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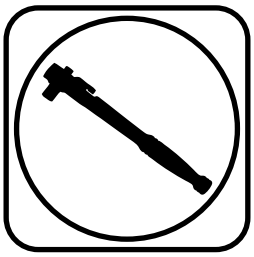
Installation Instructions

Part # 12293110/12293115 - 2015-Up Ford F150 2WD/4WD HQ Front CoilOvers

Recommended Tools



2015-Up Ford F150 2WD/4WD Front CoilOvers

Installation Instructions

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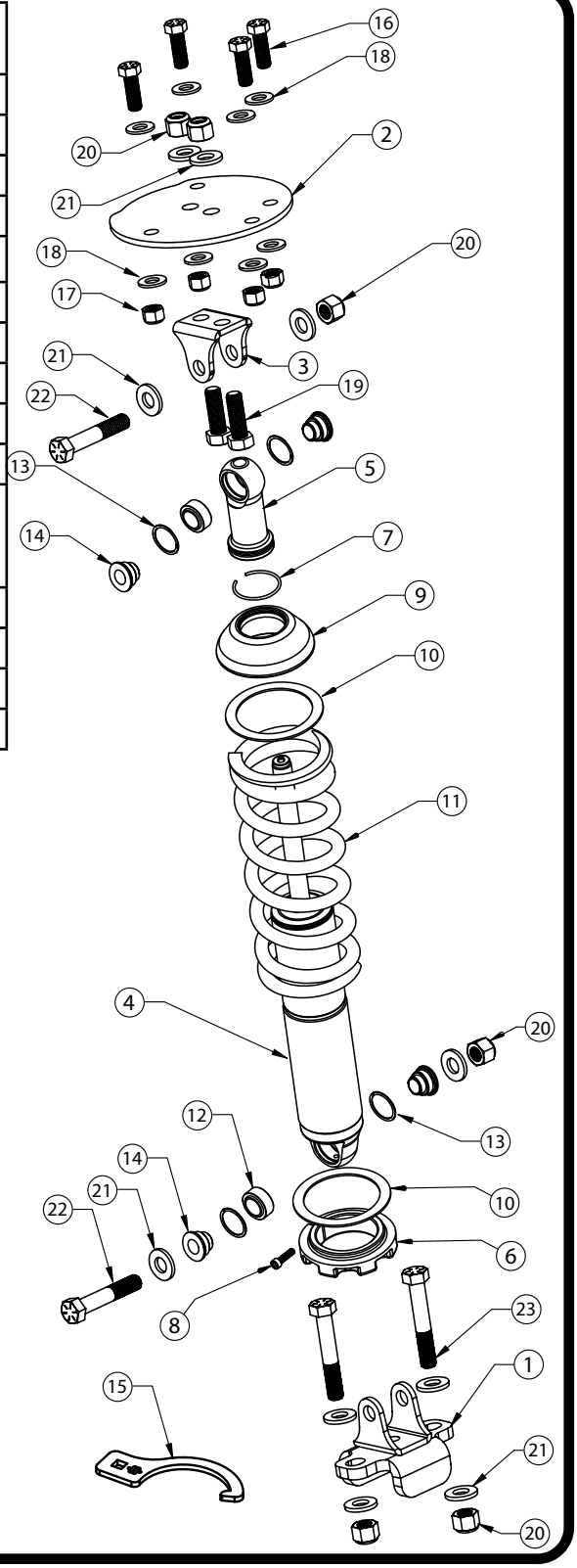
THIS KIT IS DESIGNED TO REPLACE THE OEM SHOCK/SPRING SETUP.

TRUCKS EQUIPPED WITH BLUE CRUISE WILL NEED THE FORWARD CAMERA RECALIBRATED TO THE NEW WHEEL ARCH HEIGHT. A FORD DEALERSHIP CAN DO THIS.

