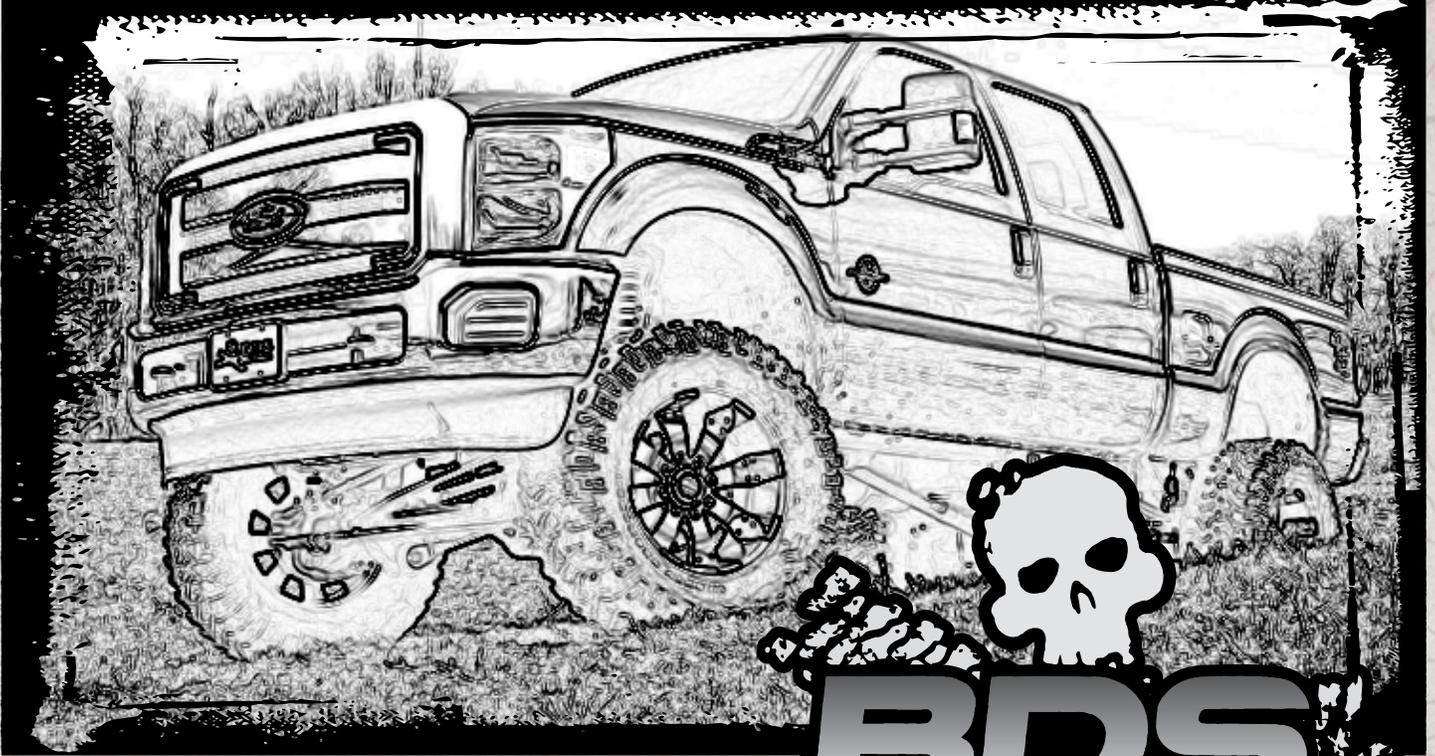


INSTALLATION GUIDE



Part#: 123417



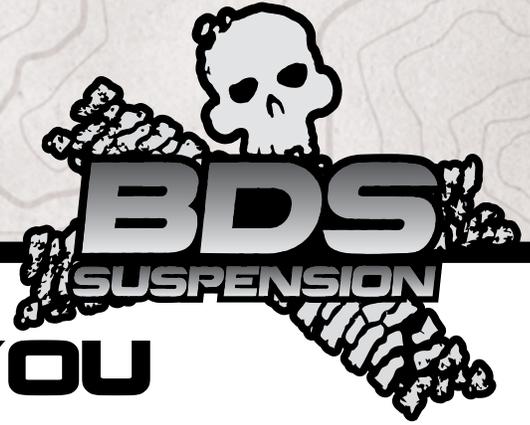
HARDCORE LIMITED LIFETIME WARRANTY

2017 Ford Super Duty Recoil Traction Bar System

Rev. 011917

491 W. Garfield Ave., Coldwater, MI 49036 • Phone: 517-279-2135
E-mail: tech-bds@sporttruckusainc.com

Read And Understand All Instructions And Warnings Prior To Installation Of System And Operation Of Vehicle.



