



## INSTALLATION INSTRUCTIONS

6419

### HANGER & SHACKLE KIT

FORD F-150

**Congratulations! You were selective enough to choose a BELLTECH PRODUCT. We have spent many hours developing our line of products so that you will receive maximum performance with minimum difficulty during installation.**

- Note:** Confirm that all of the hardware listed in the parts list is in the kit. **DO NOT** begin installation if any part is missing. Read the instructions thoroughly before beginning this installation.
- Warning:** **DO NOT** work under a vehicle supported by only a jack. Place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.
- Warning:** **DO NOT** drive vehicle until all work has been completed and checked. Torque all hardware to values specified.
- Reminder:** Proper use of safety equipment and eye/face/hand protection is absolutely necessary when using these tools to perform procedures!
- Note:** It is very helpful to have an assistant available during installation.

#### **RECOMMENDED TOOLS:**

- Properly rated floor jack, support stands, and wheel chocks
- Combination wrench set
- Torque wrench: *0-100 lb ft. range*
- Ratcheting socket wrench and socket sets
- Air Chisel / Die grinder W/ cut off wheel
- Safety Glasses

#### **KIT INSTALLATION**

1. Open the hardware kit and remove all of the contents. Refer to the part list (Page 3) to verify that all parts are present.
2. Place the vehicle on a level, solid surface. We recommend asphalt or concrete. For better access to the suspension and to simplify the procedure we recommend removing the bed from the vehicle. This is accomplished by disconnecting the gas filler neck, ground strap(s), unplugging the tail light harness, and removing the bed to chassis securing bolts. While removing the bed simplifies the installation of the kit, it is not mandatory and the installation can be accomplished without removing the bed from the vehicle. If bed removal is not accomplished, removal of the rear fender to bed support rail brace will be necessary to allow for leaf spring shackle installation clearance. **(PHOTO 1)**
3. Block the front wheels of the vehicle and raise the rear wheels of the vehicle off of the ground with a floor jack rated for this load. **(PHOTO 1 & 2)** Position a set of jack stands rated for this load, forward of the leaf spring pack forward hangers. **(PHOTO 3)** Lower the vehicle down on to the jack stands; check for vehicle stability with the floor jack located under the center of the rear axle housing. Remove the rear wheels and tires.
4. Remove the emergency brake cables and their bracket at the point they are secured to the driver side spring hanger. **(PHOTO 4- Regular Cab; Photo 4A-Extended Cab)**

5. Position a floor jack rated for this load under the center of the rear axle housing; raise the rear axle housing  $\frac{1}{2}$ " to  $\frac{3}{4}$ " to unload the leaf spring pivot bolts in the forward hanger and the rear shackle.
6. While supporting the leaf spring-ends, loosen and remove the forward leaf spring eyebolt and the rear leaf spring eyebolt and shackle eyebolt. **(PHOTOS 5, 6 & 7)** Remove the shackle. **CAUTION:** Springs under load store considerable energy. Make sure the leaf spring eyebolts are unloaded before attempting to remove them.
7. Lower the rear axle housing to allow the forward leaf spring eye to come clear of the forward leaf spring hanger. **CAUTION: DO NOT** allow the rear axle housing to be lowered to the point that any of the brake lines come under any tension.
8. Using a die grinder with a cutoff wheel, or similar tool, grind a slot in the heads of the rivets that secure the stock forward leaf spring hanger to the chassis rail. **(PHOTO 8) CAUTION: Always wear eye protection when using power tools.**
9. Using an air chisel, or suitable tool, remove the slotted heads of the stock hanger rivets. **(PHOTO 9) CAUTION: Always wear eye protection when using power tools.**
10. Punch the remaining rivet shanks through the hanger and chassis rail using a punch and hammer, or suitable tool, and remove the stock hanger from the chassis rail. **(PHOTO 10) CAUTION:** When driving out the rivets on the driver side of the vehicle, be aware of the fuel tank behind the chassis rail so that during rivet removal the fuel tank and components are not damaged.
11. Install the kit-supplied hanger with the kit supplied hardware and torque the hardware to 80-100 Ft.-lbs. **(PHOTO 11) NOTE:** The front hangers are symmetrical except for the leaf spring eyebolt. When installing the hangers, the leaf spring eyebolt must be offset toward the rear of the vehicle. **CAUTION: When installing the driver's side hanger, make sure the electrical, brake and fuel system components behind the frame are not captured under the washers on the kit supplied hardware.** On regular cab models, the bottom rear bolt of the driver's side hanger should be used to mount the kit supplied emergency brake cable bracket. **(PHOTO 12)** Bolt the OEM emergency cable bracket to the kit-supplied bracket using the kit supplied  $\frac{5}{16}$ " hardware. Torque this bolt to 20-25 Ft.-lbs. On extended cab models, the kit supplied emergency cable bracket should not be used. Using a die grinder with a cut-off wheel, or similar tool, the OEM emergency brake cable should be trimmed approximately  $\frac{3}{8}$ " in front and  $\frac{3}{4}$ " in the rear. **(PHOTOS 13 & 14) CAUTION:** Be careful not to cut or damage the cables when trimming the bracket. Using two Channel Locks, or similar tools, bend the upper flange of the bracket down to a 60-degree angle. **(PHOTOS 15 & 16)**
12. Raise the rear axle so that the forward leaf spring eye can be inserted into the front hanger. On regular cab models, install the forward leaf spring eyebolt and nut but do not tighten at this time. **(PHOTO 17)** On extended cab models, install the bracket onto the front spring hanger using the OEM front spring eyebolt and nut but do not tighten at this time. Make sure the upper flange of the emergency brake cable bracket is positioned between the vertical gussets of the hanger. **(PHOTO 18)**
13. Raise the rear axle until the rear end of the leaf spring can be accessed over the top of the chassis rail. **(PHOTO 19)** Install the kit-supplied shackle using the OEM bolt and nut, but do not tighten at this time. Lower the rear axle housing until the shackle eyebolt can be installed through the shackle eye and the original rear hanger. **(PHOTO 20)** Install the nut on the shackle eyebolt, but do not tighten at this time.
14. Complete steps 3 through 11 for the remaining side of the vehicle.
15. Support the rear axle housing with a floor jack rated for this load. Remove the U-bolt nuts, spring support plate and the U-bolts. **(PHOTO 21)**

