



## INSTALLATION INSTRUCTIONS

**6447**  
**4" REAR AXLE FLIP-KIT**  
**2015+ FORD F-150 2WD/4WD CREW CAB SHORT BED**

**Thank you for being selective enough to choose our high quality 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 (page 6) 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 and six (6) support stands
- Wheel chocks
- Metric socket set up to 27mm
- Metric combination wrench set up to 27mm
- Impact wrench
- C-clamps
- Power Drill
- Drill bit set
- Abrasive cutter
- Grinder
- Safety Glasses

### **JACKING, SUPPORTING AND PREPARING THE VEHICLE**

- a) Block the front wheels of the vehicle with appropriate wheel chocks. Make sure the vehicle's transmission is in "Park" (automatic) or 1<sup>st</sup> gear (manual). Activate the parking brake.
- b) Loosen, but **DO NOT REMOVE**, the rear wheel lug nuts.
- c) Lift the rear of the vehicle off the ground using a properly rated floor jack. Lift the vehicle so that the rear tires are approximately 6-8 inches off the ground surface.
- d) Support the vehicle using four (4) support stands, rated for the vehicle's weight. The stands should be positioned, two on each of the frame rails, just forward of the front leaf spring hangers and just below the rear leaf spring shackle hangers. Prior to lowering the vehicle onto stands, make sure the supports will securely contact the straight, flat portions of the frame rails. It is very important that the vehicle is properly supported during this installation to prevent frame damage and personal injury! Make sure that the support stands are properly placed prior to performing the following procedures.

- e) Lower the vehicle slowly onto the stands and, before placing the vehicle's weight on them, again check that they properly and securely contact the frame rails as described above. Check for possible interference with any lines, wires, or cables.
- f) Remove the rear wheels from the vehicle.

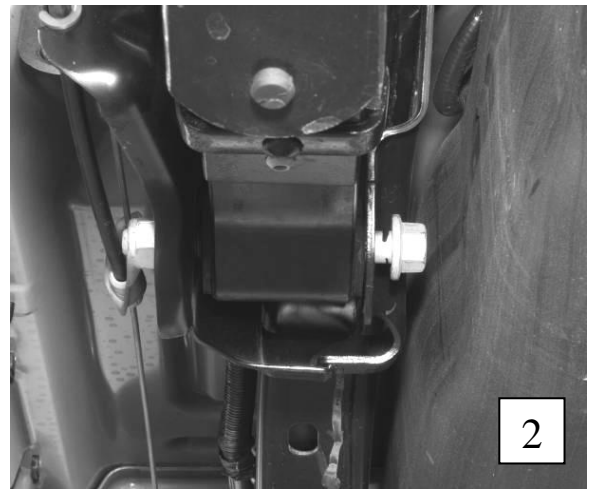
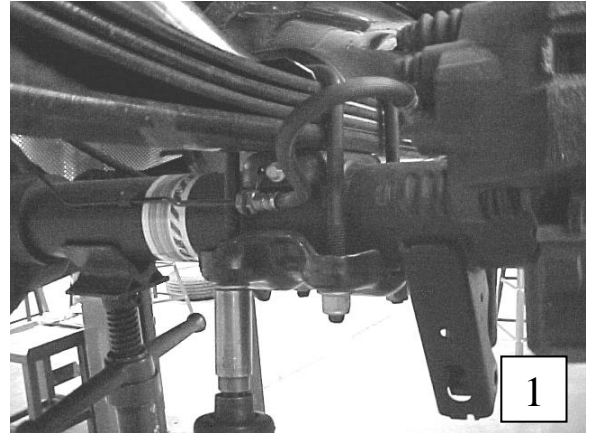
**SAFETY REMINDER:** Check for safe vehicle stability before proceeding under the vehicle to begin the following procedures. Never work under a vehicle supported by only a jack. Always use properly rated support stands to support the vehicle.

