



# 97-03 Ford F-150 4x4 6" Suspension Lift Installation Instructions

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### REQUIRED TOOL LIST:

- \* Metric & Standard Wrenches & Sockets
- \* Allen Wrenches
- \* Assorted Drill Bits
- \* Floor Jack
- \* Jack Stands
- \* Measuring Tape
- \* Torsion Bar Tool
- \* Torque Wrench
- \* Transmission Jack



Before beginning the installation, thoroughly & completely read these instructions & the enclosed driver's WARNING NOTICE. Affix the WARNING decal in the passenger compartment in clear view of all occupants. Please refer to the Parts List to insure that all parts & hardware are received prior to the disassembly of the vehicle. If any parts are found to be missing, contact SKYJACKER<sup>®</sup> Customer Service at 318-388-0816 to obtain the needed items. If you have any questions or reservations about installing this product, call SKYJACKER<sup>®</sup> Technical Assistance at 318-388-0816.

Make sure you park the vehicle on a level concrete or asphalt surface. Many times a vehicle is not level (side-to-side) from the factory & is usually not noticed until a lift kit has been installed, which makes the difference more visible. Using a measuring tape, measure the front & rear (both sides) from the ground up to the center of the fender opening above the axle. Record this information below for future reference.

Driver Side Front: \_\_\_\_\_

Passenger Side Front: \_\_\_\_\_

Driver Side Rear: \_\_\_\_\_

Passenger Side Rear: \_\_\_\_\_

### IMPORTANT NOTES:

- This lift is determined from the amount of lift to the front of the vehicle, while only lifting the rear to a position level with the front.
- If larger tires (10% more than the stock diameter) are installed, speedometer recalibration will be necessary. Contact your local Ford dealer or an authorized dealer for details.
- After installation a qualified alignment facility is required to align the vehicle to factory specifications.

## Kit Box Breakdown:

### F9701A:

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
F970L	FORD F150,LEFT STRG KNUCKLE	1
F970R	FORD F150,RIGHT STG KNUCKLE	1
F970SKID-S	FORD F150,FRONT SKID PLATE	1
F970SPP-S	FORD F150,PASS.SIDE SKID PLATE	1
F970SPD-S	FORD F150,DRIV.SIDE SKID PLATE	1
F970TBD-S	FORD F150,TORSION DROP BRKT	2
HB-F970-SP	HDWR BAG:F970 SKID PLATES	1
HB-F970-TBB	HDWR BAG:F970 TORSION BRKTS	1
I-F970	INST SHEET:97-02 F150 F9701	1

### Hardware Bag Breakdown:

#### HB-F970-SP            Front Skid Plate

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
38X1TCFB	3/8 X 1 THRD-CUTTER FLG BLT	3
38X1FTB	3/8 X 1 FINE THREAD BOLT	10
38X114FTB	3/8 X 1 1/4 FINE THD/GRD 8	8
38FTN	3/8-24 FINE N/I LOCK NUT	18
38SAEW	3/8 SAE WASHER	36

#### HB-F970-TBB            Torsion Bar Drop Brackets

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
12X112FTB	1/2 X 1 1/2 FINE THRD BOLT	4
716X112FTB	7/16 X 1 1/2 FINE THRD BOLT	4
58X112FTB	5/8 X 1 1/2 FINE THD,GR. 8	2
12FTN	1/2-20 FINE N/I LOCK NUT	4
716FTN	7/16-20 FINE N/I LOCK NUT	4
58FTN	5/8-18 NYLON INSERT LOCKNUT	2
12SAEW	1/2 SAE WASHER	8
716SAEW	7/16 SAE WASHER	8
58SAEW	5/8 SAE WASHERS	4

