



# INSTALLATION GUIDE

**PART NUMBER: 6448**  
**FLIP KIT AND C-NOTCH**  
**FORD F-150 2WD / 4WD | 2015-2020**

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:**

4-5 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
- Grinder with abrasive cut-off wheel
- Power drill and drill bits

## 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 2712EE.

## 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. The vehicle chassis MUST also be supported during this modification. In addition to the factory locations, place support stands underneath the chassis, at the front and at the rear of the leaf springs. This will eliminate any deflection or drooping of the chassis during the cutting and modification. Belltech is not responsible for any damages resulting from poor reinforcement of the chassis during this modification.
8. 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.
9. Lower the vehicle slowly onto the stands.
10. 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

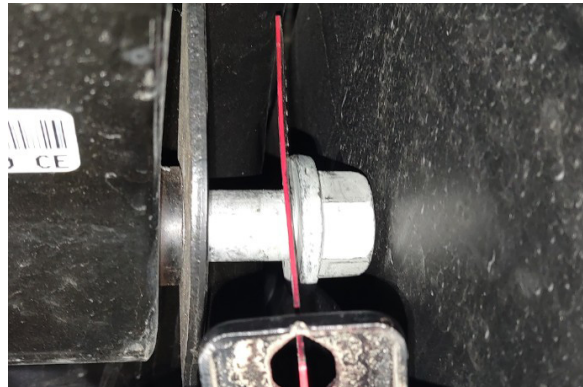
11. Remove the upper and lower 15mm shock bolts to detach the shock from the vehicle.



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



13. Remove the 21mm lower shackle bolt at the rear hanger but leave the shackle attached to the leaf spring.
14. Break the 21mm front leaf spring hanger bolts loose. Back the bolt and nut off enough to expose the bolt shank.
15. 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.



15. Mark the leaf springs with left, right, front, and rear to confirm their locations when placed back on the vehicle.
16. 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. Assemble the leaf spring with the center bolts inverted; round bolt head at the top.

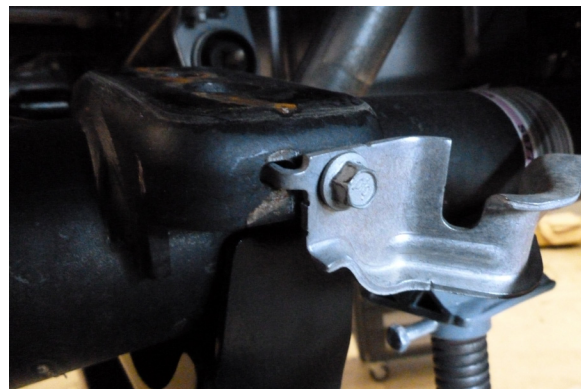


### Technician reminder:

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 in the same direction.
21. Attach the new Belltech shackle onto the leaf spring with the original nut and bolt. The open side of the shackle must face toward the leaf's. Do not torque the shackle bolt yet. After the vehicle has been placed on the ground, the torque setting will be 173 ft lbs.
22. Unfasten the bolts securing the brake line brackets to the leaf spring mounts on each side of the vehicle.

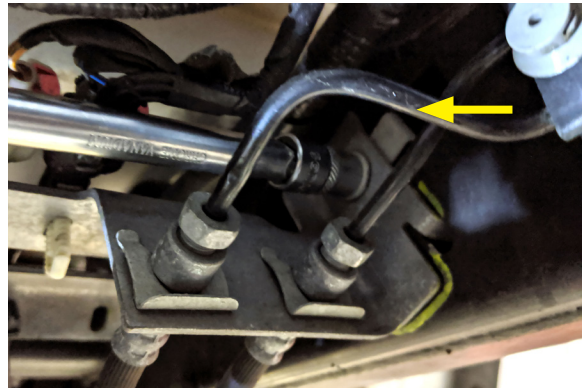


## REAR SUSPENSION REMOVAL CONTINUED

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



24. Remove the 10 mm bolt from the drivers side brake line bracket at the chassis. The clip nut behind the bracket must also be detached from the chassis as it will be reused later.



25. Use a panel/trim removal tool to detach the wiring loom and brake lines from the surrounding mounting locations to allow slack in the lines.



26. Use tie downs, zip-ties, or bungee cords to wrap around the wiring looms and brake lines to pull away and create clearance for the cutting areas. Do not damage the lines with excessive pulling or stretching, rather, remove more mounts to create slack.



