



# INSTALLATION GUIDE

**PART NUMBER: 6451**

**FLIP KIT**

**FORD F-150 2WD / 4WD | 2021+**

2WD: 4.5" REAR LOWERED RIDE HEIGHT  
4WD: 5.5" REAR LOWERED RIDE HEIGHT

300 W. PONTIAC WAY. CLOVIS, CA 93612  
PHONE: 800-445-3767 | EMAIL: [INFO@BELLTECH.COM](mailto:INFO@BELLTECH.COM)

# THANK YOU

Thank you for choosing our high quality Belltech product. We have spent a great deal of time developing our line of products so that you will receive maximum performance with minimal difficulty during installation. Soon your vehicle will be on the road looking and feeling much improved.

**Please take a moment to read all instructions and warnings prior to installation of your new Belltech product and before operating your vehicle. If you have any questions or concerns regarding any step in the installation process, please do not hesitate to call or email our customer support specialists who are trained to help you through any portion of this process.**

## Before You Begin:

**It is of the utmost importance that you confirm all of the components listed on the parts list is in the kit. You can find this list located on the last page(s) of your instructions. Do not begin installation if any part is missing. Instead, please call our Belltech customer service specialists.**

### Belltech Customer Support:

Phone: 1-800-445-3767

Email: [info@belltech.com](mailto:info@belltech.com)

## Safety Information:

**Warning:** Do not work under a vehicle supported only by a jack. Place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

Proper use of safety equipment and eye/face/hand protection is absolutely necessary when performing any of the following instructions.

We strive for an exceptional experience for all our valued customers. If for any reason you need assistance with your Belltech products, please do not return the product to the store you purchased from, but rather call our dedicated customer service experts, from 7am to 5pm PST.

We recommend that a qualified mechanic, at a properly equipped facility, perform this installation.

It is very helpful to have an assistant available during installation.

## Before Driving Your Vehicle:

It is important to double check all brake hoses, cables, and other components to be sure there is no interference. You must also check for wheel/tire to chassis/body interference. If any issues are found, review your installation instructions to be sure no steps were missed and any problems are corrected.

Make sure your vehicle is aligned immediately following installation.

Check all hardware and torque at intervals for the first 10, 100, and 1000 miles.

Some of Belltech's products are designed to improve your vehicle's off-road performance. Leveling/lifting your vehicle may result in an altered center of gravity. It is crucial to use extreme care when operating your vehicle to prevent rollover and/or loss of control.

Any changes in your vehicle's suspension may result in transformed handleability. Please test drive your vehicle in a remote location so you can become accustomed to the revised driving characteristics.

Perform headlight check and adjustment.

Failure to drive any modified vehicle in a safe manner may result in harm or death.

Never operate your modified vehicle under the influence of drugs, alcohol, or lack of adequate sleep.

Always wear your seatbelt.



**DIFFICULTY:**



**INSTALLATION TIME:**

3-5 Hours + Alignment

## RECOMMENDED TOOLS:

- Properly rated floor jack
- Support stands
- Wheel chocks
- Metric and standard socket wrench set
- Metric and standard wrench set
- Hex key socket set
- Vise-grip locking pliers
- Tape measure
- Marking Pen
- C-clamps

## SPECIALTY TOOLS:

- Torque wrench up to 300 ft lbs.
- Impact wrench
- Reciprocating saw

## ADDITIONAL PARTS REQUIRED:

The OEM shocks will be too long and will not allow proper suspension travel for use with this Belltech flip kit. Please use Belltech Street Performance shocks part number 2512JJ.

## INSTALLATION PREPARATION:

Before beginning the installation process, measure the hub to fender heights for your vehicle and record them in the “Before” section. After your vehicle has been modified, record the new measurements in the, “After” section. This way, you can compare the resulting height to the original. When taking the measurements, measure vertically from the center of the wheel to the inner edge of the fender.

**Before:**

LF: \_\_\_\_\_

RF: \_\_\_\_\_

LR: \_\_\_\_\_

RR: \_\_\_\_\_



**After:**

LF: \_\_\_\_\_

RF: \_\_\_\_\_

LR: \_\_\_\_\_

RR: \_\_\_\_\_

# JACKING, SUPPORTING, AND PREPARING THE VEHICLE

1. Park your vehicle on a smooth, level, concrete or seasoned asphalt surface.
2. Block the front wheels of the vehicle using wheel chocks. Make sure the vehicle's transmission is in "PARK" (automatic) or 1st gear (manual).
3. Activate the parking brake.
4. Break loose, but do not spin the wheel lug nuts to ease in removal when the wheels are in the air.
5. Lift the rear of the vehicle off the ground using a properly rated floor jack. Lift the vehicle so the front tires are approximately 6-8 inches off the ground.
6. Place support stands rated for the vehicles weight. The stands should be positioned in the factory specified locations (Refer to owners manual). Prior to lowering the vehicle onto stands, make sure the support stands will contact the chassis. It is very important that the vehicle is properly supported to prevent any harm to ones self or to the vehicle.
7. Lower the vehicle slowly onto the stands.
8. Remove the rear wheels.



