



INSTALLATION GUIDE

PART NUMBER: 6451
-4.5" 2WD | -5.5" 4WD REAR AXLE FLIP KIT
FORD F-150 | 2021+

300 W. PONTIAC WAY. CLOVIS, CA 93612
PHONE: 800-445-3767 | EMAIL: 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

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 6am 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 re-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
- 4 support stands
- Wheel chocks
- Metric socket wrench set
- Metric wrench set
- Impact wrench
- C-clamps
- Abrasive cutter
- Reciprocating saw
- Spray paint
- Tape measure
- Marking Pen
- Wire coat hanger or wire

REQUIRED ADDITIONAL PARTS:

- After installing your new Belltech Flip Kit, your OEM shocks will be too long and will not allow proper suspension travel. We recommend purchasing a set of 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 rear 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. Loosen, but do not remove, the front wheel lug nuts.
5. Lift the front 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 front wheels.

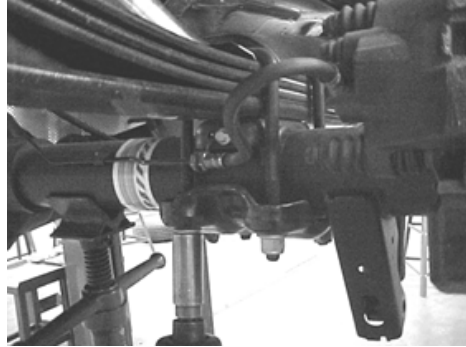


Technician reminder:

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.

DISASSEMBLY

9. Properly 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 once unbolted.
10. Remove shocks.
11. Lower the axle until the springs are at full droop.
12. Remove the U-bolts using a 21mm socket.



13. Remove the lower shackle bolt that connects it to the rear hanger, but leave the shackle connected to the spring at this time.
14. Loosen the front spring hanger nuts and bolts. Back the bolt and nut off enough to expose the bolt shank.
15. Both front spring hanger bolts need to be cut off because of the fuel tank and exhaust locations. Cut off the head of the bolts, being careful not to damage the fuel tank, exhaust, or frame.



16. Mark the leaf springs with left, right, front, and rear to signify their locations, so they are easily reinstalled in their new locations.
17. Remove both leaf springs. It may be necessary to lower the axle to remove the leaf springs.

LEAF SPRING PREPARATION

18. Use a pair of C-clamps to hold the spring pack together while you reverse the center bolts.



19. Remove and discard the U-bolt support plate and outer shims. Do not remove any shims between the leaves.

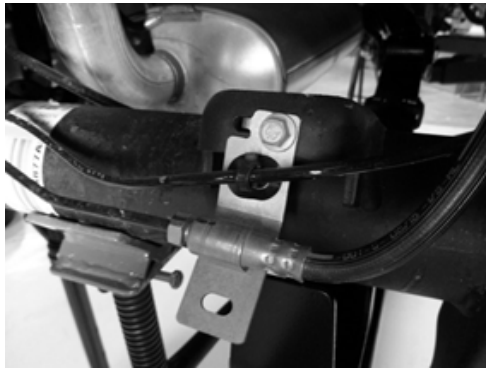


LEAF SPRING PREPARATION CONTINUED

20. Tighten the center bolts by using pliers to hold the round head of the bolt.
21. Remove the stock shackle. Note the direction of the bolt head as the bolt will need to be reinstalled the same direction.
22. Install the Belltech shackle onto the leaf spring. Do not tighten the shackle in place. It will be tightened after the vehicle has been set down.



23. Repeat steps 18 through 22 for the other leaf spring.
24. Remove the bolts securing the brake lines to the rear of the OEM leaf spring mount on each side of the axle.



LEAF SPRING HANGER INSTALLATION

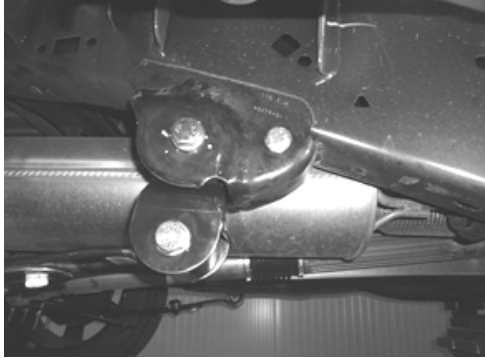
25. Install the hanger into the front leaf spring mount using the locating hole on the frame. Insert the supplied bolt and washer. The hanger is threaded. Torque to 70 ft lbs.