Major CoilOver Components .....In the box

Item #	Part #	Description	QTY
1	90003270	Lower CoilOver Mount	2
2	90003271	Upper CoilOver Mounting Plate	2
3	90002158	Upper CoilOver Mounting Bracket	2
4	982-10-805	5.2" Stroke HQ Series Shock	2
5	90002025	2.7" Shock Eyelet Assembly	2
6	234-15-200	Lower Spring Adjuster Nut	2
7	038-01-006-A	CoilSpring Plate Retaining Ring	2
8	99050001	Adjuster Nut Locking Screw	2
9	90002070	Dropped CoilSpring Cap	2
10	70010828	Delrin Spring Washer	4
11	59100650 (2WD) or 59100750 (4WD)	Coilspring 10" (2WD) 650lb - 2WD or Coilspring 10" (4WD) 750lb - 4WD	2 or 2
12	90001994	5/8" ID Shock Bearing	4
13	90001995	Shock Bearing Snap Ring	8
14	90002043	. 500 x .365 Shock Bearing Spacers	8
15	85000000	Spanner Wrench	1



HARDWARE LIST - Kit # 99010168

Item #	Part #	Description	QTY
UPPER MOUNT TO STRUT TOWER			
16	99431021	7/16"-14 x 1 1/4" Hex Bolt	8
17	99432010	7/16"-14 Nylok Nut	8
18	99433005	7/16" SAE Flat Washer	16
UPPER COILOVER MOUNT TO BRACKET			
19	99501053	1/2"-13 x 1 1/2" Hex Bolt	4
20	99502009	1/2"-13 Nylok Nut	4
21	99503014	1/2" SAE Flat Washer	4
SHOCK TO SHOCK MOUNT			
20	99502009	1/2"-13 Nylok Nut	4
21	99503014	1/2" SAE Flat Washer	8
22	99501064	1/2"-13 x 2 3/4" Hex Bolt	4
LOWER MOUNT TO CONTROL ARM			
20	99502009	1/2"-13 Nylok Nut	4
21	99503014	1/2" SAE Flat Washer	8
23	99501004	1/2"-13 x 3" Hex Bolt	4

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Installation Instructions

Disassembly

This CoilOver System is Designed to replace the factory Shocks and Springs.

The front OEM Shock and Spring assemblies will need to be removed from the front of the truck. **DO NOT DISASSEMBLE THE SHOCK/SPRING ASSEMBLY, THE COILSPRING IS UNDER COMPRESSION AND COULD CAUSE BODILY INJURY!**

1. Raise the vehicle and support it by the frame, allowing the suspension to hang freely. Remove the wheels.

2. Remove the shock/spring assembly from both sides of the truck. **DO NOT DISASSEMBLE THE SHOCK/SPRING ASSEMBLY, THE COILSPRING IS UNDER COMPRESSION AND COULD CAUSE BODILY INJURY!**

3. Disconnect the sway bar from the control arms. This allows the lower control arm to move easier during the CoilOver installation.

4. If replacing the OEM upper control arms, replace them in conjunction with the CoilOvers.

Getting Started.....

5. The CoilOvers need to be assembled before putting the shocks in the mounts. Assemble the shocks and springs using the instructions below.

CoilOver Assembly...

First, using the supplied lower adjuster nut (803-00-199) thread the nut onto the shock from the bottom side as seen in figure 6. Remove the plastic pellet that is in the split of the adjuster nut.

Next, install a delrin washer then coil spring over the top of the shock as seen in figure 7.

Before the upper spring mount can be installed screw the adjuster knob on the upper eye mount to the firmest setting (clockwise) as seen in figure 8. Then remove the Knob by holding it while removing the center screw.

