belltech®

INSTALLATION GUIDE

PART NUMBER: 6440
FLIP KIT
FORD F-150 2WD | 2004-2008

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 the installation of your new Belltech product and before operating your vehicle. For any questions or concerns regarding the steps in the installation process, please do not hesitate to call or email our customer support team 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 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

RECOMMENDED TOOLS:

- Properly rated floor jack
- Support stands
- Wheel chocks
- Metric socket wrench set
- Metric wrench set
- Marking pen
- Spray paint
- Tape measure
- Safety glasses
- Grinder with abrasive cut-off wheel
- Power drill and drill bits
- Large C-clamps
- Medium weight ball peen hammer and center punch
- Steel construction square
- 1/2” drive torque wrench up to 200 ft lbs.

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.

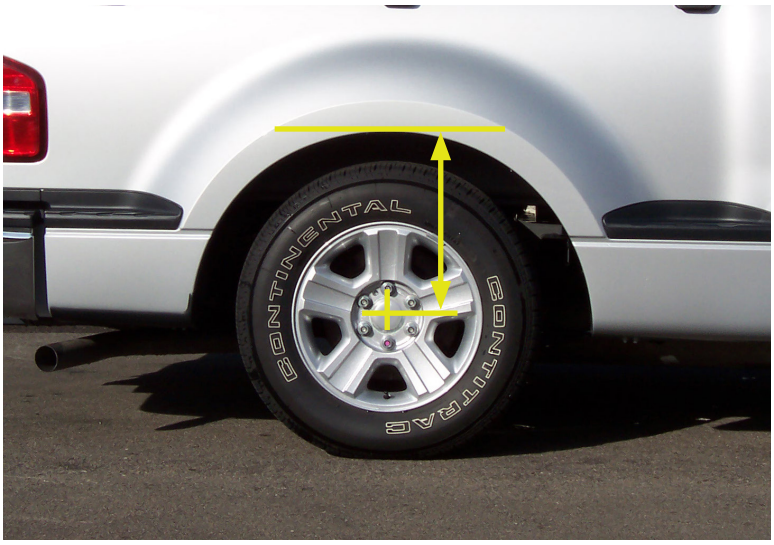
Before:

LF:_____

RF:_____

LR:_____

RR:_____



After:

LF:_____

RF:_____

LR:_____

RR:_____

JACKING, SUPPORTING, AND PREPARING THE VEHICLE

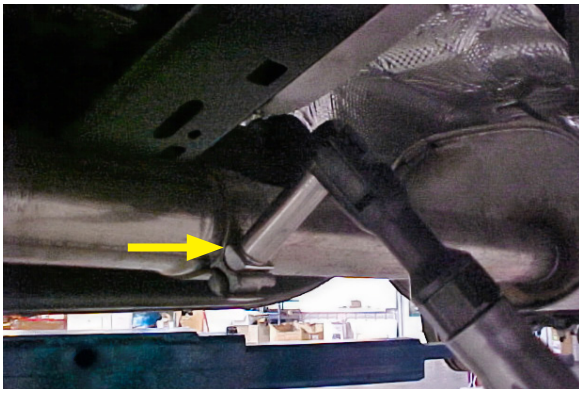
1. Park your vehicle on a smooth, level, concrete or seasoned asphalt surface.
2. Block the front wheels of the vehicle using wheel chocks. Make sure the vehicle's transmission is in "PARK" (automatic) or 1st gear (manual).
3. Activate the parking brake.
4. Break loose, but do not spin the wheel lug 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 rear 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 the owner's 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 oneself or to the vehicle.
7. Lower the vehicle slowly onto the stands.
8. Remove the rear wheels.

Technician reminder:

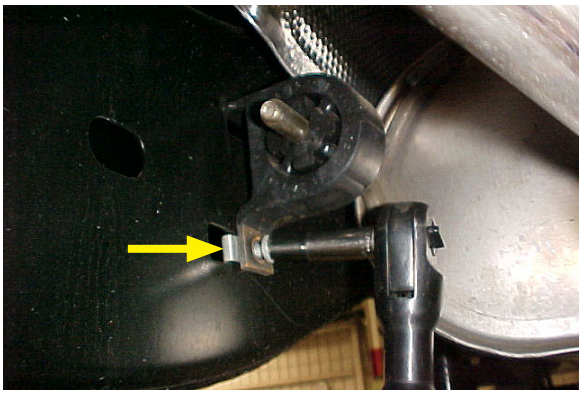
Never work under a vehicle supported only by a jack. It is necessary to place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

REAR SUSPENSION REMOVAL

9. The muffler will need to be loosened and lowered to help access the leaf spring hanger on the passenger side. Loosen but do not fully remove the 15mm nut on the exhaust clamp located before the muffler.