26. Install the supplied M18 bolt, washer, and M18 lock nut into the top hole and torque down to 180 ft lbs.
27. Attach the leaf spring to the hanger with the helix head M18-2.5x 140mm, washer and M18 lock nut.

LEAF SPRING HANGER INSTALLATION CONTINUED

28. Install the hanger into the front leaf spring mount using the locating hole on the frame. Insert the supplied bolt and washer. The hanger is threaded. Torque to 70 ft lbs.
29. Install the supplied M18 bolt, washer, and M18 lock nut into the top hole and torque down to 180 ft lbs.
30. Attach the leaf spring to the hanger with the helix head M18-2.5x 140mm, washer and M18 lock nut.



Technician note:

Do not tighten/torque the leaf spring mounting hardware until the vehicle is on level ground. Failure to do so will result in improper final lift or lowering measurements.

LEAF SPRING INSTALLATION

31. Raise the axle toward the vehicle so the springs can be moved under the axle and bolt onto the chassis.
32. Place two bushing support rings on the front leaf spring bushings with the flat side facing outward.



33. Place the leaf spring in the front spring hanger and insert the supplied 18x2.5x130mm bolt, washer and nylon lock nut from the outside.
34. Once the bolt, washer, and nut are in place, rotate the spring back and insert the lower shackle bolt in the rear hanger.
35. Torque the front spring hanger bolt to 180 ft lb. Leave the rear shackle bolt loose. It will be tightened to OE specifications after the vehicle has been set down.
36. Repeat steps 31 through 35 on the other side.

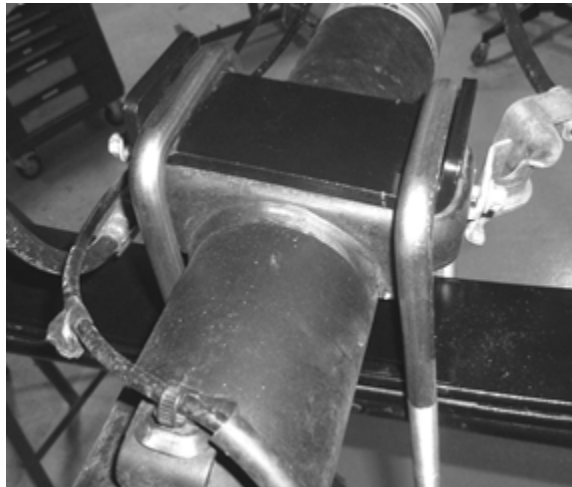
LEAF SPRING INSTALLATION CONTINUED

37. Place the two axle saddles onto the leaf springs. The saddle should be placed on the leaf spring so that the two locating holes are toward the front of the vehicle.



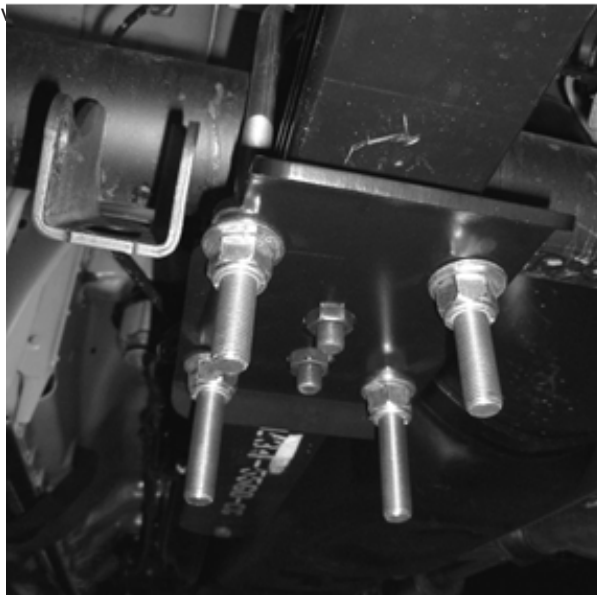
38. Install the 3 degree pinion shim between by sliding it between the leaf spring and the Belltech saddle, with the taller side facing towards the front of the vehicle. Make sure the saddle and pinion shims are seated correctly between the two leaf springs and the axle.