## FRAME PREPARATION

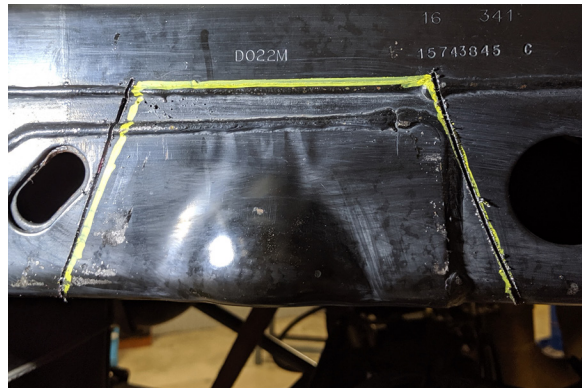
27. Attach the cutting template to the chassis. Align the cutouts with the corresponding holes in the frame. Use a paint pen to clearly mark the area to be cut.



28. Assure the marks are correct by removing the template and measuring from the top of the chassis to the top marked line. The measurement should be approximately 40mm or 1-9/16". Removing too much of the frame will result in a compromised frame and allow it to flex too much.



29. Use an angle grinder and a cutting disc to make straight pilot cuts. This will align the saw and help keep the cut consistent on both sides of the frame. Be cautious to keep the saw level and straight while cutting the sides of the chassis.

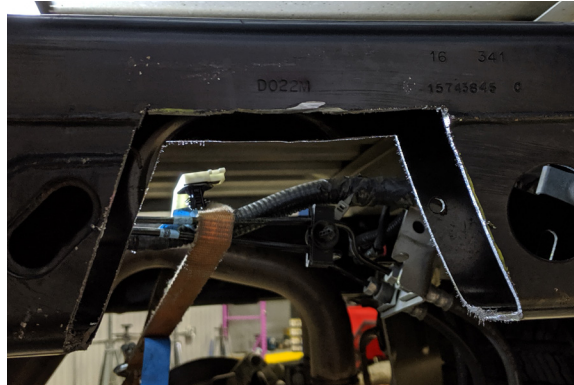


## FRAME PREPARATION CONTINUED

30. To make the horizontal cut, create a slit with the angle grinder along the marking. The saw blade can now pass through the slit and through the pre-existing hole on the other side. Move slowly while cutting to avoid the blade from bending along with the contour of the back hole.

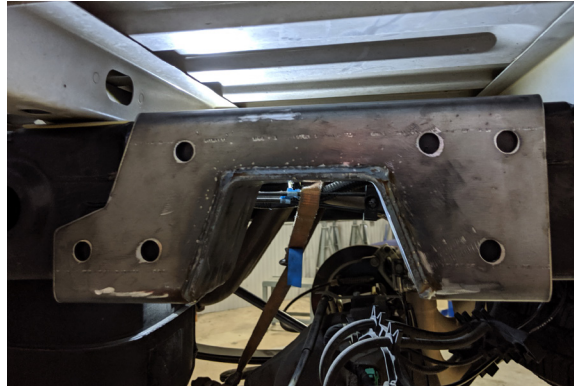


31. The resulting cut should look similar to the image below. Use the angle grinder to clean up and deburr the cuts to remove the sharp edges. Spray paint or coat the bare edges to prevent corrosion.



## BELLTECH C-NOTCH INSTALLATION

32. Place the outer C-notch shell over the frame. The shell must fit tightly. Trim the cuts as necessary.



33. The C-notch inner support plate is temporarily used as a guide for the holes to line up concentrically. Place the support plate on the inside of the outer shell. Fasten with the supplied 7/16"-20 x 1-1/4" bolts, 7/16"-20 Nyloc nuts, and washers. Tighten to about 20 ft lbs. or just enough to hold the support plate firmly against the chassis.