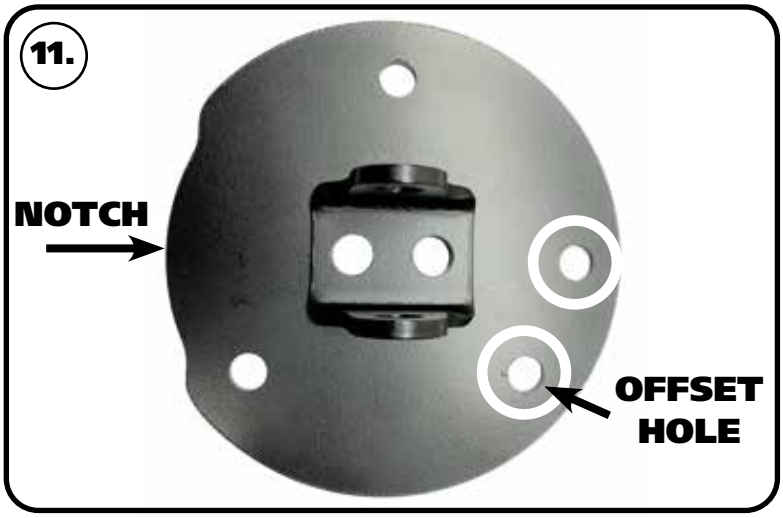
Once the knob is removed slide a Delrin washer over the eyelet. Next, slide the upper spring mount (803-00-199) over eyelet as seen in figure 9.

Install upper spring mount retainer clip (803-00-199) into the groove on the upper eyelet as seen in figure 10. Then, reinstall adjuster to complete assembly.

Install the locking screw in the adjuster nut before setting spring preload, but DO NOT tighten until the spring preload has been set. Set the spring preload after the CoilOver has been installed.

NOTE: Remember to adjust the shock valving before driving, the shock is currently set to full stiff.

Assembling Upper Mount



11. Line up the 2 mounting holes in the upper mounting flange with the 2 holes of the mounting bracket. The location of the offset hole is critical. Make sure it is located the same as **Image 11**. The front hole is a locating hole.

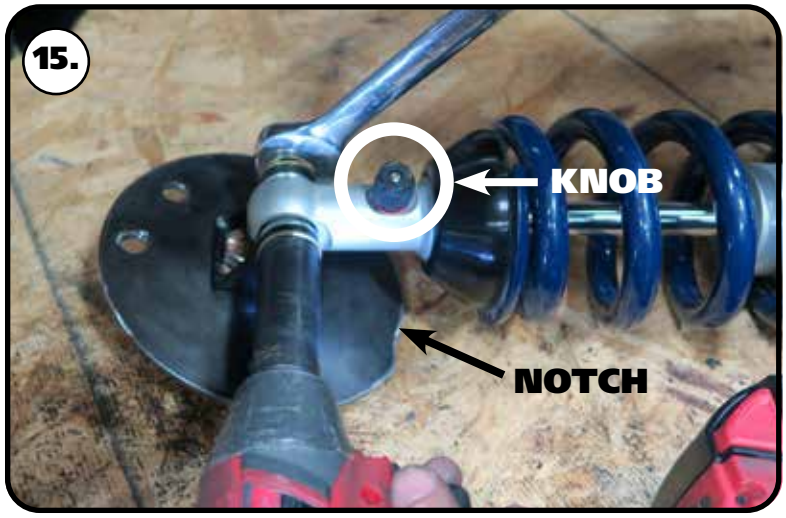
NOTE: The Upper Mounts are not side specific so they are the same for both sides of the truck.

12. Insert a 1/2"-13 x 1 1/2" bolt through each hole of the flange/mount. The bolts need to be installed with the bolt head in the upper bracket. Refer to **Images 12 & 13**.