THANK YOU

Your truck is about to be fitted with the best suspension system on the market today. That means you will be driving the baddest looking truck in the neighborhood, and you'll have the warranty to ensure that it stays that way for years to come. Thank you for choosing BDS Suspension!

BEFORE YOU START

BDS Suspension Co. recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

FOR YOUR SAFETY

Certain BDS Suspension products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. BDS Suspension Co. does not recommend the combined use of suspension lifts, body lifts, or other lifting devices. You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

BEFORE INSTALLATION

Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.

Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.

Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.

Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.

Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.

If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.

Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.

BEFORE YOU DRIVE

Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.

Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure. Longer replacement hoses, if needed can be purchased from a local parts supplier.

Perform head light check and adjustment.

Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

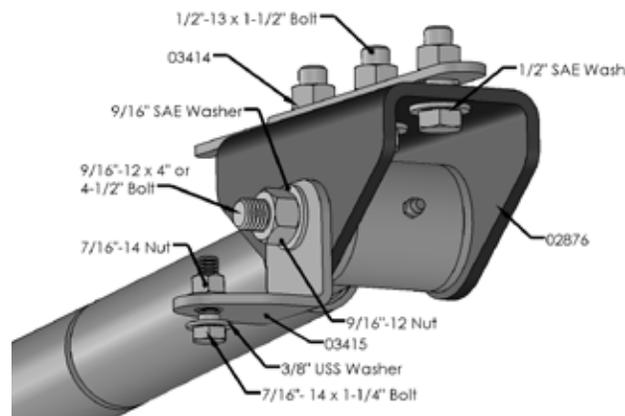
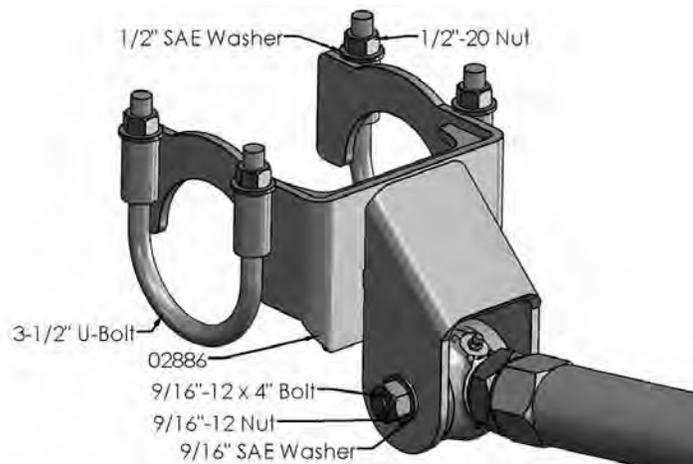
CONTENTS OF YOUR KIT

Box Kit 123417

Part #	Qty	Description
02876	2	Frame Bracket
03414	2	Nut Tab
03415	1	Skid Plate Support
02886	2	Axle Bracket
123120512RB	4	1/2" x 3-1/2" x 5-1/4" Round U-bolt
02910	2	Jam Nut Wrench
B1197	1	Bag Kit
963	1	Bolt Pack (Frame Mounts)
	6	1/2"-13 x 1-1/2" Bolt - Grade 8
	6	1/2" SAE Washer
984	1	Bolt Pack (Skid Support)
	1	7/16"-14 x 1-1/4" Bolt - Grade 5
	2	3/8" USS Washer
	1	7/16" - 14 Prevailing Torque Nut
	1	9/16"-12 x 4-1/2" Bolt - Grade 8
964	1	Bolt Pack (Traction Bar Hardware)
	4	9/16"-12 x 4" Bolt - Grade 8
	4	9/16"-12 Prevailing Torque Nut
	8	9/16" SAE Washer
962	1	Bolt Pack (Axle Mount)
	8	1/2"-20 Prevailing Torque Nut
	8	1/2" SAE Washer

Box Kit 123409

Part #	Qty	Description
A255	2	Traction Bar Assembly
02865	1	Traction Bar
02866	1	Spacer Washer
02867	1	Bushing
02868	1	Guide Bolt
02869	1	Traction Bar Slider End
033001	1	Heavy Rate Spring
033002	1	Lite Rate Spring
9452K63	2	O-Ring
91985A231	1	Internal Retaining Ring
3537BK	2	Bushings
61	1	Sleeve
516	2	Grease Fitting
A171	1	Forged Flex Joint End





INSTALLATION INSTRUCTIONS

AXLE BRACKET INSTALLATION

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.