10. Remove the 10mm bolts from the three rubber mount brackets that hold the muffler to the frame. The muffler can now be lowered enough access passenger side front spring hanger bolt.

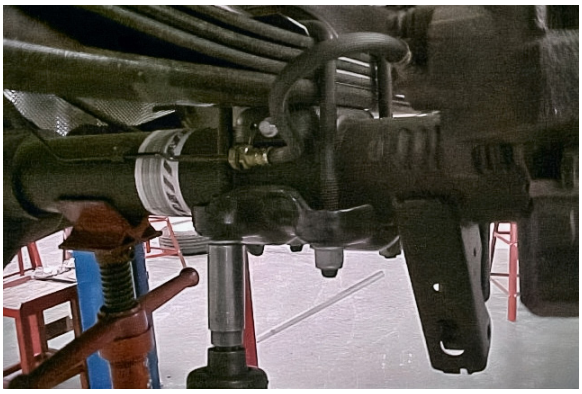


11. Support the axle using a floor jack so that it can be raised and lowered. Additionally, support the rear axle near the rear U-joint to keep the axle from rotating.

Technician warning:

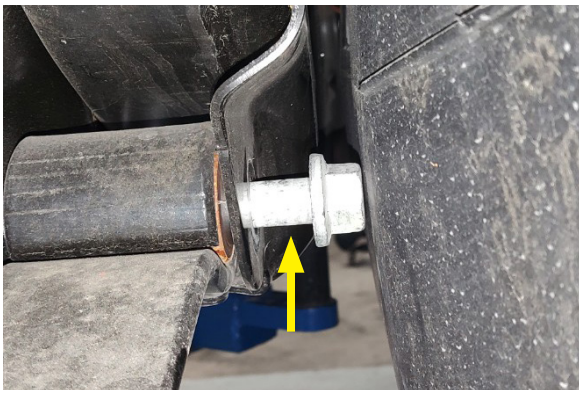
Leaf springs may be under tension and may store a great amount of energy. Use caution during the following steps to avoid personal injury and/or damage to vehicle. Ensure not to damage the brake hoses and/or driveline while relocating rear axle assembly

12. Remove the upper and lower 18mm nuts and 15mm bolts to detach the rear shock assemblies from the vehicle.
13. Lower the axle until the springs are at full droop and remove the 21mm U-bolt nuts.



REAR SUSPENSION REMOVAL CONTINUED

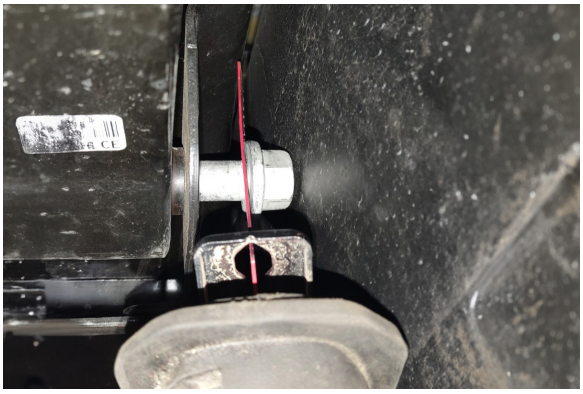
14. Remove the 21mm lower shackle bolts at the rear hangers but leave the shackles attached to the leaf springs.
15. On the passenger side, remove 24mm nut and 27mm bolt from front spring hanger.
16. On the driver side, break loose the 24mm nut and 27mm bolt from front spring hanger. Back the bolt and nut off enough to expose the bolt shank.



17. Due to the fuel tank location, the driver side front spring hanger bolt must be cut off to be removed. Cut off the head of the bolt using a reciprocating saw or an other suitable tool.

