pressure setting. You can decrease pressure by pushing the black bleed valve. Pushing the bleed valve half way down, and holding it there, will allow pressure to escape from the pump and shock. Pushing the bleed valve all the way down and releasing it will allow only a small amount of pressure to escape (micro adjust). When unthreading the pump from the air valve fitting, the sound of the air loss is from the pump hose, not the shock itself.

Note: When you attach the pump to the shock, the hose will need to fill with air. This will result in a lower pressure registering approximately 10 to 20 PSI on the gauge.

Note: Average setting range is from 50 to 300 PSI. DO NOT EXCEED 300 PSI. Replace the air valve cap before riding.

Warning: If your FLOAT shock has not returned to its original neutral length (eye to eye position), DO NOT attempt to disassemble the outer air sleeve or any other part of the shock. Air has become trapped in the Air Negative chamber and can cause serious injury if the shock is disassembled. This condition is known as "stuck down". If the shock is stuck down, return it immediately to FOX Racing Shox or an Authorized FOX Racing Shox Service Center for service. (see Service / Warranty for details)

Procedure to check for a stuck down shock:

- 1. Release air pressure from the shock.
- 2. Using a FOX Racing Shox high pressure pump, pressurize the shock to 250 psi.
- 3. If the shock does not extend it has become stuck down.

DO NOT ATTEMPT TO PULL APART, OPEN, DISASSEMBLE OR SERVICE A SHOCK THAT IS STUCK DOWN. SERIOUS INJURY CAN RESULT. CALL FOX Racing Shox or an Authorized FOX Racing Shox Service Center for assistance.

Note: While a "stuck down" shock is a serious condition and should only be serviced by FOX Racing Shox or an Authorized FOX Racing Shox Service Center, it is also rare.

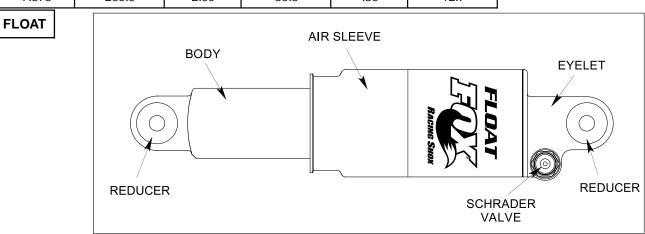
Adjusting Sag

To get the best performance from your FLOAT shock, it is necessary to adjust sag. On your FLOAT shock this is done by adjusting the air pressure. The air pressure needed is determined by the rider's weight and riding conditions. Sag is how much the shock compresses when you sit on the bicycle. Increasing air pressure will make the shock stiffer. Decreasing the air pressure will make the shock softer. (Note: It might be necessary to change air pressure to achieve the proper sag setting). The smoothest ride will be attained by running the air pressure low enough to occasionally bottom out.

- 1. Locate the Schrader air valve on the shock and remove the valve cap.
- Screw your FOX Racing Shox pump onto the air valve until the pump shows pressure on the gauge. Do not over tighten.
- 3. Add air pressure by pushing on the pump handle until desired pressure is shown on gauge. (See *Pump* Section)
- 4. Unthread pump from air valve; measure the sag.

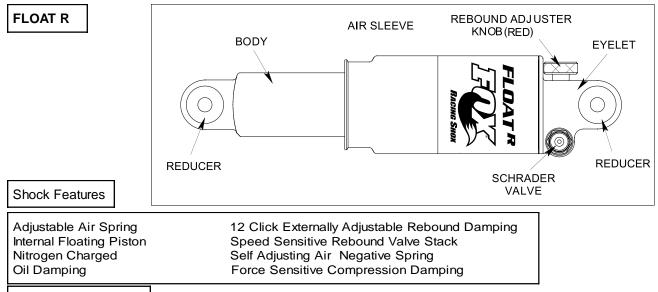
FLOAT Sag Table					
Common Shock Lengths		Shock Travel		Recommended Sag	
(inches)	(millimeters)	(inches)	(millimeters)	(inches)	(millimeters)
5.500	139.7	1.00	25.4	.25	6.4
6.000	152.4	1.25	31.8	.31	7.9
6.500	165.1	1.50	38.1	.38	9.5
7.250	184.2	1.75	44.4	.44	11.1
7.875	200.0	2.00	50.8	.50	12.7

Repeat step 1-4 until proper sag is achieved. Replace valve cap after sag is set.