! Caution *This installation should be done with the weight of the vehicle on the rear axle.*

2. Starting on the driver side of the vehicle, locate the axle mount bracket (02886). The axle mount will be mounted in front of the leaf spring perch, with the mount facing towards the front of the vehicle.

Note: The brackets are designed to work with the factory style square U-bolts running from the top down and round U-bolts running from the bottom up.

3. Depending upon which lift block is installed in the rear, the U-bolts and lift block may need to be temporarily removed to install the axle bracket due to clearance to the bump stop wing during installation. The factory 2" rear block will require the lift block to be removed for axle mount bracket installation. See steps 4-9 for lift block removal and installation.
4. To remove the lift block, raise the rear of the vehicle and support with jack stands under the frame rails just ahead of the spring hangers.
5. Support the axle with a hydraulic jack.
6. Remove the 4 nuts from the U-bolts and lower the axle.
7. Remove the lift block and install the axle mount bracket in front of the leaf spring mount on the axle.
8. After the axle mount bracket is installed, reinstall the lift block with the bump stop wing positioned inboard and ensuring the alignment pins in the block, leaf spring, and axle all line up. Loosely tighten the U-bolts and lower the vehicle to the ground.
9. With the weight of the vehicle on the axle, torque the U-bolts to 130-150 ft-lbs.

FIGURE 1

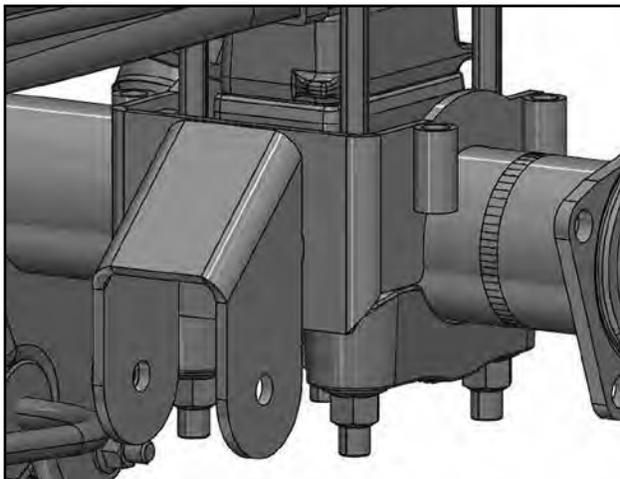
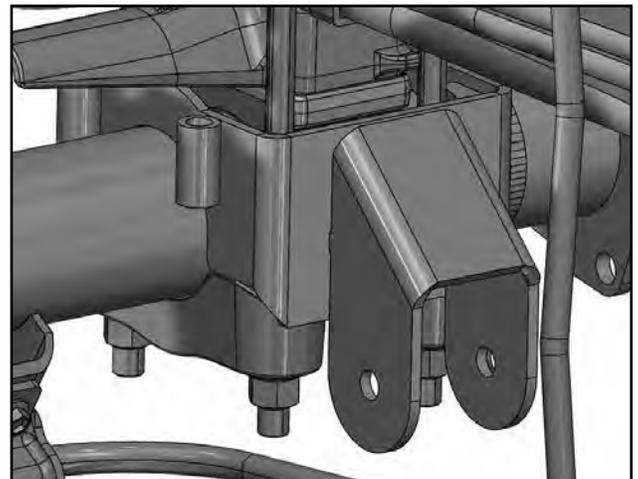
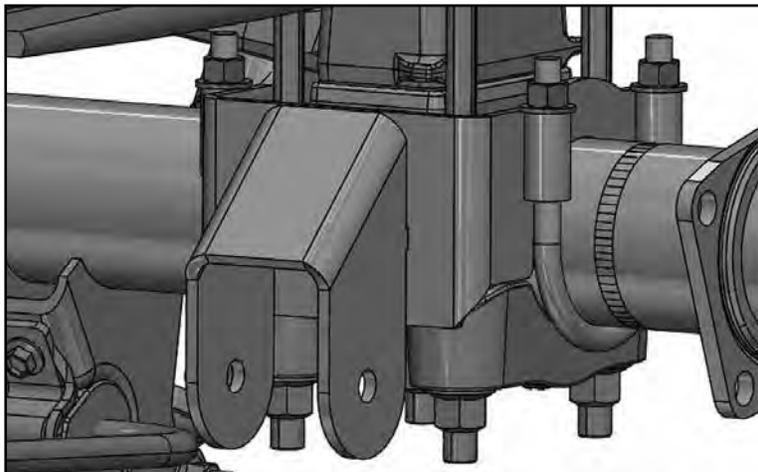


