

INSTALLATION INSTRUCTIONS

86506

Rev B

For Rancho Suspension System **RS886506B:**

Ford F250 Super Duty 4x4 **“DIESEL ONLY”**

(Single Rear Wheels Only With or Without Auxiliary Spring).

(WILL NOT WORK ON GAS ENGINES DUE TO EXHAUST CLEARANCE ISSUES).

		Raised Height				Shock Absorbers	
Year	Model	Front	Rear	Front Springs	Rear Kit(S)	Front	Rear
Ford - Pickup (3/4 Ton) 4WD (F Series)							
2013-11	F-250 Superduty 4WD w/ Automatic Transmission & Diesel Engine- Exc. All Wheel Drive.	4"	4"	RS80123B	RS886506	RS999044 ^{XL} RS5044 RS19044 ^{PS}	RS999261 ^{XL} RS5261 RS19261 ^{PS}

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION



IMPORTANT NOTES!

WARNING: This suspension system will enhance the off-road performance of your vehicle. It will handle differently, both on and off-road, from a factory equipped passenger car or truck. Failure to drive this vehicle safely may result in serious injury or death to the driver and passengers. ALWAYS WEAR your seat belts, REDUCE your speed, and AVOID sharp turns and other abrupt maneuvers.

A. Before installing this system, have the vehicle's alignment and frame checked by a certified technician. The alignment must be within factory specifications and the frame of the vehicle must be sound (no cracks, damage or corrosion).

B. Do not install a body lift kit with this suspension system or interchange Rancho components with parts from another manufacturer.

C. Do not powdercoat or plate any of the components in this system. To change the appearance of components, automotive paint can be applied over the original coating.

D. Each hardware kit in this system contains fasteners of high strength and specific size. Do not mix hardware kits or substitute a fastener of lesser strength. See bolt identification table on page 3.

E. Compare the contents of this system with the parts list in these instructions. If any parts are missing, contact the Rancho Technical Department at 1-734-384-7804.

F. Install all nuts and bolts with a flat washer. When both SAE (small OD) and USS (large OD) washers are used in a fastener assembly, place the USS washer against the slotted hole and the SAE washer against the round hole.

G. Apply a drop of thread locking compound to all bolts during installation. CAUTION: Thread locking compound may irritate sensitive skin. Read warning label on container before use.

H. Unless otherwise specified, tighten all nuts and bolts to the standard torque specifications shown in the table on page 3. USE A TORQUE WRENCH for accurate measurements.

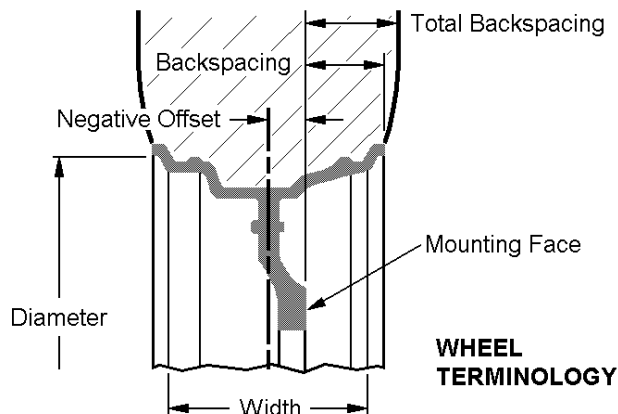
I. Some of the service procedures require the use of special tools designed for specific procedures. The following tools and supplies are recommended for proper installation of this system:

- ☐ Ford Service Manual
- ☐ Torque Wrench (200 FT-LB capacity)
- ☐ 1/2" Drive Ratchet and Sockets
- ☐ 1/2" Drive Breaker Bar
- ☐ Combination Wrenches
- ☐ Heavy Duty Jack Stands
- ☐ Hydraulic Floor Jack
- ☐ Wheel Chocks (wooden blocks)
- ☐ Hammer
- ☐ Wire Brush (to clean bracket mounting surfaces)
- ☐ Tape Measure
- ☐ **Safety Glasses**--Wear safety glasses at all times

J. Suspension components that use rubber or urethane bushings should be tightened with the vehicle at normal ride height. This will prevent premature failure of the bushing and maintain ride comfort.

