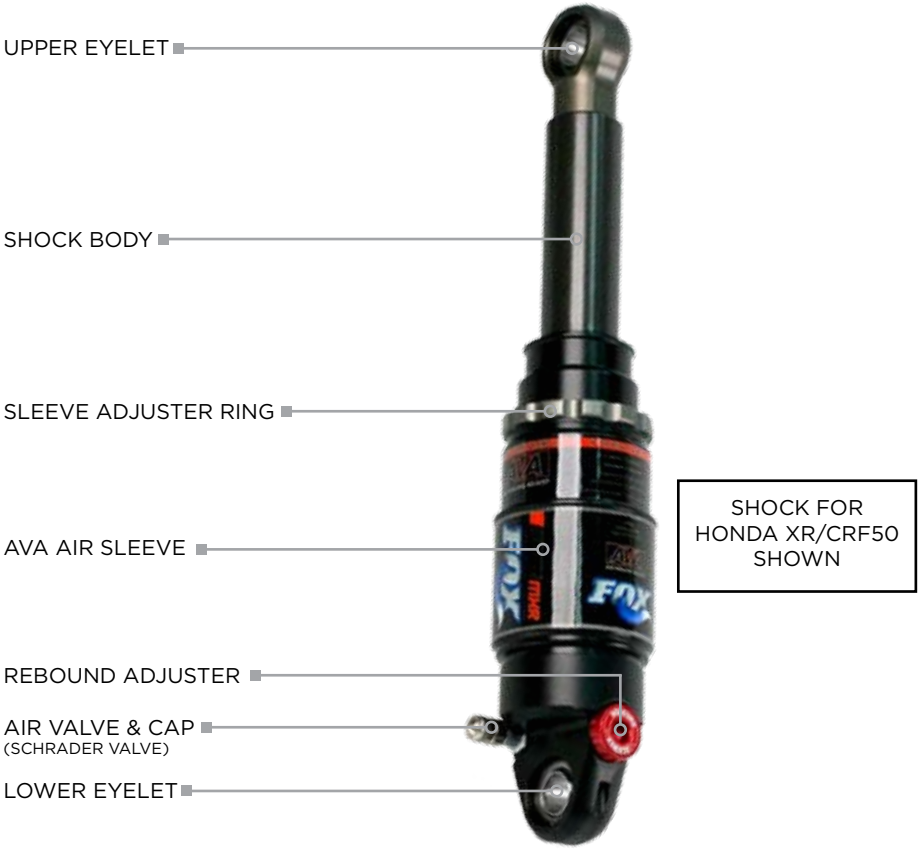
FOX RACING SHOX

POINTS OUT INFORMATION THAT, IF NOT FOLLOWED, CAN LEAD TO SERIOUS INJURY OR DEATH, OR CAUSE SERIOUS DAMAGE TO YOUR FORK.

POINTS OUT INFORMATION THAT MAY NOT BE OBVIOUS, OR THAT CAN HELP THE RIDER OUT WITH SOME TRICKY SITUATION.

TABLE OF CONTENTS

	FLOAT MXR
dimensions	10.25" (260mm) / 2.80" (71mm)
features	> Ultra-lightweight: 1.1 lbs. (0.5 kg) > Infinitely adjustable air spring > Air Volume Adjustment (AVA) technology > Race-proven oil damping system > External rebound damping adjuster > Patented self-adjust negative air spring > 100% rebuildable and revalveable > 1-Year factory limited warranty > 90-day valving guarantee > Easy to install (no seat or frame modifications)



CONGRATULATIONS!

Thank you for choosing FOX FLOAT MXR for your motorcycle. In doing so, you have chosen the finest suspension shock in the world. FOX Racing Shox products are designed, tested and manufactured by the finest professionals in the industry in Santa Cruz County, California, USA.

As a consumer and supporter of FOX Racing Shox products, you need to be aware of the importance of setting up your shock correctly to ensure maximum performance. This manual provides step-by-step instructions of how to setup and maintain your shock. It is a good idea to keep your receipts with this manual, and refer to it for service and warranty issues.

This manual does not contain step-by-step detailed service instructions for a reason: FOX recommends that detailed service be performed by FOX Racing Shox.

