



INSTALLATION GUIDE

PART NUMBER: 6417
HANGER AND SHACKLE KIT
FORD F-150 EXTENDED CAB 2WD | 1987-1996

4" REAR LOWERED RIDE HEIGHT

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 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.

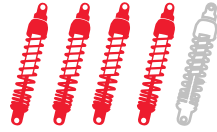
Failure to drive any modified vehicle in a safe manner may result in harm or death.

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

RECOMMENDED TOOLS:

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

SPECIALTY TOOLS:

- Torque wrench up to 200 ft lbs.
- Impact wrench
- Pneumatic Hammer or Punch and Hammer
- Air Chisel
- Abrasive cutting tool

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 2211HB.

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.

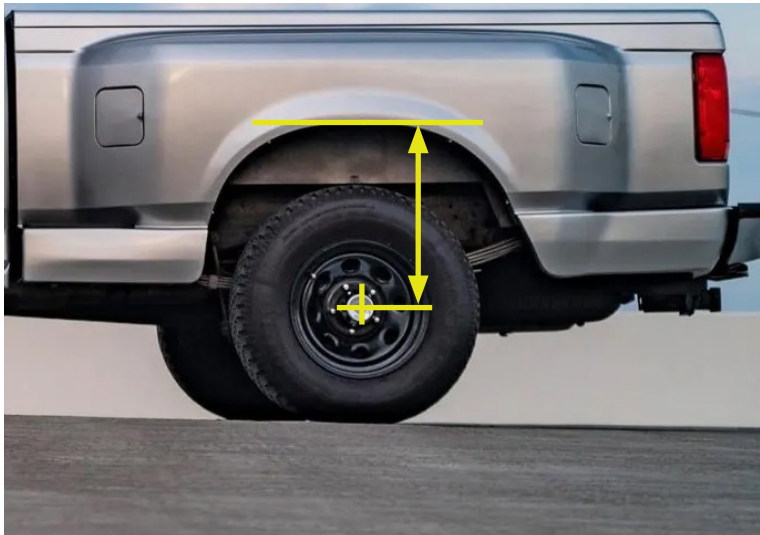
Before:

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. For easier access to the suspension and to simplify the installation, we recommend removing the bed from the vehicle. This is accomplished by disconnecting the gas filler neck, ground strap(s), unplugging the taillight harness, and removing the bolts that attach the bed to the chassis. While removing the bed simplifies the installation of the kit, it is not mandatory, and the installation can be accomplished without removing the bed from the vehicle. If the bed removal is not done, removal of the rear fender to bed support rail brace will be necessary to allow clearance for the leaf spring shackle during installation.
3. Block the front wheels of the vehicle using wheel chocks. Make sure the vehicle's transmission is in "PARK" (automatic) or 1st gear (manual).
4. Activate the parking brake.
5. Break loose, but do not spin the wheel lug nuts to ease in removal when the wheels are in the air.
6. 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.
7. Place support stands rated for the vehicles weight. The stands should be positioned in the factory specified locations (Refer to 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.
8. Lower the vehicle slowly onto the stands.
9. Remove the rear wheels.

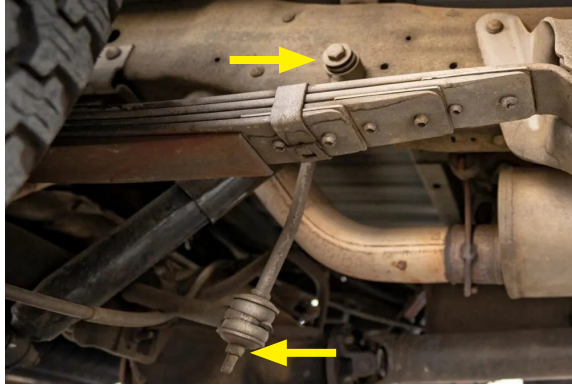


Technician reminder:

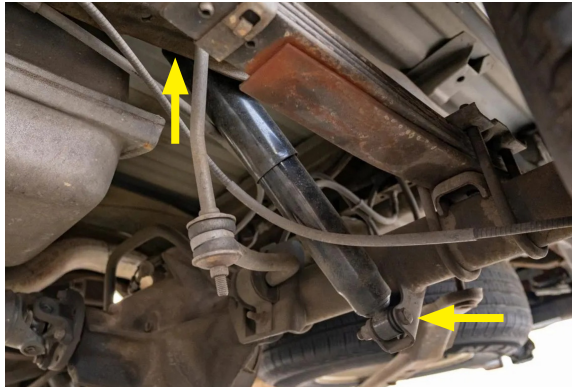
Never work under a vehicle supported only by a jack. It is necessary to place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

REAR SUSPENSION REMOVAL

10. Detach the end links from the chassis and sway bar ends.



11. Remove the upper and lower shock mount bolts to detach the rear shocks from the vehicle.



12. Place a floor jack under the center of the rear axle housing and raise the jack until the pad just contacts the axle housing. Raise the jack another 1/8" to 1/4" to remove tension from the leaf spring pack.
13. Remove the forward leaf spring bolt. Support the end of the spring and lower it free of the forward hanger.



Technician warning:

The leaf spring may still be under tension, use caution when removing the bolt. The floor jack vertical position may have to be altered to allow removal of the leaf spring bolt.



REAR SUSPENSION REMOVAL CONTINUED

14. Remove the rear lower shackle bolt. Break loose the upper shackle bolt and lift the leaf spring shackle assembly out of the rear hanger. Retain all OEM leaf spring pivot eye hardware for reuse in the installation.



15. Lower the floor jack holding the axle housing so the leaf spring assembly clears of the forward leaf spring hanger. Do not lower the rear axle so as to overextend or damage brake lines or related components.
16. The forward hanger rivets must be removed. Removal can be achieved by either of the following methods: Using a cutting wheel, grind a slot completely through the center of the rivet heads on the front spring hanger. If a cutting wheel is unavailable, drill a 3/8" hole through the center of each rivet. Begin by drilling a small pilot hole through each rivet and then increasing the drill sizes until the final 3/8" drill size is reached.

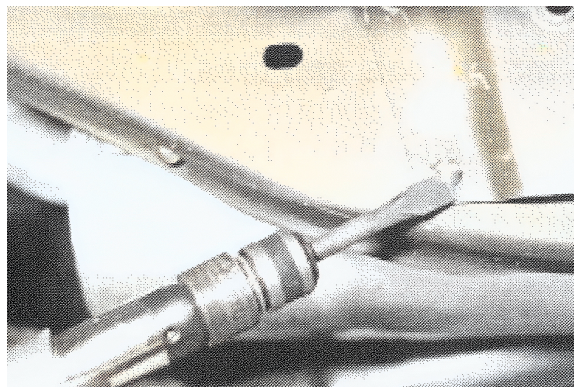


Technician warning:

Always wear eye protection when using power tools or striking tools.

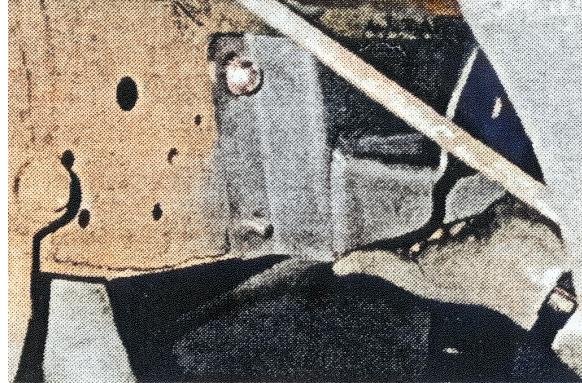
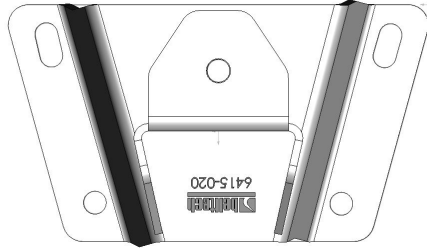
When using a cutting wheel, do not cut through the hanger into the vehicle chassis.