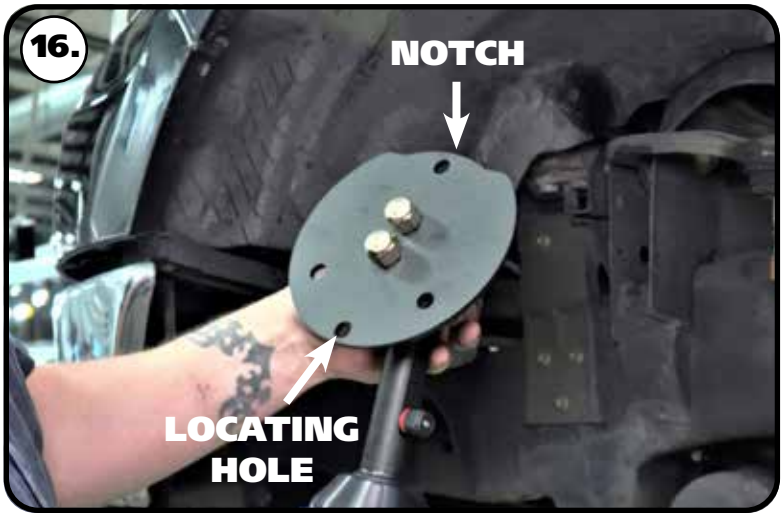
13. Install a 1/2" SAE flat washer & 1/2"-13 nylok nut on the threads of each bolt that is sticking through the mount. Torque to 75 ftlbs.

Assembling CoilOver

14. Install the 1/2" I.D. bearing spacers into the bearing in the shock eyelet. These spacers have a through hole that is 1/2" diameter. The small diameter of the spacers will insert into the shock bearing.



15. Insert the shock eyelet into the upper mount. **Install each CoilOver in the upper mount with the Adjusting Knob facing the opposite side as the notch in the upper plate**. Line up the shock bearing/spacers hole with the mounting holes of the upper mount. Install a 1/2" flat washer on a 1/2"-13 x 2 3/4" bolt. Insert a bolt/washer through the mount/shock. Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of the bolt that are sticking through the mount. Torque the upper mounting hardware to 75 ftlbs.



16. The upper mount has 4 holes in the perimeter of the flange. The flange is also notched out on one side. The upper mount needs to be installed in the truck with the notch to the frame.

Installation of CoilOver Assembly

17. Position the mount/coilover in the truck. It will be placed in the OEM location. Line up the locating hole and 3 mounting holes.

18. Install a 7/16" flat washer on each of (4) 7/16"-14 x 1 1/4" hex bolts. Install the bolt/washer in the frame/mount from the top side with the threads pointing down. Install a 7/16" flat washer and 7/16"-14 nylok nut on the threads of each bolt sticking through the frame. Torque the hardware to 50 ftlbs. Repeat steps 11-18 on the remaining side.

19. The lower shock mount bolts to the lower control arm in the same location as the OEM shock. Sit the mount on the lower control arm, aligning the mounting holes with the shock mounting holes

Installation of CoilOver Assembly

20. . Install a 1/2" flat washer on each of (2) 1/2"13 x 3" hex bolts. Insert a bolt/washer in each mounting hole.

21. Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of each bolt sticking through the control arm. Torque the hardware to 75 ftlbs.

22. Install the 1/2" I.D. bearing spacers into bearing in the shock body. These spacers have a through hole that is 1/2" diameter. The small diameter of the spacers will insert into the shock bearing.

Installation of CoilOver Assembly

23. Insert the shock into the lower mount. Line up the shock bearing/spacers hole with the mounting holes of the lower mount. Insert a 1/2"-13 x 2 3/4" bolt through the mount/ shock.

24. Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of the bolt that are sticking through the mount.

25. Repeat steps 19-24 on the other side of the truck.

26. Reattach the sway bar linkage. The lower sway bar linkage nut is torqued to 60 ft-lbs. The upper linkage nut is torqued 50-55 ft-lbs.

27. Verify all the hardware is tight before continuing to preload and ride-height adjustment.

NOTE: The optimal eye-to-eye shock measurement at ride height should be 15.5-16" to acheive the alignment specs listed below. You may encounter difficulty meeting the camber alignment spec if your ride height is too low.

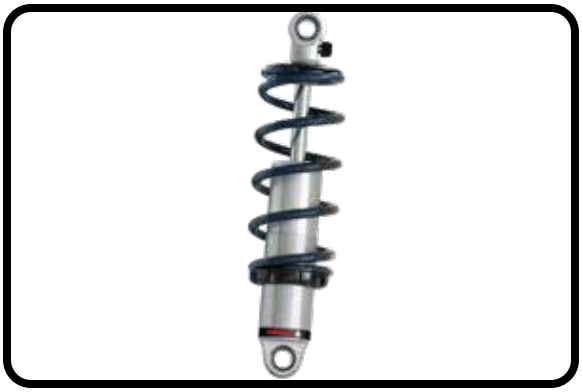
28. Once you are satisfied with your ride height, have the vehicle aligned.