## Kit Box Breakdown:

### F9701B:

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
F970FCM-S	FORD F150 FRONT CROSSMEMBER	1
F970RCM-S	FORD F150,REAR CROSS MEMBER	1
F970DDPF-S	F150,DIFF DROP PASS.,FRONT	1
F970DDPR-S	F150,DIFF DROP PASS., REAR	1
F970CVS-F	F150, CV SPACER,1.825" WIDE	1
F970BLE-F	FORD F150,BRAKE EXT., FRONT	2
F970BLE-R	FORD F150,BRAKE EXT., REAR	1
SBE1125	OE STYLE SWAY BAR LINK	1
RB45	4.5" REAR BLOCK	2
916X314X1312U	9/16 X 3 1/4 X 13 1/2 U-B R	4
HB-F970-CM	HDWR BAG:F970 X-MEMBER BKTS	1
HB-F970-DB	HDWR BAG: F970 DIFF BRKTS	1
HB-F970-CVS	HDWR BAG: F970 C.V. SPACER	1
HB-F970-BLE	HDWR BAG: F970 BRAKE LN EXT	1
HB-916	HDWR BAG: 8 - 9/16" NUTS	1

\* If box kit F9701BS was purchased, there will be no rear lift blocks & the U-bolts will be part # 916x314x912.

### Hardware Bag Breakdown:

#### SBE1125                      Sway Bar End Links

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
SBE1125-S	OE SWAY BAR LINK / 11.25"	2
SBE-CBSH	END LINK BUSHING	2

#### HB-F970-CM                      Front and Rear Cross Member

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
58X6FTB	5/8 X 6 FINE THD BOLT/GRD 8	4
58FTN	5/8-18 NYLON INSERT LOCKNUT	4
58SAEW	5/8 SAE WASHERS	8
12SAEW	1/2 SAE WASHER	2
5MMX12SHB	5MM X 12MM-.80 SKT HEAD C/S	2

#### HB-F970-DB                      Passenger Side Differential Brackets

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
716X4FTB	7/16 X 4 FINE THREAD BOLT	1
12X112FTB	1/2 X 1 1/2 FINE THRD BOLT	1
716FTN	7/16-20 FINE N/I LOCK NUT	1
12FTN	1/2-20 FINE N/I LOCK NUT	1
716SAEW	7/16 SAE WASHER	2

I-F970

**HB-F970-CVS****C.V. Spacers**

<b>ITEM#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
12X65MMB	12MM X 65 METRIC BOLT/10.9	6
LT100	NUT LOCKING COMPOUND	1

**HB-F970-BLE****Brakeline Brackets**

<b>ITEM#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
516X34TCFB	5/16 X 3/4 THD CUT FLG BOLT	2
516X34CTBG5	5/16 X 3/4 CRS BOLT/GRADE 5	3
516CTN	516-18 COARSE N/I LOCK NUT	3

**HB-916****Nuts For U-Bolts**

<b>ITEM#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
916FTN	9/16-18 NYLON INSERT LOCKNUT	8

## **Front Installation:**

1. With vehicle on flat level ground, set the emergency brake and block the rear tires. Place floor jack under the lower control arm's front cross member and raise vehicle. Place jack stands under frame rails, behind the front wheel wells, then lower the frame onto the stands.

**WARNING:** Be extremely careful when loading or unloading the torsion bars; there is a tremendous amount of stored energy (load pressure) in the bars. Keep your hands and body clear of the adjuster arm assembly and puller tool in case anything slips or breaks.

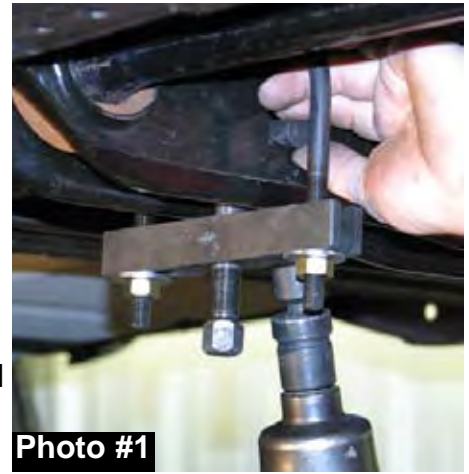
**NOTE:** A special PULLER TOOL is required for SAFE REMOVAL/INSTALLATION of the Torsion bars. This special puller can be purchased from your local Ford Dealer or from OTC (Part #7826).

