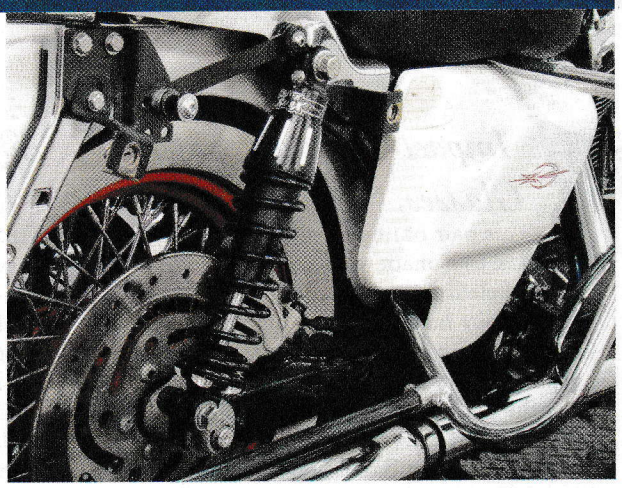
INSTALL

By Steven Wyman-Blackburn • Photos by Steve Lita

Shocking Development

Installing Super Shox on a Road King



WHILE WE ALL LOVE HARLEYS, SWAPPING out the factory shocks is usually quite high on the to-do list. In fact, when Ken McCurdy, our ad/sales guy for *American Iron Garage*, first purchased this 2006 Harley-Davidson Road King, the previous owner had already switched out the stock suspension system with aftermarket shocks. Even though they're comfortable, they're too short for Ken. So he began searching for longer ones while making sure that whatever he got, he wouldn't sacrifice his Road King's already low custom look.

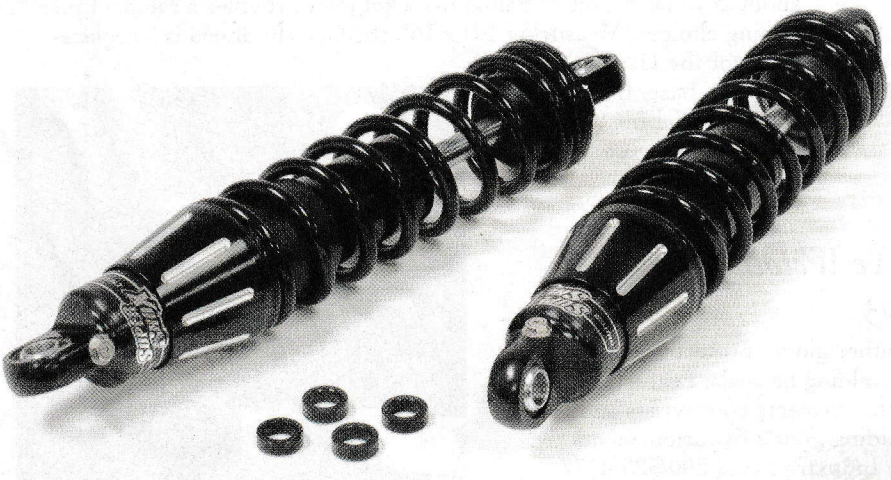
While being on the prowl for new parts is always exciting, it's even more invigorating testing out an all-new venture. That's one of the main reasons why Ken ordered a set of Super Shox motorcycle shocks (SR1-3000/$649.99). Super Shox has an extensive history in making aluminum monotube gas shocks for Sprint and Midget cars, first distributing its products in 1998. And the SR1-3000 is the company's spearheading effort into the motorcycle market. This endeavor is part of what Super Shox is calling its SR1 series, which will be comprised of rear suspension systems exclusively for Harley-Davidsons. The 3000, which, as of now, is the only SR1 model available, is for Touring bikes. SR1 models are currently being worked on for Dynas, with Sportsters next on the docket.

