

**Rize Industries, LLC.**  
**2005/2006 Ford Super Duty Installation Instructions**  
**Suspension Lift Kit Part# 410-312-042**

**WHILE THIS KIT IS AN EASY BOLT-ON SYSTEM, RIZE INDUSTRIES STRONGLY RECOMMENDS THAT A PROFESSIONAL INSTALLATION CENTER BE CONTRACTED TO DO THE INSTALL.**

**RIZE INDUSTRIES ALSO RECOMMENDS USING A HYDRAULIC LIFT WHEN PERFORMING THIS INSTALLATION.**

**BEFORE STARTING THE INSTALLATION OF THIS KIT, VERIFY THE KIT INVENTORY AND THOROUGHLY READ AND UNDERSTAND ALL INSTRUCTIONS.**

***NOTE:** This 12-inch installation instruction packet is to be used in conjunction with the 8-inch installation instruction packet.*

***NOTE:** Thoroughly read both instruction packets before beginning so you will know where the two intersect.*

***NOTE:** To help with parts identification all **DRIVER** side parts are marked with a **RED** dot, and all **PASSENGER** side parts are marked with a **BLUE** dot.*

***WARNING:** The Rize Industries 12-Inch lift kit is an extreme lift system designed for Off-Road and/or show purposes only. It should not be used on any public streets, road, highways, or interstates.*

***WARNING:** By using this vehicle on public streets, roads, highways and interstates the vehicle owner and/or operator assumes all responsibility and/or penalty of such actions.*

***WARNING:** Because of the extreme nature of a lift of this size, the owner and/or operator must use caution; there is an increased risk of rollover if this vehicle is operated in a careless and/or reckless manner. The bottom line is the owner and/or operator of a modified vehicle must act responsibly and use extreme caution at all times when driving.*

If You Have Any Questions, Comments, Or Concerns Please Contact Us Immediately at 619-447-0110.

**Thank you for choosing Rize Industries.**

1. Start with procedure #1 thru #17 of the 8-inch instruction packet.
2. INSTALLING PITMAN ARM
  - A. Follow procedure #18 of the 8-inch instruction packet.

***NOTE:** If installing the 12-inch kit as an upgrade to an existing 8-inch kit, the Pitman arm taper hole will need to be drilled out to 3/4". If installer prefers Rize Industries can provide a new pitman arm for the 8-inch to 12-inch upgrade, however there will be an additional cost.*
3. Proceed with steps #19 through #24 of the 8-inch installation packet.
4. Proceed with step #25 of the 8-inch installation packet with the exception of spherical bearing thread lengths. Adjust the upper quad link bars to 1/8" and the lower quad link bar to 1/2" of thread showing.

***NOTE:** AS IN THE 6-INCH & 8-INCH KITS, **MAXIMUM THREAD SHOWING BETWEEN THE BEARING AND JAM NUT MUST NOT EXCEED 5/8".***
5. Proceed with steps #26 through #31 of the 8-inch installation packet.
6. 12-INCH IDLER ARM MOUNT INSTALLATION
  - A. Remove the four factory passenger side nuts from the motor mount bolts. (Fig-2)
  - B. Lift idler arm mount up and into position so the motor mounts bolts go through mount, loosely install factory nuts back onto motor mounts bolts. (Fig-3)
  - C. Loosely install the 1/2" hardware from (Bag #6) through the front of the idler arm mount and factory cross member. (Fig-4)
  - D. Hand tighten the motor mount nuts.
  - E. Fully tighten the 1/2" hardware.
  - F. Fully tighten the factory motor mount nuts.