K. The required installation time for this system is approximately 1 to 2 hours. Check off the box (☒) at the beginning of each step when you finish it. Then when you stop during the installation, it will be easier to find where you need to continue from.

L. This suspension system was developed using a BFGoodrich® All-Terrain™ 35x12.5R20/D tire on a 20" wheel with 6.25" of backspacing. Before installing any other combination, consult your local tire and wheel specialist. Actual tire size varies by manufacturer.



M. Important information for the end user is contained in the consumer/installer information pack. If you are installing this system for someone else, place the information pack on the driver's seat. Please include the installation instructions when you finish.

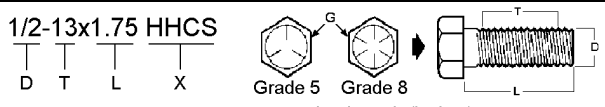
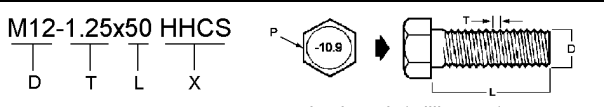
N. Thank you for purchasing the best suspension system available. For the best installed system, follow these instructions. If you do not have the tools or are unsure of your abilities, have this system installed by a certified technician. RANCHO IS NOT RESPONSIBLE FOR DAMAGE OR FAILURE RESULTING FROM IMPROPER INSTALLATION OF THIS SUSPENSION SYSTEM.



PARTS LIST

P/N	DESCRIPTION	QTY.
176223	Carrier Bearing Spacer	1
176600	E-Brake Bracket	1
860681	Axle Vent / E-Brake HDWR Kit	1
176602	Axle Vent / Brake Line Spacer	1
	M8-1.25 x 25 HHCS	1
	M8-1.25 Nyloc Nut	1
	8mm Washer	2
	Thread Lock	2

P/N	DESCRIPTION	QTY.
860678	U-Bolt Hardware Kit	1
	M16-2.0 Nyloc Nut	8
	5/8 Washer	8
860482	Hardware Kit	1
	Sleeve	2
	7/16-14 x 3.5 HHCS	2
	7/16 SAE Washer	2
740030	M16-2.0 x 3.25 x 15.1 U-bolt	4
15111	Cast Offset Riser Block	2

STANDARD BOLT TORQUE & IDENTIFICATION						
INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 9.8	Class 10.9	Class 12.9
5/16	15 FT-LB	20 FT-LB	M6	5 FT-LB	9 FT-LB	12 FT-LB
3/8	30 FT-LB	35 FT-LB	M8	18 FT-LB	23 FT-LB	27 FT-LB
7/16	45 FT-LB	60 FT-LB	M10	32 FT-LB	45 FT-LB	50 FT-LB
1/2	65 FT-LB	90 FT-LB	M12	55 FT-LB	75 FT-LB	90 FT-LB
9/16	95 FT-LB	130 FT-LB	M14	85 FT-LB	120 FT-LB	145 FT-LB
5/8	135 FT-LB	175 FT-LB	M16	130 FT-LB	165 FT-LB	210 FT-LB
3/4	185 FT-LB	280 FT-LB	M18	170 FT-LB	240 FT-LB	290 FT-LB
1/2-13x1.75 HHCS  G = Grade Marking (bolt strength) D = Nominal Diameter (inches) T = Thread Pitch (threads per inch) L = Length (inches) X = Description (hex head cap screw)			M12-1.25x50 HHCS  P = Property Class (bolt strength) D = Nominal Diameter (millimeters) T = Thread Pitch (thread width, mm) L = Length (millimeters) X = Description (hex head cap screw)			

- ☐ Chock front wheels. Raise the rear of the vehicle and support the frame with jack stands. Remove rear wheels and set them aside.
- ☐ Support the rear axle assembly with a hydraulic jack. Remove both rear shock absorbers. Do not reuse OE shock absorbers.
- ☐ For vehicles with rear sway bars, disconnect end links from sway bar to aid riser block installation.
- ☐ Disconnect emergency brake line bracket from frame. See Illustration 1. Keep the mounting bolt and guide for later use.

