



Installation manual
4" Suspension system
2017-2018 Ford Super Duty
F250 / F350
Part # 24987 & 24989

SS08292017

Part # 24987 & 24989 (gas & diesel engines)
2017-2018 Ford Super Duty F250 / F350
4" Suspension system w/Radius arms

Part #	Description	Qty.
24975-CL01	Front coil springs (diesel engine)	2
24975-CL02	Front coil springs (Gas engine)	2
24975-01	Driver side radius arm	1
24975-02	Passenger side radius arm	1
25975-01	Track bar relocation bracket	1
24970-10	DS & PS front bump stop relocation bracket	2
24970-14	Rear carrier bearing relocation bracket	1
24970-15	Front steering stabilizer bracket	1
25975-03	Brake line bracket	2
DODSSWAY-01	DS swaybar bracket	1
DODPSSWAY-01	PS swaybar bracket	1
FD2005A	Pitman arm	1
5U-583181712SR	5/8" x 3 5/8" x 17 1/2" u-bolt	4
58NW	Ubolt hardware bag	1
BL5504	Rear Blocks	2
5161142R	5/16" x 1" x 1 1/4" round ubolt	2
516FLN	5/16" flange nut	4
24987NB	Hardware Bag	1
WARNINGDECAL	Warning decal	1
MIRRORHANGER	Rear view mirror hanger	1
DECAL	Window decal	1

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

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.

Important customer information:

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

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

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.

It is the responsibility of the customer or the mechanic 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. OEM manual should be used as a reference guide.

Make sure to use loctite on all new and stock hardware associated with this installation.

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.

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 35"x12.50" tire package.

If larger than a 35"x12.50" tire is installed on your vehicle in conjunction with part # 24987/24989; Tuff Country assumes no liability and the warranty will be VOID. **Our tire and wheel fitments are only a guideline. Different production times or tolerances will vary and this size should only be used as a starting point. Each vehicle is different and will need to be treated as such.**

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.

New longer front and rear shocks are needed after this suspension system has been installed and the front and rear shocks need to be ordered as a separate part #. If you have not already ordered your front and rear shocks, please feel free to contact Tuff Country or your local Tuff Country dealer and order your front and rear shocks. Tuff Country recommends installing a 26" fully extended nitrogen gas shock on the front and a 33" fully extended nitrogen gas shock in the rear.

Tuff Country highly recommends installing shock boots once the new shocks have been installed and the shock boots need to be ordered as a separate part #. If you have not already ordered your new shock boots, please feel free to contact Tuff Country or your local Tuff Country dealer and order your new shock boots. Tuff Country EZ-Ride suspension offers; Red, light blue, dark blue, black, yellow or gray shock boots. If shock boots are not installed on the new shocks, damage could be caused to the piston of the new shock. If the new shock is damaged due to not having a shock boot installed, warranty will be void.

After the installation of this suspension system, Tuff Country highly recommends taking the vehicle directly to an alignment shop for a proper front end alignment.

Hardware bag 24987NB includes:

Description		Quantity
M30JN	30mm jam nut	1
716112B	7/16" x 1 1/2" bolt	4
38WA	3/8" USS flat washer	8
716UN	7/16" unitorque nut	4
M18UN	18mm 2.50 nut	1
716212B	7/16" x 2 1/2" bolt	2
5161B	5/16" x 1" bolt	4
14WA	1/4" USS flat washer	8
516UN	5/16" unitorque nut	4

Special note: 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.

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: _____

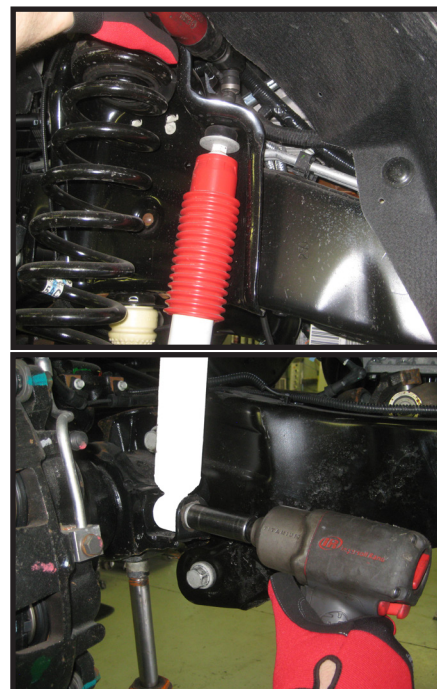
Front end installation:

1. Safely block the rear tires of the vehicle so the vehicle is stable and can not roll backwards. Using a pair of hydraulic floor jacks, raise up on the front axle until the front tires can be removed. Support the frame on each side using jack stands
2. Working on the driver side, remove the brakeline bracket bolt from the frame rail, save bolt for later installation. Repeat on passenger side.

