



## INSTALLATION INSTRUCTIONS

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2351

### 2" DROP SPINDLE 2WD ONLY

>>> **CANNOT USE STOCK WHEELS** you **MUST** use **20"** wheels or larger see instructions on pg. 3 <<<  
04'- UP FORD F-150 Regular Cab, Extended Cab, Super Cab,  
Lincoln Mark LT, Harley Davidson, Expedition

**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
- Screwdriver set
- Pliers
- Chisel or punch and hammer
- Torque wrench: *0-300 lb ft. range*
- Ratcheting socket wrench and sockets sets
- Safety Glasses

#### **KIT INSTALLATION**

1. Open the hardware kit and remove all of the contents. Refer to the part list (**Page 4**) to verify that all parts are present.
  2. Park the vehicle on a smooth, level concrete or seasoned asphalt surface and activate the parking brake. Block the REAR wheels of the vehicle with appropriate wheel chocks; making sure the vehicle's transmission is in 1<sup>st</sup> gear (manual) or "Park" (automatic).  
Using a properly rated floor jack, lift the front wheels of the vehicle off the ground. Place support stands, rated for the vehicle's weight, in the factory specified locations. Refer to the vehicle Owner's Manual. Prior to lowering the vehicle onto the stands, make sure the supports will securely contact the chassis.
- !** It is very important that the vehicle is properly supported during this installation to prevent personal injury and chassis damage! Make sure that the support stands are properly placed prior to performing the following procedures. We **DO NOT RECOMMEND** using wheel ramps while performing this installation. Slowly lower the vehicle onto the stands and, before placing the vehicles entire weight on

them, again check that they properly and securely contact the chassis as described above. Check for possible interference with any lines, wires, cables, or other easily damaged components.

## 1. STEERING KNUCKLE REMOVAL

- a) Starting on the passenger's side of the vehicle remove the wheel from the vehicle **(Photo 1)**.
- b) Remove the brake caliper assembly from the steering knuckle **(Photo 2)**. With a metal hook or wire attach the caliper to chassis so that it doesn't dangle and damage the brake line.
- c) Remove the sensor from the steering knuckle with a socket or wrench **(Photo 3)**.
- d) Remove the bearing cap, cotter pin, and nut from the spindle pin **(Photo 4)**.
- e) Remove the brake rotor.
- f) Remove the backing plate by removing the three screws from the steering knuckle **(Photo 5)**.
- ! Belltech recommends using a lever style or puller style ball joint removal tool. In the case these tools are not available it is helpful to use a large hammer and forcefully strike the ball joint boss. This striking action will usually free the ball joint with one swing. We do not recommend the use of a fork style ball joint separator because they can damage the ball joint and cut the grease cup.
- g) Remove the steering arm tie rod end **(Photo 6 & 7)**.
- h) Unthread the upper control arm ball joint nut using a socket or wrench. It is helpful to keep the ball joint nut partially threaded on to keep the arm from swinging up and to keep it in place while removing the lower ball joint. Use one of the above removal methods to remove the ball joint from the steering knuckle.
- i) Partially unthread the lower ball joint nut for ball joint removal using a socket. Use one of the above removal methods to remove the ball joint from the steering knuckle.
- j) Finally remove upper and lower ball joint nuts to free the steering knuckle from the vehicle.

## 2. STEERING KNUCKLE INSTALLATION

- a) Locate the new Belltech steering knuckle and install it onto the upper, lower and steering arm ball joints. **(Photo 8 & 9)**
  - a1) Tighten and torque the **lower ball joint to 95 ft lbs. (See wheel fitment instructions and illustration 17)**
  - a2) Tighten and torque the **upper ball joint to 85 ft lbs.**
  - a3) Tighten and torque the **steering arm ball joint (tie-rod end) to 100 ft lbs.**
- b) Re-install the backing plate to the steering knuckle using the three stock bolts.
- c) Install the rotor and thread the **wheel hub nut** onto the spindle then torque to **296 ft lbs (Photo 10)**. Install the lock clip and new cotter pin onto the wheel hub nut.
- d) Install the **brake caliper** onto the steering knuckle with the two stock bolts. Torque the bolts to **148 ft lbs. (Photo 11)**
- e) Re-install the sensor to the steering knuckle with the stock bolt **(Photo 12)**.
- f) Rotate the steering knuckle in both directions to check if the brake line and sensor cable have proper clearance.
- g) When passenger side installation is complete repeat the above steps for driver's side.