## 1. DIS-ASSEMBLY

- 1a) Remove both rear shocks

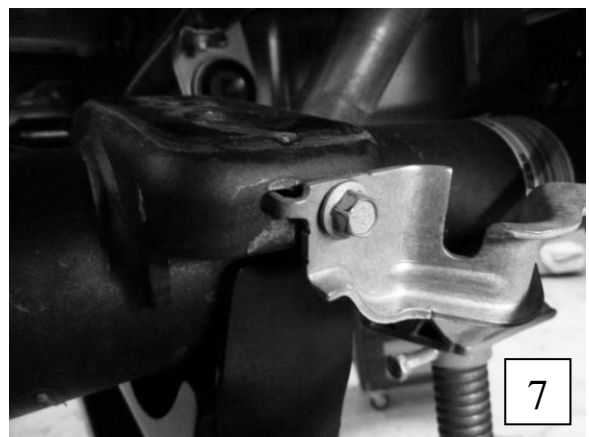
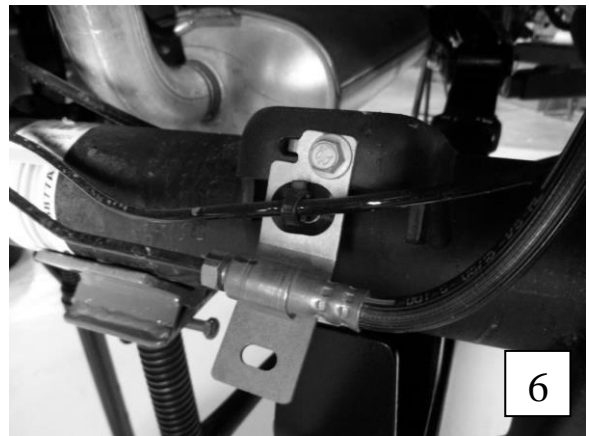
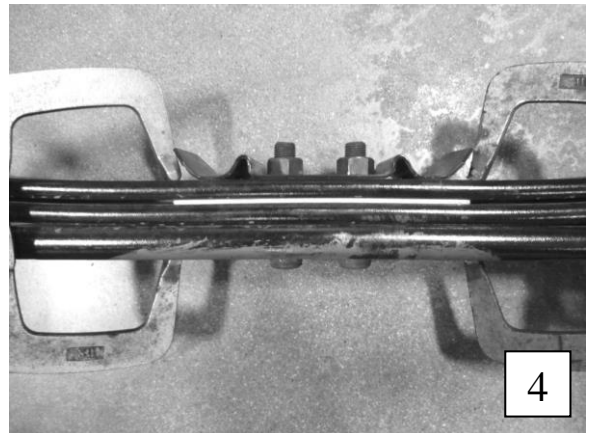
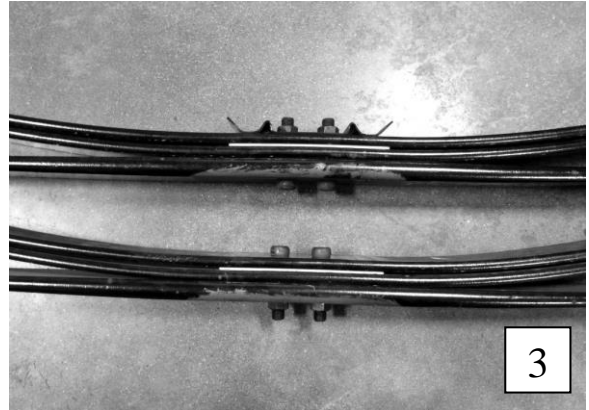
**Warning:** Leaf springs may be under tension. Springs under tension store a great amount of energy. Use caution during the following steps to avoid personal injury and/or damage to vehicle. Be careful not to damage the brake hoses and/or driveline while relocating rear axle assembly.

- 1b) Properly support the axle using a jack or lifting device so that it can be raised and lowered. Also support the rear axle near the rear u-joint to keep the axle from rotating once unbolted.
- 1c) Remove the U-bolts using a **21mm** socket **(photo 1)**.
- 1d) Remove the lower shackle bolt that connects it to the rear hanger and leave the shackle connected to the spring at this time.
- 1e) Loosen the front spring hanger nuts and bolts. Back the bolt and nut off sufficiently to expose the bolt shank. Due to the fuel tank and exhaust locations, both front spring hanger bolt needs to be cut off. Cut off the head of the bolts, being careful not to damage the fuel tank, exhaust, or frame **(photo 2)**.
- 1f) Mark the leaf springs "Left" and "Right". Also mark each forward spring end with a forward pointing arrow so that the springs can be properly reinstalled into their original locations.
- 1g) Remove both leaf springs from under the vehicle. It might be necessary to lower the axle before they can be removed.