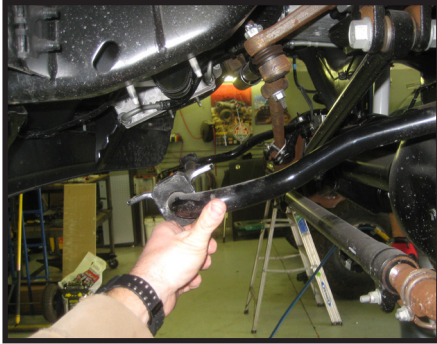


3. Working on the driver side, remove the nut, washer, and rubber bushing from the top of the shock absorber. Repeat on passenger side.

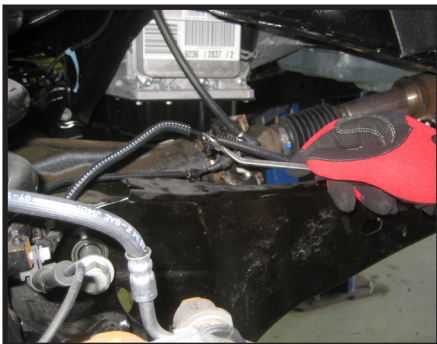
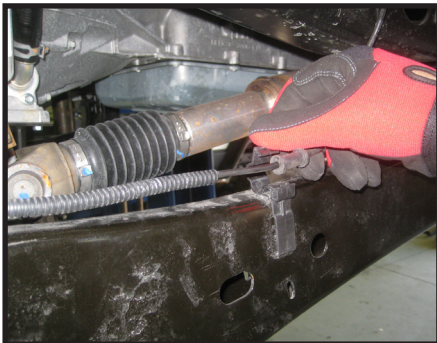
4. Now remove the bolt and nut from the bottom mounting location of the front shock absorber, save hardware for later installation. Remove shocks from the vehicle.



4. Working on the front swaybar, remove the 4 bolts holding it to the bottom of the frame rails, and carefully let the sway bar hang from its endlinks.



5. On the driver side, locate the ABS wires that run along the radius arm, now unclip the wire from its mount and pop the mount out from the arm. This step is performed in order to get enough slack in the wires to lower the front axle. Repeat on the passenger side.

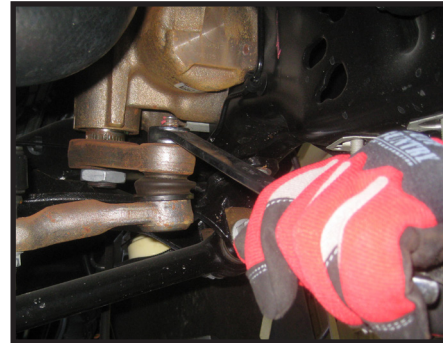


6. Lower down the front axle enough that both front coil springs can be removed from the vehicle. **Special Note: Save the OE rubber coil spring isolator for re-installation.**



7. Working on the steering drag link, unbolt the steering stabilizer shock from the drag link and save the OE nut.

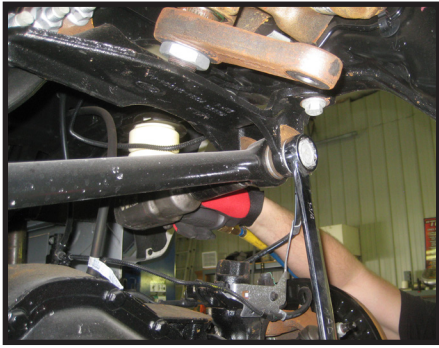
8. Working at the steering box, remove the cotter pin, nut retainer, and the nut from the drag link's tie rod end. Save this hardware for later installation.