**IMPORTANT NOTE:**

**INSTRUCTIONS FOR WHEEL FITMENT**

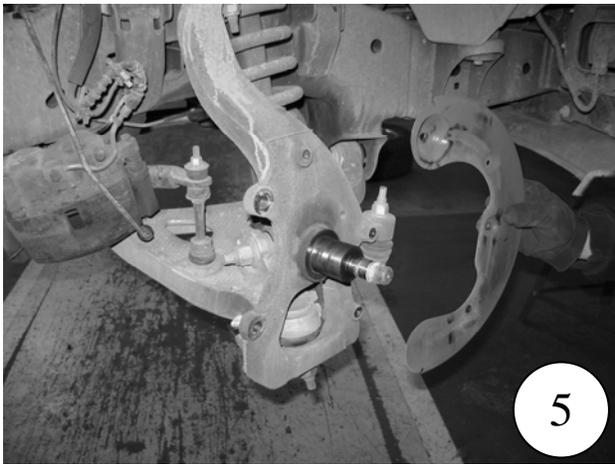
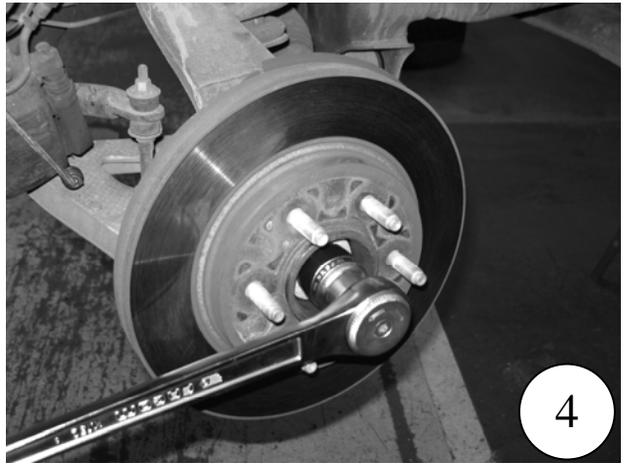
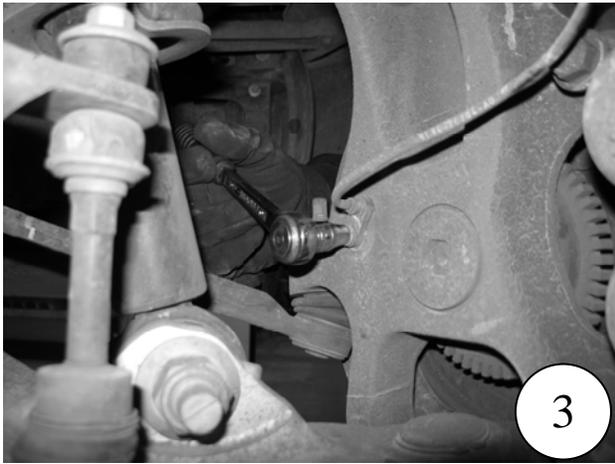
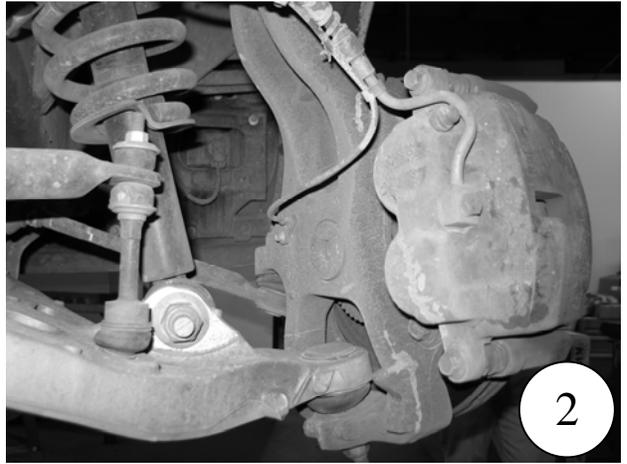
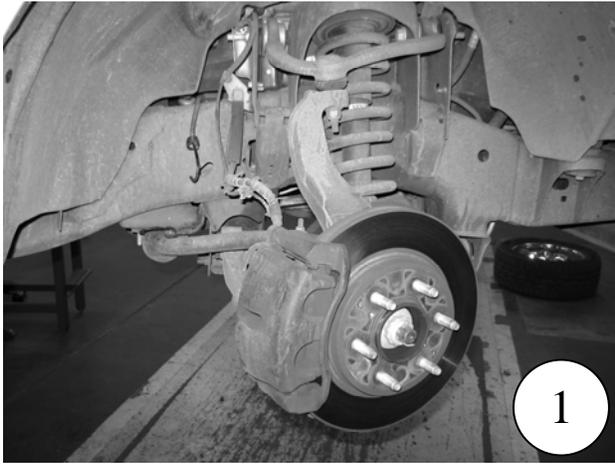
- ! This Belltech spindle was designed to use only 20" wheels and larger. When using 20" wheels you must use the supplied nut and lock washer on the lower ball joint, then trim the ball joint stud for adequate clearance (**illustrations 17**). The supplied lock washer and nut should be installed and torque to **95 ft. lbs.** before the ball joint stud is trimmed. It is recommended that when you remove the lower portion of the stud you leave at least 1/16" of the stud extended out from the nut. It is also recommended that once the stud is trimmed off you use a chisel or punch to score the edge of the threads to prevent any possibility of the nut coming loose (**illustration 17**).