CONSUMER SAFETY

Riding a motorcycle can be dangerous and can result in death or serious injury. Take your responsibility to yourself and others seriously, and heed the following safety tips:

> Keep in your motorcycle and suspension system in optimal working condition.

> Wear protective clothing, eye protection and always fasten your helmet before you ride.

> Know and ride within your limits.

The FLOAT MXR shock contains a nitrogen charge. The charged portion of the shock should only be opened by a FOX Racing Shox technician. Opening a nitrogen pressurized shock can be dangerous and can result in serious injury or death.

The portion of the shock that is charged with nitrogen does not need to be opened to perform the air sleeve service.

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). THIS CAN RESULT IN SERIOUS INJURY.

MAINTENANCE CONSIDERATIONS

FLOAT MXR shocks may have a small amount of air sleeve lubricant residue on the body. This is normal. If this residual air sleeve lubricant is not present, this is an indication that the FLOAT MXR air sleeve should be re-lubed. For more information on maintaining the air sleeve, see the **AIR SLEEVE MAINTENANCE** section on page 11.

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

Wash your shock with soap and water ONLY.

DO NOT USE A HIGH PRESSURE WASHER ON YOUR SHOCK.

Extensive internal service should be performed by FOX Racing Shox.

USING THE FOX HIGH PRESSURE PUMP

Your FLOAT MXR shock ships with the FOX High Pressure Pump, as shown on the right.
The pump is used to add and release air pressure from your FLOAT MXR shock.

FOX High Pressure Pump

To pressurize your shock:

1. Remove the air valve cap from the shock.
2. 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.

IF THE SHOCK HAS NO AIR PRESSURE, THE GAUGE WILL READ ZERO.

3. 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.
4. Pump to the desired pressure setting. Average air pressure range is from 50 to 300 psi. DO NOT EXCEED 300 PSI. 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 from the shock.

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 3 TO 4 PSI ON THE GAUGE.

5. Replace the air valve cap.

"STUCK DOWN" SHOCK

Under certain rare circumstances, a FLOAT MXR shock can become "stuck down." If your FLOAT MXR 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 your shock is "stuck down," return it immediately to FOX Racing Shox or an Authorized FOX Racing Shox Service Center for service. Service and warranty information can be found on the inside front cover of this manual.

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. Contact FOX Racing Shox for assistance.

MOUNTING THE FLOAT MXR SHOCK

The following tools and supplies will be needed: A 14mm wrench, 17mm socket, 10mm socket, ratchet, large Philips screwdriver and flat-blade screwdriver:

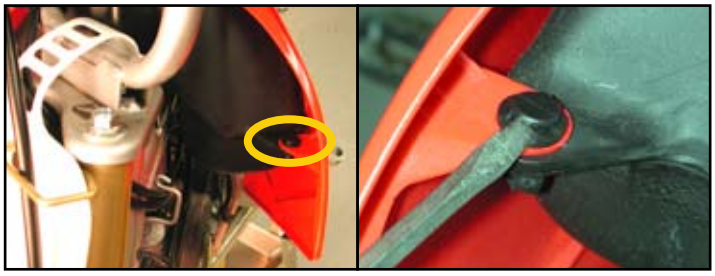
1. Place the XR/CRF50 on a workstand.

2. Using a wrench and 10mm socket, remove the two bolts that attach the rear fender to the motorcycle's frame.

3. Remove the screws that hold the shrouds on both sides of the fuel tank.

4. Using a flat-blade screwdriver, remove the plastic fasteners located on the inside of the shrouds on both sides of the fuel tank.

   These fasteners are reusable, so be careful to not damage them.



5. Pull the body work unit off the motorcycle by sliding it backwards and up.

6. Remove the white plastic ignition module holder from above the shock.

7. Using a 14mm wrench and 17mm socket, remove the upper and lower shock bolts. Use care when removing the bottom shock bolt as the swingarm may drop slightly. Remove the existing shock from the motorcycle.

