



INSTALLATION GUIDE

PART NUMBER: 2504

DROP SPINDLE SET

GM C-1500 REGULAR CAB | 1992-1998

GM C-1500 EXTENDED CAB | 1988-1998

-3" FRONT LOWERED RIDE HEIGHT

****REQUIRES A MINIMUM 1.25" BRAKE ROTOR****

****FOR USE WITH 2019 AND UP GM 1500 FOUR PISTON BRAKE CALIPERS****

****MUST USE 18" WHEELS OR LARGER, FITS MOST 18" WHEELS. MUST CHECK FOR INTERFERENCE****

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 the components listed on the parts list are 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 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, in 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.

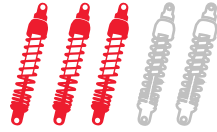
Failure to drive any modified vehicle in a safe manner may result in harm or death.

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

Always wear your seatbelt.



DIFFICULTY:



INSTALLATION TIME:

3.5-4.5 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 set
- Tape measure
- Hammer and rubber mallet
- Safety glasses
- Paint or marking pen
- Spray paint
- Torque wrench rated up to 150 ft lbs.

SPECIALTY TOOLS:

- Angle grinder
- Cut-off tool
- Tie-rod end removal tool
- Ball joint removal tool
- Caliper spreader

FITMENT NOTE:

Not all possible wheel sizes and backspacing can be tested. Cautiously check the wheel assembly to the spindle, suspension component, and fender/body clearance before tightening the lug nuts and rotating the wheel assembly. Belltech is not responsible for any wheel, tire, suspension component, and/or body damage caused by failure to check for interference.

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: _____

OEM GM 1500 Four Piston Brake Caliper Components Needed:

Belltech spindle 2504 was engineered for maximum performance with an upgraded modern GM 1500 four piston brake caliper. You are required to independently purchase the upgraded calipers and brake hoses needed to convert from the former GM "OBS" C1500 brake system to the modern brake system. Please see the parts list below and ensure you have them available to proceed with this installation.

DESCRIPTION	BRAND	PART NUMBER
BRAKE HOSE- FRONT LEFT	ACDELCO	18J4298
BRAKE HOSE- FRONT RIGHT	ACDELCO	18J4299
BRAKE CALIPER- FRONT LEFT	GM GENUINE	13545382
BRAKE CALIPER- FRONT RIGHT	GM GENUINE	13545383

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 first 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 vehicle's weight. The stands must 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 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.

OEM SPINDLE REMOVAL

9. Remove the 9/16" end link nuts to detach the end links from the lower control arm and sway bar.
10. Remove the two 11mm upper control arm brake line and ABS line bracket bolts to detach the lines from the upper control arm.
11. Remove the two 3/8" hex caliper bolts to detach the caliper from the spindle. Slide the caliper up and away from the brake rotor. Disconnect the original rubber brake hose from the brake hardline by removing the retaining clip first then unfasten the hardline from the original rubber hose. Ensure the hardline is not twisted or damaged by torque while turning the fitting nut. Use a catch pan to collect the brake fluid that comes out. Detach the original brake caliper assembly from the vehicle.



12. Remove the hub and rotor assembly from the spindle by removing the grease cap, cotter pin, and the nut from the spindle pin. Carefully slide the rotor assembly off the spindle pin, do not let the outer bearing fall out of the hub.
13. Remove the cotter pin from the nut on the tie rod end. Loosen the 3/4" nut, but don't remove it completely. Use a tie rod puller or use a hammer to strike the side of the steering arm until the tie rod end is dislodged; swing the rod end out of the way.



Technician reminder:

Do not strike the nut or the tie rod end itself as this may damage the steering components.

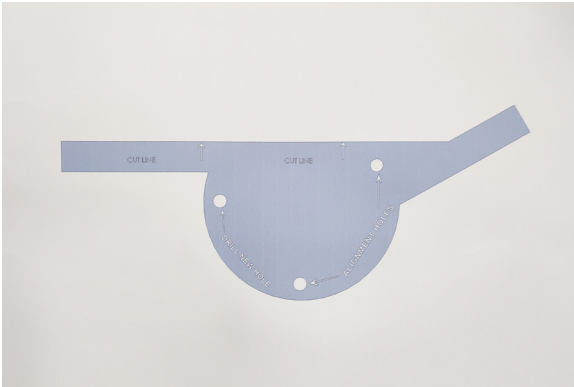
14. Detach the dust shield by removing the three 1/2" bolts on the face of the spindle.



15. Place a floor jack under the lower control arm and lift until a slight compression of the suspension is achieved. Turn the spindle to access the lower ball joint without interference.
16. Remove the cotter pin and loosen but do not remove the 1" lower ball joint nut. Strike the lower portion of the spindle beside the ball joint, this will dislodge it from the taper.
17. Remove the cotter pin and loosen but do not remove the 1" upper ball joint nut. Strike the lower portion of the spindle beside the ball joint, this will dislodge it from the taper.
18. Once both ball joints are dislodged, remove the upper nut and lift the control arm to free the spindle. Remove the lower nut and slide the spindle off the lower ball joint.