FIGURE 2



10. Locate two of the 1/2" U-bolt and install around the axle and up through the sleeves in the axle mount bracket (02886). Using the 1/2" fine thread nut and 1/2" SAE washer from Bolt Pack 962, tighten the U-bolts so that the axle mount clamps around the axle. The axle mount bracket should be parallel with the leaf spring perch. Tighten the 1/2" fine thread hardware to 45 ft-lbs.

FIGURE 3



11. Repeat axle bracket installation on the passenger's side of the vehicle.



Tip

While this system was designed and tested as a "bolt-on" kit, the axle and frame bracket can also be tack welded to the vehicle. This would only be necessary if increased torque/leverage was consistently applied over the normal loads.

TRACTION BAR INSTALLATION

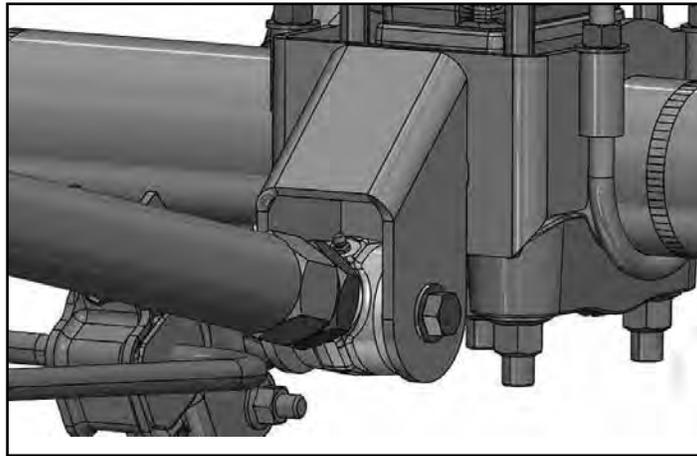
12. Check that the jam nut on the Forged Flex End (A171) is threaded in as far as it can go on the shaft of the Forged Flex End. Make sure the Forged Flex End is completely threaded into the Recoil Traction Bar (02865) up to the jam nut as shown in Figure 4.

FIGURE 4



13. Attach the Recoil Traction Bar to the axle bracket with a 9/16" x 4" bolt, 9/16" nut and 9/16" SAE washers from Bolt Pack 964. Install the Recoil Traction Bar so that the Forged Flex End (A171) is mounted to the axle bracket. Leave mounting hardware loose at this time

FIGURE 5



14. Measure the length of the bar from the center of the bolt at the axle to the center of the sleeve at the traction bar slider end (02869). The length should be approximately 59-3/4" +/- 0.25". If not, press firmly on the traction bar slider end to seat the springs.
15. Leave the bar resting on the ground at this time.

FRAME BRACKET INSTALLATION

16. On the driver's side, cut the front fuel tank skid plate support even with the side of the skid plate. Be careful not to damage the fuel tank when cutting the fuel tank skid plate support. It is easier to leave the 2 bolts in the top of the fuel tank skid plate support to stop it from moving when cutting it. After the support is cut, support the skid plate until the new support bracket is installed.

FIGURE 6



17. Remove the two bolts that are attached to the upper part of the fuel tank skid plate support that was just cut. Remove the two J-nuts from the frame rail.