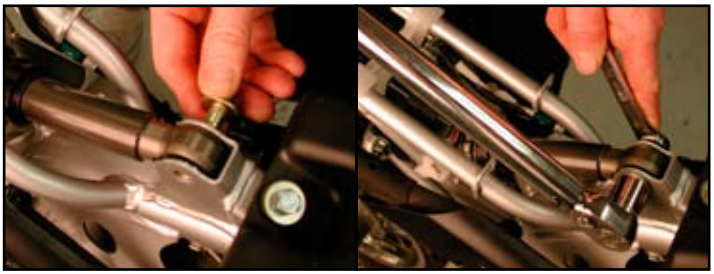
8. Properly place the enclosed shock reducers, o-rings and washers onto your FLOAT MXR shock. There are two sets of reducers, one for the bottom mount and one for the top mount, four o-rings and four washers. For proper reducer, o-ring and washer orientation, see the **REDUCER AND WASHER ORIENTATION** section on page 13.

   Mount the FLOAT MXR so that the shock end with the rebound adjuster is attached to the bottom frame mount, and that the Schrader valve is pointing towards the left side of the bike and that the rebound adjuster is pointing up.

Make sure that the air sleeve on your FLOAT MXR shock clears both sides of the XR/CRF50's frame. If the shock is too close to one side of the frame or other, stack the washers to offset the shock at its mount points. For proper washer orientation, see the **REDUCER AND WASHER ORIENTATION** section on page 13.

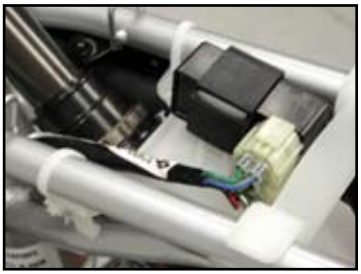
9. Re-attach the original mounting bolts, making sure the shorter bolt goes on the top shock mount.

   Torque the mounting bolts to 35 ft-lb (47 N-m) using a torque wrench with 17mm socket and 14mm wrench.



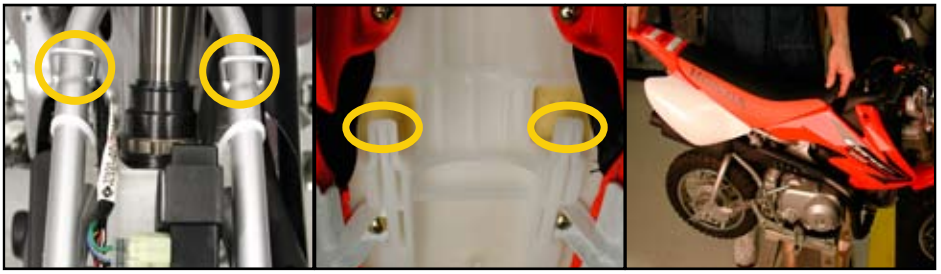
10. Place the white plastic ignition module holder back to its position above the shock. Do not snap the lower portion of the ignition module back onto the cycle's frame. Instead, use the supplied zip ties to tie the bottom portion of the ignition module holder to the top portion of the cycle's frame, as shown.

11. Cycle the suspension on your motorcycle making sure that the shock, ignition module holder and surrounding wires do not interfere with the shock's and swingarm's travel.



12. Put the body work unit back onto the motorcycle by sliding it forwards and down.

    Ensure that the white plastic hooks (circled in the picture below) on the underside of the seat slide directly into the gray metal hooks (circled in the picture below) on the frame. The holes in the front of the fairing should line up with the screw holes on the gas tank.



13. Screw in the two gas tank screws, two plastic fasteners, and two 10mm bolts on the back so that the body work unit is securely fastened to the motorcycle.
14. Measure and set sag, then adjust rebound as described in the following sections before riding.

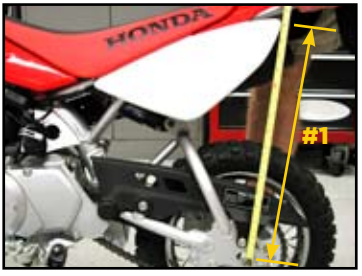
SHOCK SETUP

To get the best performance from your FLOAT MXR, it is necessary to adjust sag. Sag is how much the shock compresses, or "sags," when you sit on the motorcycle.

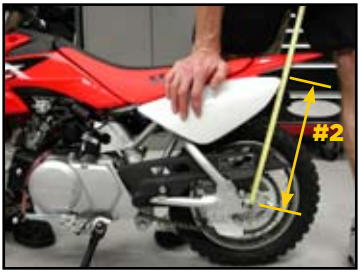
Use the following procedure to measure wheel travel on your XR/CRF50 and the sag on your FLOAT MXR:

PUMP YOUR SHOCK UP TO AT LEAST 100 PSI TO ENSURE THAT THE SUSPENSION IS FULLY EXTENDED.