Technician warning:

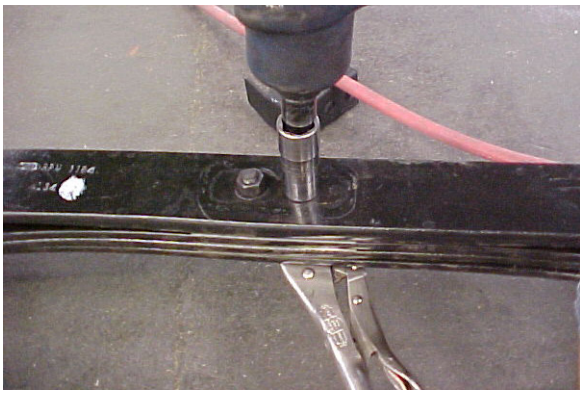
Due to the close proximity of the fuel tank to this area, we DO NOT recommend using a flame-cutting torch or plasma cutter when performing these operations. Ensure not to damage the fuel tank while cutting the bolt.



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

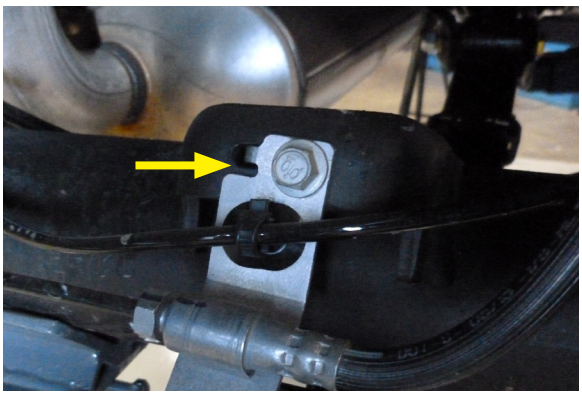
REAR SUSPENSION REMOVAL CONTINUED

20. The leaf spring center bolts must be inverted. Use a pair of C-clamps to hold the spring pack while the spring is modified.
21. Use vise-grip locking pliers to hold the round head of the center bolt and remove the 19mm nut.
22. Remove and discard the original U-bolt locating plate. Assemble the leaf spring with the center bolts inverted, round bolt head at the top. Torque the bolts.



23. Remove 21mm upper shackle bolts to detach the original shackles from the leaf springs.
24. Mount the new Belltech shackles onto the leaf springs with the open side toward the spring. Fasten the shackles with the original bolts and nuts but do not torque yet.

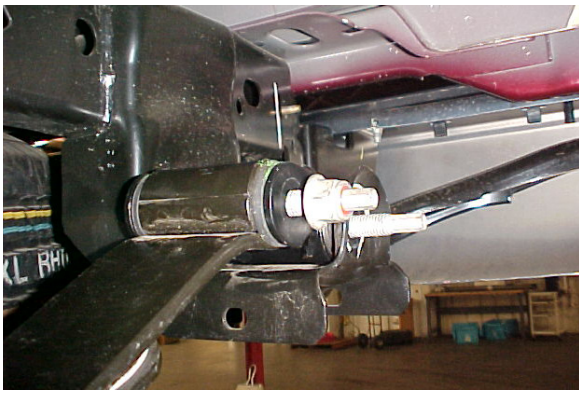
25. Remove the 10mm bolts from hydraulic brake line brackets on leaf spring mounts.



BELLTECH FLIP KIT INSTALLATION

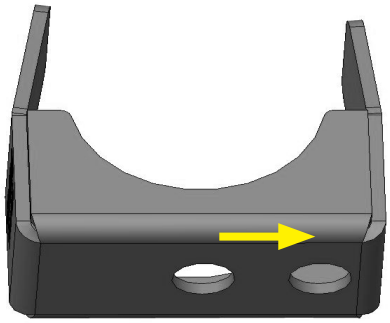
26. Raise the axle upward into the vehicle to place the leaf springs under the axle and in the hangers.

27. Begin from the passenger side. Place the leaf spring in the front spring hanger and insert the original bolt. Once in, rotate the leaf spring assembly back and place the shackle in the rear hanger. Insert the original rear lower shackle bolt into the hanger. Torque the front spring hanger bolt to 95 ft lbs. Leave the rear shackle nut and bolt loose, they will be torqued after the vehicle has been set down.



28. On the driver side, the leaf spring assembly will be mounted the same way. However, the front leaf spring will be fastened with the supplied M18 x 2.5-140mm bolt and M18 Nyloc nut. The bolt must be inserted from the outside in and torqued to 95 ft lbs.