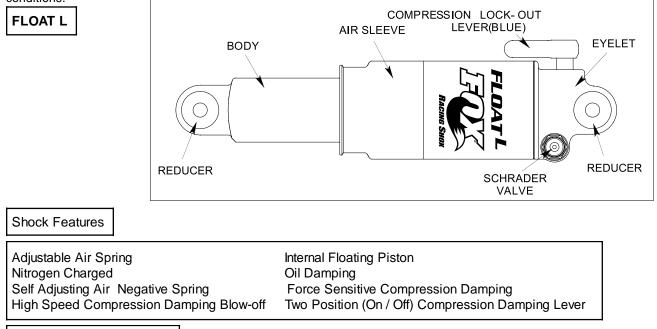
Shock Features

Adjustable Air Spring	Self Adjusting Air Negative Spring
Internal Floating Piston	Nitrogen Charged
Oil Damping	Force Sensitive Compression Damping



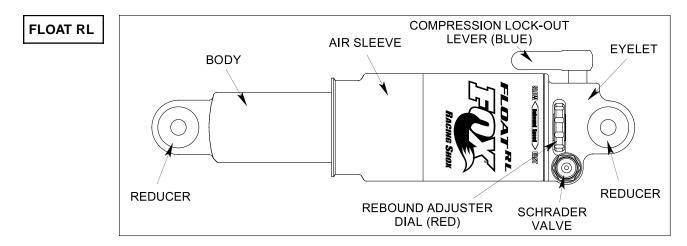
Rebound Adjustment

Rebound damping controls the speed at which the shock returns after the shock is compressed. Turning the rebound adjuster clockwise will cause the rebound to be slower, counterclockwise will cause the rebound to be faster. This knob gives your shock a wide range of adjustment. This adjustment will enable you to tune your shock to any air pressure and riding condition. The proper rebound setting is a personal preference and varies depending upon your weight and riding style. Rebound should be as fast as possible without kicking back and pushing the rider off the saddle when riding the bike in rough terrain. If the rebound is too slow the suspension will not function properly and the wheel will not follow the changing terrain. Determining the proper rebound setting may take a number of rides. During the first few rides adjust the clicker and note the different ride characteristics. Your rebound damping setting may change with different riding conditions.



Compression Adjustment

The compression adjuster is the blue lever. There are two options for lever position. For one option, the lever is at a 45° angle counter clockwise to the shock in the normal position. Moving the lever clockwise 90° increases compression damping. For the other option, the lever is in line with the shock in the normal position. Moving the lever 180° in either direction increases compression damping. The increased compression damping setting will be firm but will "blow off" under a big hit or heavy load.



Shock Features

Adjustable Air Spring Internal Floating Piston Self Adjusting Air Negative Spring Force Sensitive Compression Damping Two Position (On / Off) Comp Damping Lever 36 Click Externally Adjustable Rebound Damping Nitrogen Charged Oil Damping High Speed Compression Damping Blow-off

Rebound Adjustment

Please refer to Rebound Adjustment for FLOAT R.

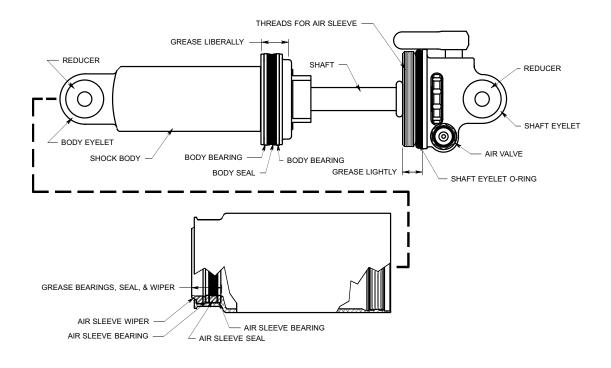
Compression Adjustment

Please refer to Compression Adjustment for Float L.