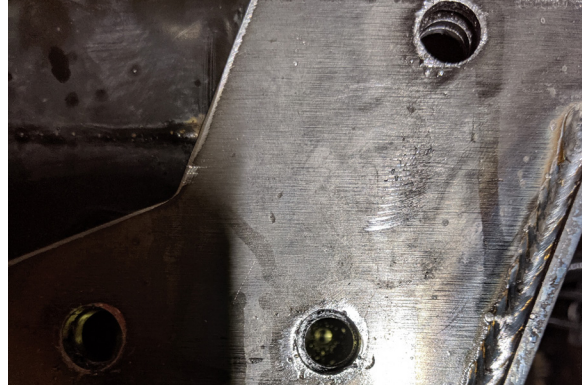
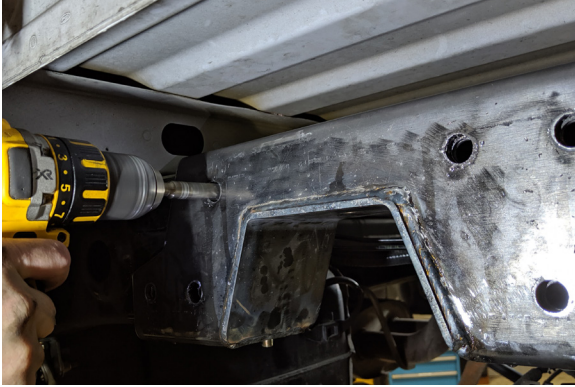


34. Use a center punch to mark the holes to be drilled from the outer shell side.



## BELLTECH C-NOTCH INSTALLATION CONTINUED

35. Drill pilot holes first with a smaller drill bit (this will ensure the holes will be concentric from front to back), then increment the drill bits to enlarge the hole to 9/16". Alternatively, you can use a step drill bit. Do not rush this process as overheating the metal will cause a poor finish in the holes and dull your drill bits.



36. After the holes on the chassis are drilled through, loosen the top and bottom bolts holding the support plate onto the outer C-notch shell until the support plate is allowed to move.
37. Place the supplied 1/2"-20 x 4-1/2" bolts through the outer C-notch shell and fasten with the 1/2"-20 Nyloc nuts and washers. Torque to 80 ft lbs.

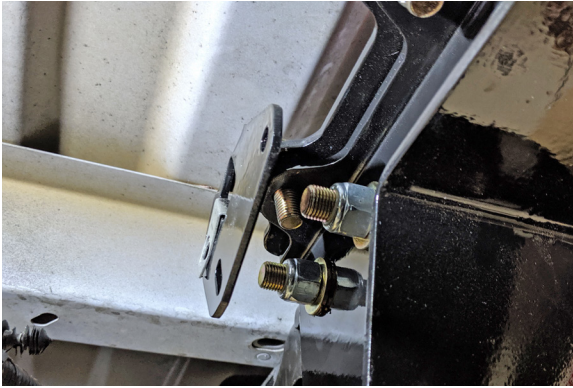


38. Torque the top and bottom 7/16"-20 x 1-1/4" bolts to 65 ft lbs. On the drivers side, do not tighten the far rear top bolt. Remove the bolt as this is where the brake line relocation bracket will be installed.

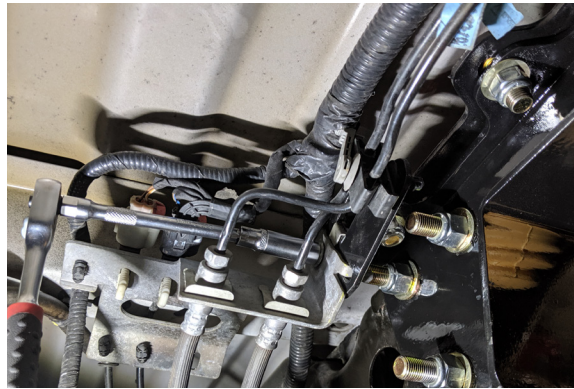


## BELLTECH C-NOTCH INSTALLATION CONTINUED

39. **Drivers side only:** Attach the brake line relocation bracket with the 7/16"-20 x 1-1/4" bolt passing through the far rear top hole. Fasten with the 7/16"-20 Nyloc nut, and washers. Torque to 65 ft lbs. and insert the clip nut as shown in the images below.



40. Attach the original brake line and wiring bracket to the relocation bracket with the original bolt. Attach the wiring loom and brake lines to their original mounting locations.



41. Attach the supplied bump stops into the threaded hole in the center of the outer C-notch shells as shown. Do not cross-thread the bolt. The bump stop will thread in by hand and does not require any tools to be installed. Hand tighten firmly.