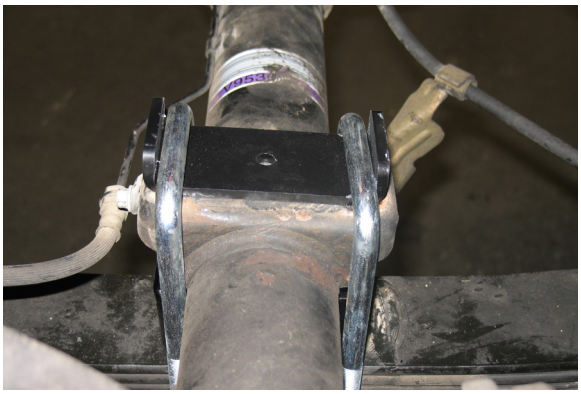
29. Place the axle saddles onto the leaf springs. Ensure the saddle's two locating holes are toward the front of the vehicle.



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

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

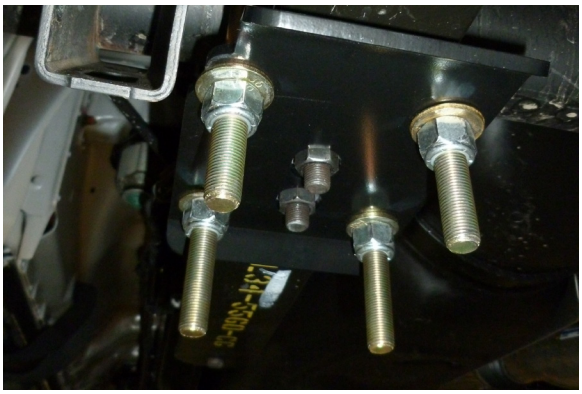
32. Attach the supplied 9/16"-18 x 9" U-bolts and U-bolt plates loosely onto the axle. Thread the 9/16"-18 Nyloc nuts, and washers on the U-bolts.



33. 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.

BELLTECH FLIP KIT INSTALLATION CONTINUED

34. The U-bolts are longer than necessary for ease of installation. After securely fastening the U-bolts, the excess ends can be trimmed.



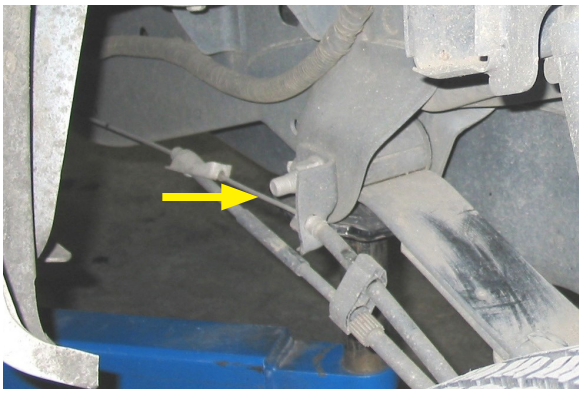
35. Fasten the upper shock mount with the original nut and bolt. Fasten the lower shock mount with the supplied M12 x 1.75 x 75mm bolt and M12 lock nut. Torque to 66 ft lbs.

Technician note:

The original shocks or original length shocks will no longer fit as they are too long. Short length shock absorbers must be used. We recommend the Belltech Street Performance shocks part# 2211EE or Nitro Drop 2 shocks part# 8523.

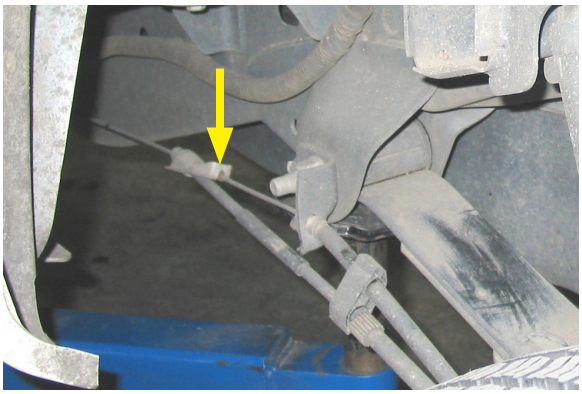
36. Attach the hydraulic brake line brackets to the leaf spring mounts using the original bolts. It may be necessary to grind down the tip of the bolt for proper seating. Torque to 17 ft lbs.

37. The driver side rear wheel parking brake cable may need to be extended to ensure engagement when activated. The parking brake cable (PBC) is located forward of the front spring hanger. Ensure the tension is relieved from the PBC prior to disconnecting it.

