

# RZR XP 900 spring/shock installation

Thank you for purchasing the Shock Therapy Dual Rate Spring Kit for your RZR 900. Your item list:

2 Front upper coil springs, 2 Front lower coil springs, 2 Rear upper springs, 2 Rear lower springs, 4 nylon spring dividers, 4 Silent cross over rings, 4 cross over ring O-rings, 8 aluminum spring adaptors (only for Fox equipped cars). You will need to get a coil spring compressor if you don't already have one.



Here are the set up notes for each 900 spring kit:

Fox 2 seat      Walker 2 seat      Walker 4 seat

Front:

Pre load.....3.5" .....4" .....1.750"

Cross over.....7.5" .....7" .....5.25"

Rear:

Pre load.....2.25" .....2" .....1"

Cross over.....6" .....4" .....3"

First, remove your front shocks from your car. Be careful not to lose the mounting spacers and the O-rings that are on them. Place one shock in a vice, upside down so both of your hands are free. Loosen the pre load nut holding tension on the top of the coil springs. On a Fox this is two, rings jammed together. Walker shocks use a single aluminum ring. You will need to spin or thread these rings to the top of the shock to loosen the coil springs as much as possible. Now slide the bump stop down the shock shaft about two inches. If the spring is loose enough you can pull the bottom spring retainer down and slide it off the shock. If the spring is still too tight you will have to use a spring compressor to compress the spring enough to remove the spring retainer.



(pic above shows WHERE to measure from not your measurements)

With the retainer removed you can now remove the factory spring. Now, measure where the round threaded shock body ends and the head of the shock starts, down to the FRONT cross over location listed on the first page and make a mark on the shock body. For instance, if you have a Fox equipped 2 seat RZR you will make a mark at 3.5". Our Fox kits utilize a spring adaptor to convert the stock Fox preload nut and retainer to 2.5" OD allowing it to accept the correct spring. You MUST install the top adaptor ring FIRST before installing the crossover. If you have a Walker equipped car you don't need any spring adaptors. Next, install the cross over ring with the round recess groove (O-ring retainer) facing the bottom of the shock right at the mark. Use the supplied spanner wrench to tighten the outer ring locking the cross over ring in place (Fox only).

Now, you can install the springs as marked in your kit with the front, upper spring first, then the nylon spring divider with the long side facing the bottom of the shock (away from the cross over ring) then the front lower spring. Make sure the ends of the springs touch the plastic spring divider on opposite sides of the divider. Another way to put this is that the springs end 180 degrees apart from each other on the divider. This will be important later. Using your spring compressor, compress the springs enough to install the lower spring perch with another spring adaptor ring (Fox only) between the coil spring and the spring perch. Again, the Walker equipped car does not use the adaptor rings. With the perch in place you can move the bump stop to hold the perch in place. Now let the tension off the springs. Last, thread the pre-load rings/collar toward the springs tightening the system. Move them down to the pre-load measurement listed on the first page. This measurement is from the same place at the top of the shock down to the top of the upper spring or the bottom of the spring adaptor ring. You can now install the front shocks on your car.

Move the rear of the car and remove the rear shocks. With one in a vice, loosen the pre-load collar and remove the springs. You may need the spring compressor for this. Measure from the top where the threaded shock body stops and the top cap of the shock starts, down and make a mark for your rear cross over ring location. Next, slide the spring adaptor on (Fox) and install the rear cross over rings with the O-ring groove facing the bottom of the shock. Tighten the cross

over and install the O-ring. Now, install the upper spring, nylon divider with the long side facing the bottom of the shock, then the lower spring. Use the spring compressor and install the lower spring perch and lower adaptor (Fox). Release the spring compressor and thread the pre-load collar down to the pre-load distance listed on the first page. Now you can install the rear shocks on the car.

Installing your shocks with the new springs is a pretty straight forward thing to do but there are some adjustments to the ride height that you must follow to ensure that your RZR is at the correct height for best performance. All RZRs are different weights depending on the accessories you have on it so you may need to adjust them a little to get your ground clearance correct.

Once you have your shocks installed you must drive it to settle the suspension for any ground clearance measurements. Just pushing the RZR up and down a few times will not work! Once you have driven at least 100 yards or so then pull into



your driveway or any other flat and hopefully level spot, slowly without using much, if any brakes so as not to cause the front to dip down for the measurement. **STAY IN THE CAR FOR GROUND CLEARANCE MEASUREMENTS.** Have someone else grab your tape measure. Check the rear of the RZR by measuring from the bottom of the frame to the ground, in the center of the chassis at the rear. This should be about 12" off the ground. Now measure the front at the bottom of the frame just behind the lower control arm

mount and forward of the firewall. This should be 12.5" to 13" off the ground. The front should be higher because we want the RZR to be level or a bit higher than the rear with you are sitting in it. This means it will be an inch to .5" higher than the rear when empty.