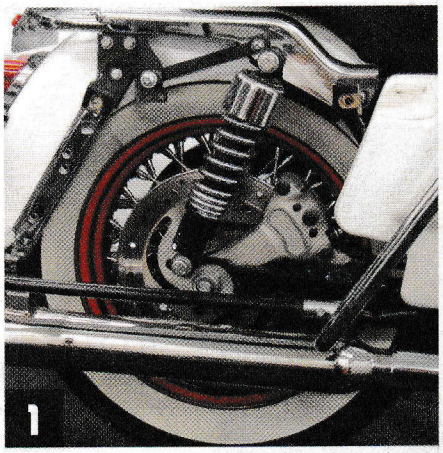
TOOLS NEEDED

- 3/4" wrench and/or socket
- Blue Loctite
- Torque wrench (ft-lbs.)

The SR1 series is designed after Super Shox's line of gas-assist monotube racing shocks. Manufactured out of aircraft-grade aluminum, the Super Shox units feature an anodized finish, and their mounting points have spherical bearings that enhance bind-free movement while promoting longevity.

While only offered in one size, the SR1 series shocks come with an integrated and calibrated preload adjuster that allows you to optimize for yourself, a passenger, and loaded-up saddlebags (see sidebars). And as Ken notes, they look pretty damn sharp. Both the short shocks and Super Shox are shorter than the stock Harley Touring rear suspension, which measures 13". The Super Shox are 12-1/2" and the aftermarket short shocks we uninstalled are 11-1/2". For Ken, his bike will be slightly lifted with this new Super





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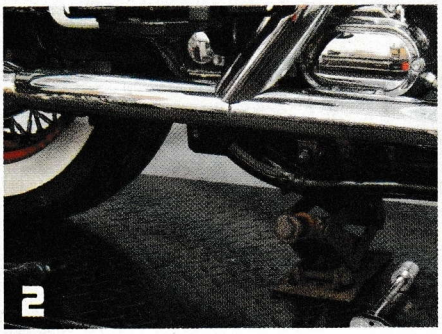
Here's Ken's 2006 Road King on our bike lift with the bags removed showing the aftermarket short shocks we're about to replace.

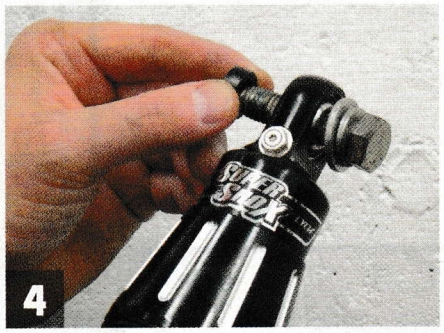
Shox suspension system while still remaining lower than stock.

After Ken's first shakedown ride of approximately 100 miles, he's very impressed by the ride, and he doesn't feel every ripple in the road. As he says, "Now I don't have to worry about being jolted out of my seat; it just modulates right over!"



First, we brace the bike up with a scissor jack until all of the weight is off the suspension. Make sure the tire is lifted just enough so you can spin it.

We remove the bolts holding the aftermarket short shocks onto the bike with a 3/4" wrench, and remove the shocks. You can see how much longer the Super Shox are in comparison to the removed aftermarket short shocks.



Before installing the new shocks, slip the Super Shox-supplied spacers onto the stock mounting bolts. On the upper bolt, the spacer goes between the shock and chassis, and on the lower bolt, it goes between the shock and the swingarm. Then apply blue Loctite to the threads.

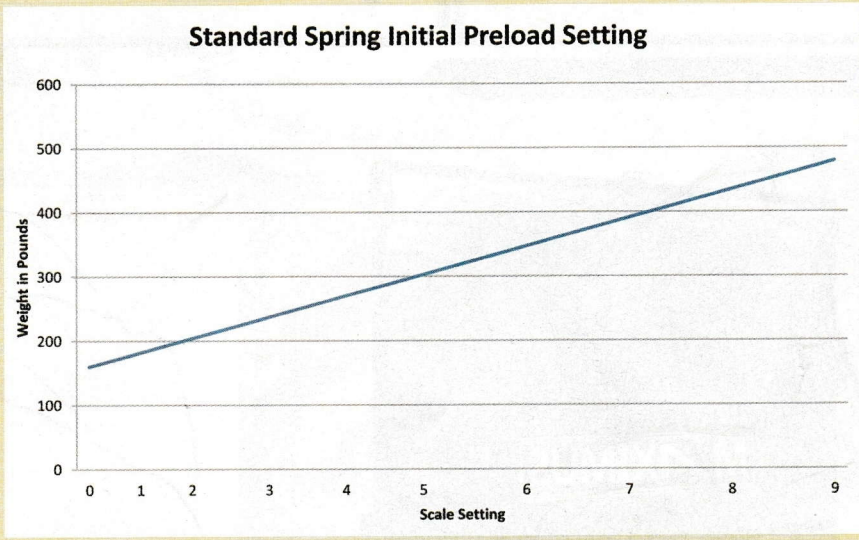
Install the top mounting bolt using a 3/4" wrench on both sides.