16. Lower the rear axle to gain access to the leaf spring pack center bolt. **CAUTION: Do not lower the rear axle to the point that any of the brake system components come under any tension.**
17. Clamp the leaf spring pack together using C-clamps, or suitable tools, and remove the original spring center bolt. **(PHOTO 22)** Install the kit supplied spring center bolt and spacer from the bottom of the leaf spring pack. **(PHOTO 23)** Install the kit-supplied nut and torque the 88-93 Ft.-lbs. Trim off any excess spring center bolt that extends through the nut with a die grinder and a cutoff wheel or suitable tool. **(PHOTO 24)** **CAUTION: Always wear eye protection when using power tools.**
18. Install the kit supplied rear axle shim over the axle housing pad hole with the thicker portion of the shim facing toward the front of the vehicle. **(PHOTO 25)** Raise the rear axle back up to capture the shim between the rear axle housing and the leaf spring pack. **(PHOTO 26)**. Install the new hardware, which includes U-bolts, nuts and washers. Torque the U-bolt nuts to 72-97 Ft.-lbs. Recheck U-bolt torque after 10, 100, 1,000 miles. Repeat steps 13 through 16 for the remaining side of the vehicle.
19. Repeat steps 13 through 16 for the remaining side of the vehicle.
20. Unbolt the OEM -bump stops and replace them with the kit supplied bumps stops. **(PHOTOS 27 & 28)** Torque the bump stop nut to 10 Ft.-lbs.
21. Re-install the wheels and tires. Torque the lug nuts to 83-100 Ft.-lbs.
22. Raise the rear of the vehicle to clear the jack stands, remove the jack stands and lower the vehicle to the ground. Torque the front leaf spring eye bolts to 100 Ft.-lbs. and the rear leaf spring eye bolts and shackle eyebolts to 72-97 Ft.-lbs. The installation is complete.

Due to installation variables and factory manufacturing variances beyond our control, we highly recommend that the driveline angles present after modification be checked and compared to the driveline angles present before modification and, if necessary, be brought back within factory specifications. Installation of pinion shims and/or drive shaft carrier bearing spacers may be required for this procedure and can be obtained from Belltech as kits. For more information, contact Belltech at (559) 875-0222.

<b>PART No.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
6419-010	HANGER, LH	1
6419-020	HANGER, RH	1
6415-010	Leaf Spring Spacer	2
6400-100	Shackle	2
4900-001	Bump Stop	2
4979-001	Pinion Shim 6°	2
110408	½"-20 x 1-1/4" NF Grade 8 CS	8
110660	½" A325 FW ZP	16
110402	½"-20 NF Grade 8 ZP	8
6419-005	Emergency Brake Cable Bracket	1
110201	5/16"-18 x 1" Grade 8 CS ZP	1
110203	5/16"-18 Grade C Nylon LN ZP	1
110204	5/16" A325 FW ZP	2
110314	7/16"-20 x 5" Spring Center Bolt	2
110321	7/16"-20 x 1-1/8" Coupling Nut	2
6419-002	U-Bolt	4
110455	Lock Nut	8
110670	9/16 Washer	8