## 2. LEAF SPRING PREPARATION

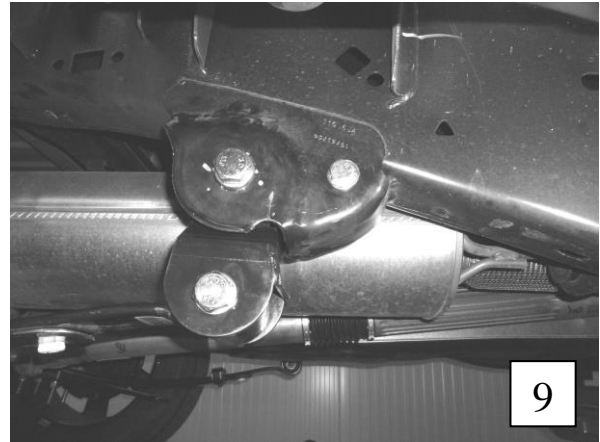
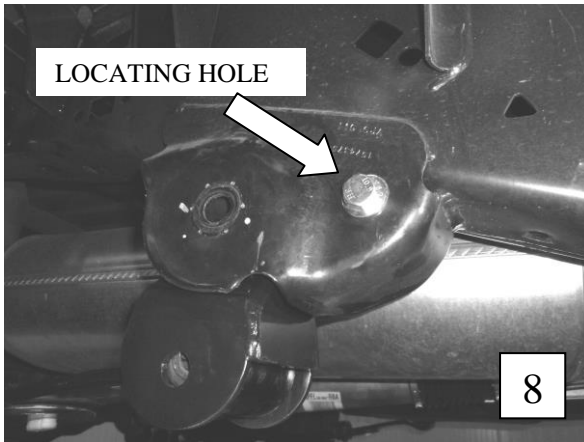
- 2a) Remove and reverse both center bolts on the leaf springs. **DO NOT** re-attach the U-bolt locating plate that's bolted to the top of the spring: It is no longer needed. **(photo 3)** **NOTE:** It might be helpful to use a couple of C-clamps to hold the spring pack together while you reverse the center bolts, or loosen them and reverse one at a time. **(Photo 4)**. Tighten the center bolts using pliers to hold the round head of the bolt.
- 2b) Remove the stock shackle. Note the direction of the bolt head as the bolt will need to be reinstalled the same direction.
- 2c) Assemble the bushing and spacer on the supplied Belltech shackle. Install the shackle onto the leaf spring. Do not tighten the shackle in place it will be tightened after the vehicle has been set down **(photo 5)**.
- 2d) Repeat this process on the other leaf spring.
- 2e) Remove all bolts securing the brake line to the front and rear of the OEM leaf spring mount on each side of the axle **(photo 6&7)**.



### 3. LEAF SPRING HANGER INSTALLATION

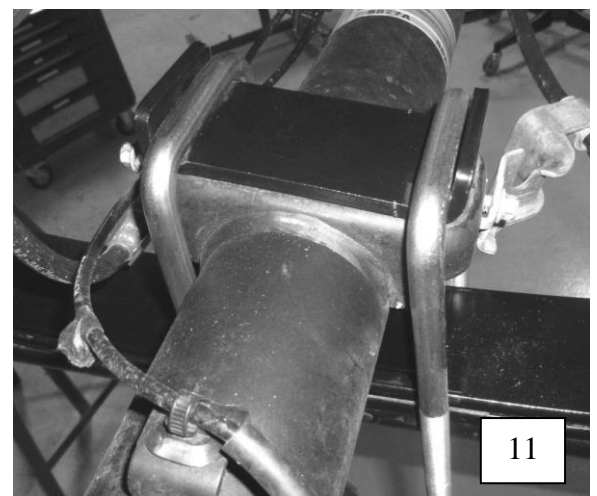
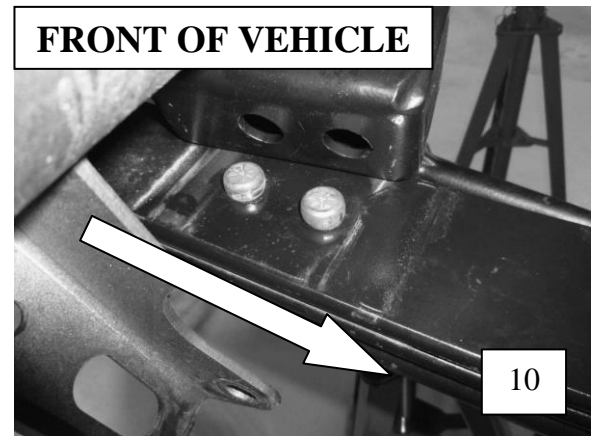
- 3a) Install the hanger into the front leaf spring mount using the locating hole on the frame. Insert the supplied bolt and washer as the hanger is threaded. **(Photo 8)**
- 3b) Install the supplied HH M18-2.5x140mm, washer, and M18 lock nut into the old leaf spring location with hanger, top hole, and torque down to **70 ft. lbs.**
- 3c) Install leaf spring to hanger with the HH M18-2.5x 140mm, washer and M18 lock nut. **(Photo 9)**

