



Part # 22929

2009 - 2013 Ford F150 4WD and 2WD
2" Suspension System

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
22909-01	Front leveling spacer	2
D2P-NB	Hardware bag	1
TCI-R39	Rear add-a-leaf	2
CB12-NB1	Hardware bag	1
22929INST	Instruction manual	2
MIRRORHANGER	Rear view mirror hanger	1
WARNINGDECAL	Warning decal	1

Congratulations on your selection to purchase a Tuff Country EZ-Ride Suspension System. We at Tuff Country EZ-Ride Suspension are proud to offer a high quality product at the industries most competitive pricing. Thank you for your confidence in us and our product.

If you desire to return your vehicle to stock, it is the customers responsibility to save all stock hardware.

The Tuff Country EZ-Ride Suspension product safety label that is included in your kit box must be installed inside the cab in plain view of all occupants.

Please see the end of the installation manual for a picture of the hard parts that are included in this suspension system.

Tuff Country EZ-Ride Suspension packages (2) sets of instruction sheets with this box kit. (1) is for the installer and (1) is for the customer. The (1) for the customer has some post installation procedure literature and it is the installers responsibility to make sure that the customer receives a copy of the installation manual along with the literature.

Before installation begins, it is the customers/installers responsibility to make sure that all parts are on hand. If any parts are missing, please feel free to call one of our customer service representatives @ (801) 280-2777.

Installation manual

2" Suspension System

2009 - 2013

Ford F150 4WD and 2WD

Part # 22929

sj12112013rev.03

Important customer information:

Tuff Country EZ-Ride Suspension highly recommends that a qualified or a certified mechanic performs this installation.

It is the responsibility of the customer/installer to wear safety glasses at all times when performing this installation.

It is the customers/installers responsibility to read and understand all steps before installation begins. If you have any questions or concerns, please contact our technical department @ (801) 280-2777. Also, the OEM manual should be used as a reference guide.

This vehicles reaction and handling characteristics may differ from standard cars and/or trucks. Modifications to improve and/or enhance off road performance may raise the intended center of gravity. Extreme caution must be utilized when encountering driving conditions which may cause vehicle imbalance or loss of control. **DRIVE SAFELY!** Avoid abrupt maneuvers: such as sudden sharp turns which could cause a roll over, resulting in serious injury or death.

It is the customers responsibility to make sure that a re-torque is performed on all hardware associated with this suspension system after the first 100 miles of installation. It is also the customers responsibility to do a complete re-torque after every 3000 miles or after every off road use.

After the original installation, Tuff Country EZ-Ride Suspension also recommends having the alignment checked every 6 months to ensure proper tracking, proper wear on tires and front end components. Tuff Country EZ-Ride Suspension takes no responsibility for abuse, improper installation or improper suspension maintenance.

Limited lifetime warranty

Notice to all Tuff Country EZ-Ride Suspension customers: It is your responsibility to keep your original sales receipt! If failure should occur on any Tuff Country EZ-Ride Suspension component, your original sales receipt must accompany the warranted unit to receive warranty. Warranty will be void if the customer can not provide the original sales receipt. Do not install a body lift in conjunction with a suspension system. If a body lift is used in conjunction with any Tuff Country EZ-Ride Suspension product, your Tuff Country EZ-Ride Suspension WARRANTY WILL BE VOID. Tuff Country Inc. ("Tuff Country") suspension products are warranted to be free from defects in material and workmanship for life if purchased, installed and maintained on a non-commercial vehicle; otherwise, for a period of twelve (12) months, from the date of purchase and installation on a commercial vehicle, or twelve thousand (12,000) miles (which ever occurs first). Tuff Country does not warrant or make any representations concerning Tuff Country Products when not installed and used strictly in accordance with the manufacturer's instructions for such installation and operation and accordance with good installation and maintenance practices of the automotive industry. This warranty does not apply to the cosmetic finish of Tuff Country products nor to Tuff Country products which have been altered, improperly installed, maintained, used or repaired, or damaged by accident, negligence, misuse or racing. ("Racing is used in its broadest sense, and, for example, without regards to formalities in relation to prizes, competition, etc.) This warranty is void if the product is removed from the original vehicle and re-installed on that or any other vehicle. This warranty is exclusive and is in lieu of any implied warranty of merchantability, fitness for a particular purpose or other warranty of quality, whether express or implied, except the warranty of title. All implied warranties are limited to the duration of this warranty. The remedies set forth in this warranty are exclusive. This warranty excludes all labor charges or other incidental or consequential damages. Any part or product returned for warranty claim must be returned through the dealer of the distributor from whom it was purchased. Tuff Country reserves the right to examine all parts returned to it for warranty claim to determine whether or not any such part has failed because of defect in material or workmanship. The obligation of Tuff Country under this warranty shall be limited to repairing, replacing or crediting, at its option, any part or product found to be so defective. Regardless of whether any part is repaired, replaced or credited under this warranty, shipping and/or transportation charges on the return of such product must be prepaid by the customer under this warranty.