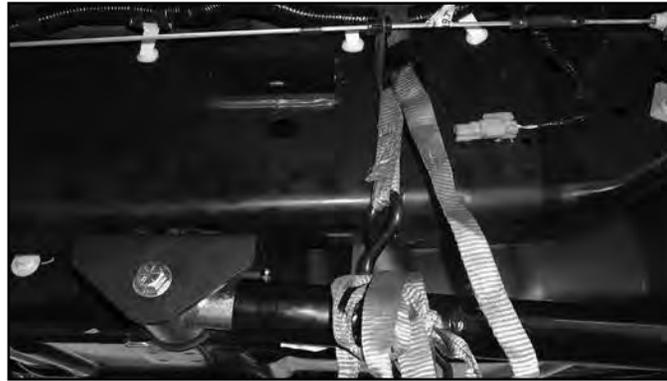
FIGURE 7



18. Starting on the driver's side, loosely attach the frame bracket (02876) with a 9/16" x 4-1/2" bolt from Bolt Pack 984 and a 9/16" nut and two 9/16" SAE washers from Bolt Pack 964 to the Traction Bar Slider End (02869). Make sure the frame bracket is installed such that the single hole is towards the front of the vehicle and the two slots are towards the rear of the vehicle.
19. Raise the Recoil Traction Bar to the frame rails and position the bracket such that the holes in the bracket run down the center of the frame rail. A ratchet strap can be used to help support the traction bar.

Note: Make sure the inside surface of the frame bracket is outside of the skid plate so that the skid plate support bracket can be installed (See Figure 13 for further clarification).

FIGURE 8



20. While holding the bracket in place, use the holes and center of the two slots in the frame bracket as a template, mark the location to be drilled on the frame. Since a nut tab is used, **it is important that the holes are centered on the slots** (see Figure 10). Use the template at the end of the instructions to create a precise location to drill the holes. Lower the Recoil Traction Bar from the frame rail.

Note: The driver side holes may coincide with square holes in the frame from the skid plate support. In this case, these holes will not need to be drilled, but may need to be cleared for the bolt to fit through the hole.

FIGURE 9



FIGURE 10



21. Drill the three holes to 9/16".
22. Remove the frame bracket (02876) from the slider end of the Recoil Traction Bar.
23. Insert the nut tab through the slot in the frame rail. Line up the nuts on the nut tab with the three holes drilled in the previous step.

FIGURE 11



24. Attach the frame bracket to the frame rail with three of the 1/2" x 1-1/2" bolts and 1/2" SAE washers from Bolt Pack 963. Torque the 1/2" bolts to 60 ft-lbs.

FIGURE 12



25. Reattach the Recoil Traction Bar to the frame bracket with the 9/16" x 4-1/2" bolt, 9/16" nut, and two 9/16" SAE Washers, leave hardware loose. Attach the new skid plate support bracket (03415) on the inside of the frame bracket with the 9/16" hardware. The bracket should support the bottom of the fuel tank skid plate.

FIGURE 13



26. Mark the hole location for the skid plate support bracket on the bottom of the fuel tank skid plate.
27. Drill the hole to 1/2".
28. Install the 7/16" x 1-1/4" bolt, 3/8" USS washers, and 7/16" nut from Bolt Pack 984 to the fuel tank skid plate and skid plate support bracket. Torque to 35 ft-lbs.

FIGURE 14



29. Torque the 9/16" hardware for the Recoil Traction Bar at the frame and axle brackets to 90 ft-lbs.
30. Repeat installation on the passenger's side of the vehicle. The passenger side will not require the skid plate support bracket for installation and will utilize a 9/16" x 4" bolt, 9/16" SAE washers, and 9/16" nut from Bolt Pack 964 for the frame bracket installation. There will be an additional 9/16" x 4" bolt from Bolt Pack 964 after the installation is completed.
31. Grease all bushings and the Recoil Traction Bar before use. Do not over grease the Recoil Traction Bar, it is recommended to grease the Recoil Traction Bar one pump of grease every 10,000 miles.
32. Check all hardware for proper torque.
33. Check hardware after 500 miles.

TRACTION BAR ADJUSTMENT

34. Loosen the jam nut at the axle end with the two provided wrenches. Utilize a 1/2" ratchet or breaker bar in the wrench if needed.

FIGURE 22



35. Use the levels on the wrench to gauge how much force is inputted into the Recoil Traction Bar. The wrench is designed to be used at the traction bar slider end as shown in Figure 23. Make sure the wrench is pressed firmly against the bushing / tube for an accurate measurement.