Air Sleeve Maintenance

See www.foxracingshox.com for downloadable video instructions.

Release all air pressure from Air Valve. Cycle shock a few times to release pressure from the air negative spring. Release all air pressure from Air Valve again. Remove shock from bike Remove aluminum reducers. Clamp shaft eyelet in a vise with soft jaws being careful not to crush the air valve, lock out lever, or rebound knob. Slide a screwdriver or punch through the body eyelet to keep the air sleeve from coming off the body. Loosen air sleeve by turning counter clockwise and slide it down the body. Remove screwdriver or punch.



Cleaning and Inspection

Clean inside of the air sleeve with parts cleaner. Inspect the seal and bearing inside of the air sleeve. Replace if damaged or worn. Clean body, body seal, body bearings and shaft with parts cleaner. Inspect body seal and body bearings for wear or damage. Replace if damaged or worn.

Greasing and Reassembling

Lightly grease the shaft eyelet O-ring and shaft eyelet threads with Multi-purpose Lithium based grease (NLGI #2). Liberally grease the body seal and body bearing, leaving a reservoir of grease above the body bearing . Lightly grease the air sleeve seal, air sleeve bearing, and air sleeve wiper.

Slide the air sleeve over the body until the air sleeve wiper is at the end of the body. Leave the air sleeve unthreaded at this time.

(The air sleeve will be very difficult to compress because there is pressure trapped in the air negative chamber.

Waiting until after the shock is mounted in the bike will allow the leverage of the bike to easily compress the shock.) Grease bushings and reducers.

Install reducers in eyelet bushings.

Install shock in bike.

Carefully compress shock until you can screw on the air sleeve. Do not let the air sleeve slip off the body. Thread air sleeve onto shaft eyelet.

Inflate shock using inflation instructions listed in the Pump Instructions.

Note: If needed, the Air Sleeve Seal Kit part number is 803-00-050-A.

Vanilla Shocks

Adjusting Sag

To get the best performance from your Vanilla shock, it is necessary to adjust sag. On the coil-over shocks this is done by adjusting the spring preload or changing springs. Sag is how much the shock compresses when you sit on the bicycle. Increasing spring preload will make the shock compress less. Decreasing the preload will make the shock compress more. The smoothest ride will be achieved with one turn of preload. (Note: it might be necessary to change spring rate to achieve the proper sag setting.) Adjusting sag setting is easiest with two people, the bike rider and an assistant.

Vanilla Sag Table				
Shoc	k Travel	Recomm	ended Sag	
(inches)	(millimeters)	(inches)	(millimeters)	lf th
1.00 1.25	25.4 31.7	.25 .31	6.4 7.9	hi
1.50	38.1	.38	9.5	
1.75 2.00	44.4 50.8	.44 .50	11.1 12.7	
2.25	57.1	.56	14.3	
2.50 2.75	63.5 69.9	.63 .69	15.9 17.5	

If more than 2 turns of preload are required to achieve the correct amount of sag, it is recommended that a higher rate spring be installed.

To set the preload, you need to adjust the spring preload ring. FOX Racing Shox recommends no more than 2 turns of preload.

Adjust preload by turning the preload ring onto the body. Clockwise turns increase preload, which decreases the sag. Counterclockwise turns decrease preload, which increases sag.