42. Confirm ALL hardware and visually inspect the C-notches are firmly clamping the chassis.



# BELLTECH FLIP KIT INSTALLATION

43. Raise the axle up to place the leaf springs under the axle and in the hangers.



44. Begin on the passenger side. Attach the leaf spring to the front leaf spring hanger with the M18 X 2.5-130 mm bolt, 5/8" washer, and M18 Nyloc 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 258 ft lbs.

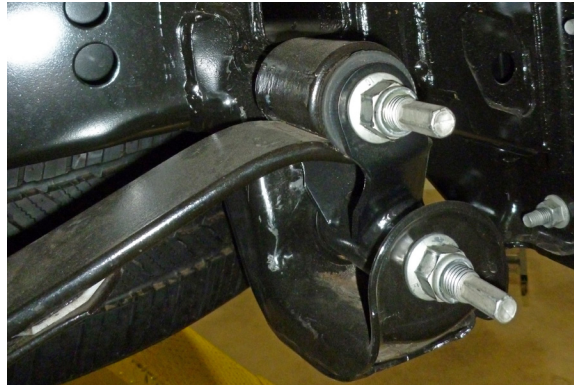


## Technician reminder:

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.



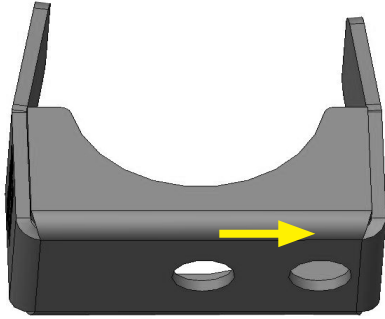
45. Lift the rear of the spring and place the lower shackle in the rear hanger. Fasten the spring and shackle assembly with the original nut and bolt.



46. 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.
47. Repeat these steps for the opposite leaf spring and shackle assembly.

## BELLTECH FLIP KIT INSTALLATION CONTINUED

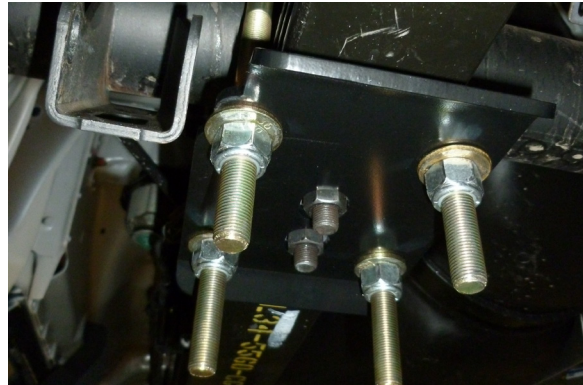
48. Place the axle saddle onto the leaf spring. Ensure the saddle's two locating holes are toward the front of the vehicle.



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

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

51. 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: 26 ft lbs., Stage 2: 52 ft lbs., Stage 3: 74 ft lbs., and Stage 4: 98 ft lbs.



52. 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.

53. Attach the shorter-length shock absorber to the upper and lower mounts with the original bolts. Torque the upper and lower bolts to 66 ft lbs. The lower shock bolt may need to be trimmed to avoid contact with the U-bolt plate.



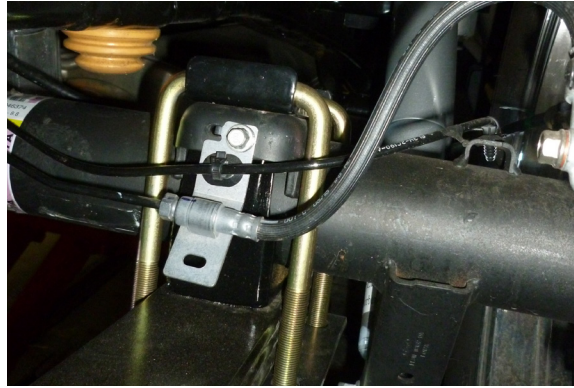
### Technician note:

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 2712EE.



## BELLTECH FLIP KIT INSTALLATION CONTINUED

54. Attach the brake line brackets with the original bolt; torque to 17 ft lb. It may be necessary to trim down the end of the bolts.