FIGURE 23

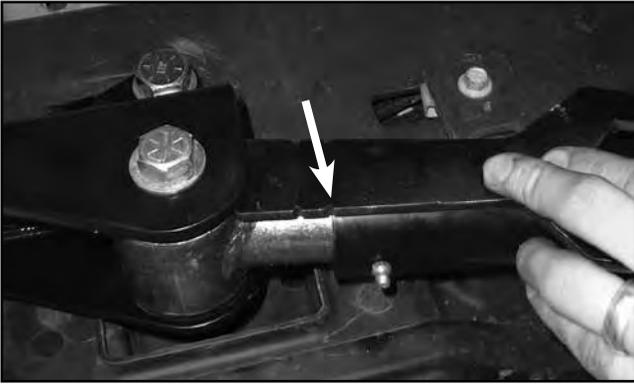
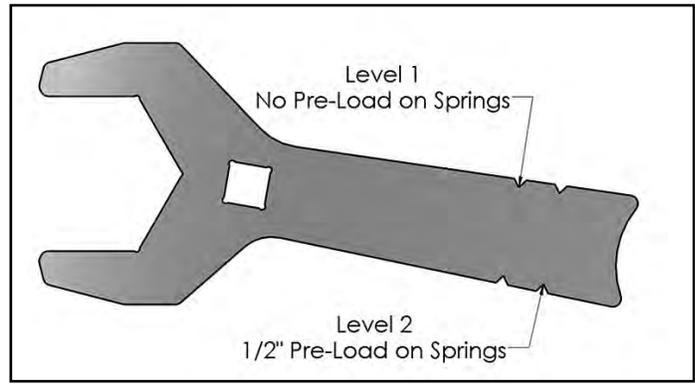


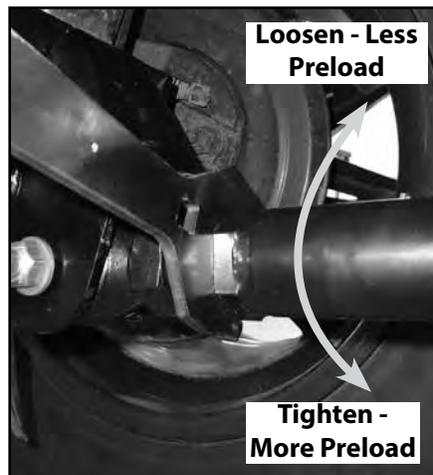
FIGURE 24



36. Utilizing the Levels on the wrench, spin the Recoil Traction Bar either clockwise to add more force into the dual coil springs setup to reduce axle wrap, or loosen the Recoil Traction Bar by spinning it counter clockwise in order to reduce the input the Recoil Traction Bar has on the suspension system.

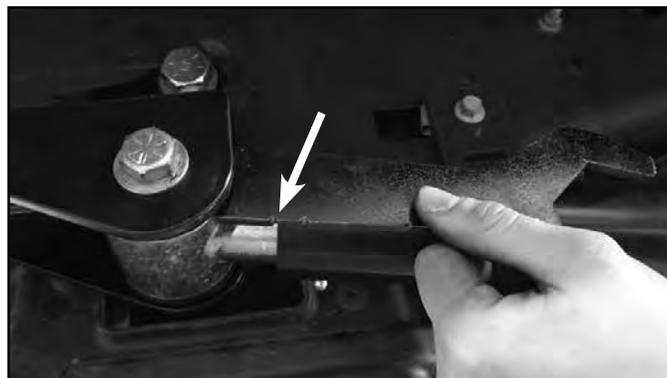
Note: Depending upon lift height, the Recoil Traction Bar may need to be unthreaded from the Forged Flex End until the First Level is reached on the wrench. At this point the dual coil spring setup are in contact and there is no preload in the springs.