2. Locate the torsion bar adjuster bolt on the bottom of the rear cross member, measure and record the length of the torsion bar adjusting bolt that is exposed below the nut, and remove the torsion bar adjusting bolt. Apply a small amount of lubricating grease to the puller threads and the puller shaft-to-adjuster arm contact point. Position puller and load adjuster arm until the adjuster nut can be removed from the cross member. With the bar unloaded, slide it further forward into the lower control arm. If the bar seems lodged, use a hammer and punch through the hole in back of the cross member. When the bar shifts forward, the adjuster will fall free. (See Photo #1) Repeat this process on passenger side.

3. With torsion bars removed from rear cross member, remove torsion bar cross member using 15mm and 18mm sockets. With cross member removed, remove the torsion bars from the vehicle, be sure to mark driver and passenger for reinstallation. (See Photo #2)

4. Remove front tires using 21mm socket. Remove front shocks using 18mm and 13 mm wrench. Remove front sway bar links using 15mm socket and 16mm wrench. Be sure to save sway bar link bushings. They will be reused in further installation. (See Photo #3)

5. Remove the brake caliper bolts using 18mm socket. Remove the caliper. It will not be necessary to disconnect the actual brakeline from the caliper. Simply wire it out of the way until reassembly. Remove the Brake Rotor. (See Photo #4)



6. Remove the cotter pin from the axle shaft. Remove the axle nut using 1 7/16" socket. (See Photo #5)

7. Remove the 6 C.V. bolts located at the front differential. Remove the bolts using a 12 point 12 mm socket. Remove the C.V. shaft from the vehicle. (See Photo #6)

8. Remove the cotter key from the outer tie rod. Remove the tie rod from the steering knuckle using 21mm socket. It may be necessary to strike the side of the knuckle to dislodge the tie rod end. Be careful not to damage the tie rod end itself. (See Photo #7)

9. Disconnect the ABS line at the frame. Remove the ABS clip from the back of the knuckle using an 8mm wrench.

10. Remove the cotter pin from the upper and lower A-Arm ball joints. Remove the upper and lower ball joint nuts using a 24mm and 21mm socket. Once again, it may be necessary to strike the side of the knuckle to dislodge the tie rod end. Be careful not to damage the ball joint itself. Remove the steering knuckle from the vehicle.

11. Using 15mm socket, remove the bearing assembly from the steering knuckle. The dust shield will **not** be removed or reused in installation. Remove the inner seal from the hub. (See Photo #8)

12. Remove the lower A-Arm bolts from the frame, and remove the lower A-Arms. (See Photo #9)

13. Mark the front drive shaft at the differential. Mark so that it will be reinstalled the same during reinstallation. Using a 12mm 12 point wrench, disconnect the drive shaft from the front differential. It will not be necessary to remove the drive shaft from the vehicle. Simply wire it out of the way. (See Photo #10)



Photo #5



Photo #6

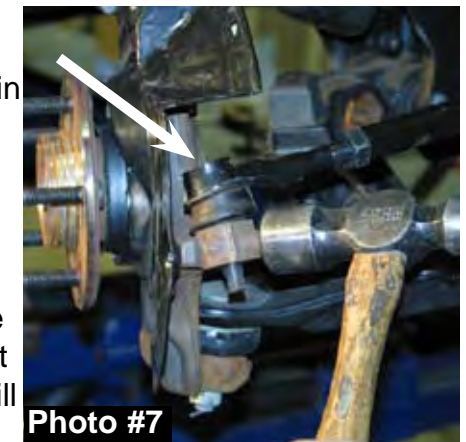


Photo #7



Photo #8

I-F970



Photo #9



Photo #10

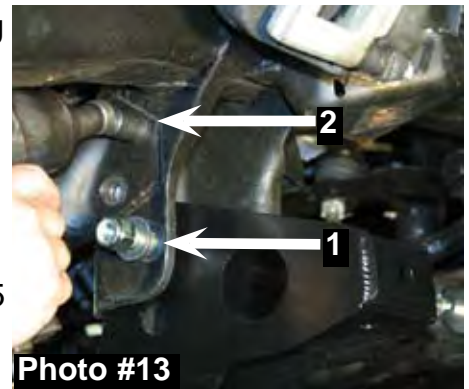
14. Remove the actuator cover from the front differential using a 10mm wrench. Disconnect the vent hose and the actuator line from the front differential. Support the front differential using a transmission jack. Remove all differential bolts using 15mm and 18mm wrench. Then remove the front differential from the vehicle. (See Photo #11)