OR

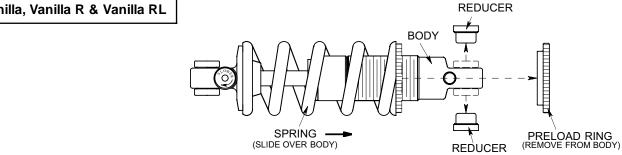
Change the spring (See *Installing and Removing Springs*). A stiffer spring (higher spring rate) decreases sag. A softer spring (lower spring rate) increases sag.

Springs are available from FOX Racing Shox as well as authorized dealers and service centers. Numbers are printed on the outside of the spring coils indicating the rate (in pounds) and travel (in inches). Example: 550-1.95 is a 550 pound-per-inch spring rate with 1.95 inches of travel. Please note this number when ordering replacement springs. Also be prepared with the make, model, and year of bicycle, shock travel, rider weight and riding style.

Installing & Removing Springs

To remove the spring from your shock, follow these steps:

Vanilla, Vanilla R & Vanilla RL



Loosen and remove the preload ring from the body.

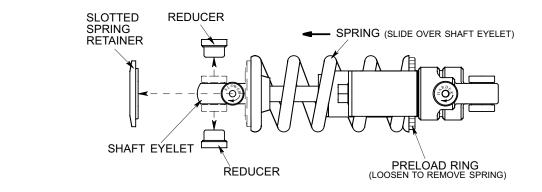
Note: It might be necessary to remove the reducers from the body end of the shock to remove the spring.

Slide the spring over the shock body.

Vanilla RC

Install your new spring by sliding the spring over the shock body.

Tighten the preload adjuster one full turn to keep the preload ring from shaking loose.



Back off preload ring to loosen the spring until the slotted spring retainer can be removed from the shock.

Note: It might be necessary to remove the reducers from the shaft end of the shock to remove the spring.

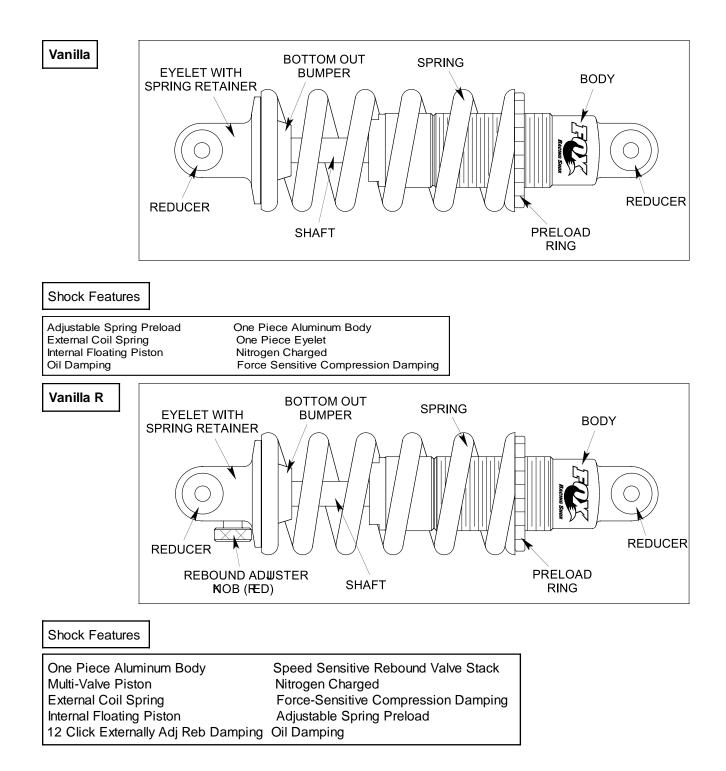
Slide the spring over the eyelet.

Slide the new spring on over the eyelet, and re-install the spring retainer.

Note: The slotted spring ring retainer slot must rest on the flat side of the spring. If the slot is straddling the gap caused by the end of the spring wire the slotted spring retainer may bend.