**NOTE:DO NOT TIGHTEN LEAF SPRING BOLT, AS THE VEHICLE HAS TO BE ON LEVEL GROUND TO BE PROPERLY TORQUED.**

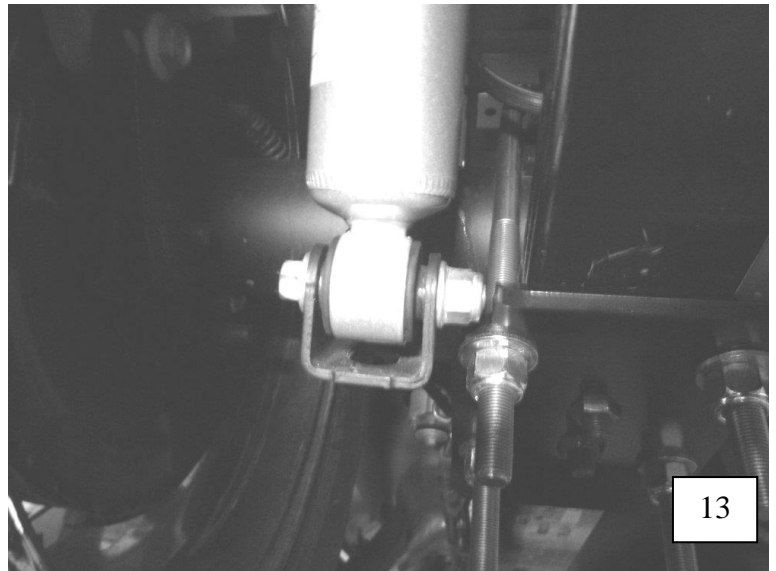
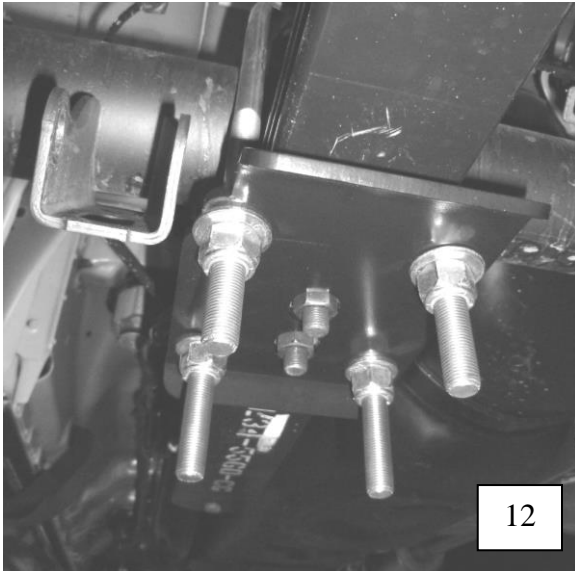


### 4. LEAF INSTALLATION

- 4a) Raise the axle upward into the vehicle so the springs may pass under the axle and bolt onto the chassis.
- 4b) Start from the passenger side. Place the leaf spring in the front spring hanger and insert the supplied 18x2.5x140mm bolt, washer and nylon lock nut from the outside. Once in, rotate the spring back and insert the lower shackle bolt in the rear hanger. Torque the front spring hanger bolt to **95 ft lb**; leave the rear shackle bolt loose, it will be tightened after the vehicle has been set down.
- 4c) Repeat this process on the driver side leaf spring.
- 4d) Install the two axle saddles onto the leaf springs. The saddle should be placed on the leaf spring so that the 2 locating holes are toward the front of the vehicle. **(photo 10)**
- 4e) Install the supplied **3° Pinion** shim between the leaf spring and the Belltech saddle, with the tall side facing towards the front of the vehicle. **NOTE: Make sure the saddle and pinion shims are seated correctly between the two leaf spring pins and axle.**
- 4f) Lower the axle into the saddles ensuring the two tabs are positioned up inside the factory spring mount.
- 4g) Install the U-bolt Spring Pad Mount on top of the axle, centering it atop the mount surface. **(Photo 11)**