### 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.

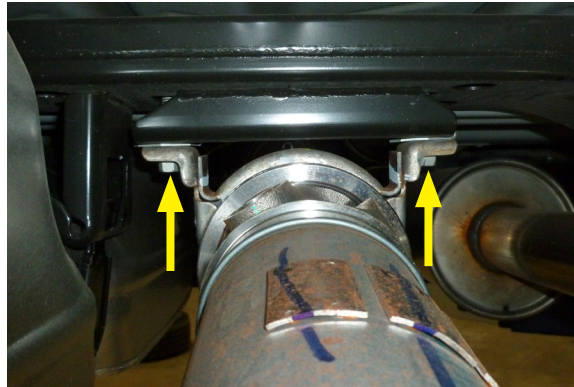
# DRIVELINE ADJUSTMENTS



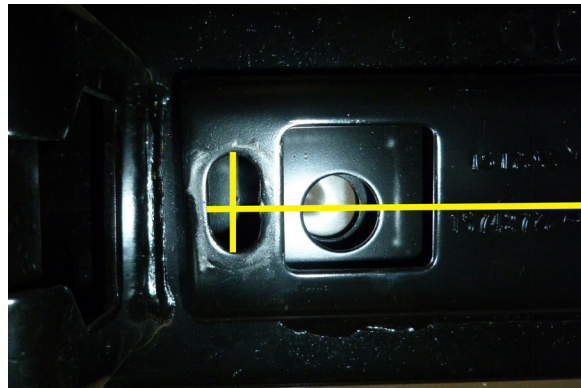
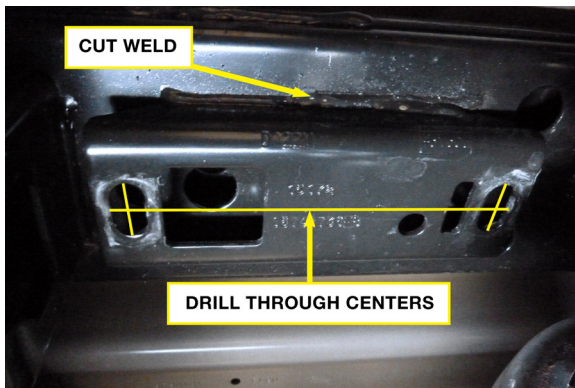
## Technician note:

For applications with a **two-piece** driveline and center-carrier bearing, the center carrier bearing mount must be relocated.

55. To prevent damage to the U-joints, use a jack to support the driveline during the modification.
56. Remove the two 14mm center carrier bearing bolts and nut inserts. Push the center carrier bearing toward the passenger side and support it in place with the jack. Ensure you do not drop, dent, or damage the driveline components.



57. Use a center punch to mark the crossmember above the existing center carrier bearing bracket. Drill a 1/2" hole through both layers of the crossmember. Ensure you do not drill into the floor of the cab, which is just above the crossmember.

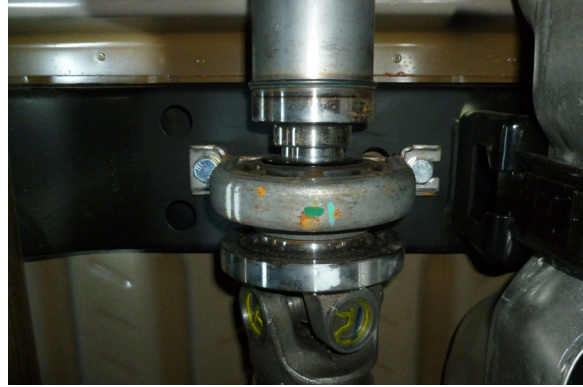


58. Use an abrasive cutting wheel to cut the welds at the front and rear of the original center carrier bearing bracket. Ensure you do not cut into or damage the crossmember as you remove the bracket.



## DRIVELINE ADJUSTMENTS CONTINUED

59. Use a grinder to clean up any excess material left on the mount. The surfaces where the two welds once were must be smooth. Spray paint over the exposed metal to prevent corrosion.
60. Attach the center carrier bearing assembly onto the crossmember using the supplied M12 X 1.5-60 mm bolts, M12 Nyloc nuts, and washers. Place the bolts and washers from under the crossmember and Nyloc nuts on the topside. Torque both bolts to 50 ft lbs.