***NOTE:** On some gas powered Super Duties the factory only uses (3) bolts per side in the motor mount plate. The installer will need to supply an additional bolt & nut (1/2"-13 x 1 1/2" Gr-8).*

***TIP:** By lightly modifying the motor mount nut retaining plate with a Dremel tool or grinding bit, then the installing the 1/2" hardware from the top of the cross member the three to four bolt transformation is easily accomplished.*
7. INSTALL IDLER ARM ONTO IDLER ARM MOUNT
  - A. Position idler arm onto idler arm mount so the longer triangle cut faces towards the passenger side wheel well, with the small end of the triangle pointing towards the rear of the vehicle.
  - B. Using the 20mm hardware and (2) stainless steel spacers from (Bag #6) fully tighten idler arm. (Fig-5) (Dia-1)
8. INSTALL CENTER LINK
  - A. Thread 1-inch spherical bearing with jam nut from (Bag #7) completely into the center link. Leave jam nut loose. (Fig-6)

***NOTE:** MAKE SURE THE FACE OF THE SPHERICAL BEARING IS PARALLEL TO THE TOP OF THE CENTER LINK.*
  - B. Install roller bearing end of the center link into the open end of the idler arm. Use the 20mm hardware and (2) stainless steel spacers from (Bag #6) and fully tighten. (Fig-7) (Dia-2)
  - C. Swing center link into position under pitman arm, using 3/4" hardware plus (2) short spherical bearing misalignment spacers from (Bag #7) and fully tighten. (Fig-8a & Fig-8b) (Dia-3).
  - D. Fully tighten 1-inch spherical bearing jam nut.

9. INSTALL PANHARD ROD AXLE MOUNT
  - A. Position drill template over passenger side axle bump stop pad. (Fig-9) (Dia-4)  
**NOTE: MAKE SURE THE TEMPLATE IS PUSHED BACK AGAINST THE FRONT FACE OF THE BUMP STOP PAD.**
  - B. Mark and drill the two corresponding 1/2" holes through the bump stop pad.  
**NOTE: THE STEEL USED FOR THE BUMP STOP IS VERY HARD, TAKE YOUR TIME AND BE SURE TO DRILL THE HOLES STRAIT. IF THE HOLES ARE NOT STRAIT THE PANHARD ROD AXLE MOUNT BOLTS WILL NOT LINE UP CORRECTLY WITH THE SUPPLIED NUT PLATE.**  
**TIP: IF THE 1/2" BOLTS DO NOT LINE UP WITH THE NUT PLATE YOU CAN SLIGHTLY ENLARGE THE HOLES IN THE BUMP STOP PAD.**
  - C. Set panhard rod axle mount on top of the bump stop pad.
  - D. Using 1/2" hardware and the PRAM nut plate from (Bag #8) guide the two bolts through panhard rod axle mount, through the bump stop pad, and into the PRAM nut plate. (Fig-10) (Dia-5)
  - E. Once the bolts are hand tightened into the PRAM nut plate fully tighten them.
  - F. Using 7/16" hardware from (Bag #8) loosely install bottom panhard rod axle mount plate around the axle tube and onto the panhard rod axle mount. (Fig-11)
  - G. Fully and evenly tighten 7/16" hardware.
10. Proceed with step #32 of the 8-inch installation packet.
11. INSTALL PANHARD ROD TAPER END ONTO PANHARD ROD AXLE MOUNT
  - A. Insert machined taper from (Bag #8) into tapered hole of the panhard rod. (Dia-6)
  - B. Using 3/4" hardware, plus (2) medium length 1-inch spherical bearing misalignment spacers from (Bag #8), install panhard rod onto the panhard rod axle mount (Dia-7)
  - C. Fully tighten (Fig-12).  
**NOTE: IT MAY BE NECESSARY TO PUSH OR PULL THE AXLE SIDE TO SIDE TO GET THE PANHARD ROD BOLT FULLY IN ALIGNMENT WITH THE SPHERICAL BEARING.**
12. Proceed with steps #33 and #34 of the 8-inch installation packet.
13. INSTALL SWAY BAR RELOCATION BRACKETS
  - A. Locate the (4) rivets (2 per side) on the bottom frame rail, slightly forward of the front cab body mounts. (Fig-13)
  - B. Drill out, or chisel, and remove rivets from both driver and passenger sides. (Fig-14)
  - C. Position the sway bar relocation brackets under the frame rails, so the cut outs on the top surface of the brackets line up with the weld seam on the frame rail, and the bolt holes line up with the rivet holes. (Dia-8a & Dia-8b)
  - D. Using the 7/16" hardware from (Bag #10) fully tighten. Driver (Fig-15), Pass (Fig-16)
14. INSTALL COIL SPRING BUCKET SPACERS
  - A. Position supplied drill template over the coil spring locator in the coil bucket.
  - B. Point Arrow to the outside of the vehicle, right in the middle of the bucket. (Fig-17) (Dia-9a)
  - C. Mark and drill the three 1/2" holes through the driver side coil bucket.
  - D. Repeat on Passenger side.  
**NOTE: IT IS IMPORTANT TO DRILL THESE HOLES IN THE CORRECT LOCATIONS TO ACHIEVE THE CORRECT CLOCKING OF THE COIL SPACERS. (FIG-18) (Dia-9b)**