See the pictures above and on the right to make sure you are measuring in the correct spots.

If your RZR is sitting too low or too high then jack it up and adjust the preload collar accordingly. You can often spin the collar by hand just by grabbing the springs and twisting them and the collar together. If you have Fox shocks then use a standard screw driver to unlock the two preload collars and spin them up or down according. With Walker shocks you can use an extension in the pre-load collar holes to spin them. Any adjustment to the collar will change the ride height about double the amount you move the collar. For instance, if you move the preload collar down ½" it will raise the RZR about 1". Your springs are NEW and they will settle a bit with use. After about 200 miles they will be where they like to be permanently. Please check your ride height at around 100 and again at 200 miles and make more preload adjustments as needed. Never raise or lower the RZR to make the suspension stiffer or looser! The spring's job is to hold it up. All other tuning is done with the compression adjustor on the shock or the "Silent" cross over rings inside the upper coil spring. Now that you have the ride height dialed in lets go through the shock tuning procedure.

Our goal with your new set up is to get the softest, most plush ride through all terrain as possible so that you don't feel the bumps, rocks, tracks, ect. For this reason start with all of the compression adjusters all the way loose or counter clockwise. This will be your softest ride. On a Walker shock the adjuster is a large knob on the reservoir of the shock you can turn by hand. On a Fox shock the adjuster can be a blue plastic knob or it can be a small adjuster that requires a standard screw driver to move it. Now pick your favorite trail and drive the RZR like you normally do. If it doesn't bottom out on the big hits or G outs then great, leave it where it is! But if you bottom out the front 6 or 7 times in a 30 minute blast then you need to add some compression to the shock. Turn the compression adjuster 2-3 clicks stiffer which is clockwise. Only adjust the front. There is no reason to stiffen up the back if the front is bottoming. Now run the same trail again and if the bottoming has stopped then you are done! If it still bottoms out a bit then add 2-3 clicks of compression until it stops. Same goes for the rear if it is the one that bottoms out the most. Just add 2-3 clicks of

compression on the adjuster until it stops. Now if you bottom out the RZR 1 time in an hour ride we would call that perfect. Anything can be bottomed out if you make a big mistake. At least you know where the limit is and the ride is as plush and smooth as it can be for 99% of everything you do.

For the more advanced suspension tuners, you can play with the “silent” cross over rings as well. They control when, though compressing your suspension, the heavier lower spring comes into play and makes your suspension considerably stiffer. We set the collars location at an all-around, great place that we have found through testing. But, you can adjust it to suit your driving style too. The higher up the shock you run the collar the longer the suspension will remain soft and plush. The negative to this is that the higher up the shock you run the collar the more body roll you will get, the more front dive or rear squat you will get and the less help in the bump stage or big hits you will get. The lower you run the collar the quicker the suspension will move from soft to stiff. The advantage to this is less front dive or rear squat, less body roll and more help in the big hits without turning up the compression knob on the shocks. This may be a perfect thing if you are racing short course. The negative to this is that the plush ride will go away very quickly and the chatter and stiffness will start to creep back into your seat soon. Don't worry, all of these adjustments can always go back to where you started just by moving them back. Feel free to experiment and see what you like or dislike. Finally, more weight will make the RZR bottom out sooner so experiment with your shock adjusters to accommodate for more passengers. As a rule of thumb, we add 2-3 clicks of compression to the front if you add a 180lb passenger. If you have a 4 seater then you may add 1-2 clicks to the rear shocks for one rear passenger and 2-3 clicks for two rear passengers. These settings should compensate for the added weight so you can keep your speeds the same as you would by yourself.

The cross over rings are designed to be rubbed by the coil springs. As the spring compresses it vibrates side to side and can rub the cross over ring. This is normal. Sometimes the springs don't sit perfectly flat on the plastic divider. You will notice this by looking at the plastic spring divider when the car is on the ground. If it is fairly straight with the shock body your good to go. But if it is

sitting sideways a bit then you can clock the springs differently to help this. Jack the car up and clock the upper and lower springs 90 degrees apart from each other by twisting them by hand instead of 180 degrees apart. This may get the divider to sit straighter and allow the upper spring to rub the cross over ring less.

That's it. You are now all set to run and adjust your RZR like a pro! Experiment to try things and see what you prefer. Remember just put everything back to full soft, and start over if you lose your way on the adjustments. We hope this kit helps to make you the fastest and smoothest person in your group. Now go show off and have fun! Thank you.