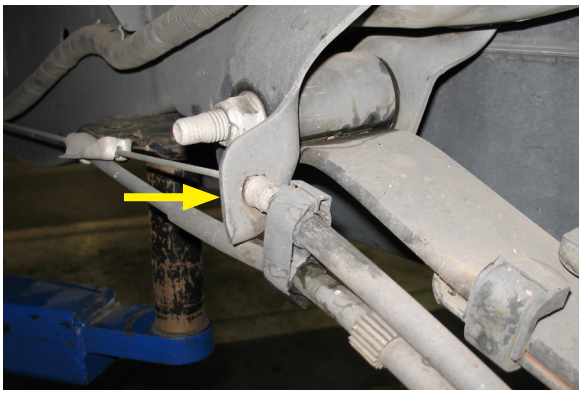


BELLTECH FLIP KIT INSTALLATION CONTINUED

38. Disconnect the end of the PBC at the activator bracket.

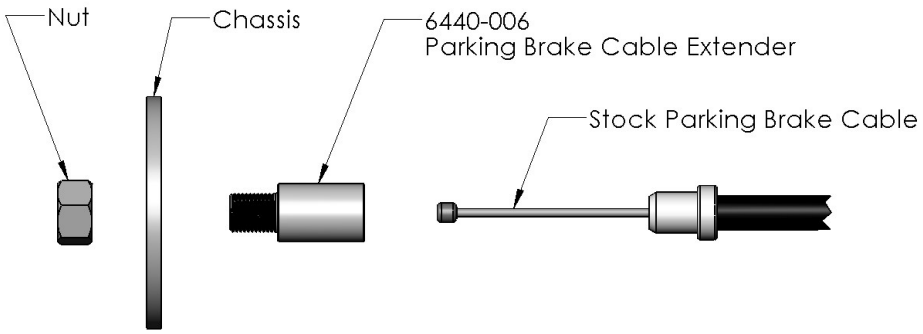


39. Detach the clip from the mount on the chassis bracket.

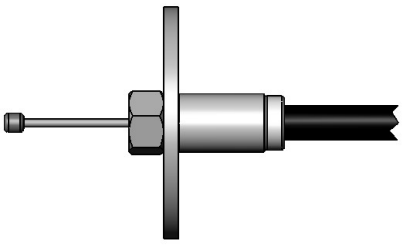


40. Feed the PBC through the supplied PBC extender, part# 6440-006 as shown in the diagram below. Insert the new PBC Extender through the PBC chassis bracket hole. Push the original mount clip onto the PBC extender to secure it in place. Fasten with the supplied 1/2”-20 Nyloc nut.

Exploded View

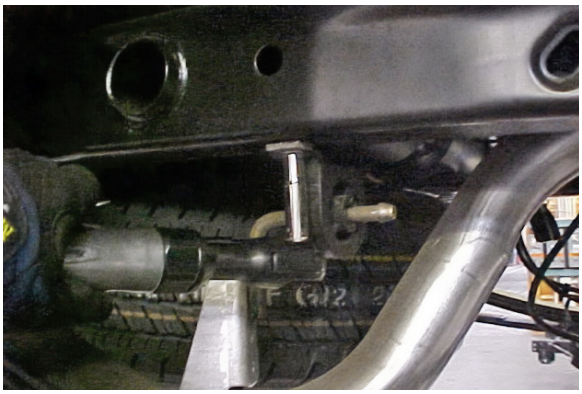


Collapsed View



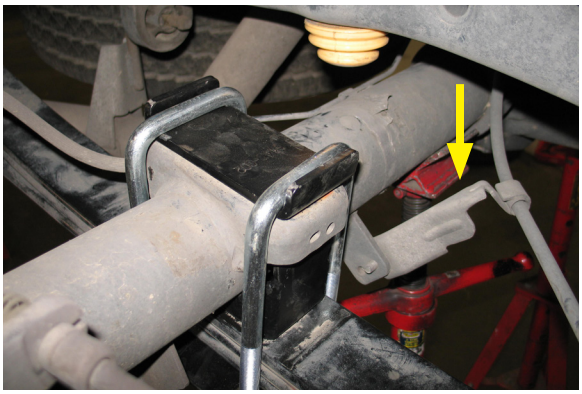
BELLTECH FLIP KIT INSTALLATION CONTINUED

41. Attach the three rubber mount brackets and muffler to the chassis using the original bolts. Torque them to 22 ft lbs.