FIGURE 25



It is recommended when pulling or hauling heavy weights that Recoil Traction Bar be set at a minimum of the Second Level on the Jam Nut Wrench to help reduce axle wrap. The Second Level is 25% of the maximum force the springs output. The maximum amount of force that can be preloaded in the spring is 12 full rotations of the Recoil Traction Bar when starting at the First Level. This equals 1" of total preload in the dual coil spring setup in the Recoil Traction Bar. At this point, the dual coil spring setup creates a solid link between the frame and axle when in compression. DO NOT tighten the Recoil Traction Bar past this amount

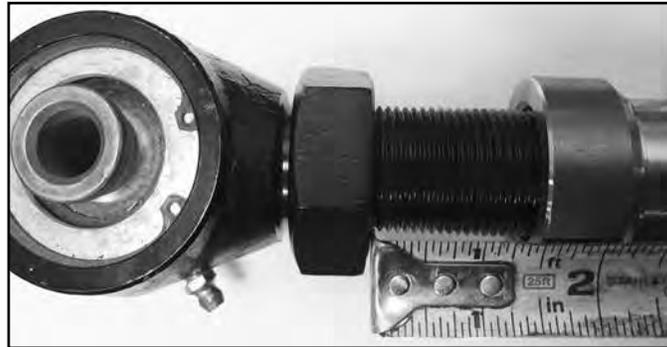
FIGURE 26



37. Utilize the Jam Nut Wrench to set a desired force setting (Minimum of the First Level). Depending upon suspension setups, different spring preload may need to be tried to find a good setup to reduce axle wrap. After the desired force is set, lock off the jam nut with the two provided Jam Nut Wrenches and repeat this process on the other Recoil Traction Bar.

Note: Never unthread the forged flex end past 1-1/2" of adjustment. This can cause thread damage and weaken the joint. See Figure 27.

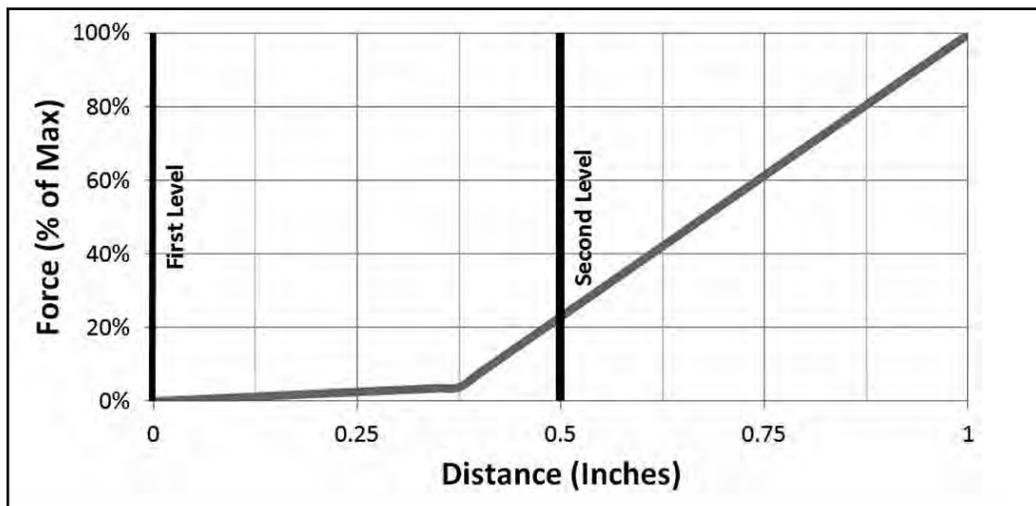
FIGURE 27



38. The dual coil spring setup is utilized to always create contact between both ends of the Recoil Traction Bar. Having dual coil spring setup allows the Recoil Traction Bar system to not affect suspension performance at a lower force as seen at the First Level, allowing greater articulation and less affect on the suspension system. As the Recoil Traction Bar is adjusted and the dual coil spring setup are compressed, a higher force is exerted on the axle in order to reduce axle wrap. Each Level below corresponds to the levels on the wrench, representing different amounts of force in the Recoil Traction Bar system.

Note: It is recommended to never fully compress the spring past the 1" of compression. This can be measured 1" from the First Level on the Jam Nut Wrench.

FIGURE 28





WE WANT TO SEE YOUR RIDE!

Grab photos of your BDS-equipped truck in action and send them in for a chance to be featured. Send it in to our Bad Ass Rides customer gallery at bds-suspension.com/bar and post them on the BDS Fan Page on Facebook at facebook.com/BDSSuspensions. Don't forget about your BDS swag! BDS offers t-shirts, hoodies, decals and more available on the BDS website or through your local BDS distributor.

TIME TO HAVE SOME FUN

Thank you for choosing BDS Suspension.

For questions, technical support and warranty issues relating to this BDS Suspension product, please contact your distributor/installer before contacting BDS Suspension directly.

FRAME BRACKET TEMPLATE