## Technician reminder:

Never work under a vehicle supported only by a jack. It is necessary to place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

## REAR SUSPENSION REMOVAL

- Support the axle using a jack or lifting device so that it can be raised and lowered. Additionally, support the rear axle near the rear U-joint to keep the axle from rotating.
- Remove the upper and lower 15mm shock bolts to detach the shock from the vehicle.



### Technician reminder:

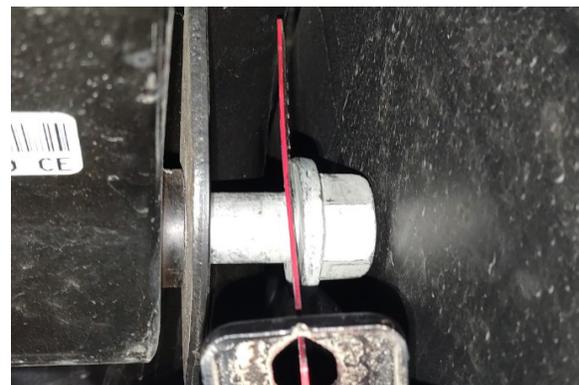
The driver side has a flag nut on the upper bolt. Ensure the correct tool is used to hold while removing the bolt.



- Lower the axle until the springs are at full droop and remove the 21mm U-bolt nuts.



- Remove the 21mm lower shackle bolt at the rear hanger but leave the shackle attached to the leaf spring.
- Break the 21mm front leaf spring hanger bolts loose. Back the bolt and nut off enough to expose the bolt shank.
- Due to the location of the fuel tank and exhaust, both front leaf spring hanger bolts must be cut off. Cut at the head of the bolts; ensure not to damage the fuel tank, exhaust, or frame.



- Mark the leaf springs with left, right, front, and rear to confirm their locations when placed back on the vehicle.
- Detach both leaf springs from the vehicle. If necessary, lower the axle to gain clearance.

## REAR SUSPENSION REMOVAL CONTINUED

17. The leaf spring center bolts must be inverted. Use a pair of C-clamps to hold the spring pack while the spring is modified.
18. Use vise-grip locking pliers to hold the round head of the center bolt and remove the 1/2" nuts.



19. Remove and discard the U-bolt support plate and outer shims. Assemble the leaf spring with the center bolts inverted; round bolt head at the top.



### Technician reminder:

Do not remove the shims placed between the leaves.



20. Detach the original shackle from the leaf spring. Note the direction of the bolt head as the bolt will need to be placed the same direction.
21. Mount the new Belltech shackle onto the leaf spring with the open side toward the leaves. Do not torque the supplied M16 x 2 -130mm low profile shackle bolt at this time. After the vehicle has been placed on the ground, the torque setting will be 173 ft lbs.
22. Unfasten the bolts securing the brake lines at the rear of the leaf spring mount on each side of the axle.



## LEAF SPRING AND HANGER INSTALLATION

23. Place the Belltech front leaf spring hanger into the front leaf spring mount; align the threaded bolt hole on the Belltech hanger with the front locating hole on the frame. Fasten the hanger the supplied 1/2"-20 X 1-1/4" bolt and 1/2" washer. Torque to 70 ft lbs.



24. Fasten the upper bolt hole with the supplied M18 X 2.5-130mm bolt, M18 washer, and M18 lock nut. Torque to 180 ft lbs.



25. **For vehicles equipped with mono-leaf springs only**, place two bushing support rings, part number 6449-045 on the front leaf spring bushings with the flat side facing outward.



## LEAF SPRING AND HANGER INSTALLATION CONTINUED

26. Raise the axle up the vehicle to place the leaf springs under the axle and in the hangers.
27. Attach the leaf spring to the Belltech front leaf spring hanger with the M18 X 2.5-130mm bolt, M18 washer, and M18 lock nut. Place the bolt in from the outside. Do not torque the front spring hanger bolt at this time. After the vehicle has been placed on the ground, the torque setting will be 180 ft lbs.



### Technician reminder:

Do not torque the leaf spring mounting bolt until the vehicle is on level ground. Failure to do so may result in improper final lift or lowering height measurements.



28. Lift the rear of the spring place the lower shackle in the rear hanger. Fasten the spring and shackle assembly with the original bolt.



29. Do not torque the original rear lower shackle bolt at this time. After the vehicle has been placed on the ground, the torque setting will be 173 ft lbs.

# BELLTECH FLIP KIT INSTALLATION

30. Place the axle saddle onto the leaf spring. Ensure the saddle's two locating holes are toward the front of the vehicle.