Important information that needs to be read before installation begins:

Tuff Country recommends a 33x12.50 tire package once part # 22929 has been installed. If larger than a 33x12.50 tire is installed on your vehicle in conjunction with part # 22929; Tuff Country assumes no liability and the warranty will be VOID.

Part # 22929 will not fit on the Raptor SVT model trucks.

If the vehicle that you are working on is equipped with EPAS, the EPAS plugs will need to be disconnected prior to beginning the installation of this kit. Failure to disconnect these plugs could result in damage to the EPAS module resulting in an error message being displayed, which will require replacement of the EPAS module. EPAS stands for (Electronic Power Assist Steering).

If you are installing this rear add-a-leaf on a rear end that has no after market blocks or u-bolts installed, the stock rear u-bolts may not be long enough. If this is the case on the vehicle that you are working on, please contact Tuff Country or your local Tuff Country dealer and order part # 27800.

Before installation begins, Tuff Country EZ-Ride Suspension highly recommends that the installer performs a test drive on the vehicle. During the test drive, check to see if there are any uncommon sounds or vibrations. If uncommon sounds or vibrations occur on the test drive, uncommon sounds or vibrations will be enhanced once the suspension system has been installed. Tuff Country EZ-Ride Suspension highly recommends notifying the customer prior to installation to inform the customer of these issues if they exist.

Make sure to use thread locker or loctite on all new and stock hardware associated with the installation of this suspension system.

Hardware bag D2P-NB includes:

<u>Description</u>	<u>Quantity</u>
38NLN (3/8" nylon lock nut)	6
516WA (5/16 USS flat washer)	6

Hardware bag CB12-NB1 includes:

<u>Description</u>	<u>Quantity</u>
CB121 (1/2" x 6" centering bolts)	4
12FN (1/2" fine nut)	4

Recommended tools selection:

Torque wrench
Standard socket set
Standard wrench set
Metric socket set
Metric wrench set
Tape measure
Hydraulic floor jacks

Please follow instructions carefully:

Before installation begins, measure from the center of the hub, to the bottom of the fender well, and record measurements below.

Pre-installation measurements:

Driver side front: _____

Passenger side front: _____

Driver side rear: _____

Passenger side rear: _____

At the end of the installation take the same measurements and compare to the pre-installation measurements.

Post-installation measurements:

Driver side front: _____

Passenger side front: _____

Driver side rear: _____

Passenger side rear: _____

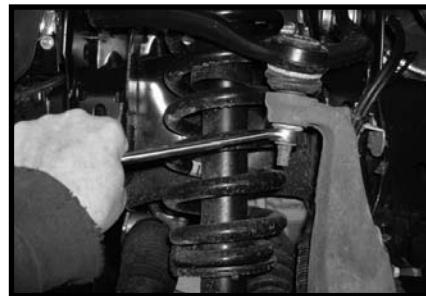
If the vehicle that you are working on is equipped with EPAS, the EPAS plugs will need to be disconnected prior to beginning the installation of this kit. Failure to disconnect these plugs could result in damage to the EPAS module resulting in an error message being displayed, which will require replacement of the EPAS module. EPAS stands for (Electronic Power Assist Steering).

1. To begin installation, safely lift the front and rear of the vehicle and support the vehicle with jack stands on each corner of the vehicle. Next, remove the front wheels and tires from both sides.

2. Working on the driver side, remove the (3) upper strut mount nuts. Save the stock hardware. Repeat procedure on the passenger side.



3. Working on the driver side, Loosen, but do not remove the upper ball joint nut. Repeat procedure on the passenger side.



4. Working on the driver side, loosen but do not remove the nut from the outer tie rod. Repeat procedure on the passenger side.



5. Now return to the upper ball joint and outer tie rod and carefully break the taper and remove them both from the steering knuckle. Repeat on passenger side. **Special Note: Take special care not to damage the ball joint and tie rod end rubber boots.**



6. Working on the driver side, disconnect the sway bar end link from where it is connected to the sway bar, do not disconnect the end link from the lower control arm. Repeat on passenger side.



7. Working on the driver side, remove the nut and bolt holding the strut assembly to the lower control arm. Repeat on passenger side.



8. Working on the driver side, loosen but do not remove the (2) bolts holding the lower control arm to the vehicle. Repeat on passenger side. **Special note: This is done so that the lower control arm can swing down and allow you to remove the strut assembly from the vehicle. Also, the use of a pry bar may make removal easier.**



9. With both strut assemblies out of the vehicle it is time to install the new leveling spacers. Install these directly on top of the stock strut plate and secure them using the stock nuts. Torque to **35 ft lbs**.



10. Working on the driver side, remove the brake line bracket from the frame rail. Save the hardware. Repeat procedure on the passenger side.



11. Working on the driver side, install the strut assembly back into the stock location, it may be necessary to pry down on the lower control arm in order for the lower eyelet of the shock to go into its pocket. Secure the strut using the stock bolt and hardware on the lower part, and using the new 3/8" nylon lock nuts and 5/16" flat washers on the upper mount. Torque the upper 3/8" hardware to **32 ft lbs** and the lower stock bolt to **100 ft lbs**. Repeat on passenger side.

12. With the struts now installed back into the vehicle, it is time to re-install the CV axle back into the hub assemble and secure using the stock nut. Torque to **20 ft lbs**. Repeat on passenger side.