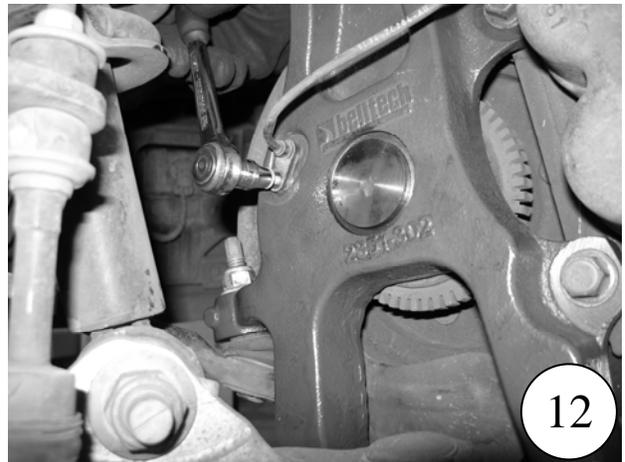
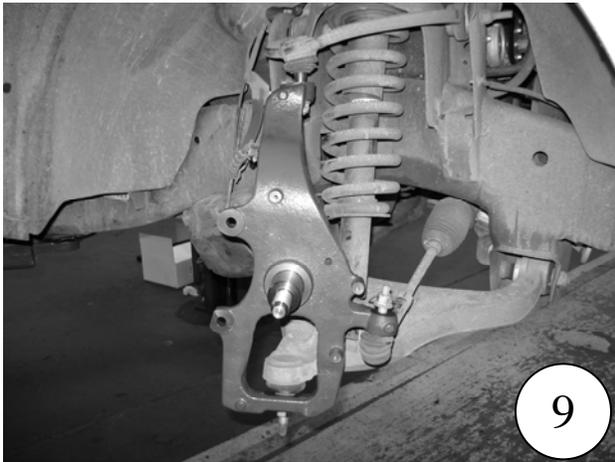
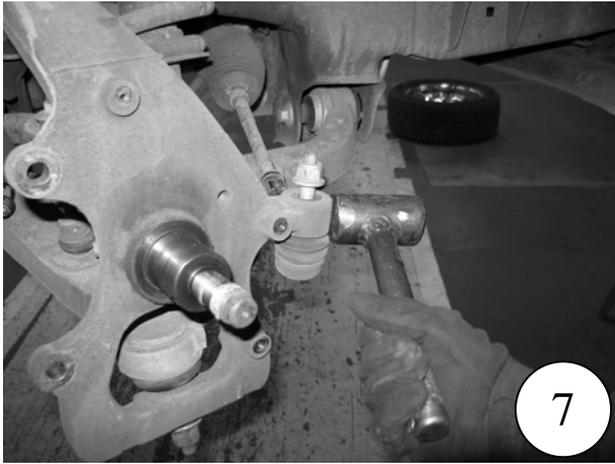
**3. FINAL ASSEMBLY AND ADJUSTMENTS**

- a) Check that all components and fasteners have been properly installed, tightened and torque.
- b) Check the brake hoses, and other components for any possible interference.
- c) Lift the vehicle and remove the support stands. Carefully lower the vehicle to the ground.
- d) Visually inspect the wheel alignment after the vehicle has been set down and rolled to relieve any pressure. It might be necessary to manually adjust the toe on the steering arms before the vehicle is driven.
- e) Immediately 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 modified.
- f) We recommend the vehicle be taken in to a qualified wheel alignment facility to be realigned to factory specifications. This should be done after the vehicle has been test driven and all modifications have been completed.
- g) Installation is complete. Check all of the hardware and re-torque at intervals for the first 10, 100, 1000 miles.