15. Install the Skyjacker front cross member into the factory Lower A-Arm mounting holes on the frame. Install using the 5/8 x 6 fine thread bolts, washers, and nuts in the upper holes. Do not tighten at this time. (See Photo #12)



16. Install the Skyjacker rear cross member into the factory Lower A-Arm mounting holes on the frame. Install using the 5/8 x 6 fine thread bolts, washers, and nuts in the upper holes. Do not tighten at this time. (See Arrow #1 in Photo #13) **Do not remove the factory rear cross member until the Skyjacker rear cross member is installed. If the factory cross member is removed before the new cross member is installed, the frame can possibly tweak inward making it difficult to install the new Skyjacker cross member.** Once the Skyjacker rear cross member is installed, remove the factory rear cross member using 15mm socket. (See Arrow #2 in Photo #13)



17. Reinstall the front differential using transmission jack. Attach to front and rear cross member using factory hardware. (See Photo #14)



18. Attach passenger side differential bracket as shown in Photo #15 and #16. Reuse the factory bolt at the bottom. Use the 7/16 x 4 fine thread bolt, nut, and washers in the upper hole. Attach bracket to the lower control arm mount on the frame using 1/2 x 1 1/2 washers and lock nut.

19. Reinstall driveshaft the same as factory.

20. Reinstall the lower A-Arms to the new cross member using the 5/8 x 6 fine thread bolts, washers, and lock nuts.

REAR mounting point on passenger side diff tube.



21. Remove the bump stops from the lower A - Arm using 15mm socket. Reattach it to the rear cross member. (See Photo #18)



22. Install the factory seal into the new Skyjacker Heavy Duty Steering Knuckle. It may be necessary to use a wooden block to allow full contact. (See Photo #19)



23. Attach hub assembly to the new steering knuckle. Do not use the dust shield. Be sure to use supplied thread lock compound on the bolts. (See Photo #20)



24. Install the new steering knuckle by attaching it to the upper and lower A - Arm ball joints.

25. Move the ABS clip up on the ABS Line so that it lines up with the hole on the knuckle. It may be necessary to use WD40 to allow the clip to slide. Attach to the knuckle using the 5mm x 12mm screws supplied. (See Photo #21)



26. Reinstall passenger side C.V. shaft using factory hardware. Install the driver side C.V. shaft using the 1 5/8 aluminum C.V. spacer. Be sure to install spacer so that male end is against the differential. Install using the 12x65 mm bolt. Also be sure to use thread Lock Compound. (See Photo #22)

27. Disconnect the brakeline bracket located on the frame rail behind the steering knuckle. (See Photo # 23) Install the new Skyjacker brakeline bracket. Attach upper hole using the factory bolt. Line the middle hole in the bracket up with the lower hole that is already in the frame. Drill the hole to 9/32 and install the 3/8x1 thread cutter bolt. Attach the brakeline to the new Skyjacker bracket using the 5/16 x 1 coarse thread bolt, washers, and nuts. (See Photo # 24)

28. Reinstall the brake caliper using the factory hardware. Reattach the outer tie rod to knuckle using factory hardware. Be sure to install the cotter key as well.