17. After the rivet heads have been drilled or slotted, use a chisel to remove the head of each rivet. Drive the remaining rivet shaft out of the hanger and chassis using a pneumatic hammer or a punch and hammer. Detach the hanger from the chassis.

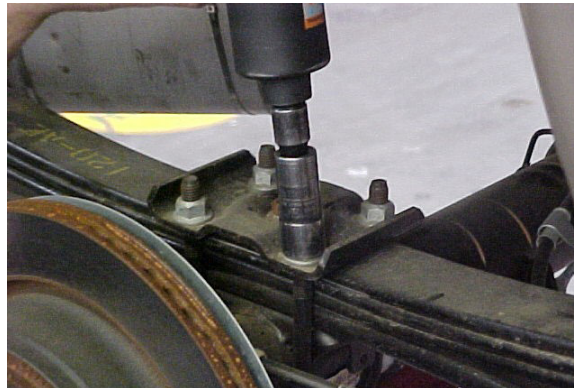


BELLTECH HANGER AND SHACKLE INSTALLATION

18. Clean the mounting surface on the chassis.
19. Line up the bolt holes on the Belltech hanger to the holes on the chassis in the original position. The logo on the hanger will be upside down. Attach the Belltech hanger using the supplied 1/2"-20 X 1-1/4" bolts, 1/2" washers, and Stover lock nuts. Torque the nuts to 126 ft lbs.



20. Support the leaf spring pack and remove the U-bolt nuts, U-bolts, and the spring support plate. Keep all OEM hardware. Detach the leaf spring pack from the axle pad.

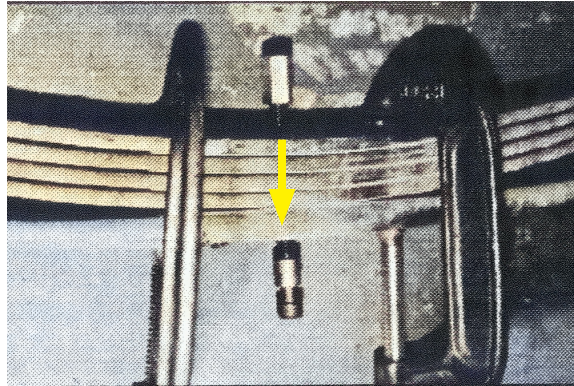


21. Clamp the leaf spring pack together using C-clamps or a suitable clamping device. Remove the leaf spring center bolt and nut.



BELLTECH HANGER AND SHACKLE INSTALLATION CONTINUED

22. Place the supplied leaf spring pack 7/16"-20 X 5" center bolt and 5/8" spacer tube, on the bolt head, side into the leaf spring center hole. Ensure the bolt head and spacer tube are on the bottom side of the spring pack.



23. The threaded portion leaf spring center bolt must be measured for the proper length. Place the 7/16" coupling nut against the bolt on the leaf spring. Mark the threads 1/8" above the nut. Use a cutting tool to trim the bolt. Fasten the nut and torque to 58 ft lbs.

24. Place the supplied 4-degree shim on top of the axle tube spring pad. Ensure the thickest part of the shim is facing forward and the spring center bolt head is seated in the hole on the axle pad.



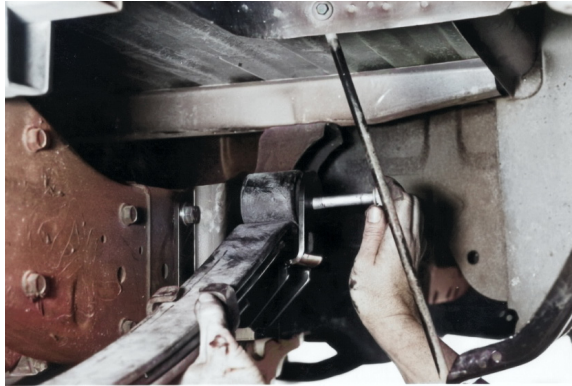
25. Fasten the leaf spring pack onto the axle with the original U-bolts, nuts, and spring support plate. Torque the U-bolt nuts to 90 ft lbs.

26. Attach the supplied Belltech shackle to the rear of the leaf spring with the original bolt. Do not torque the bolt yet.