**PART LIST FOR 2351 DROPPED SPINDLE KIT**

<b>PART#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
2351-350	Steering Knuckle LH	1
2351-450	Steering Knuckle RH	1
110910	Cotter Pins 1/8" x 1-1/2	2
115009	Internal Tooth Lock Washer 5/8"	2
115012	Half Nut 16mm x 1.5	2



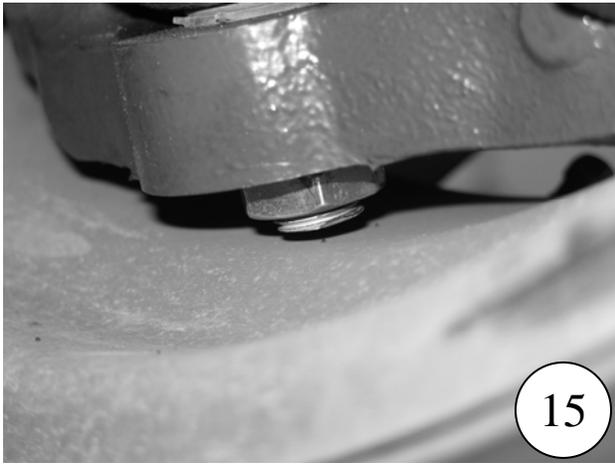




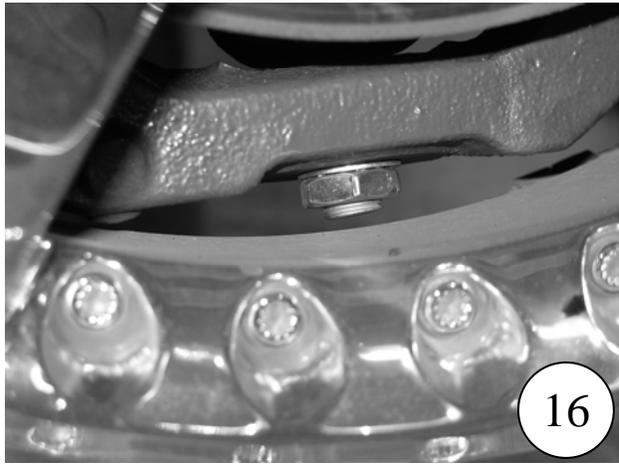
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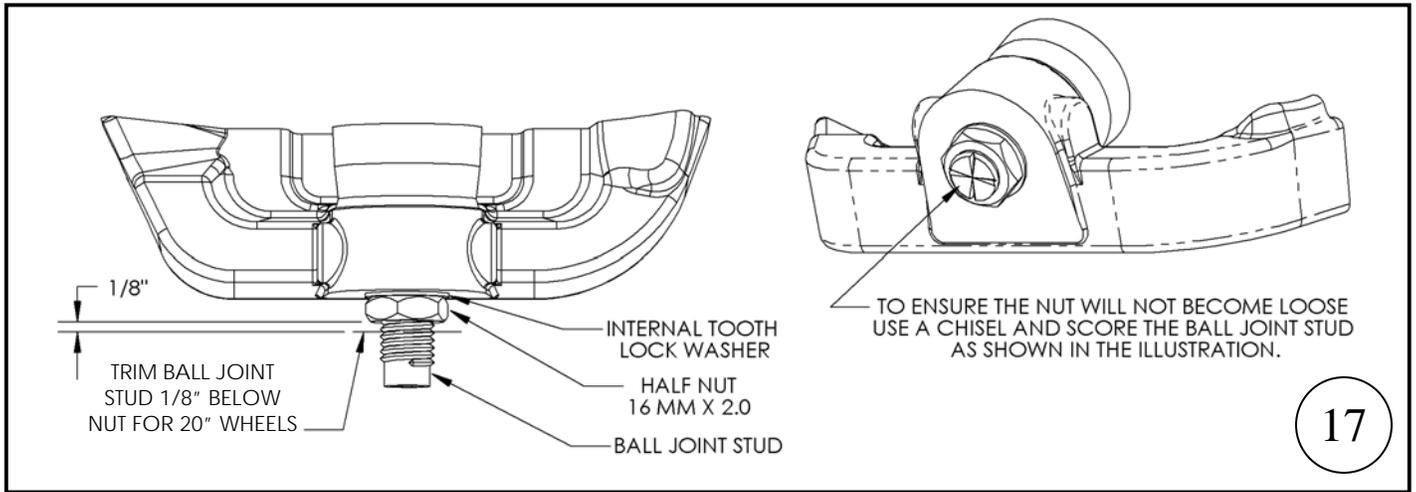
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