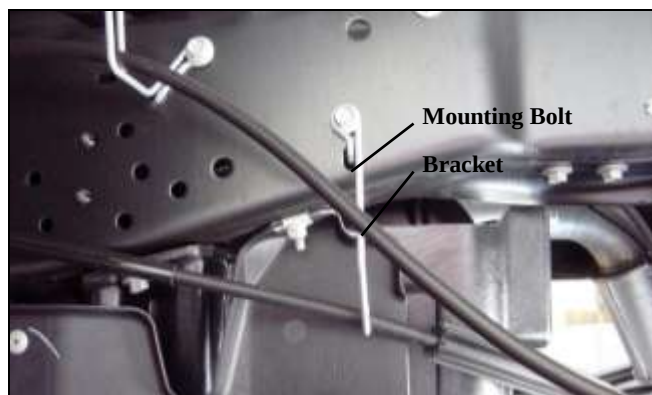


Illustration 1

- ☐ Disconnect axle vent at the axle connection point. See Illustration 2



Illustration 2

Spacer Block Installation

- ☐ Remove the U-bolt retaining nuts on the passenger side of the vehicle only. Remove the U-bolts. See illustration 3.

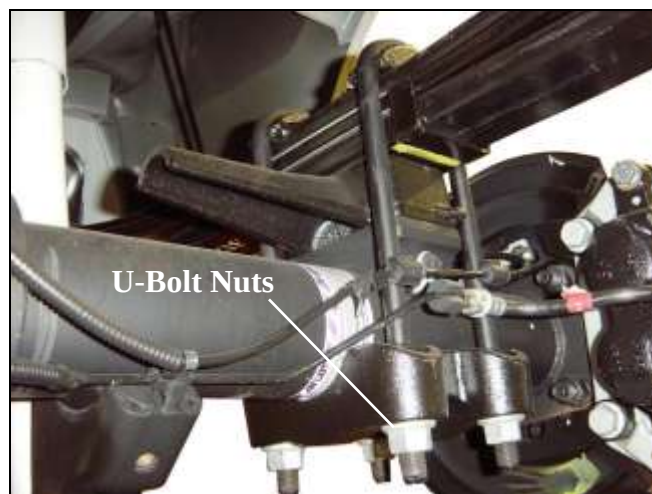


Illustration 3

- ☐ Loosen the U-bolt retaining nuts on the driver side of the vehicle 3-4 turns.
- ☐ Carefully lower the rear axle and remove the OE riser block.
- ☐ Set block 15111 on axle pad with cast pin of block in the alignment hole of OE axle pad.
- ☐ Carefully raise the rear axle until the riser block makes contact with the leaf spring. Align pin on bottom of spring with **REAR** hole in block. If needed, loosen driver side U-bolt retaining nuts a few more turns. Make sure axle does not twist or come off of centering pin. See illustration 4
- ☐ Attach the axle to the spring with new U-bolts supplied in rear kit, and the hardware from kit 860678. Do not torque until both sides are installed.

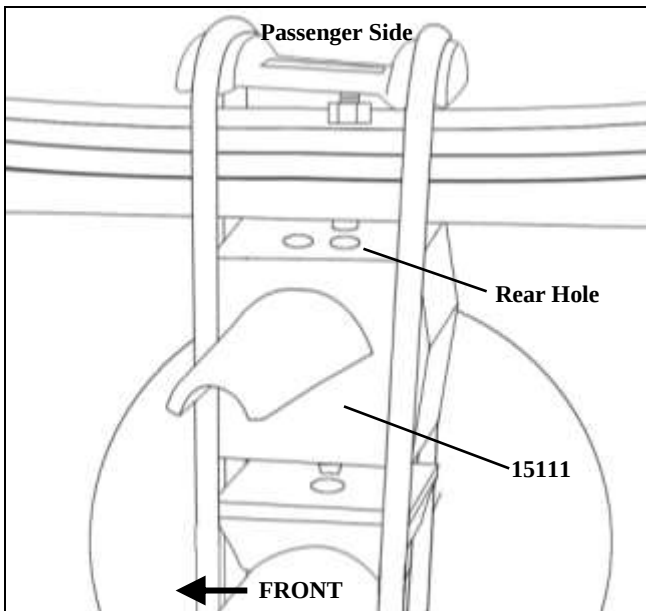


Illustration 4

12. ☐ Repeat steps 6 through 10 for other side. Tighten the nuts evenly in a cross-type pattern to 148 ft. lbs. Reattach ABS line clips to U-Bolts.

