

## CURNUTT AIR SHOCK SET-UP

### CURNUTT WARRANTY

Foes Racing will not warranty or perform warranty service for shocks that have been ridden undersprung (too little air pressure in main chamber), ridden with excessive preload or air pressure, or what Foes deems to be rider error due to improper use or maintenance. Conversely, if you take care of your bike and perform routine maintenance and inspections of your frame, parts and accessories, and you happen to notice problems, like the shock bottoming out, and you stop riding before damage occurs to the frame or shock, then your warranty will remain intact. Riders who keep riding while their Curnutt Shocks are undersprung, bottoming out consistently, or overall, appear not to be in proper working condition, will not receive warranty status, upon inspection of the shock.

### BASICS

The Curnutt AIR is an air sprung, fluid damped racing shock which works off of patented 'Piston Cavity' technology exclusive only to Foes framesets. These shocks work on, essentially, the same principles as the conventional coil spring Curnutts, yet, use air as the spring instead of metal. The use of air eliminates the need for different spring rates for different rider weights, and removes almost a pound of weight. Curnutt AIR shocks are also built around the Foes 2:1 rear leverage ratio platform, which allows for far lower air pressures than similar travel air shocks from other manufacturers.

There are 3 main types of adjustments that you can make to your Curnutt AIR shock: Spring Rate and Sag (by air pressure through Schraeder valve – back end of shock), Bottoming Control and Stable Platform (by air pressure through Schraeder valve and turning ramping dial – at front end of shock), and Rebound Speed (by turning rebound dial – at back end of shock). Each of these adjustments will be covered below for the 4" travel (2" stroke), 5" travel (2 1/2" stroke), and 6" travel (3" stroke) Curnutt AIR shocks.

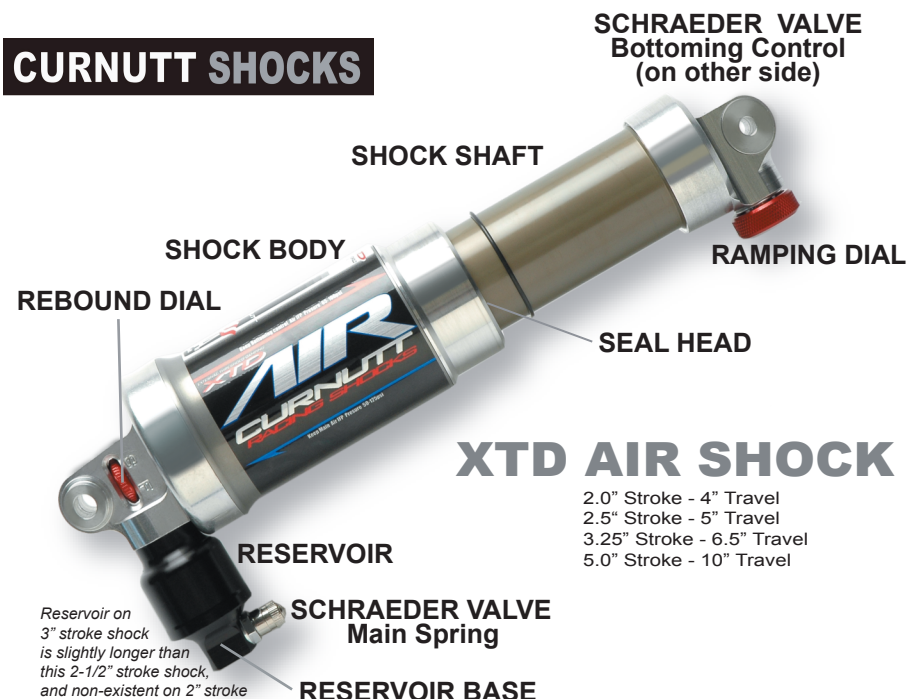
### AIR PRESSURE AND SAG

The primary air chamber, whose schraeder valve is found at the back part of the shock, serves as the main spring for the Curnutt AIR. The correct spring rate, or air pressure, is determined by achieving the correct amount of sag, measured at the rear shock. Once you have your correct sag set, you are 90% set up for riding. The following describes the 'what' and 'whys' of sag and air pressure, and how to achieve the proper pressure.

Shock Sag, or just sag, is the amount the shock compresses under the static weight of the rider (and gear) and is described as the shock's 'neutral' or 'ready-for-bump' position. Sag allows your shock to absorb 'negative' forces, like pot holes, that extend the shock from the neutral position. Having the proper sag will enable your bike to absorb negative forces (potholes and drop outs) and positive forces (rocks, roots, landings, etc.). The recommended sag is 1/2" (13mm) for the 2" stroke (4" travel); 5/8" (16 mm) for the 2 1/2" stroke (5" travel); and 3/4" (19 mm) for the 3" stroke (6" travel)... measured at the shock shaft.

To adjust the spring rate and, and therefore, the sag on the air shock, first roll the o-ring on the shock shaft all the way toward the seal head (back). Attach your pump to the valve and lower the air pressure with the release button. Next, pump to 60 psi (a good starting place), and unscrew the chuck. Gently climb onto the bicycle with your gear (backpack, water, tools – anything you would carry on your ride) without bumping up and down. Then, gently climb off. Measure how much the shock compressed - the distance between the o-ring and the seal head should be the recommended distance (1/2", 5/8", or 3/4"). If it is more than the recommended amount, add some air pressure; if less, subtract some pressure. Then, re-test the sag. Foes recommends that you set the correct air pressure each time you ride, and once you know how much air pressure it takes to get the proper sag with your typical riding weight, you can simply adjust your shock to that pressure without checking your sag.