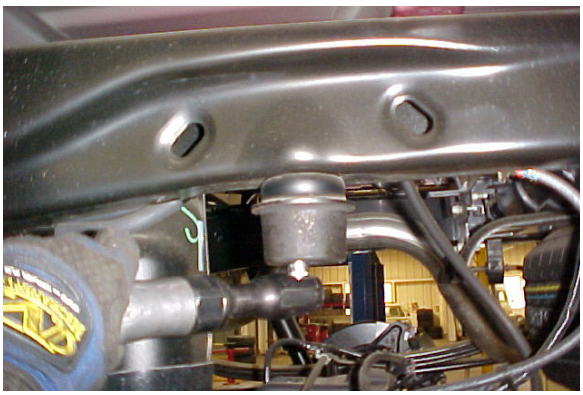
42. If the exhaust looks too low or too close to the leaf spring, slightly rotate it away before the clamp is tightened. Align the exhaust clamp at the clamp and torque the nut to 35 ft lbs.

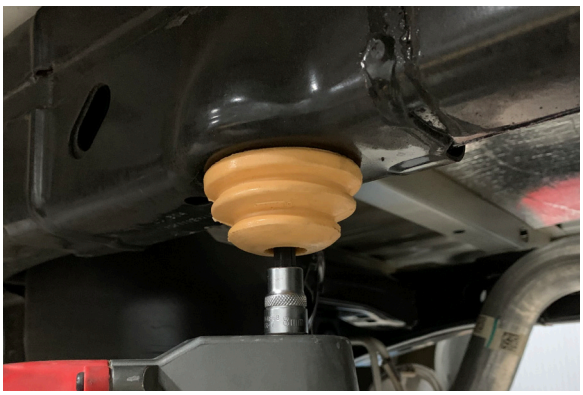
43. The passenger side parking brake cable support bracket, attached to the rear axle, must be bent to gain clearance from the heat of the exhaust tubing.



44. Ensure all hydraulic brake lines or ABS sensor lines running from the chassis to the driver side of the rear axle do not become pinched as the rear axle compresses. Zip-tie or modify the arrangement of these lines if necessary.

45. Remove the original bump stops from the chassis and fasten the supplied Belltech progressive bump stops in place.





DRIVELINE ADJUSTMENTS

Technician note:

For applications with a **one-piece** driveline, the supplied transmission spacer must be installed to relocate it in a higher position.

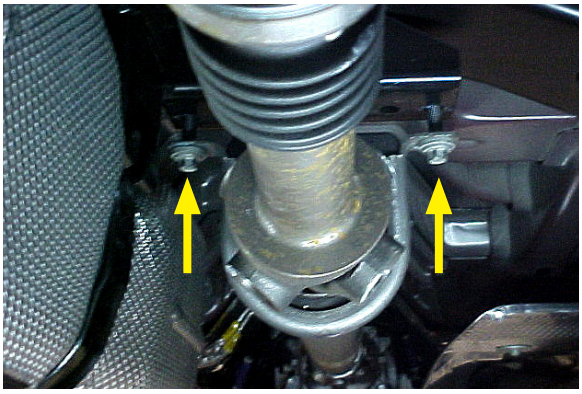
46. Remove the two 13mm bolts from below the transmission mount. Use a jack to lift the transmission high enough to place the supplied spacer between the mount and transmission. Fasten with the supplied 1/2”-13 x 1-3/4” bolts and 1/2” washers. Torque to 59 ft lbs.

Technician note:

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

47. To prevent damage to the U-joints, use a jack to support the driveline during the modification.

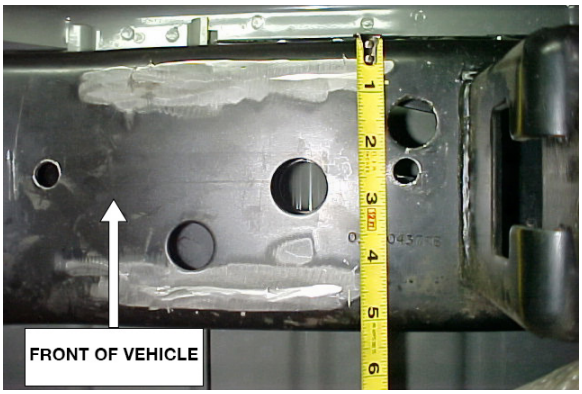
48. Remove the two 14mm center carrier bearing bolts. Push the center carrier bearing toward the passenger side and support it in place with the jack. Ensure not to drop, dent, or damage the driveline components.