### Technician warning:

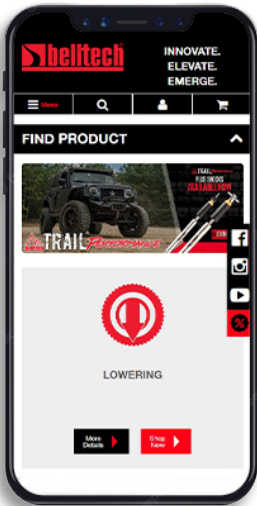
The axle saddles have been designed to properly position the rear axle pinion shaft relative to the driveline. In combination with the driveline adjustments performed, driveline vibration should be eliminated. If driveline vibration *is* experienced after the installation, take the vehicle to a driveline service shop immediately for angle inspection and necessary adjustments. **DO NOT** drive the vehicle if it exhibits extreme driveline vibration as U-joint wear may occur. Ensure the U-joints are lubricated if deemed necessary.

# FINALIZING THE INSTALLATION

61. Mount the wheels and tighten the lug nuts.
62. Lift the vehicle and remove the support stands.
63. Carefully lower the vehicle onto the flat ground.
64. Torque the lug nuts to 150 ft lbs.
65. Check that all components and fasteners have been properly installed and torqued.
66. 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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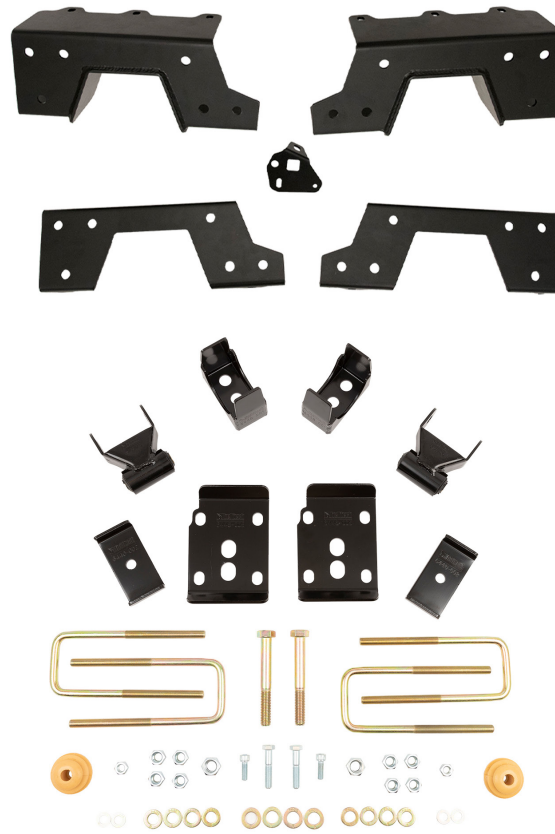
If you have any questions, concerns, or warranty related issues regarding your Belltech product, please call or email our experienced customer service specialists.

### Belltech Customer Support:

Phone: 1-800-445-3767

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

# KIT CONTENTS



6448		
Part number	Description	Qty
6703-100	SHACKLE	2
6446-001-99	AXLE SADDLE	2
11U1011-955	SQUARE U-BOLT	4
6446-005-991	U-BOLT PLATE	2
6440-002-991	U-BOLT SPRING PAD	2
6647-007-99	OUTER C-NOTCH LH	1
6647-009-99	OUTER C-NOTCH RH	1
6647-008-99	C-NOTCH SUPPORT LH	1
6647-010-99	C-NOTCH SUPPORT RH	1
6647-059-99	BRAKE LINE BRACKET	1
6647-887	TEMPLATE	1
6448-777	HARDWARE KIT	1
6647-777	HARDWARE KIT	1

# KIT CONTENTS

6448-777		
Part number	Description	Qty
110265	M18-2.5 NYLOC NUT	2
112292	M12-1.5 NYLOC NUT	2
110455	9/16"-18 NYLOC NUT	8
110293	M18 X 2.5-130 MM BOLT	2
112046	M12 X 1.5-60 MM BOLT	2
110670	9/16" WASHER	8
110645	7/16" WASHER	4
110502	5/8" WASHER	4

6647-777		
Part number	Description	Qty
110403	1/2"-20 NYLOC NUT	12
110305	7/16"-20 NYLOC NUT	10
110203	5/16"-18 NYLOC NUT	1
110427	1/2"-20 X 4-1/2" MM BOLT	12
110650	7/16"-20 X 1-1/4" MM BOLT	10
110201	5/16"-18 X 1" MM BOLT	1
4923-001-BN	BUMP STOP	2
110660	1/2" WASHER	24
110645	7/16" WASHER	20
110204	5/16" WASHER	2



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