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



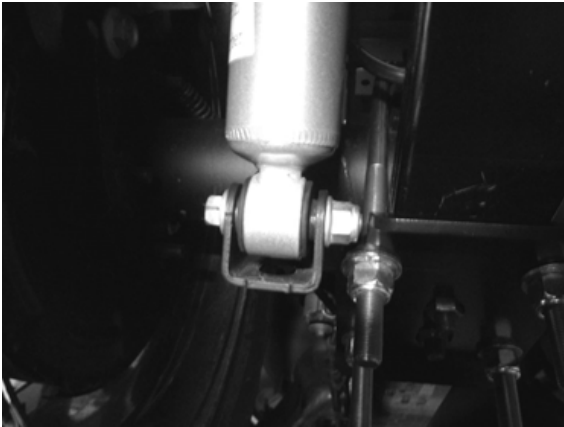
40. Install the U-bolt spring pad mount on top of the axle, centering it on the mounting surface.

41. 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 toward the drive



LEAF SPRING INSTALLATION CONTINUED

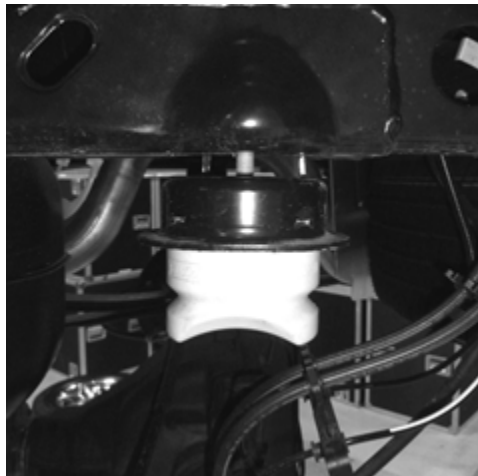
42. Using the supplied M12x1.5x65mm bolts on the bottom, install shorter-length shock absorbers. The OEM length shock absorbers are too long and will not allow for travel. We recommend Belltech Street Performance Shocks (Part number 2512JJ).



43. Using supplied M8 hardware, install the brake line brackets to the axle.

BUMP STOP INSTALLATION

44. Remove the OEM bump stop by removing the bolt in the center of the bump stop.



45. Install the supplied Belltech bump stop using the supplied socket head bolt.
46. Repeat steps 44 and 45 for both frame rails.



Technician note:

The axle adapter saddles have been design to properly position the rear axle pinion shaft relative to the drive-line, so that vibrations are eliminated. If driveline vibrations are experienced, take the vehicle to a driveline service shop immediately for driveline angle inspection and any necessary adjustments. Do not drive vehicles exhibiting extreme driveline vibrations, as U-joint wear could occur prematurely.

FINALIZING THE INSTALLATION

47. Re-install the wheels and tighten the lug nuts.
48. Lift the vehicle and remove the support stands.
49. Carefully lower the vehicle onto the flat ground.
50. Torque the lug nuts to manufacturer's specifications.
51. Check that all components and fasteners have been properly installed and torqued.
52. Re-read and perform all tasks in the "Before Driving Your Vehicle" section of page 1 of your instructions.



belltechsuspension



Belltech Suspension



@belltechsuspension

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!

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

KIT CONTENTS



6451		
Part number	Description	Qty
6705-100	Shackle and Bushing	2
6449-001-99	Axle Saddle	2
6596-007	U-Bolt	4
6451-777	Hardware Kit	1
6449-005-991	U-Bolt Plate	2
6440-002-991	U-Bolt Spring Pad	2
6447-040-99	Hanger RH	1
6447-030-99	Hanger LH	1

6451-777 Hardware Kit		
Part number	Description	Qty
110265	Nylon Lock Nut M18-2.5	4
110293	Bolt Hex M18x2.5-130mm	4
112024	Socket Cap Screw 10mm-1.5 x 30mm	2
4923-001	Bump Stop	2
110455	Nylock Nut	8
110670	Washer	8
112001	Socket Head Cap Screw 8mm-1.25 x 16mm	2
110635	Washer 8mm	2
110502	Washer 5/8"	8
110239	Washer M10	2
6449-045	Leaf Spring Bushing	4
4967-001	Pinion Shim	2