- E. Using the 7/16" hardware from (Bag #9), install and fully tighten coil spring spacers.  
**NOTE:** THE DOTS DISTINGUISH THE **DRIVER** & **PASSENGER** PARTS, ALSO THE BOLT CENTERED WITH THE LEADING EDGE OF THE TOP PLATE ON THE COIL SPACERS POINTS OUT TOWARDS THE WHEEL.  
**TIP:** THE SIMPLEST WAY TO TELL IF THE COIL SPACERS ARE ON THE WRONG SIDE IS IF WHEN INSTALLED, THE BOTTOM OF THE COIL SPACER IS POINTING FORWARD
- F. Correct installation should look like this. (Fig-19a, Fig-19b, & Dia-10)
15. INSTALLATION OF INCLUDED COIL OVER MOUNT ( **OPTIONAL** )
- A. The coil over shock mount is installed in the factory coil bucket in the same manner as the coil spring spacer. (Dia-11)
- B. The lower coil over shock mounting bracket installs in place of the lower coil spring retaining perch.
- C. Remove and discard factory bolt and lower spring perch from axle.
- D. Using 14mm hardware from (Bag #9) install lower coil over mounting tabs, and fully tighten. (Dia-12)  
**TIP:** IT IS RECOMMENDED TO USE THREAD LOCK COMPOUND ON COIL OVER MOUNTING TAB BOLTS.  
**NOTE-1:** THIS IS A UNIVERSAL COIL OVER SHOCK MOUNTING KIT. WHILE IT SHOULD WORK WITH MOST 10-INCH TO 12-INCH TRAVEL COIL OVERS, RIZE INDUSTRIES DOES NOT GUARANTEE IT. AFTER COMPLETE INSTALLATION OF 12-INCH KIT, THE INSTALLER WILL HAVE TO DETERMINE THE BRAND, LENGTH, TRAVEL, AND VALVING OF THE COIL OVER SHOCKS THAT BEST FIT THE APPLICATION.  
**NOTE-2:** RIZE INDUSTRIES DOES OFFER AN OPTIONAL COIL OVER REPLACEMENT BUCKET AND HARDWARE KIT. THIS SYSTEM USES TWO COIL OVERS AND TWO SMOOTH BODY OR BY-PASS SHOCKS AND REPRESENTS THE TOP OF THE LINE SHOCK SETUP. CALL RIZE INDUSTRIES FOR MORE INFORMATION.
16. Proceed with steps #35 and #36 of the 8-inch installation packet.  
**NOTE:** WHEN INSTALLING THE SPRINGS IN THE 12-INCH KIT DROP THE FRONT AXLE AS FAR AS THE QUAD LINK BARS WILL ALLOW. THE PASSENGER SIDE SPRING WILL NEED TO BE COMPRESSED SLIGHTLY AND GUIDED OVER THE AXLE MOUNT.  
**TIP:** USING A LONG PRY BAR CAN EASILY COMPLETE THIS TASK. (FIG-20)
17. Disregard steps #37 and #38 of the 8-inch installation packet.
18. INSTALL SWAY BAR ONTO RELOCATION BRACKET
- A. Using factory sway bar U-bracket and 7/16" hardware from (Bag #10) fully tighten sway bar to relocation brackets. Driver (Fig-21), Pass (Fig-22)
19. INSTALL SWAY BAR LINKS ONTO SWAY BAR
- A. Assembly each sway bar link by using (2) 5/8" spherical bearings and (2) 5/8" jam nuts from (Bag #10).  
**NOTE:** EACH LINK HAS A LEFT-HAND AND RIGHT-HAND THREAD; THE LEFT-HAND THREAD JAM NUT HAS A NOTCH IN THE CORNER OF EACH NUT.
- B. Fully thread jam nuts onto spherical bearings and then fully thread into links.
- C. Using the short tapered misalignment spacers with a 5/8" ID from hardware (Bag #10) install sway bar links to the outside of the sway bar. (Fig-23) (Dia-13)