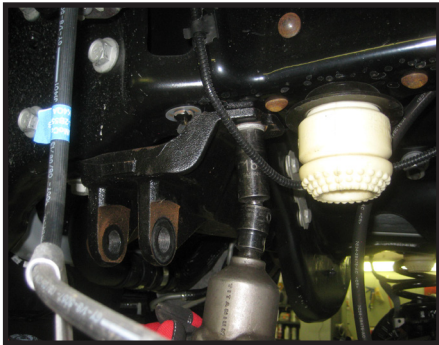
9. Using a proper tie rod removal tool and/or a hammer, hit the end of the pitman arm to break the taper and remove the tie rod end from the pitman arm.



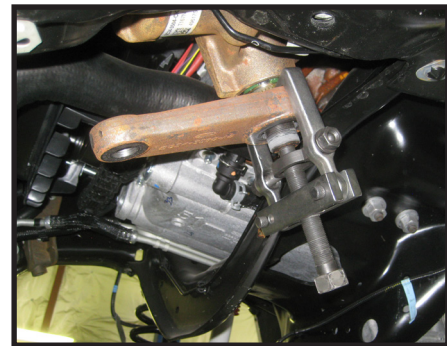
10. Locate the OE Track bar bracket that is bolted to the frame near the steering box, remove the large bolt that is securing the track bar to the bracket, save hardware for later installation.



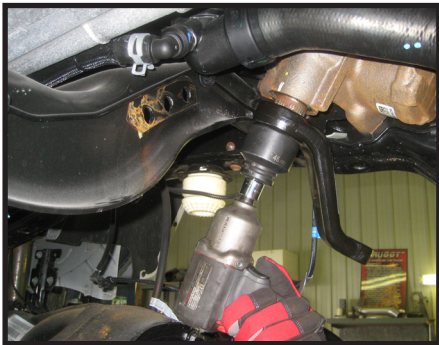
11. Now completely remove the OE track bar bracket from the frame rail. Save the hardware for later re-installation. **Special note: The OE bolts going up into the frame have nuts with their own keeper on it, they will hold themselves while loosening the bolts. Be carefull not to lose these keeper style nuts..**



12. Move back to the steering box and remove the pitman arm. **Special note: It is highly recommended to use the proper pulling tool to perform this step.**



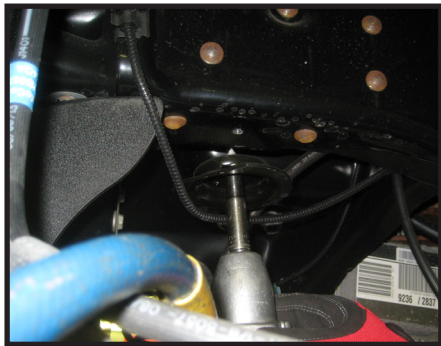
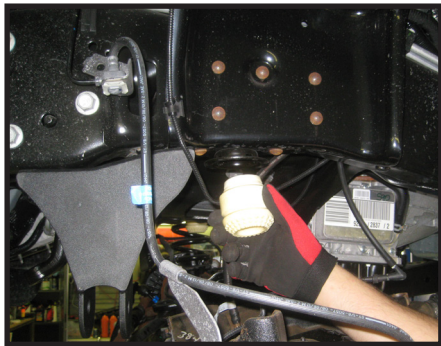
13. Locate the new pitman arm, and the new 30mm pitman arm nut. Install the new pitman arm onto the steering box sector shaft. Make sure to install it in the same orientation that the original was removed. Install the new nut and **torque to 350 ft lbs.**