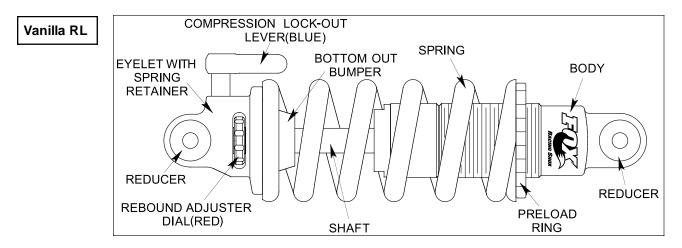
Tighten the preload adjuster one full turn to keep the spring retainer from shaking loose.

Align the slotted spring retainer so that the rebound knob is in the middle of the slot.



Rebound Adjustment

Rebound damping controls the speed at which the shock returns after the shock is compressed. Turning the rebound adjuster clockwise will cause the rebound to be slower, and counterclockwise will cause the rebound to be faster. This knob gives your shock a wide range of adjustment. This adjustment will enable you to tune your shock to any spring rate and riding condition. The proper rebound setting is a personal preference and varies depending upon your weight and riding style. Rebound should be as fast as possible without kicking back and pushing the rider off the saddle when riding the bike in rough terrain. If the rebound is too slow the suspension will not function properly and the wheel will not follow the changing terrain. Determining the proper rebound setting may take a number of rides. During the first few rides adjust the clicker and note the different ride characteristics. Your rebound damping setting may change with different riding conditions.



Shock Features

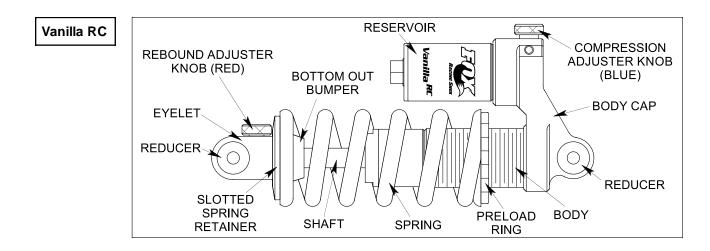
	One Piece Aluminum Body Multi-Valve Piston External Coil Spring Internal Floating Piston	Oil Damping Nitrogen Charged Force-Sensitive Compression Damping Adjustable Spring Preload
36 Click External Adj Rebound Damping Two Position (On / Off) Compression Damping Lever	5	, , , , , , , , , , , , , , , , , , , ,

Rebound Adjustment

Please refer to Rebound Adjustment for Vanilla R.

Compression Adjustment

Compression adjustment is featured on the Vanilla RL Shock. The compression adjuster is the blue lever. There are three options for lever position for the Vanilla RL. For one option, the lever is at a 45° angle counter clockwise to the shock in the normal position. Moving the lever clockwise 90° increases compression damping. On another option, the lever is in line with the shock in the normal position. Moving the lever 180° in either direction increases compression damping. On the third option, the lever is in line with the shock in the normal position. Moving the lever 180° in either direction increases compression damping. On the third option, the lever is in line with the shock in the normal position. Move the lever 90° clockwise to increase compression damping. The increased compression damping setting will be firm but will "blow off" under a big hit or heavy load.



Shock Features

Nitrogen Charged	Speed Sensitive Rebound Valve Stack
Multi-Valve Piston	Piggy Back Remote Reservoir
External Coil Spring	Force-Sensitive Compression Damping
Internal Floating Piston	12 Click Externally Adjustable Rebound Damping
Adjustable Spring Preload	12 Click Externally Adjustable Compression Damping

Rebound Adjustment

Please refer to Rebound Adjustment for Vanilla R.

Compression Adjustment

The compression damping is changed by turning the blue rebound adjuster knob on the Vanilla RC. The compression adjuster changes the force required to compress the shock. Turning the blue adjuster knob clockwise increases compression damping (more difficult to compress), while counterclockwise reduces the compression damping (easier to compress). During the first few rides change the compression adjuster and note the different ride characteristics. Your compression adjuster setting may change with different riding conditions.

Note: The smoothest ride will be attained with the compression adjuster in the softest setting.