



ICON VEHICLE DYNAMICS

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Part No. 6-4500
4.5" Suspension System
2005-2007 Ford Super Duty F250/F350 4WD

Enclosed Parts List:

(2) Coil Springs	(1) Sway Bar Link
(1) Pan Rod Bar Assembly	Bushing Kit
(2) Radius Arm Drop Bracket	(1) Brake Line Hardware Kit
(2) Sway Bar Links	(2) Bump Stop Spacers
(1) Frame Bracket Hardware Kit	(4) DR Signature Series Shocks
	(1) Rear Block Kit

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION! IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED, SEVERE FRAME, SUSPENSION AND TIRE DAMAGE MAY RESULT TO THE VEHICLE!

Warning! *Icon Vehicle Dynamics* recommends that you exercise extreme caution when working under a vehicle that is supported with jack stands or on a lift.

FRONT SUSPENSION INSTALLATION

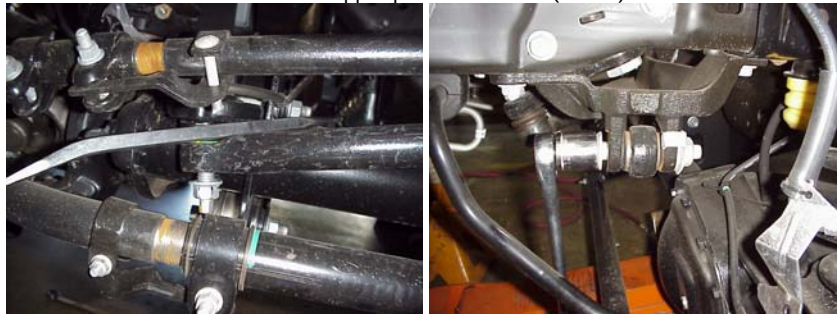
1. Jack up the front end of the truck and support the frame at the front frame rails with jack stands. NEVER WORK UNDER AN UNSUPPORTED VEHICLE. Remove front tires.
2. Remove the sway bar links. The bottom bushing will be reinstalled on the new links
3. Pop the ABS wire connector out of the plastic inner fender liner at the rear of the fender. Measure the hole spacing and drill 2 new holes (3/16 and 1/4) 2" down in the plastic and insert the clip.



4. Disconnect the upper and lower brake line brackets.



5. Support the axle housing with a floor jack and remove the front shocks. The shocks are limiting droop so **MAKE SURE THE AXLE IS SUPPORTED OR THE AXLE WILL FALL** when the shocks are removed
6. Loosen the 24mm nut on the lower end of the pan rod bar; leave the nut engaged a couple of threads. Put a pry bar between the pan rod bar and the lower pan rod joint housing. Slowly lower the axle housing making sure not to over extend any hoses or brake lines, as the axle is lowered the pry bar will cam in-between the joint and dislodge the taper. You will hear a loud pop when the taper dislodges. You can now remove the nut and the upper pan rod bar bolt (30mm) and remove the bar from the vehicle.



7. As you continue to slowly lower the axle the coils will unload from the mounts and you can remove them. Remove the rubber isolator from the stock coil and install it on the new coils.



8. Remove the pivot bolts on rear of the radius arm. At this point there is nothing else holding the heavy front axle and radius arms to the vehicle. It helps to have an extra floor jack and an extra hand to maneuver the cumbersome front end.
9. Lower the rear of the radius arms out of the frame brackets to allow room for the new brackets.
10. Install the new radius arm drop brackets using (2) $\frac{3}{4}$ " bolts and (2) $\frac{7}{16}$ " bolts per side. Re install the radius arm into the new bracket using the factory bolt. Do not fully tighten this hardware yet.



11. Pull the front bump stops out of the bump stop plate. Remove the bolt in the center of the plate. Install the bump stop extender between the plate and the frame with the supplied bolt and snap the bump stop back into place.



12. Install the new coil springs. Make sure the pig tail lower end of the spring is seated properly in its seat by rotating clockwise until the end of the spring hits the stop in the seat

13. Slowly jack up the axle making sure the coils align in the upper and lower seats. Jack up just far enough to install the new front shocks. Snug but do not full tighten the lower shock bolt.



14. Install sway bar links: Grease the bushings and install in the eyelet end of the new link. Grease the sleeve and install in bushings. Install the factory lower stem bushings on the new link. Install on the vehicle, make sure the short step end of the sleeve fits in the end of the sway bar install $\frac{1}{2}$ " x 3" bolt and tighten 78 ft-lb.



15. Install the upper and lower brake line brackets. The upper bracket uses the factory bolt on the top and a supplied $\frac{5}{16}$ " bolt on the bottom. Carefully reroute the hard line. The lower bracket goes behind the stock brake line bracket and rotates the bracket out toward the wheel and away from the longer sway bar link eyelet.



16. Lower the axle and allow the front end to hang on the shocks. This helps the front end components re center left to right.

17. Assemble the pan rod bar. Thread the turn buckle on to the bar and the rod end into the turn buckle, thread both pieces in all the way, do not install the allen pinch bolts yet. Note the thread direction, the bar is right hand thread and the rod end is left hand thread. Grease and install the bushings and sleeve in the pan rod bar end.