Axle Vent Spacer and E-Brake Bracket Installation

13. ☐ Attach axle vent spacer 176602 to the axle. Connect axle vent with bracket to axle vent spacer 176602. See illustration 5.

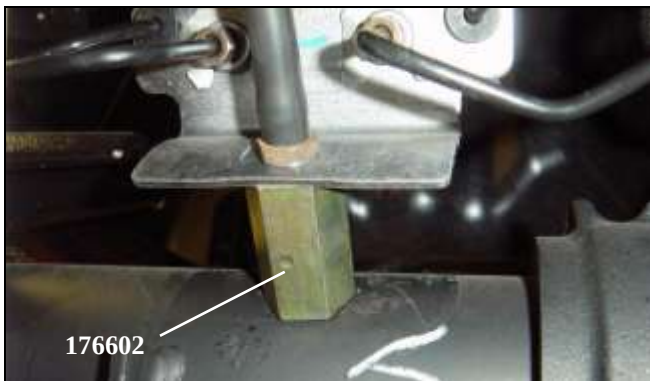


Illustration 5

14. ☐ Attach emergency brake line drop bracket 176600 to the frame using OE bolt and mounting hole. Connect the OE brake line bracket to the drop bracket using the 8mm hardware from kit 860681. Tighten nuts and bolts to 23 ft. lbs. See illustration 6.

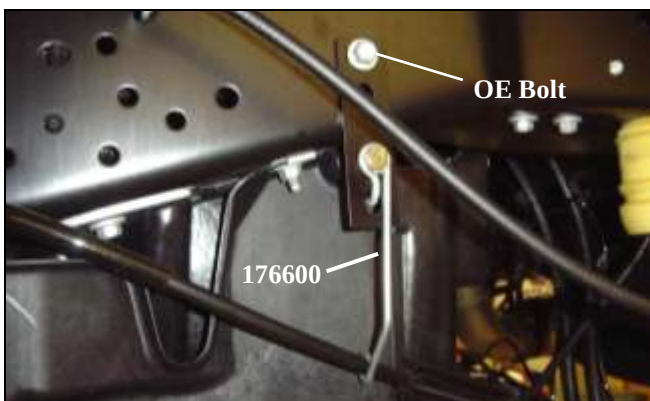


Illustration 6

15. ☐ Reconnect end links to sway bar (if applicable). Tighten nuts to 52 ft. lbs.

16. ☐ Install new Rancho rear shock absorbers RS999261 or RS5261.

Carrier Bearing Bracket Installation (if applicable)

17. ☐ For vehicles with a two-piece driveshaft, support the driveshaft and remove the bolts from the carrier-bearing bracket. See illustration 7.

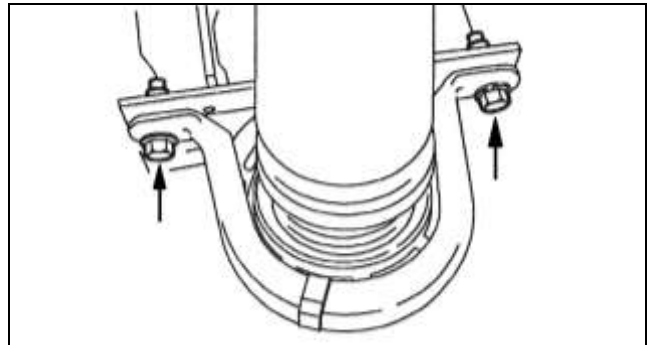


Illustration 7

18. ☐ Insert carrier-bearing spacer 176223 between the bearing bracket and body mount. See illustration 8.



Illustration 8

19. ☐ Place the two sleeves from kit 860482 inside the bearing spacer over the mounting holes.

20. ☐ Reattach the carrier-bearing bracket with the hardware from kit 860482. Tighten the bolts to 47 ft. lbs.

21. ☐ Install rear wheels and lower vehicle to the ground. Tighten lug nuts to 165 ft. lbs.

FINAL CHECKS & ADJUSTMENTS

22. ☐ Ensure that the vehicle brake system operates correctly. If new brake hoses were installed, verify that each hose allows for full suspension movement.

23. ☐ Readjust headlamps (use Philips #2 screwdriver). Turn counter-clockwise to adjust down.

24. Please retain this publication for future reference. See Important Note N