Suggested Alignment Specs:

Camber:	0 to -.75 degrees
Caster:	+5.5 to + 7.5 degrees
Toe:	1/16" to 1/8" toe in

SETTING PRELOAD

1. Before adding any preload to your coilover, ensure that you are starting with zero preload on the spring. The adjustment nut should be snug against the coil spring, but not compressing it. The locking screw should be installed, but not yet tightened.



2. With zero preload on the spring, measure the distance from the bottom of the adjustment nut to the flat of the shock body. This is your starting point of reference.

3. Using a spanner wrench (Figure 3), apply preload by threading the adjustment nut up the shock an additional 1/2" from the measurement you took in Step 2. This is your initial preload setting.

4. Tighten the locking screw to secure the adjustment nut in its preloaded position. Torque to **18 in-lbs**.

ADJUSTING RIDE HEIGHT

NOTE: Optimal ride quality and handling typically occurs when the shock absorber is sitting between 40-60% of its full travel at ride height. However, measuring the shock can be difficult on some applications. If you do not wish to measure your shocks, an easier method that is still quite effective is to measure wheel travel. See Steps 1-4 below for this alternate method. If you've determined that your shock travel is good, you may skip to Step 5 to jump straight to making any necessary ride-height adjustments.

1. With coilovers installed and the preload set, lower the vehicle to the ground. With the entire weight of the vehicle on the wheels, jounce the suspension and roll the vehicle forward and backward to release any suspension bind.

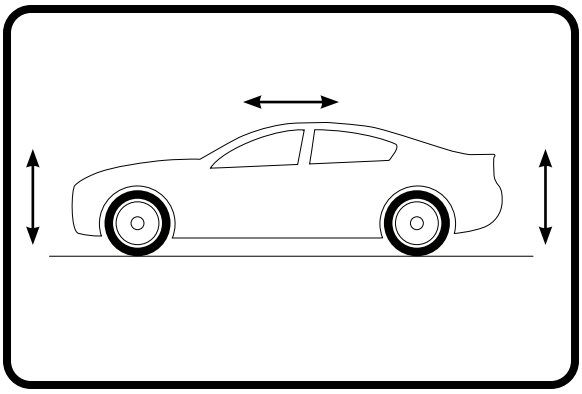


Figure 1

2. At the centerline of the wheel, take a measurement from the fender lip to the ground (Figure 2).

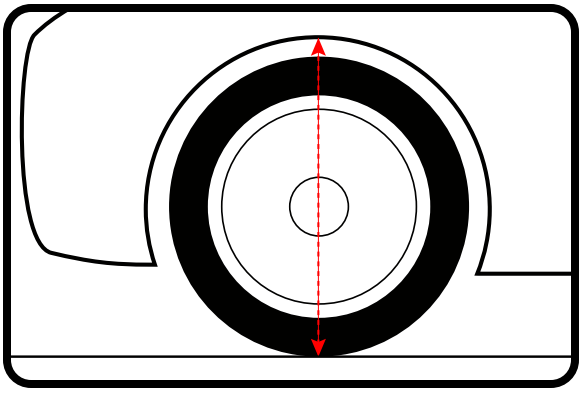


Figure 2

3. Lift the vehicle by the frame until the wheel is barely touching the ground. Take another measurement from the fender lip to the ground (Figure 3).