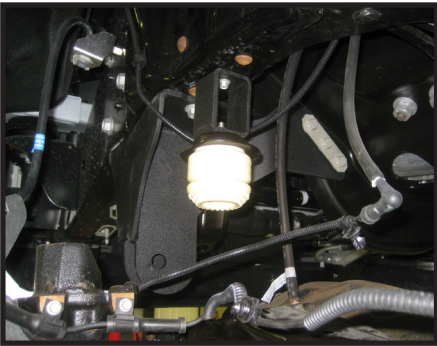
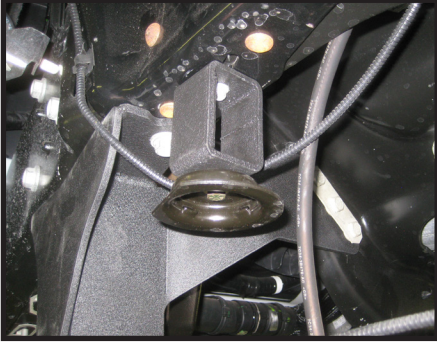
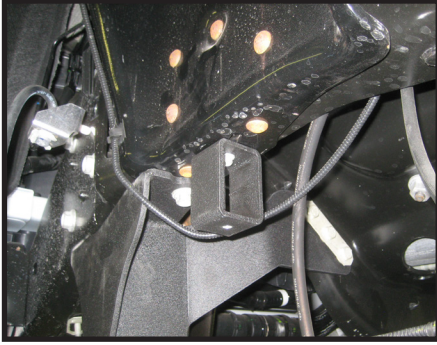
14. Locate the new track bar relocation bracket and the OE track bar bracket hardware. Install the new bracket into the original location on the frame rail. **Special note: the part of the bracket with the 3 holes will be installed on the back side of the engine crossmember, this is opposite of how the OE bracket was mounted. Torque nuts to 75 ft lbs.**



15. Working on the driver side, remove the rubber bump stop and un-bolt the bumpstop cup from the bottom of the frame rail, save bolts. Repeat on the passenger side.



16. Locate (2) bumpstop relocation brackets, also locate (2) 5/16" x 1" bolts, (4) 1/4" flat washers, and (2) 5/16" uni-torque nuts from hardware bag 24987NB. Using the OE bolt, connect the bumpstop relocation brackets to the bottom of the frame rail in the original location. Using new 5/16" hardware, attach the bumpstop cup to the new relocation bracket. Torque bolts to 10 ft lbs and re-install rubber bump stop into the cups.

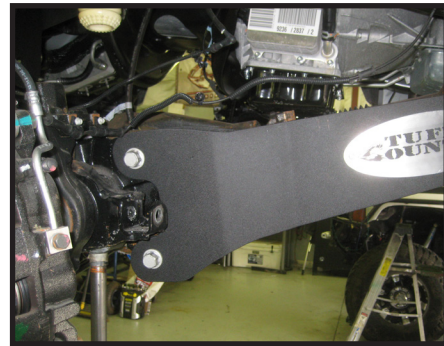


17. Locate the new driver and passenger side extended radius arms, also locate the new 18mm nut from hardware bag 24987NB.

18. Working on the driver side, remove the 2 bolts that are holding the radius arm to the front axle mount, save bolts for re-installation. Now remove the bolt holding the radius arm to the frame bracket, save hardware. Remove OE radius arm and discard. **Special note: Check and double check that the front axle is supported safely during these steps.**



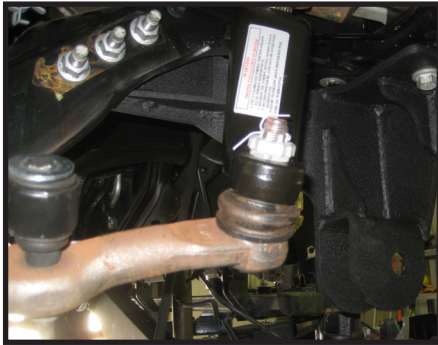
19. Install the new extended radius arm into the vehicle using the OE hardware that was removed in step 18. **Note: the upper hole on the axle mount of the Driver side will get the new 18mm Nut installed on the original bolt. Torque all hardware to 115 ft lbs.**





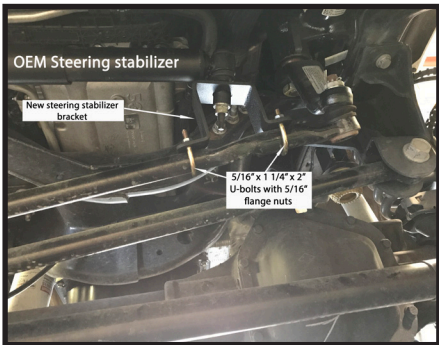
20. Repeat steps 18 and 19 on the passenger side of the vehicle.