13. Re-connect the upper ball joint into the steering knuckle and secure using the stock nut. It may be necessary to pry down on the upper control arm to get the nut started. Torque to **85 ft lbs** and repeat on passenger side.

14. Now attach the brake line bracket into the stock location using the stock bolt, torque to **8 ft lbs**.

15. Working on the driver side re-install the tie rod ends back into the steering knuckle using the stock nut and torque to **70 ft lbs**. Repeat on passenger side.

16. Working on the driver side, attach the sway bar back to the sway bar end link using the stock hardware. Repeat on passenger side and torque to **50 ft lbs**.

If the vehicle that you are working on is equipped with EPAS, and you disconnected the module, re-connect the module at this point! EPAS stands for (Electronic Power Assist Steering).

17. Install the front tires and wheels.

18. Front end installation complete.

Rear end installation:

19. Remove the wheels and tires from both sides.

20. Position a pair of hydraulic floor jacks under the rear axle. Place one jack stand on the driver side and one on the passenger side. Raise up on both hydraulic floor jacks at the same time until they make contact with the rear axle.

21. Working on the driver side, remove the shock from the axle mount location. Save the hardware. The upper mount does not need to be removed, let the shock hang. Repeat procedure on the passenger side.

22. Working on the driver side, remove the (2) rear u-bolts. Save the rear u-bolts and hardware. Set the upper u-bolt plate aside. Repeat procedure on passenger side.

23. Remove the emergency brake cable from the bracket on the rear differential.

24. Lower down on both hydraulic floor jacks at the same

<p>time until the springs separate from the OE block. Lower down approximately 4". Special Note: Make sure not to over extended any brake lines or hoses when lowering axle.</p>	<p>34. Install the tires and wheels and carefully lower the vehicle to the ground.</p>
<p>25. Place a pair of "C" clamps on both sides of the centering bolts and tighten until the "C" clamps hold the springs together. Remove the stock centering bolts that connect the springs together and discard. Carefully remove the "C" clamps from the stock springs. Special note: Take special care when removing the "C" clamps because the springs are under tension.</p>	<p>35. With the weight of the vehicle on the ground, move back and torque the driver and passenger side lower control arm hardware to 110 ft lbs.</p> <p>Special note: After the completion of the installation, Tuff Country EZ-Ride Suspension recommends taking the vehicle to an alignment shop and having a proper front end alignment performed.</p>
<p>26. Locate the new rear add-a-leafs. Also, locate (2) 1/2" x 6" bolts and (2) 1/2" fine nuts from hardware bag CB12-NB1. Working on the driver side, install the new add-a-leaf between the over load and the stock spring assembly. Secure using the new 1/2" centering bolts and nuts. For now, just get the nuts started. Then using a pair of "C" clamp vise grips, carefully bring the new add-a-leaf and stock spring assembly together. Once the new add-a-leaf and the stock springs have been brought together, tighten the new 1/2" centering bolts to 54 ft lbs. Special note: Using a die grinder, carefully cut off the excess thread on the centering bolts so that the upper u-bolt plate can be installed properly.</p>	<p>Tuff Country EZ-Ride Suspension recommends that a complete re-torque is done on all bolts associated with this suspension system. It is the customers responsibility to make sure that a re-torque is performed on all hardware associated with this suspension system after the first 100 miles of installation. It is also the customers responsibility to do a complete re-torque after every 3000 miles or after every off road use. Neglect of following these steps could cause brackets to come loose and cause serious damage to the suspension system and to the vehicle.</p>
<p>27. Repeat steps # 24 - 26 on the passenger side.</p>	<p>Tuff Country EZ-Ride Suspension packages (2) sets of instruction sheets with this box kit. (1) is for the installer and (1) is for the customer. The (1) for the customer has some post installation procedure literature and it is the installers responsibility to make sure that the customer receives a copy of the installation manual along with the literature.</p>
<p>If you are installing this rear add-a-leaf on a rear end that has no after market blocks or u-bolts installed, the stock rear u-bolts may not be long enough. If this is the case on the vehicle that you are working on, please contact Tuff Country or your local Tuff Country dealer and order part # 27800.</p>	<p>If you have any questions or concerns, please feel free to contact Tuff Country or your local Tuff Country dealer.</p>
<p>29. Locate the u-bolts, u-bolt hardware and upper u-bolt plates. Working on the driver side, secure the new rear add-a-leaf and the spring assembly to the rear axle and secure using the u-bolts, u-bolt hardware and upper u-bolt plates. Torque to 120 ft lbs. Repeat procedure on the passenger side.</p>	
<p>30. Locate the lower shock hardware. Working on the driver side, secure the shock into the lower shock mounting point and secure using the hardware. Make sure to use loctite and torque to 85 ft lbs. Repeat procedure on the passenger side.</p>	
<p>31. Reinstall the emergency brake cable to the OE bracket on the rear differential.</p>	
<p>32. Carefully remove both hydraulic floor jacks from under the vehicle.</p>	
<p>33. Check and double check to make sure that all steps have been performed properly and check again.</p>	