- D. Using the 9/16" ID misalignment spacers, 9/16" hardware, and SM nut plate from (Bag #10) install sway bar link along with the bottom of the limit strap to the outside of the factory axle shock tab. With shock of installers choice install and fully tighten. (Fig-24) (Dia-13)
20. Proceed with step #39 of the 8-inch installation packet.
  21. Disregard Steps #40 through #42 of the 8-inch installation packet.
  22. Replace rubber factory brake lines with supplied braided steel lines.
    - A. Route braided brake lines in a factory manner, using factory mounting points and hardware.
  23. Disregard step #43 of the 8-inch installation packet.
  24. Proceed with step #44 of the 8-inch installation packet.
  25. Bleed Brakes  
**NOTE: USE STANDARD BRAKE BLEEDING PROCEDURE. ONLY USE BRAKE FLUID SPECIFICALLY APPROVED BY THE VEHICLE MANUFACTURER.**
  26. FRONT DRIVE SHAFT INSTALLATION
    - A. The transmission cross member will require a clearance notch cut into it directly below the front drive shaft. (Fig-25)  
**NOTE-1: THIS MODIFICATION MUST BE PERFORMED TO PROVIDE SHAFT CLEARANCE AT FULL SUSPENSION DROOP.**  
**NOTE-2: BECAUSE OF THE EXTREME AMOUNT OF SUSPENSION LIFT AS WELL AS SUSPENSION DROOP, THE FRONT DRIVE SHAFT WILL NEED TO BE COMPLETELY REPLACED OR EXTENSIVELY MODIFICATIED. THE SHAFT WILL NEED TO BE LENGTHENED, IT WILL NEED HIGH-ANGLE CV JOINTS, &/OR ADDITIONAL CLEARANCE INSIDE THE CV JOINTS THEMSELVES BEFORE IT CAN BE INSTALLED.**  
**NOTE-3: WHILE RIZE INDUSTRIES CAN AND WILL OFFER SUGGESTIONS AND ADVICE, THE FRONT DRIVE SHAFT MODIFICATIONS ARE THE COMPLETE RESPONSIBILITY OF THE INSTALLER & OWNER OF THE VEHICLE.**
    - B. When the front drive shaft modifications have been preformed, install into vehicle in same manner as removed.  
**NOTE: BE SURE TO CHECK THAT THE DRIVE SHAFT WILL ROTATE FREELY AND DOES NOT BIND AT FULL DROOP.**
  27. Rize Industries strongly recommends having the alignment checked on a computerized four-wheel alignment machine, and if necessary adjusted to within factory specifications.  
**NOTE: THE LINK BAR ECCENTRICS CAN BE ADJUSTED, AND/OR NEW ALIGNMENT CAMS MAY HAVE TO BE INSTALLED IN THE AXLE KING PINS TO ACHIEVE PROPER ALIGNMENT GEOMETRY.**  
**TIP: TO OPTIMIZE THE ALIGNMENT ON SOME VEHICLES, THE LINK BAR SPHERICAL BEARINGS MAY NEED ADJUSTGING.**
  28. Test drive the vehicle and check for correct operation. After 500 miles all hardware must be checked and retightened if necessary.

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