31. Place the 3° pinion shim between the leaf spring and the Belltech saddle. The tall side of the shim must face toward the front of the vehicle.



## Technician reminder:

Ensure the saddle and pinion shim are seated between the two leaf spring center bolts and axle.

32. Lower the axle into the saddles ensuring the two tabs are positioned inside the factory spring mount.

33. Place the U-bolt spring pad mount on top of the axle, centering it on the mounting surface.

34. Attach the U-bolts and U-bolt plate loosely onto the axle, thread the 9/16"-18 Nyloc nuts and washers on the U-bolts. The U-bolt plate must be installed with the notched section facing left (driver side) to clear the lower shock bolt. Torque the U-bolt nuts in a cross pattern in 4 stages: Stage 1: 30 ft lbs., Stage 2: 59 ft lbs., Stage 3: 89 ft lbs, and Stage 4: 111 ft lbs.



35. Attach the shorter-length shock absorber to the upper mount with the original bolt. Use the supplied M12 x 1.75-65mm bolt at the lower shock mount. Torque the upper and lower bolts to 66 ft lbs.



## Technician note:

The original length shocks are too long and will not allow proper suspension travel for use with this Belltech flip kit. Please use Belltech Street Performance shocks part number 2512JJ.



## BELLTECH FLIP KIT INSTALLATION CONTINUED

36. Use supplied M8 x 1.25-16mm socket head screw and M8 washers to attach the brake line brackets to the axle.



37. Detach the original bump stop from the vehicle by removing the 13mm bolt in the center.



38. Attach the supplied Belltech 2" tall bump stop using the supplied M10 x 1.5-30mm socket head bolt.



### Technician note:

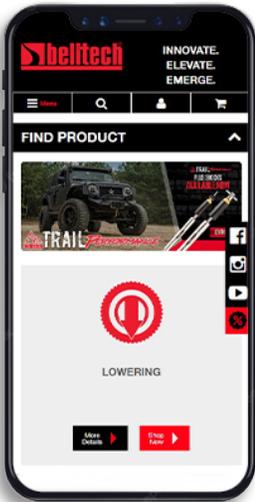
The axle adapter saddles have been design to properly position the rear axle pinion shaft relative to the driveline to eliminate vibration. If driveline vibrations are experienced, take the vehicle to a driveline service shop immediately for driveline angle inspection and for the necessary adjustments to be performed. Do not drive the vehicle if it exhibits extreme driveline vibrations, as U-joint wear could occur prematurely.

# FINALIZING THE INSTALLATION

39. Mount the wheels and tighten the lug nuts.
40. Lift the vehicle and remove the support stands.
41. Carefully lower the vehicle onto the flat ground.
42. Torque the lug nuts to 150 ft lbs.
43. Check that all components and fasteners have been properly installed and torqued.
44. Read and perform all tasks in the “Before Driving Your Vehicle” section of page 1 of your instructions.

## THANK YOU FOR CHOOSING BELLTECH.

You are now a part of the Belltech family and we are eager to catch a glimpse of your newly modified vehicle. Give us a shout out and let us know how much you love our product. Don't forget, we offer other Belltech related merchandise for you and your vehicle on our website [www.belltech.com](http://www.belltech.com)



belltechsuspension



Belltech Suspension



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If you have any questions, concerns, or warranty related issues regarding your Belltech product, please call or email our experienced customer service specialists.

### Belltech Customer Support:

Phone: 1-800-445-3767

Email: [info@belltech.com](mailto:info@belltech.com)

# KIT CONTENTS



6451		
Part number	Description	Qty
6705-100	SHACKLE	2
6446-001-99	AXLE SADDLE	2
11U1015-955	SQUARE U-BOLT	4
6449-005-991	U-BOLT PLATE	2
6440-002-991	U-BOLT SPRING PAD	2
6447-030-99	LEAF SPRING HANGER (LH)	1
6447-030-99	LEAF SPRING HANGER (RH)	1
6451-777	HARDWARE KIT	1

6451-777		
Part number	Description	Qty
110265	M18-2.5 NYLOC NUT	4
110293	M18 X 2.5-130MM BOLT	4
112024	M10 X 1.5-30MM SOCKET HEAD BOLT	2
4923-001	BUMP STOP	2
110455	9/16"-18 NYLOC NUT	8
110670	9/16" WASHER	8
112001	M8 X 1.25-16MM SOCKET HEAD BOLT	2
110635	M8 WASHER	2
112124	M12 X 1.75-65MM BOLT	2
110502	5/8" WASHER	4
110239	M10 WASHER	2
6449-045	LEAF SPRING BUSHING	4
4976-001	3 DEGREE PINION SHIM	2
110408	1/2"-20 X 1-1/4" BOLT	2
110660	1/2" WASHER	2



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