21. Re-connect the steering drag link end to the new pitman arm using the OE Nut, nut retainer, and cotter pin. **torque nut to 90 ft lbs.**



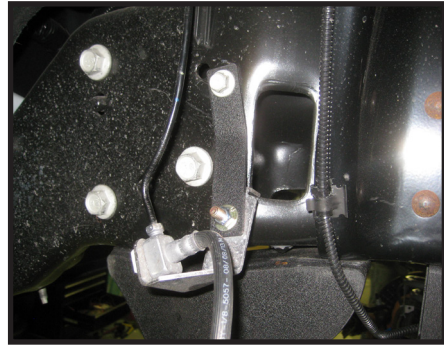
22. Locate the new steering stabilizer bracket. Also locate (2) 5/16" x 1 1/4" 2" ubolts, and (4) 5/16" flange nuts from hardware bag 24987NB.

23. Install the new steering stabilizer bracket directly over the OE mounting hole on the steering drag link using the new 5/16" ubolts and flange nuts



24. Secure the steering stabilizer shock to the new bracket using the OE nut. Torque to 40 ft lbs.

25. Locate (2) Brake line brackets. Also locate (2) 5/16" x 1" bolts, (4) 1/4" washers, and (2) 5/16" uni-torque nuts. Install the brackets to the OE threaded holes on the frame using the OE bolt, and connect the OE bracket to the bottom of the newly installed bracket using the 5/16" hardware.



26. Locate new coil springs, and the OE rubber isolators that were removed in step #6. Place the rubber isolator on the top of the coil spring, lower the axle enough to install new coil spring. **Take special care not to over extend any brakelines or wiring when lowering the front axle.**



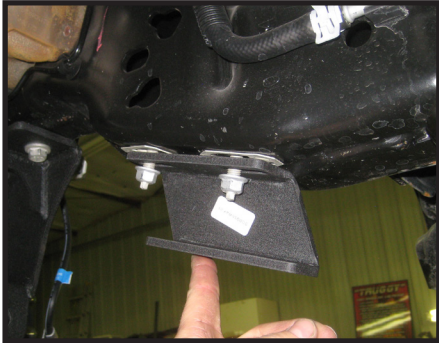
27. Locate the new front shocks. **Special note: New longer front shocks are needed, if you have not already ordered shocks, please contact Tuff Country or your local Tuff Country dealer and order the proper shocks. Tuff Country recommends using a 26" fully extended nitrogen gas shock.** Locate the new poly bushings and proper sleeves that are packaged with the new shock and install them into the lower eyelet of the new shocks. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new lower shock bushings and sleeves into the new lower shock eyelet. This will increase the life of the bushing as well as prevent squeaking.**

28. Install the new shocks into the OE position using the OE hardware on the bottom and new hardware on the top.

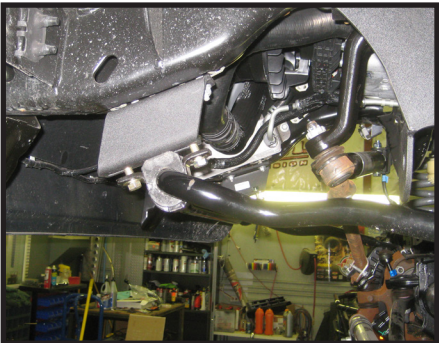


29. Locate the driver side sway bar drop bracket, also (2) 7/16" x 1 1/2" bolts, (4) 3/8" washers, and (2) 7/16" uni-torque nuts from hardware bag 24987NB. Install the new bracket to the bottom of the frame using the OE swaybar mounting hardware, Leave loose for now.

30. Repeat on Passenger side using the passenger side drop bracket.



31. Swing the sway bar up and attach it to the newly installed drop brackets using the new 7/16" hardware. Leave loose at this time.



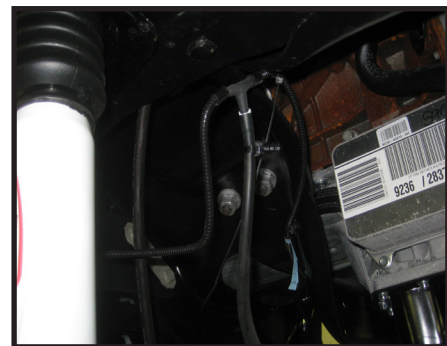
32. Looking under the vehicle on the driver side, located on the engine crossmember, find the plastic plug that is holding the T-fitting for the ABS brake lines and pop the plastic plug out of its hole. this is done to gain slack in the line so it can be re-attached to the radius arm.



33. With the newly gained slack, you can re-attach the ABS line and any other line/wires that can be plugged back onto the holes provided in the new radius arms. Repeat on the passenger side.