1. With the shock installed on your bike, measure the distance from the center of the rear axle to a fixed point on the body work unit directly above the axle. This is **MEASUREMENT #1**.



2. Let all the air out of the FLOAT MXR and fully compress the suspension.



3. Repeat the measurement in step 1 using the same fixed point on the body work unit. This is **MEASUREMENT #2**.
4. For a stock XR/CRF50, the wheel travel will be approximately 4", which can be derived by subtracting **MEASUREMENT #2** from **MEASUREMENT #1**, or:

MEASUREMENT #1 — MEASUREMENT #2 = WHEEL TRAVEL

6. Add 100 psi back to the FLOAT MXR.
7. Sit on the motorcycle in normal riding position and have an assistant measure and record the distance from the center axle to a fixed location using the same method and frame locations as in step 1. This will be **MEASUREMENT #3**.

For the FLOAT MXR shock, sag should be 25% of total wheel travel, which can be derived by subtracting **MEASUREMENT #3** from **MEASUREMENT #1**.

MEASUREMENT #1 — MEASUREMENT #3 = SAG

Additionally, for any XR/CRF50 stock or aftermarket frame or swingarm replacement, you can always use the 25%-of-wheel travel sag method . For a stock XR/CRF50, sag will be approximately 1".

8. **If the sag measurement is less than one inch**, release pressure (see **USING THE FOX HIGH PRESSURE PUMP** on page 5) from the FLOAT MXR in 5 psi increments, then repeat step 7 until proper sag is achieved.

   If the sag measurement is more than one inch, add pressure (see **USING THE FOX HIGH PRESSURE PUMP** on page 5) to the FLOAT MXR in 5 psi increments, then repeat step 7 until proper sag is achieved.

   For sag troubleshooting tips, see the **REBOUND/SAG TROUBLESHOOTING** table on page 11.
9. Unthread the pump from the air valve then replace the air cap on your FLOAT MXR shock.

AVA (AIR VOLUME ADJUSTER)

The FLOAT MXR features AVA (see picture at right), a technology that affords new levels of fine tuning adjustment. AVA increases or decreases the volume of the positive air spring chamber, which allows the rider to alter the shape of the spring curve. AVA allows as much as 200 lbs. of adjustment in spring rate.

AVA Air Sleeve

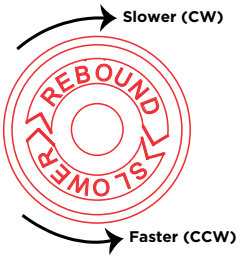
AVA is a pre-ride tuning feature. The AVA system is not intended to be used on-the-fly. It is important to clean your shock, especially the threads of the AVA air sleeve, prior to adjustment. In most cases, maximum air volume will be desired. Rotation of the AVA ring requires near complete deflation of the shock.

Using a FOX High Pressure Pump, let most or all of the air from the shock so that the AVA ring can be easily turned. Turn the ring until it just touches the wire ring that is snapped onto the air sleeve. This is the maximum volume setting. Pressurize

the shock and set sag as normal. AVA does not affect sag. If the shock seems to bottom out too easily, deflate the shock, rotate the ring to the next setting on the air sleeve. Pressurize the shock, set sag and test again for full stroke performance. Repeat this process until the setting that best fits your riding style and terrain is achieved.

Clean AVA seals after every other normal FLOAT seal service, especially if riding conditions are muddy or dusty. Carefully remove wire rings and air sleeves. Clean and inspect seals and parts for damage or wear. Re-lubricate and carefully re-assemble.

SHOCK ADJUSTMENTS



Rebound controls the rate at which the shock returns after it has been compressed. The proper rebound setting is a personal preference, and changes with rider weight, riding style and conditions. A rule of thumb is that rebound should be as fast as possible without kicking back and pushing the rider off the saddle.

The rebound knob is easily accessed from above the rear wheel and below the body work unit.

USE CARE WHEN ADJUSTING REBOUND AFTER RIDING THE MOTORCYCLE AS THE MUFFLER MAY STILL BE HOT.

For slower rebound, turn the red adjuster knob clockwise.