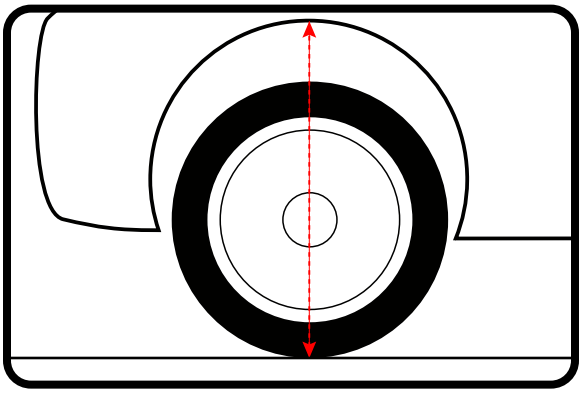


Figure 3

4. The difference between the measurements taken in Steps 2 and 3 is your **extension travel** at the wheel. A minimum of 1.5" of extension travel (at the wheel) is typically needed to prevent the shock from topping out. If you have more than 3" of extension travel, you may be at risk of bottoming out the shock and need to increase the ride height.

ADJUSTING RIDE HEIGHT

5. With coilovers installed and the preload set, lower the vehicle to the ground. With the entire weight of the vehicle on the wheels, jounce the suspension and roll the vehicle forward and backward to release any suspension bind. Evaluate your ride height.

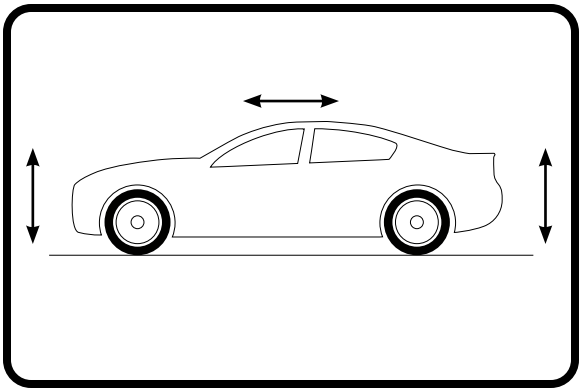


Figure 4

6. If you determine you need to adjust the ride height, raise the vehicle by the frame and allow the suspension to hang freely.

7. Loosen the locking screw on the coilover adjustment nut just enough to be able to turn the nut. **Do not remove the locking screw.** (Figure 5).

Figure 5

8. Measure the distance from the bottom of the adjustment nut to the flat of the shock body. We recommend recording this measurement for reference (Figure 6).

Figure 6

9. Using a spanner wrench, thread the nut up or down the shock body to achieve the desired ride height (Figure 7). Tighten the locking screw to secure the adjustment nut in place. Torque to **18 in-lbs**.

10. Lower the vehicle to the ground, jounce the suspension and roll the vehicle forward and backward to release any suspension bind.

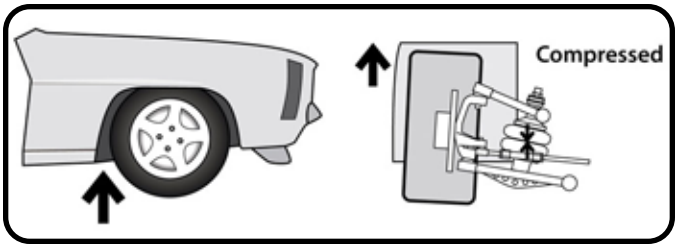
11. Recheck your ride height. If you need to adjust, repeat Steps 6-10.

12. Once your desired ride height has been achieved, refer to the Shock Tuning Guide to dial in your shocks.

Figure 7

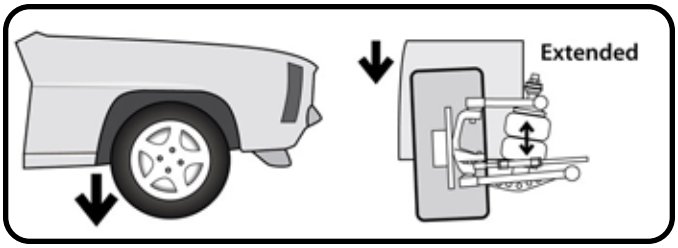
TUNING GUIDE
SINGLE-ADJUSTABLE SHOCKS

The Basics...



COMPRESSION

This typically occurs when you hit a bump in the road. The bump forces the wheel/tire/suspension assembly to "compress" or move upwards into the car.