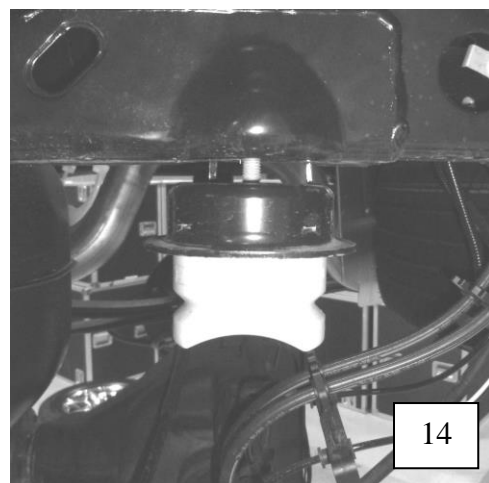


- 4h) Install the U-bolts and U-bolt plates onto the axle loosely threading the hardware in place. The U-bolt plate will be installed with the notched portion closest to the lower chock mount. **(Photo 12)**
- 4i) Tighten all the U-bolts to 100 ft/lbs.  
**NOTE:** The U-bolts are longer than necessary for ease of installation. After securely fastening the U-bolts, the excess ends can be trimmed to 1" below the bottom of the tightened nut
- 4j) Install shorter length shock absorbers. **THE OEM LENGTH SHOCKS ARE TOO LONG AND WILL NOT ALLOW FOR TRAVEL.** We recommend the Belltech Street Performance (2712EE) lowering shocks. The shoulder at the end of each lower shock bolt may need to be trimmed to avoid contact with the U-bolt plate. **(Photo 13)**
- 4k) Install the brake line bracket and securing bolt and tighten to **17 ft lb**. It may be necessary to trim down the tip of the bolts for proper seating.



## 5. BUMP STOP

- 5a) Remove the OEM bump stop by removing the bolt in the center of the bump stop. **(Photo 14)**
- 5b) Install the shorter supplied BELLTECH bump stop along with the supplied socket head bolt
- 5c) Repeat process for both frame rails.



## 6. FINALIZING THE INSTALLATION

- 6a) Re-install wheels and torque to the Manufacturer's specifications.
- 6b) Check that all components and fasteners have been properly installed, tightened and torqued.
- 6c) Lift vehicle and remove support stands. Carefully lower vehicle to ground.
- 6d) Check brake hoses, cables and other components for any possible interference.
- 6e) Check for wheel/tire to chassis/body interference.
- 6f) Once vehicle has been lowered to the ground securely fasten the shackle bolts in place to 75 **ft-lb**.
- 6g) Test-drive the vehicle in a remote location so that you can become accustomed to the revised driving characteristics and handling. Be aware that the vehicle will handle substantially different now that it has been lowered.
- 6h) Take the vehicle to a qualified shop for 4-wheel alignment.
- 6i) Check all of the hardware and re-torque at intervals for the first 10, 100, and 1000 miles.

**The front** of the vehicle **MUST BE** lowered accordingly for proper handling and performance and also to maintain warranty. See the current *Belltech Application Guide* or contact you nearest *Belltech Dealer* for the appropriate part numbers for your application.

**The axle adapter saddles have been design to properly position the rear axle pinion shaft relative to the driveline, so that vibrations can be eliminated. If driveline vibrations are experienced, take the vehicle to a driveline service shop immediately for driveline angle inspection and necessary adjustments. DO NOT drive vehicles exhibiting extreme driveline vibrations, as U-joint wear could occur prematurely. Be sure to lubricate the U-joints if deemed necessary.**

### Parts List: 6447

Part #	Description	Quantity
6446-001	Axle Saddle	2
6440-002	U-bolt Spring Pad	2
6446-005	U-bolt Plate	2
6703-010	Shackle Body	2
6590-005	Shackle Bushing	4
6590-007	Bushing Sleeve	2
6592-007	U-bolt	4
110455	9/16"-18 Nylon Lock Nut	8
110670	9/16" Washer	8
110264	M18-2.5 x 140MM HHCS (For Leaf Spring)	4
110265	M1802.5 Nylon Lock Nut	4
110502	M18 Washer	8
4922-001	Bump Stop	2
112024	M10-1.5 x 30mm SHCS (For Bump Stop)	1
6447-030	Lifting Hanger (LH)	1
6447-040	Lifting Hanger (RH)	1
4976-001	3° Pinion Shim	2
110660	Flat Washer (Hanger)	2
111092	HH CAP Screw 12MM-1.25x50MM (Hanger)	2