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### How to correctly pump your shock

First, acquire a pump designed specifically for shocks – do not use pumps designed for inflating tires. Thread the pump's chuck onto the shock's Schraeder valve until pressure registers on the gauge – do not over-tighten. Stroke the pump's handle until you have reached the desired air pressure. You may decrease the air pressure with the button release if needed. Unthread the pump crisply until the chuck breaks free, releasing a whoosh of air. This air is not from the shock, but released from the hose, and will not affect your final air pressure reading. The pressure you have in your shock is the final reading on the gauge before disconnecting the pump. **IMPORTANT!** Do not re-attach your pump to check the pressure, as it will be incorrect.

### BOTTOMING CONTROL

Bottoming control is very important to the life of your frameset! It is controlled through air pressure in the secondary air chamber and the ramping knob (both located at the front of the shock). It is recommended that you start with 60 psi in this chamber. The ramping knob has 4 complete turns of adjustment - all the way 'in', or seated is greatest bottoming control, and 4 turns out is the least. If you don't know where your adjustment is, it is best to 'zero' it out - meaning, turn the knob clockwise all the way in to the seated position. Then start over. **Do not turn past 4 turns out - you risk popping out the ramping knob and actuator dial - and this can damage the internals of the shock.** It is recommended that you start with the knob in the middle of its adjustment - or, 2 turns 'out'. If you find that you are bottoming the shock regularly, turn the dial clockwise to add more bottoming control. If, at the all the way 'in' position, you still are bottoming, it is time to add more pressure to the front chamber, 5 psi at a time - then, don't forget to adjust the Ramping Dial to 2 turns out, again (so, that you have some latitude of adjustment). The range of safe air pressures for the secondary air chamber is between 55 and 100 psi. The best adjustment is the lowest air pressure that will still offer a resistance to bottoming. **Remember, too much bottoming control can cause harsh compression damping - only use as much air pressure as needed.**

## REBOUND DAMPING

Rebound Damping is your shock's ability and speed to get back into its neutral position (sag setting) to accept another compression or bump. Rebound damping is sometimes more correctly referred to as rebound speed, and is controlled by the red knob found at the back of your shock. The knob has an 'S' for Slow and an 'F' for Fast etched into the shock body. The knob has a range of 5 full turns. Turning the knob all the way 'in' – clockwise – is the slowest setting. From this 'seated' position, turning the knob 'out' – counterclockwise – 5 complete turns will put you at the fastest rebound setting. Dialing your rebound to a medium setting (2 ½ turns from seated) is a good way to start. From there you can test different settings (1/2 turn at a time) over the same set of obstacles. Please note that, by design, Curnutt shocks rebound progressively more slowly than standard shocks as they reach the end of the rebound stroke (neutral sag setting). So, in the first ½ of the stroke rebound will be faster, and in the last ½ of the stroke the rebound will progressively slower. This feature – impossible for standard shocks – makes your ride incredibly smooth and mostly free from pedaling interruptions.

Your appropriate rebound speed setting is dependent on two variables: 1) the contour of the terrain, and 2) the speed with which you ride over this terrain. The faster you ride over obstacles, the faster your rebound will have to be. If you find your rear wheel bouncing, you should slow your rebound, as your shock is expanding back to its neutral position too fast. If you find that your rear suspension is too harsh, it may be that your rear wheel is not rebounding back into its neutral position fast enough for the next consecutive bump. This is called 'packing', and it forces the shock to remain in, or near, the compressed or 'packed' position, un-ready for the next obstacle. The correct setting is the 'fastest' one that allows the rear wheel to neither bounce, nor pack. Your correct rebound setting will become obvious by testing various settings over the same set of obstacles at nearly identical speeds.

**IMPORTANT!** The base of the 2 1/2" and 3" shock reservoirs is supposed to rotate for your convenience. However, if the air pressure is released from the main air chamber, the base with its attached Schraeder valve can become dislodged from its seated position. If this happens, no worries! Yet, follow these simple instructions to re-seat the base: Grasp the base by the Schraeder valve and pull it downward into position while rocking it back and forth. The Schraeder valve should be parallel with the shock. Check to make certain the base is seated and rotates smoothly - i.e. not crooked. Next, while maintaining force to keep the base in position, attach your shock pump's chuck onto the valve and introduce some air into the chamber to keep the base from dislodging. Again, do a visual check - you can tell if the base is in crooked. Finally, pump to your 'correct' air pressure. The base should rotate when the chamber has air pressure - it will turn slowly, but smoothly.

**IMPORTANT!** Always re-cap your shock's Schraeder valve after adjusting the air pressure. Failure to do so will allow dirt to get into the opening of the valve and be blown into the internals of the shock the next time you adjust the air pressure - dirt will destroy the integrity of the seals and surfaces.

## A FINAL WORD

All Curnutt AIR XTD Shocks are built by hand under the supervision of Curnutt Racing Shocks, Inc. Each shock is tested and checked for problems before it leaves the Foes factory. There is no reason for any shock to not perform correctly, once you have read and followed the instructions within this manual. Curnutt Shocks have a one year warranty against manufacturer's defects and materials. Shocks in question for warranty status will be determined by Foes at the time of inspection.



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**CURNUTT SHOCKS**



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## AIR SHOCKS

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### XCT-4/5 FXR-6 DHS

**INSTRUCTIONAL ADDENDUM TO MANUAL**