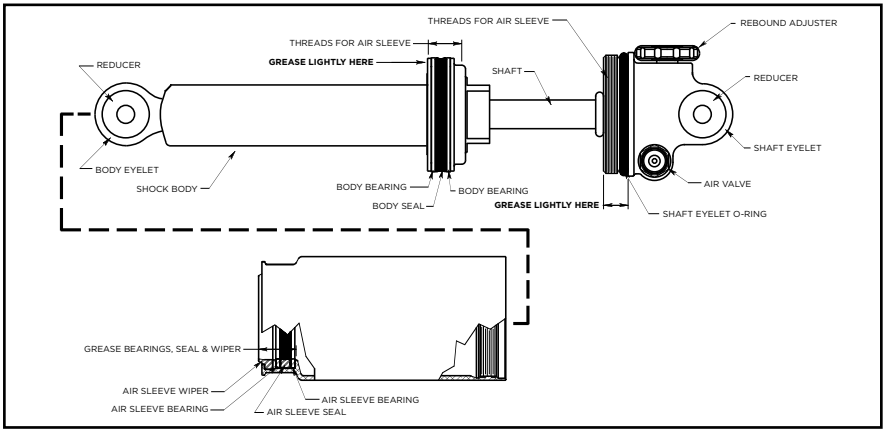
For faster rebound, turn the red adjuster knob counterclockwise.

REBOUND/SAG TROUBLESHOOTING	
Symptom	**Remedy**
- Bucking - Tops out too hard	Set slower rebound
- Packing in stutter bumps - Chatter	Set faster rebound
- Cycle sags or squats (50% or more of travel)	Increase (+) air pressure in 5 psi increments and check sag
- Excessive bottoming	Adjust AVA sleeve adjuster ring and check sag

AIR SLEEVE MAINTENANCE

1. Release all air pressure from air valve.
2. Cycle shock a few times to release pressure from the negative air spring.
3. Release all air pressure from air valve again.
4. Remove the mounting hardware and remove the shock from the bike.
5. Using shock body clamps (FOX P/N 398-00-254), clamp the shock body next to the eyelet to avoid crushing the body. Loosen the eyelet 1 - 2 turns (do not remove yet).
6. Slide a screwdriver or punch through the body eyelet to keep the air sleeve from coming off the body.
7. Turn the air sleeve counterclockwise to loosen it and slide it down the shock body by hand.

8. Remove the screwdriver or punch and remove the eyelet from the shock.
9. Slide the air sleeve off the shock.



Air Sleeve: Orientation and position on FLOAT MXR air shock body.

CLEANING AND INSPECTION

1. Clean the inside of the air sleeve, making sure that there are no large pieces of debris or leftover grease. Inspect the seal and bearing inside of the air sleeve. Replace if damaged or worn.
2. Clean body, body seal, body bearings and shaft with a clean rag.
3. Inspect body seal and body bearings for wear or damage. Replace if damaged or worn.

GREASING AND REASSEMBLING

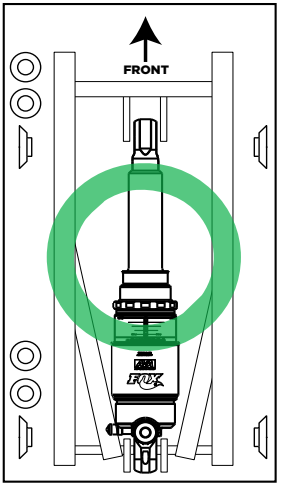
1. Lubricate the shaft eyelet O-ring and shaft eyelet threads with FLOAT Fluid or multi-purpose lithium-based grease (NLGI #2).
2. Liberally lube the body seal and body bearing, leaving a reservoir of lube above the body bearing .
3. Lubricate the air sleeve seal, air sleeve bearing, and air sleeve wiper. FLOAT Fluid can be used in this application.
4. 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 negative air chamber. Waiting until after the shock is mounted in the motorcycle will allow the leverage of the motorcycle to easily compress the shock.)
5. Clamp the shock body using the shock body clamps (FOX P/N 398-00-254). Apply primer and some red Loctite to the body threads.
6. Torque the eyelet to 20 ft/lbs (271 N-cm).
7. Dry bushings and reducers.
8. Install reducers in eyelet bushings and install the shock back on the bike.
9. Carefully compress the shock until you can screw on the air sleeve.
10. Thread the air sleeve onto shaft eyelet hand tight.
11. Inflate the shock (see **USING THE FOX HIGH PRESSURE PUMP** on page 5).