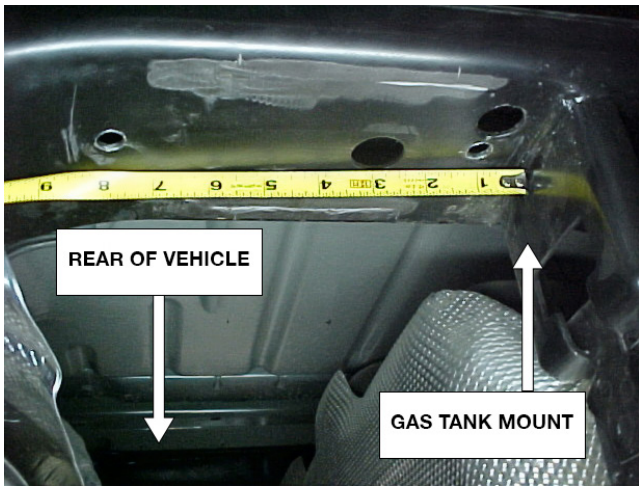
DRIVELINE ADJUSTMENTS CONTINUED

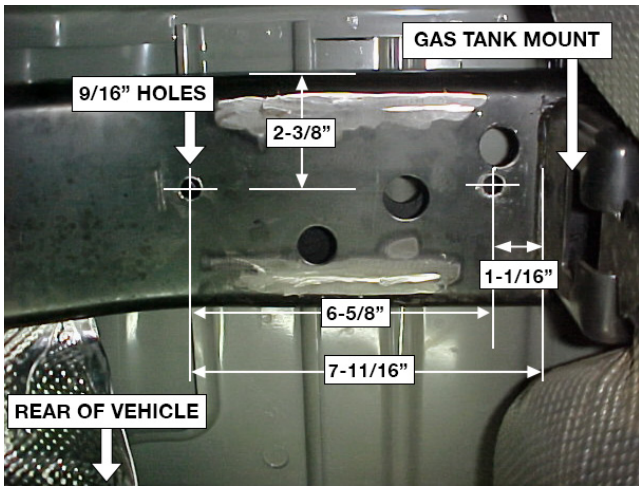
49. Use an abrasive cutting wheel to cut the welds at the front and rear of the original center carrier bearing bracket. Ensure you do not to cut into or damage the crossmember as you remove the bracket.

50. 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.



51. Two 9/16” holes must be drilled in the cross member to attach the center carrier bearing. Use the images below to reference the dimensions needed to mark the location of two holes. The dimensions are referenced from the welded gas tank mount and the edge of the cross member.