18. Jack the axle up 2-3" from full droop. Make sure not to jack the vehicle off of the stands!!! Install the pan rod bar taper end first. Adjust the turnbuckle to length making sure both thread have equal engagement and install in upper end with factory bolt. Torque the upper bolt to 369 ft-lb. Torque the lower to 150 ft-lb.
19. With the suspension in this partially compressed position go back and torque all the partially installed hardware. Radius arm bracket: ¾" and factory bolt 260ft-lb, 7/16 bolts 54 ft-lb. Lower shock bolt: 76 ft-lb.
20. Reinstall tires and lower vehicle to the ground.
21. With the vehicle on the ground center the front axle by adjusting the pan rod bar turn buckle. Install the turn buckle pinch bolts, make sure the pinch bolt in aligned with the flats on the bar, torque to 19 ft-lb
22. Center the steering wheel. This lift does not affect castor, camber or toe-in, this is the only alignment that is needed. Point the tires straight ahead, make sure the steering column is not locked, loosen the clamps on the drag link turn buckle and rotate the turn buckle to center the steering wheel. Without the use of alignment equipment you may need to test drive the vehicle and re center the wheel if it is off slightly.



23. Check the torque on all hardware. Drive the truck 1-2 miles and re-torque all nuts, bolts and lugs. Re-center the steering wheel if necessary.

REAR SUSPENSION INSTALLATION

Kits are configured with either rear blocks or rear leaf springs; follow appropriate instructions for your configuration

1. Lift rear of vehicle and support on jack stands. Remove rear wheels.
2. Remove the rear shocks.
3. With a floor jack under the rear end loosen and remove the U-bolts. Make sure the axle is well supported or it could fall when the U-bolts are removed
4. Slowly and carefully lower the axle away from the springs and remove the stock lift blocks.

BLOCK INSTALLATION

1. Place the new lift block between the axle and spring, make sure the bump stop tang is pointing toward the center of the vehicle. Jack up the axle and guide the spring center pin in to the hole on the top of the block.

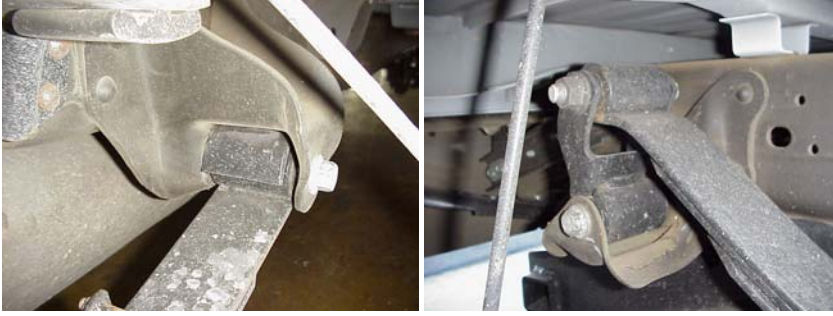


2. Install new u-bolts, washers and nuts, tighten to 185 ft-lb
3. Install new shocks boot down. Apply grease to the upper bushing, the lower does not require grease. Torque to 76 ft-lb
4. Reinstall wheels and lower to the ground. Re check U-bolt torque.

LEAF SPRING INSTALLATION

1. Remove front spring bolt and rear lower shackle bolt and remove the spring from the vehicle. Be careful they are heavy and cumbersome.
2. Note the spring direction; the front of the spring is double wrapped around the eyelet. Remove the shackle from the stock spring and install on the rear (small eyelet) of the new spring, do not fully tighten.

3. Install the new spring in the vehicle. Install the front spring bolt and rear shackle bolt. Do not fully tighten.



4. Jack up the axle and guide the spring center pin into the hole in the axle pad.



5. Install new u-bolts, washers and nuts, tighten to 185 ft-lb.
6. Install new shocks boot down. Apply grease to the upper bushing; the lower does not require grease. Torque to 76 ft-lb
7. Reinstall wheels and lower to the ground. Re check U-bolt torque.
8. With the vehicle sitting on the ground go back and torque the spring hanger and shackle bolts. Front spring bolt: 185 ft-lb. rear shackle bolts: 185 ft-lb

RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 100 MILES AND PERIODICALLY THEREAFTER.

For Technical Assistance Call: 951.272.ICON

***Icon Vehicle Dynamics* LIMITED LIFETIME WARRANTY**

Icon Vehicle Dynamics warrants to the original retail purchaser who owns the vehicle on which the product was originally installed. *Icon Vehicle Dynamics* does not warrant the product for finish, alterations, modifications and/or installation contrary to *Icon Vehicle Dynamics* instructions. *Icon Vehicle Dynamics* products are not designed, nor are they intended to be installed on vehicles used in race applications, for racing purposes or for similar activities. (A "race" is defined as any contest between two or more vehicles, or a contest of one or more vehicles against the clock, whether or not such contest is for a prize). This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warranty are sales outside of the United States of America and Canada.

Icon Vehicle Dynamics obligation under this warranty is limited to the repair or replacement, at *Icon Vehicle Dynamics*' discretion, of the defective product. Any and all costs of removal, installation or re-installation, freight charges and incidental or consequential damages are expressly excluded from this warranty.

Items that are subject to wear are not considered defective when worn and are not covered.

Coil over take-apart shocks are considered a serviceable shock with a one year warranty on leakage only. Service seal kits are available separately for future maintenance. We do not warranty any other product not directly manufactured by *Icon Vehicle Dynamics*.

Icon Vehicle Dynamics components must be installed as a complete kit as shown in our current application guide. Any substitutions or exemptions of required components will immediately void the warranty.

Some finish damage may happen to parts during shipping and is not covered under warranty.

This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been improperly installed, modified or customized subject to accident, negligence, abuse or misuse.