BELLTECH HANGER AND SHACKLE INSTALLATION CONTINUED

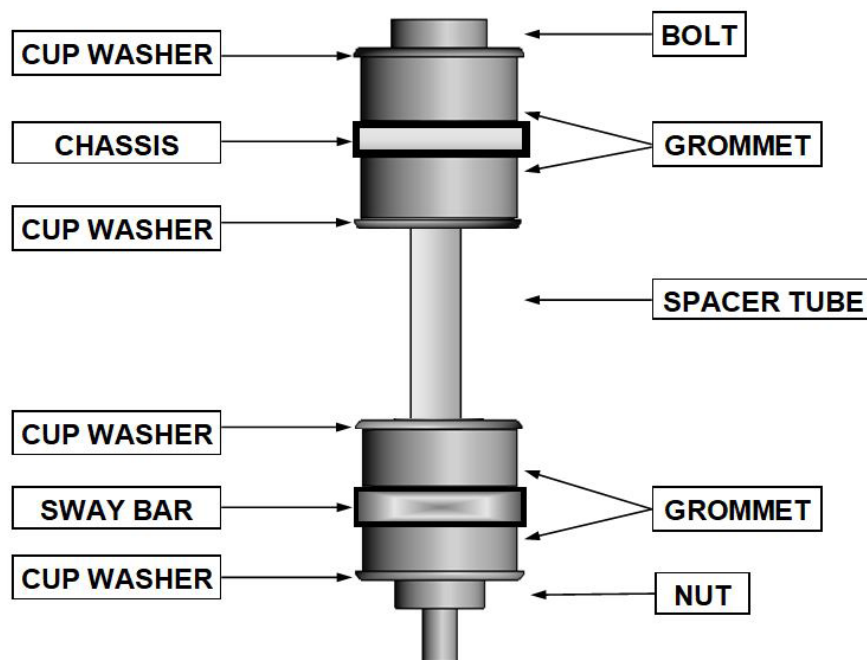
27. Use the floor jack to lift the axle housing so the leaf spring can be attached into the hangers. Align the forward leaf spring eye with the Belltech hanger and fasten them the original bolt and nut. Do not torque yet.



28. Align the lower shackle eye with the hanger and fasten them the original bolt and nut. Do not torque yet.



29. The new end links must be assembled through the chassis and the ends of the sway bar as shown in the diagram below.



BELLTECH HANGER AND SHACKLE INSTALLATION CONTINUED

30. Insert the Belltech end links through the holes on the bottom of the chassis just forward of the original end link location. Fasten the end link assemblies to the sway bar. Tighten the end link nuts to the point where the spacer tube can still be forced to rotate on the bolt by hand, but the rubber grommets should not be able to rotate by hand.



31. Attach the shocks to the upper and lower shock mounts with the original hardware. Torque to the upper bolt to 50 ft lbs. and the lower bolt to 63 ft lbs.
32. Mount the wheels and tighten the lug nuts. Raise the vehicle and remove the jack stands to lower the vehicle to the ground.
33. If the bed was removed at an earlier point, place and fasten the bed onto the chassis.
34. Torque the forward leaf spring bolt to 95 ft lbs. Torque the upper and lower shackle bolts to 95 ft lbs.

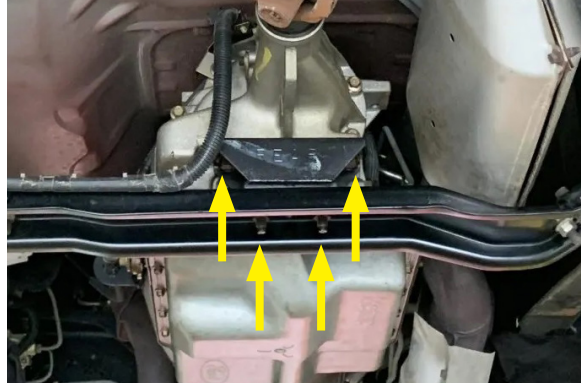
DRIVELINE MODIFICATION

35. Place a floor jack under the rear of the transmission to support the driveline.
36. Remove the two bolts that secure the rear transmission housing to the transmission rubber mount. Remove the two nuts that secure the rear transmission mount to the vehicle cross member. Use the floor jack to lift the rear of the transmission and remove the transmission rubber mount.