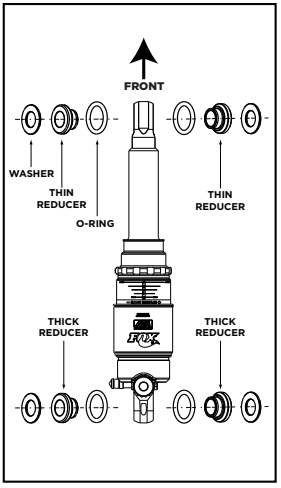
REDUCER AND WASHER ORIENTATION

The diagrams below illustrate the proper and improper methods for offsetting the FLOAT MXR shock using the supplied reducers and washers.

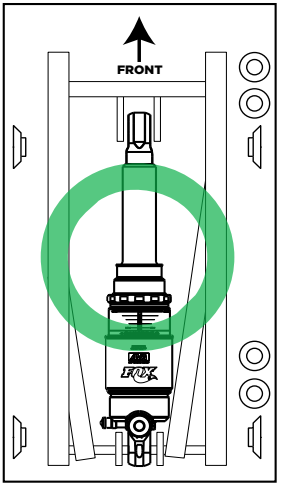
Too Close to Left Side



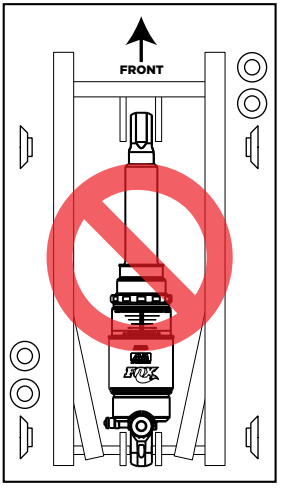
Standard Setup

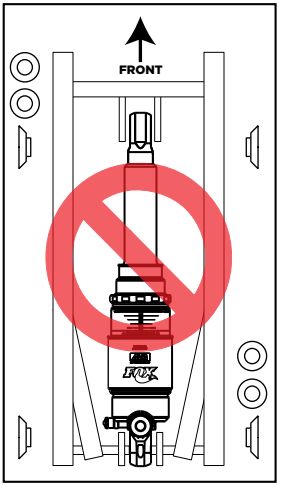


Too Close to Right Side



Do not place two washers on opposite sides of the upper and lower mounts.





TUNING NOTES:

QUICK REFERENCE GUIDE

FLOAT MXR

terms used

SUSPENSION

> Compression: downward travel of the suspension. Actions that move the endpoints of the shock closer together.
> Compression damping: oil damping resistance felt when trying to compress the shock.
> Emulsion shock: shock without an IFP (Internal Floating Piston) separating the oil and nitrogen.
> FLOAT: Fox Load Optimum Air Technology. Delivers the performance of a coil spring with the adjustability and light weight of an air shock.
> Frame clearance: distance between the frame and other moving parts, like the shock.
> Negative travel: distance the suspension or shock extends from the static ride height. Also referred to as 'free sag'.
> Preload: initial force on the spring or air spring. For air shocks, it's the initial air pressure. Preload is used to adjust rider sag.
> Ride height: with the rider on the bike, the basic stance of the bike. Usually measured from the ground to some point on the bike frame.
> Rebound: force required to extend the shock or suspension. Can also refer to the extending action of the suspension.
> Rebound damping: oil damping resistance that controls the rate at which the shock extends after being compressed.
> Sag: amount the shock compresses with the rider sitting on the bike in a normal riding position. Best measured with a friend holding your cycle up.
> Static sag: amount that the bike "sits" into travel. Usually measured from the ground to a point on the frame, or as shock stroke.
> Stroke: amount of shock travel.
> Travel: total amount the shock compresses, as measured from eye-to-eye.
> Wheel travel: distance the wheel moves when the suspension is cycled through its full travel.