Before installing the lower mounting bolt onto the bike, Ken adjusts the scissor jack so the lower mounting bolt lines up with the mounting hole. Use a 3/4" wrench (and blue Loctite on the threads) to install both shocks.

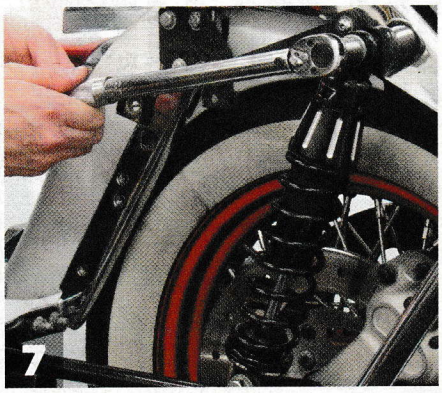
Do It Yourself

Adjusting the rear shock on your bike correctly is crucial for ridability and ergonomics. It controls the feel of about 70 percent of the ride, not just for the rider, but especially for the passenger. The rear suspension is managed by two elements: the spring, which holds up the bike and provides the ability of the suspension to move, and the damper, which controls the motion of the spring in both speed and magnitude. The combination of the spring and damper provides the riding characteristics of the bike. A properly designed and setup combination enables a light, bind-free suspension movement. When done correctly, it absorbs the energy of impacts (bumps) rather than them being transmitted to you, your bike, and your passenger. In other words, installing the shocks is only the first part of the process. You have to adjust it if you want the best possible ride.

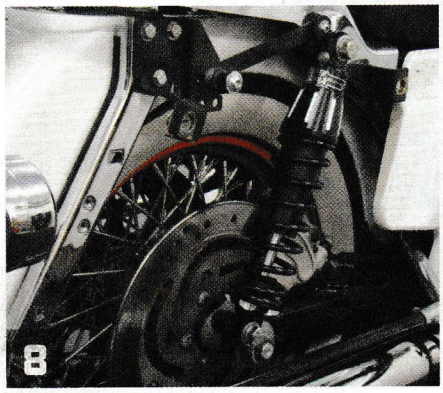
To make this process easier, Super Shox provides a calibrated scale on the shock in addition to a reference chart, which provides your starting point. This will help you figure out the load you will be carrying and the load of yourself, passenger, and cargo. (For more information on how to use the chart, see Tips & Tricks.)



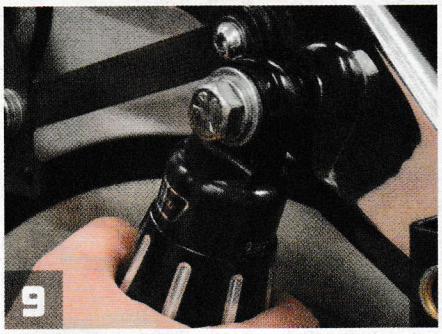
Through your calculations, you can then compare this information with the supplied chart by selecting the target number to set the preload. This preload is the starting point for the typical rider, but seeing as every rider is unique, you can fine-tune the starting point to your individual preference as well as your riding conditions. If the ride is too soft or bottoms harshly, increase the preload, which is a higher number on the scale. If you find that the ride is too firm, decrease the preload to a lower number on the scale.