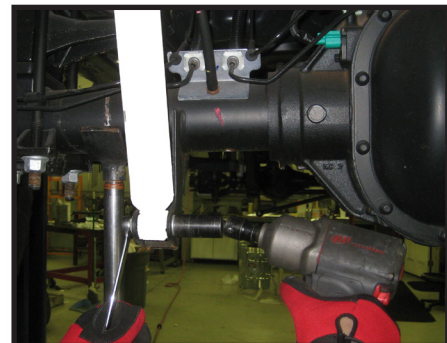
34. Using the provided zip tie in hardware bag 24987NB, secure the ABS line T fitting that was unplugged in step #33 to the ABS wire near the bottom of the frame rail.

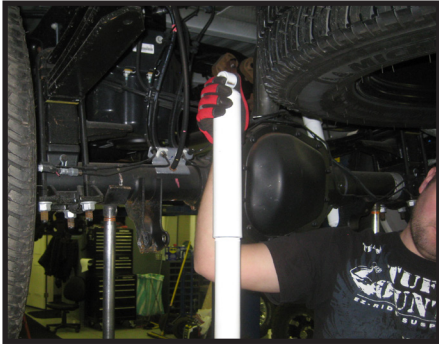


35. At this time, you will need to move to the Rear end installation. Once it is finished and the truck is sitting on the ground, we will go back and tighten some hardware that has been left loose on the front.

36. Working on the rear of the vehicle, using hydraulic floor jack/jacks, raise the vehicle up and place jack stands under the frame to support the vehicle while the axle is lowered. Lower the axle so that the load is light on the hydraulic jacks.

37. Working on the driver side, remove the upper and lower shock mounting bolts, save bolts and hardware for re-installation. Remove shocks and discard. Repeat on passenger side.

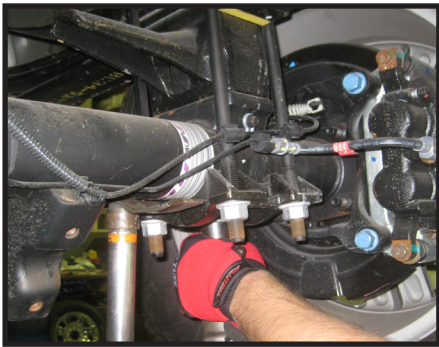




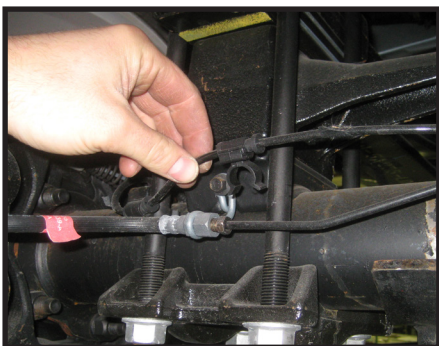
38. On the driver side of the outer frame rail, you will see a metal wire type bracket that is holding the emergency brake cable to the frame rail, remove that bolt and save for re-installation. This step is performed in order to get enough slack in the cable to lower the axle.



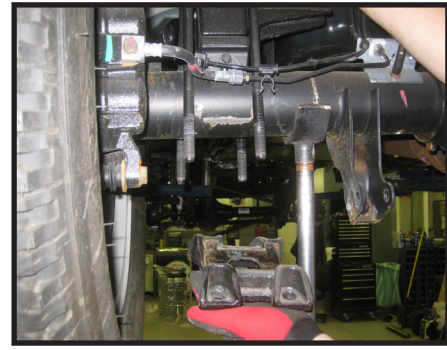
39. Working on the passenger side, loosen but do not remove the u-bolt nuts.



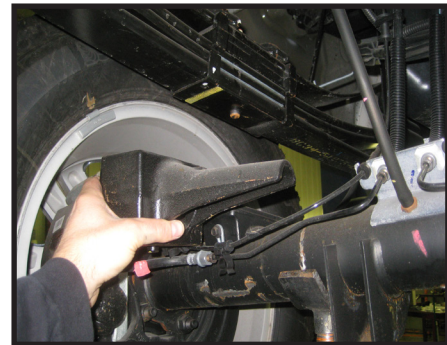
40. Working on both sides, unclip the clips that are holding the ABS brake wire to the u-bolts.