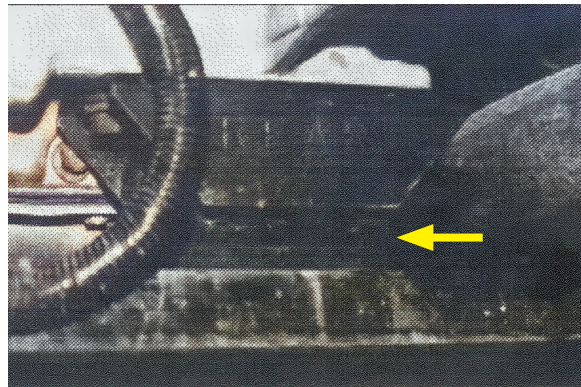
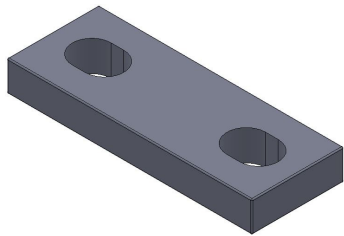


Technician warning:

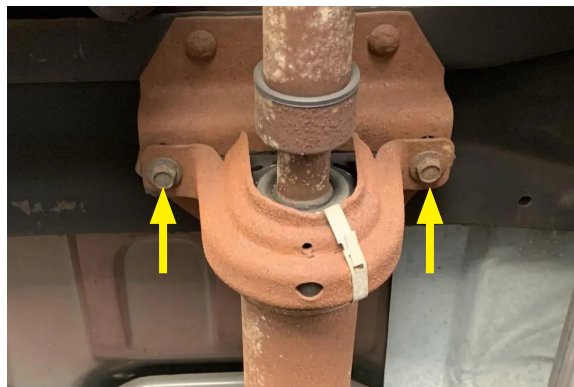
Do not lift the transmission so as to damage any of the transmission fittings or couplers.



37. Place the supplied Belltech transmission spacer over the studs of the rubber mount then place the original transmission mount over the spacer. Lower the floor jack. Apply thread-locker to the transmission mount bolts. Fasten the mount and spacer with the original flange nuts and mount bolts. Torque the transmission mount nuts and bolts to 55 ft lbs.

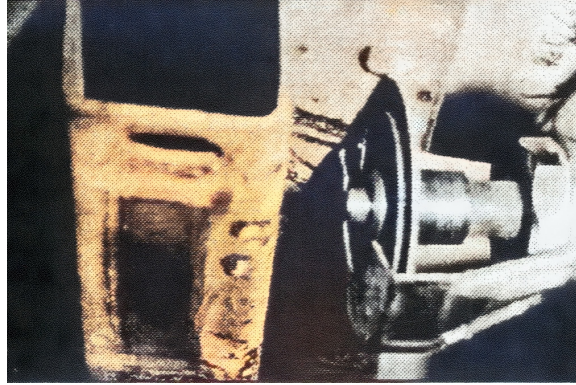


38. Place a floor jack under the drive shaft at the center carrier bearing.
39. Remove the two bolts that secure the drive shaft center carrier bearing into place. Push the center carrier bearing towards the chassis to gain access to the drive shaft center carrier bearing mount. Ensure not to drop or damage the driveline.