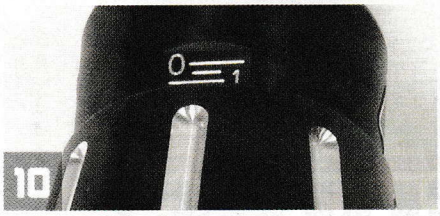
Now torque all the bolts to 35-40 ft-lbs.



Here's the bike with the Super Shox SR1-3000 installed.



Once the shocks are installed, you can adjust the preload. There's a graduated scale printed on one side of the shock's surface. Below the printed section of the scale is a twistable section that moves up and down depending on which way you twist it. To set the preload, twist the bottom adjustable portion by hand until it's directly beneath the desired preload setting.

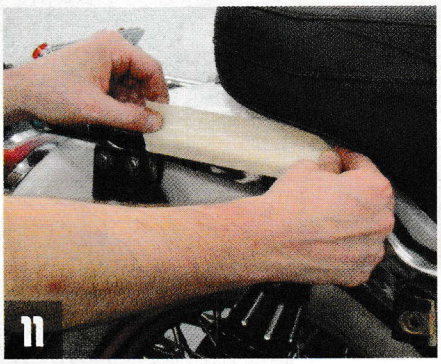


You can determine your preload by calculating your weight using the Super Shox-supplied chart. Seeing as Ken already sent in his weight measurements to Super Shox, we set the preload to what it recommends via its chart: 1-1/2 units (see Tips & Tricks).

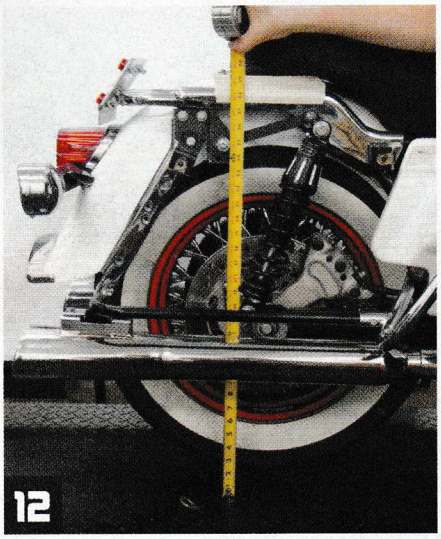
Tips & Tricks

To adjust your shock properly to achieve maximum performance, you have to work from the initial preload setup. *Preload* is the difference between two shock lengths: *free length*, the shock length without the pressure of the bike pushing down on it, and *installed length*, the length of the shock on the motorcycle with the shock fully extended. Finding out the installed length can be done by utilizing a scissor jack like we did. Adjusting the preload changes ride height as well as affecting the amount of available compression and extension. If there is too much preload, then there's not enough extension travel for going over holes. Too little preload leads to bottoming out quickly over bumps and around turns.

Adjusting the preload is referred to as *setting the sag*. There are two types of sag measurements. *Static sag* is how much the suspension compresses with a rider and gear on board. *Free sag* is the amount that a motorcycle compresses under only its own weight. Determining sag is important because to achieve the best experience, you need travel in both, compression to absorb bumps, and extension to allow the tire to drop into dips and holes. This process involves measuring the static and free sag with the preload (free length and installed length). Super Shox recommends that about 2/3 of your travel should be available for compression travel. The remaining 1/3 of travel should be available for extension.



To set the sag, we apply masking tape to a fixed point on the Road King's body to use as a reference point.



First, we're going to find the installed length. We jack up the bike using the scissor jack until all of the weight is off the suspension. Raise the bike just enough so you can spin the tire. We then measure the distance from the lift to the bottom of the applied piece of tape on the bike chassis. We measure 27-1/2" for the installed length.

To figure the free sag (unladen), we lower the bike down using the scissor jack and install the saddlebags. Next, we measure again from the lift to the bottom of the piece of tape. We measure 26-1/4".

Finally, we make the same measurements with Ken on his Road King (static sag). We measure 25-7/8". After looking over the chart, the preload checks out! Of course, this preload (1-1/2) is what Super Shox recommends. Every rider has his own riding preferences. After some riding, Ken will figure out if he wants a little stiffer or softer ride. AIG

SOURCES

SUPER SHOX
847/548-SHOX
SuperShox.com