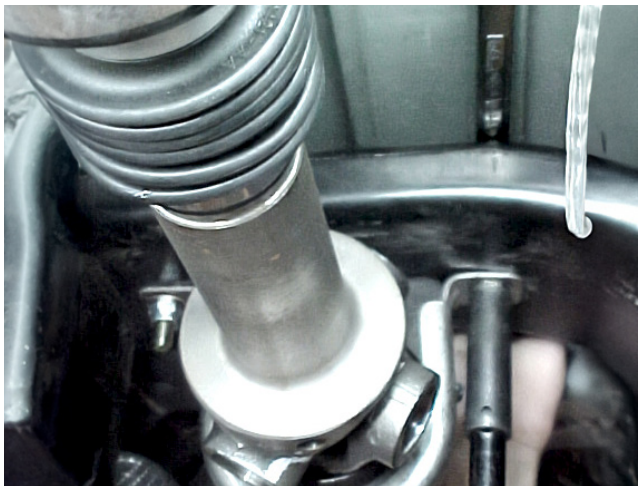


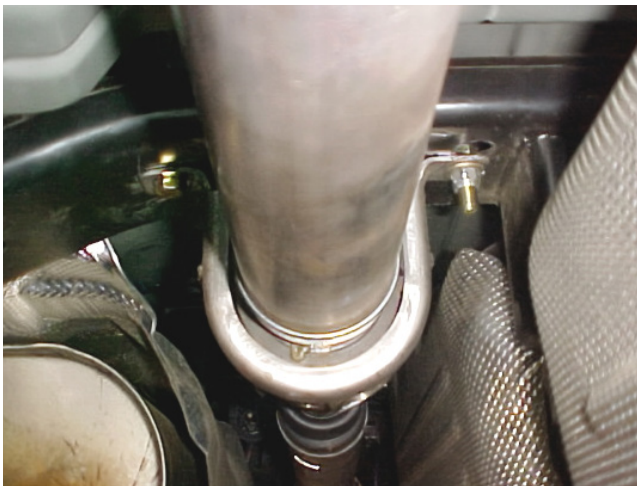


DRIVELINE ADJUSTMENTS CONTINUED

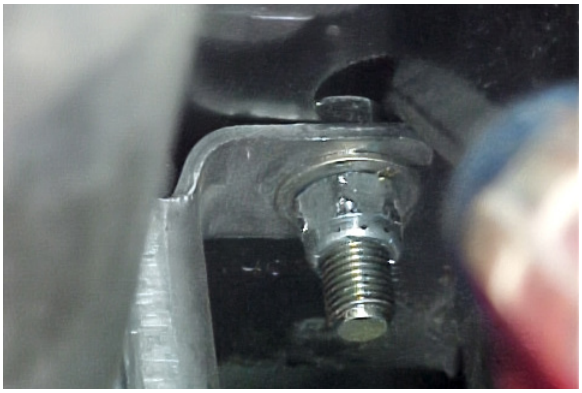
52. Due to the cutout directly above it, the hole closest to the gas tank mount only needs to be drilled through the lower portion of the cross member. The hole furthest away from the gas tank mount will need to pass through the lower and upper section of the cross member.

53. Attach the center carrier bearing assembly onto the cross member using the supplied 7/16” bolts, Nyloc nuts, and washers. The longer 7/16”-20 x 3-1/2” bolt must be used on the bolt hole furthest away from the gas tank mount with the washer and Nyloc nut on the topside. The shorter 7/16”-20 x 1” bolt needs to be inserted from the top, through the cross member cutout, then into the lower hole with the washer and Nyloc nut on the bottom side. Torque both bolts to 35 ft lbs.





54. You can place a screwdriver or prying tool into the hole next to the short 7/16” bolt head to keep it from turning while it is torqued.



Technician warning:

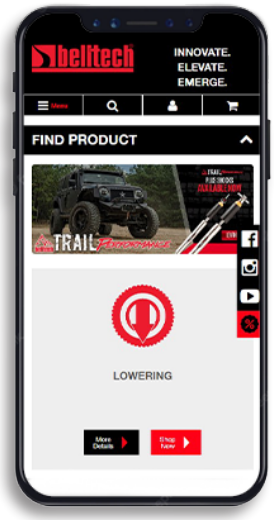
The axle saddles have been designed to properly position the rear axle pinion shaft relative to the driveline. In combination with the driveline adjustments performed, driveline vibration should be eliminated. If driveline vibration *is* experienced after the installation, take the vehicle to a driveline 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

55. Mount the wheels and tighten the lug nuts.
56. Lift the vehicle and remove the support stands.
57. Carefully lower the vehicle onto the flat ground.
58. Torque the lug nuts to 150 ft lbs.
59. After the vehicle is lowered to the ground, securely torque the shackle bolts to 100 ft lbs.
60. Check that all components and fasteners have been properly installed and torqued.
61. 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



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

KIT CONTENTS

6440		
Part number	Description	Qty
6440-020-99	U-BOLT PLATE	2
6440-002-991	UPPER U-BOLT SPRING PAD	2
6440-025-99	AXLE SADDLE	2
11U1011-955	SQUARED U-BOLT	4
6702-100	LIFT SHACKLE	2
6440-001-99	TRANSMISSION SPACER	1
6440-777	HARDWARE KIT	1

6440-777		
Part number	Description	Qty
110455	9/16”-18” NYLOC NUT	8
110403	1/2”-20 NYLOC NUT	1
110305	7/16”-20 NYLOC NUT	2
112294	M12-1.75 STOVER LOCK NUT	2
110265	M18-2.5 NYLOC NUT	1
110670	9/16” WASHER	8
110660	1/2” WASHER	2
110645	7/16” WASHER	4
112204	1/2”-13 X 1-3/4” BOLT	2
110301	7/16”-20 X 1” BOLT	1
110655	7/16”-20 X 3-1/2” BOLT	1
112053	M12 X 1.75 X 75MM BOLT	2
110264	M18 X 2.5 X 140MM BOLT	1
5922-001	BUMP STOP	2
6440-006-95	BRAKE CABLE EXTENDER	1

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