29. Install the new Skyjacker sway bar end link bushing (Part # SBE-CBSH) on the stud of the pivoting end of the new Skyjacker sway bar end link with the larger diameter end facing the boot of the sway bar end link. Align the sway bar end link bushing with the OEM mounting location of the OEM a-arm & install the new Skyjacker sway bar end link. Note: Be sure to install the sway bar end link with the pivoting end at the a-arm. (See Photo #25 and #26)



30. Install the new Skyjacker shocks using the factory bolts on the bottom.

31. Attach torsion bar drop brackets to factory holes in the bottom of frame rail. Install using 5/8 x 1 1/2 fine thread bolts in the middle mounting hole. Install the 1/2 x 1 1/2 fine thread bolts in the outside bottom holes. Tighten these bolts at this time. Mark and drill the outside frame holes to 15/32". (See Photo #27) Once drilled, install the 7/16 x 1 1/2 fine thread bolts, washer, and nuts. (See Photo #28). Before installing both drop brackets, attach the cross member to the brackets.



32. With cross member and drop brackets installed, reinstall the torsion bars. With torsion bars installed, reinstall the tires and let the weight back down on the vehicle. Now, tighten all differential bolts, cross member bolts, etc. Reinstall the factory differential cover.

**If installing Skyjacker Dual Stabilizer, Part # 7297, see those instructions at this time.**

33. Attach the skid plate braces to the front and rear cross member using the 3/8 x 1 1/4 bolts, washers and self locking nuts. Do not tighten at this time. (See Photo #29)



34. Attach skid plate to rear cross member and side braces using 3/8 x 1 fine thread bolts, washers, and self locking nuts. With all bolts started, tighten all bolts including the skid plate braces. (See Photo #30)



35. Locate the upper portion of the skid plate where it contacts the the frame. With all other bolts tight, mark and drill the three upper holes using 5/16 drill bit. Install the 3/8" thread cutter bolts. (See Photo #31)



**If installing Class I kit, Skip to step #38.**

36. Attach the front kicker brace mounts to rear cross member using 1/2 x 6 coarse thread bolts, washers, and nuts. Bracket will install with the offset mounting hole closest to the outside. Install bushings and sleeves into the strut bars. Attach the strut bar to the bracket using 1/2 x 4 fine thread bolt, washers, and lock nut. Tighten these bolts at this time. (See Photo #32)



37. With the front bolts tight, install the bushings and sleeves into the rear of the strut bar. Attach the bracket to the bar using the same 1/2 x 4 bolt. Please note that the longer bracket is for the passenger side. With bracket attached to the rear of the strut bar, hold it up to the rear cross member. Mark the center mounting. Lower the bracket down and drill to 17/32. Once



drilled reinstall using 1/2 x 1 1/2 fine thread bolt, washers, and lock nut.

**REAR INSTALLATION:**

38. Raise the rear of the vehicle and support the frame rails using jack stands. Disconnect the rear brakeline bracket located on the frame rail & install the new Skyjacker brakeline bracket using the 5/16 x 3/4 coarse thread bolt, nut, & OEM hardware. (See Photo # 33) Remove the rear shocks using 18mm socket. Remove the rear U-bolts using 21mm socket. (See Photo # 34)



**If installing rear block, skip to step # 40**

**Rear Spring Installation:** Part# FR15S

39. Remove the rear spring eye bolts using 21 mm socket. Remove the factory rear spring. Install the Skyjacker rear spring being sure to reuse the factory block. Also be sure to install with the thickest part of degree shim towards the rear. Reinstall using the factory spring eye bolts. Do not tighten the spring eye bolts at this time. Skip to step #41.