RIDING

> Bottoming: vehicle has bottomed-out when the suspension reaches the limit of its travel and stops further downward motion.
> Bucking: kicking motion on a rider after a bump or jump landing.
> Chatter: small bumps similar to braking bumps prior to a corner or berm. Often refers to the harshness felt when riding over small, closely spaced bumps.
> Fading: slow loss of shock damping usually due to heat.
> Packing: when the shock does not return quickly enough to adequately absorb the next bump in a repetitive bump sequence.
> Spiking: sharp impact cause by a square-edge bump.
> Squat: when the rear of the vehicle "sits" down either due to weight transfer or driveline forces.
> Stiction: initial force that needs to be overcome to start the suspension stroke.
> Topping-out: when the suspension is fully extended.

SHOCK

> Eyelets: at either end of the shock where the shock mounts to the bike.
> Spring rate: force required to compress a spring one inch. Measured in lb/in.
> Valving: refers to the combination of shims or damping valves on the piston face used to achieve a specific ride characteristic.

service intervals

> Before every ride: Wipe mud and debris off shock exterior
> Monthly: Check your shock's air pressure
> Annually: Air sleeve maintenance
> Every 3,000 – 5,000 miles: Shock rebuild

tools and supplies

> 14mm wrench
> 17mm socket
> 10mm socket
> Ratchet
> Large Philips screwdriver
> Flat-blade screwdriver

> FLOAT Fluid, 8 oz. bottle	FOX P/N: 025-03-003
> Rebuild Kit	Call FOX Racing Shox

contact info

FOX Racing Shox
130 Hangar Way
Watsonville, CA 95076
USA
Phone: 1.831.274.6500
North America: 1.800.FOX.SHOX (369.7469)
Fax: 1.831.768.7026
E-mail: mcyc@foxracingshox.com
Website: www.foxracingshox.com
Business hours: Monday – Friday 8 a.m. – 5 p.m. PST

method of payment & shipping

Visa, MasterCard, Cashier's Check

FOX Racing Shox uses 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 MXR shock. In the event that your shock breaks or malfunctions, FOX Racing Shox shall have no liability beyond the repair or replacement of your shock pursuant to the terms outlined in the warranty provisions of this manual.

specific exclusions from warranty

> Parts replaced due to normal wear and tear and/or routine maintenance
> Parts subject to normal wear and tear and/or routine maintenance
> Bushings
> Seals (after the 90-day seal warranty period expires)
> Suspension fluids

warranty policy

The factory warranty period for your shock is one year (two years for countries in the EU) from the original date of purchase of the shock or motorcycle. A copy of the original purchase receipt must 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. Warranty duration and laws may vary from state to state and/or country to country.

Parts, components and assemblies subject to normal wear and tear are not covered under this warranty.

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

general exclusions from warranty

> Installation of parts or accessories not qualitatively equivalent to genuine FOX Racing Shox parts.
> Abnormal strain, neglect, abuse and/or misuse
> Accident and/or collision damage
> Modification of original parts
> Lack of proper maintenance
> Shipping damages or loss (purchase of full value shipping insurance is recommended)
> Damage to interior or exterior caused by rocks, crashes or improper installation
> Oil changes or service not performed by FOX Racing Shox or an Authorized Service Center

valving guarantee

If it is determined that a FLOAT MXR requires a valving change within the first 90 days of ownership, FOX will perform the re-valve at no charge for the original consumer. The consumer is required to follow the Service Policy procedure below and is responsible for all shipping costs to and from FOX Racing Shox. Unless otherwise specified, FOX Racing Shox will return ship the shock(s) via UPS Ground Service.

service policy

> FOX Racing Shox offers 5-business day turnaround, which may vary.
> Obtain an RA (Return Authorization) number and shipping address from FOX Racing Shox at 800.FOX.SHOX. Outside the USA, contact the appropriate International Service Center.
> Mark the RA number and Return Address clearly on the outside of the package and send to FOX Racing Shox (see Contact Info above) or your International Service Center with shipping charges pre-paid by the sender.
> Proof-of-purchase is required for warranty consideration.
> Include a description of the problem, motorcycle information (manufacturer, year and model), type of FOX product and return address with daytime phone number.

FOX FACTORY INC
130 HANGAR WAY
WATSONVILLE, CA
95076

PH 800.FOX.SHOX FAX 831.768.7026 email MCYC@FOXRACINGSHOX.COM
WWW.FOXRACINGSHOX.COM