41. Working on the driver side, remove the u-bolt nuts completely and discard. Next, remove the u-bolt plate and set aside. Remove u-bolts and discard.

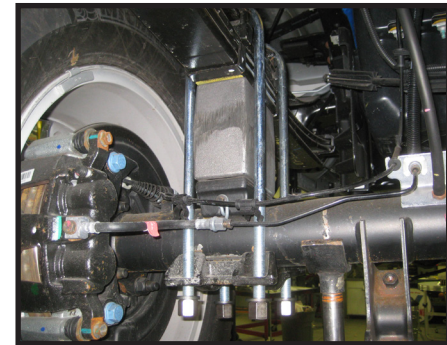


42. Carefully lower the down the floor jack enough that the OE block can be removed. Remove block and discard.



43. Locate new rear block and u-bolts , also locate hardware bag 58NW.

44. working on the driver side, install the new block between the bottom of the leaf spring pack and the axle perch. Install new u-bolts and hardware. **Special note: at this time you should only hand tighten the u-bolt nuts, we will go back and torque them once the passenger side is done.**



Repeat steps 41-44 on the passenger side.

45. Now go back and tighten all the new u-bolt hardware. Torque to 135 ft lbs. **Special note: Re-attach the ABS line clips to the new u-bolts.**

46. Locate the new rear shocks. **Special note: New longer rear shocks are needed, if you have not already ordered shocks, please contact Tuff Country or your local Tuff Country dealer and order the proper shocks. Tuff Country recommends using a 33" fully extended nitrogen gas shock.** Locate the proper sleeves that are

packaged with the new shock and install them into the upper and lower eyelet of the new shocks. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new lower shock bushings and sleeves into the new lower shock eyelet. This will increase the life of the bushing as well as prevent squeaking.**

47. Install new rear shocks using the OE hardware. Torque bolts to **80 ft lbs.**



48. Re-install the emergency brake cable bracket to the driver side frame rail using the OE hardware that was removed in step #39

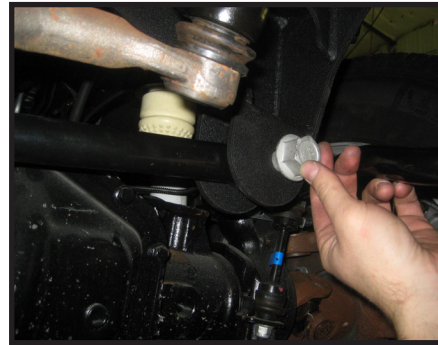
Rear Installation Complete!

49. Re-install the tires and wheels and lower the vehicle back onto the ground so it is no longer supported by jack stands.

50. Go back to the front of the vehicle and adjust the sway bar so that the endlinks are as close to straight up and down as you can, once there, torque the swaybar mounting bolts to **42 ft lbs.**



51. Re-attach the front track bar to the newly installed drop bracket using the OE hardware. **Special note: The best method we have found to get the track bar lined up with the bracket holes is to have someone in the vehicle turning the steering wheel slightly, this will cause the vehicle to shift side to side until it lines up and allows the bolt to be inserted. Torque track bar bolt to 350 ft lbs.**



If the vehicle you are working on is equipped with a 2-piece rear drive shaft, please install the carrier bearing relocation bracket using the next steps.

52. Working on the rear drive shaft, support the drive shaft with a tall hydraulic jack.

53. Remove (2) OE bolts that are holding the carrier bearing to the crossmember and discard hardware.

54. Carefully lower the jack approximately 1" down and install the new carrier bearing bearing spacer. Secure using the new 7/16" x 2 1/2" bolts and hardware from 24987NB hardware bag.



Congratulations, installation complete!

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.

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.



24975-01 / Qty. 1
Driver side radius arm



24975-02 / Qty. 1
Passenger side radius arm



25975-01 / Qty. 1
Track bar relocation bracket



25975-03 / Qty. 2
DS & PS front brake line relocation bracket



24970-10 / Qty. 2
DS & PS front bump stop relocation bracket



DODDSSWAY-01 / Qty. 1
Driver side sway bar drop bracket



24970-14 / Qty. 1
Rear carrier bearing relocation bracket



DODPSSWAY / Qty. 1
Passenger side sway bar drop bracket



24987-02 / Qty. 1
Steering stabilizer bracket