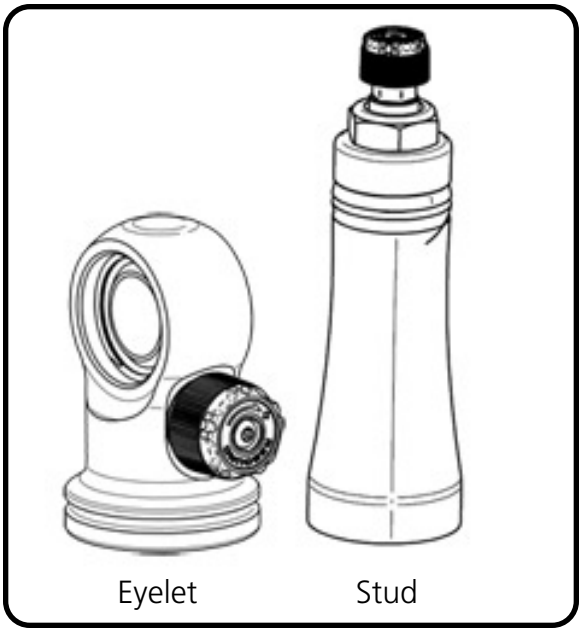
REBOUND

Rebound is the opposite of compression. This occurs when the wheel/tire/suspension assembly falls into a pothole, or simply "rebounds" from being compressed.

Where Are The Knobs?

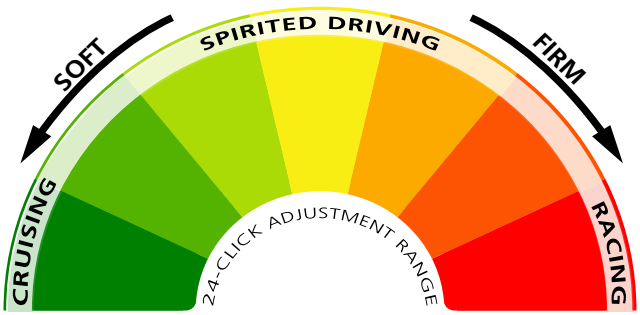
HQ Series Shocks

- **The adjustment knob is located on the top of the shock, either protruding from the side of the eyelet, or atop the stud.**
- **This knob provides rebound adjustment only.**



Knob Function

Counterclockwise = Softer



Clockwise = Firmer

TUNING GUIDE
SINGLE-ADJUSTABLE SHOCKS

Initial Rebound Setting

NOTE: Before jumping straight to a middle-of-the-road shock setting, we recommend you experience the full range of adjustment potential of your new shocks by first driving your vehicle at both the "full stiff" and "full soft" settings. Understanding how your shocks behave at these extremes will provide recognizable reference points as you attempt to dial in your settings.

1. Begin by setting your shocks to the "full stiff", or minimal rebound position. You do this by turning the adjustment knob clockwise until it stops.

2. Now turn the adjustment knob counterclockwise 12 clicks. This is the approximate center of the adjustment range.

3. Take the vehicle for a test drive. Try to determine if you are experiencing any of the unwanted behaviors found at the extremes of the adjustment range. If you are satisfied with the ride quality and handling, you're all set. Enjoy the ride!

4. If the vehicle feels too "floaty" or soft, turn the knob a few clicks clockwise to increase the damping effect.

If the ride quality is still too harsh or stiff, turn the knob a few more clicks counterclockwise to decrease the damping effect.

5. Take the vehicle for another test drive. If necessary, repeat the steps above until your desired optimal ride quality has been achieved.

General Guidelines

- The rear shocks typically have the most influence on ride quality. This is due to your seating position being closer to the rear than the front.
- Adjustments to the front shocks will generally require 3-4 clicks in any direction to be noticeable, while adjustments to the rear shocks may only require 1-2 clicks to be felt.
- Don't be afraid to turn the knobs and experience the full adjustment range. You are not going to hurt anything and you can always go back if you adjust too far one way or the other.