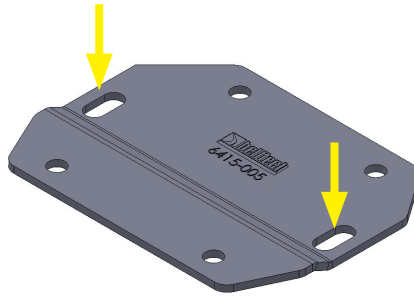


DRIVELINE MODIFICATION CONTINUED

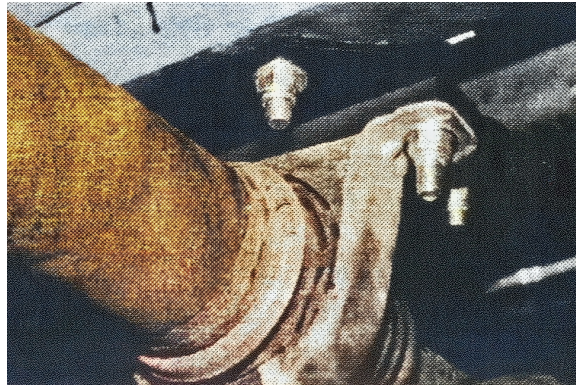
40. Cut a slot into the center carrier bearing mount rivet heads using a die grinder with a cutoff wheel, or a suitable tool. Remove the rivet heads using an air chisel or a suitable tool. Punch the remaining rivet shanks up through the center carrier bearing mount and remove the mount from the cross member.



41. Insert four of the supplied 7/16"-20 X 1-1/4" bolts and 7/16" washers through the top side of the cross member. Place two of the 7/16"-20 X 1-1/4" bolts and 7/16" washers through the top side of the Belltech center carrier bearing relocater plate before attaching the plate to the cross member. This will make the installation easier.



42. Attach the Belltech center carrier bearing relocater plate to the four bolts at cross member and fasten with the supplied 7/16"-20 Nyloc nuts and 7/16" washers.
43. Place the center carrier bearing into position on the Belltech center carrier bearing relocater plate bolts. Fasten the center carrier bearing with the remaining 7/16"-20 Nyloc nuts and 7/16" washers. Torque the 7/16" hardware to 90 ft lbs.



DRIVELINE MODIFICATION CONTINUED

44. Inspect for driveshaft clearance. The under-cab cross member must have a minimum 1/2" of clearance between the drive shaft and the cross member. If needed, remove a portion of the under-cab cross member to ensure the drive shaft has clearance. The center carrier bearing must be kept at a right angle to the drive shaft.



45. Also, it may be necessary to space the front or rear of the Belltech center carrier bearing relocater plate away from the cross member to retain the right angle between components.



Technician note:

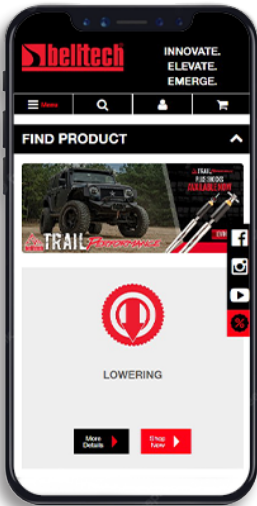
Due to installation variables and factory manufacturing variances beyond our control, we highly recommend that the driveline angles present after modification be checked and compared to the driveline angles present before modification and, if necessary, be brought back within factory specifications. 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

46. Torque the lug nuts to 100 ft lbs.
47. Check that all components and fasteners have been properly installed and torqued.
48. 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



@belltechsuspension



@belltechsuspension

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

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KIT CONTENTS



6417		
Part number	Description	Qty
6700	SHACKLE KIT	1
6415-005-99	CENTER CARRIER BEARING RELOCATION PLATE	1
6415-020-99	LEAF SPRING HANGER	2
6413-777	HARDWARE KIT	1

6413-777		
Part number	Description	Qty
5922-001	BUMP STOP	2
113000	END LINK GROMMET	8
110408	1/2"-20 X 1-1/4" BOLT	8
112138	3/8"-16 X 6-1/2" BOLT	2
110650	7/16"-20 X 1-1/4" BOLT	6
110402	1/2"-20 STOVER LOCK NUT	8
110321	7/16"-20 X 1-1/8" COUPLING NUT	2
110255	3/8"-16 NYLOC NUT	2
110305	7/16"-20 NYLOC NUT	6
4977-001	2.5" X 5" 4° PINION SHIM	2
110314	7/16"-20 X 5" SPRING BOLT	2
6420-003-99	TRANSMISSION SPACER	1
110660	1/2" WASHER	16
110645	7/16" WASHER	12
112502	CUP WASHER	8
112422-95	2.5" SPACER TUBE	2
6415-010-95	5/8" SPACER TUBE	2



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