**Block Installation:**

40. Place the 4.5" block under the factory block. Be sure to install with the tallest portion towards the rear.

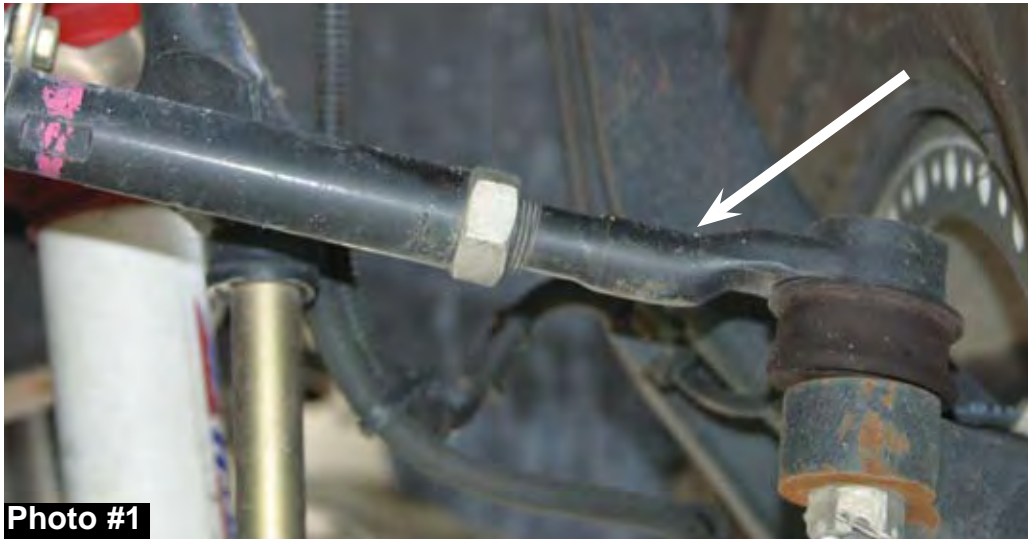
41. Install U-Bolts and torque to 85-90 Ft. Lbs. (See Photo #35) Let the weight back down onto the springs and tighten spring eye bolts. Install new Skyjacker shocks. (See Photo #36)



## Important Note:

- Front end alignment should be set to factory specifications. Some models will require cutting of the outer tie rod end adjustment threads to obtain the proper toe in. Remove the outer tie rod from the steering knuckle and the adjusting sleeve. (**See Photo #1**). Thread the jam nut all the way down until it bottoms out on the tie rod. Measure 3/8" from the end of the threads and make a mark. Cut along the mark with a die grinder or hack saw. (**See Photo #2**). Unscrew jam nut to chase threads. Reinstall tie rod onto adjusting sleeve and onto steering knuckle. Repeat this process on the opposite side of vehicle. Passenger and driver side tie rods must be cut equally and adjusted equally to allow for proper toe in adjustment.

Arrow below shows the outer tie rod.



## **FINAL NOTES:**

- After the installation is complete, double check that all nuts & bolts are tight. Refer to the following chart below for the proper torque specifications. (Do not retighten the nuts & bolts where thread lock compound was used.)
- With the vehicle placed on the ground, cycle the steering lock to lock & inspect the steering, suspension, brake lines, front & rear drivelines, fuel lines, & wiring harnesses for proper operation, tightness, & adequate clearance.
- Have the headlights readjusted to the proper settings.
- Have a qualified alignment center realign the front end to the factory specifications.
- Retorque all the bolts after the first 100 miles.

<b><u>TORQUE SPECIFICATIONS</u></b>					
<b><u>INCH SYSTEM</u></b>			<b><u>METRIC SYSTEM</u></b>		
<b>Bolt Size</b>	<b>Grade 5</b>	<b>Grade 8</b>	<b>Bolt Size</b>	<b>Class 8.8</b>	<b>Class 10.9</b>
5/16	15 FT LB	20 FT LB	6MM	5 FT LB	9 FT LB
3/8	30 FT LB	35 FT LB	8MM	18 FT LB	23 FT LB
7/16	45 FT LB	60 FT LB	10MM	32 FT LB	45 FT LB
1/2	65 FT LB	90 FT LB	12MM	55 FT LB	75 FT LB
9/16	95 FT LB	130 FT LB	14MM	85 FT LB	120 FT LB
5/8	135 FT LB	175 FT LB	16MM	130 FT LB	165 FT LB
3/4	185 FT LB	280 FT LB	18MM	170 FT LB	240 FT LB

- The above specifications are not to be used when the bolt is being installed with a bushing.

**Seat Belts Save Lives, Please Wear Your Seat Belt.**

### **Available Accessories:**

#### **Dual Steering Stabilizer - Part # 7297**