OEM DUST SHIELD MODIFICATION

19. The original dust shield must be modified to fit the new spindle. Cut out the supplied template and overlay it across the dust shield. Ensure the two existing holes are lined up with the template.



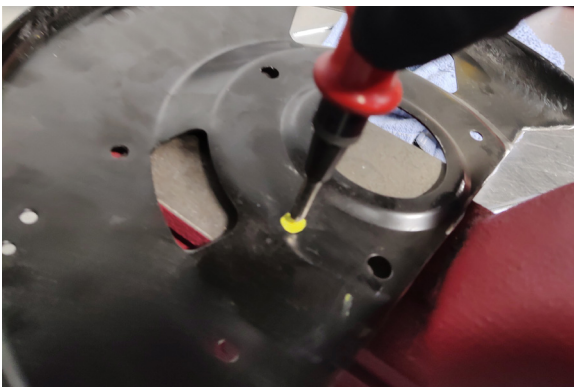
20. Mark the cut line area and the new hole to be drilled.



21. Use a cut-off tool to remove the marked area of the dust shield. Use a grinder to smooth the edges of the cut line.



22. Use a punch tool to mark the center of the new hole to be drilled and drill a 1/4" hole.



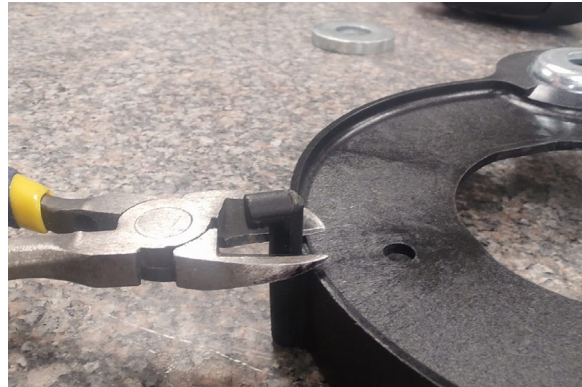
SPEED SENSOR MODIFICATION



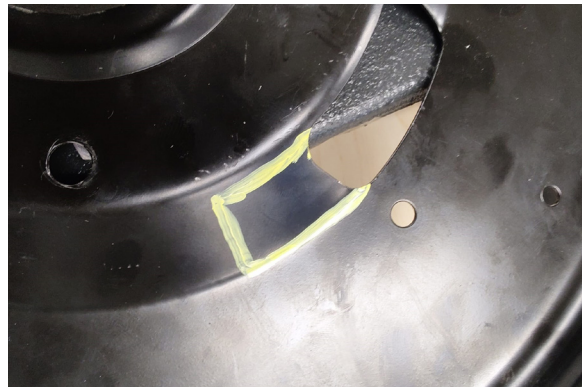
Technician note:

For later model trucks equipped with speed sensors, please continue with the following modification steps. If your vehicle is not equipped with speed sensors please skip the following steps.

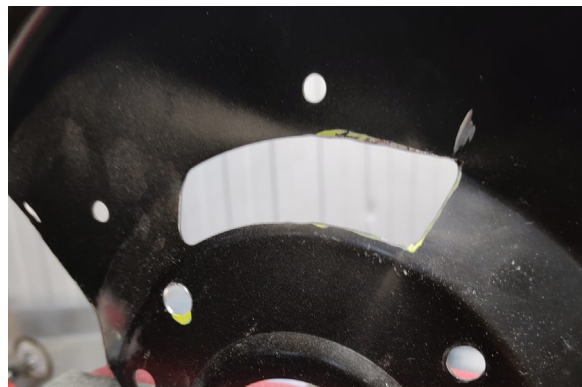
23. Use cutting pliers to cut the locating hook off the speed sensor bracket.



24. Measure and mark 1 inch to the elongated slot on the dust shield to increase the slot size for the speed sensor.

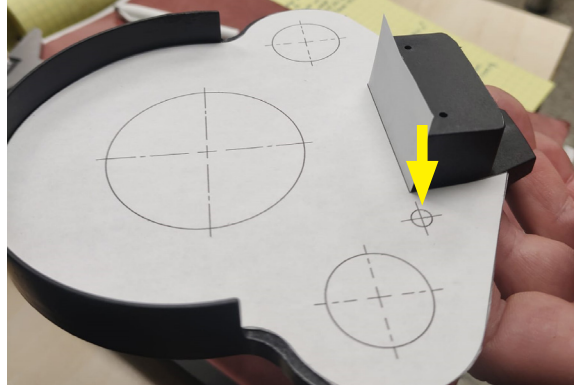


25. Cut the measured section on the slot. Deburr the edges to ensure there is a smooth surface around the wire that will pass through.



SPEED SENSOR MODIFICATION CONTINUED

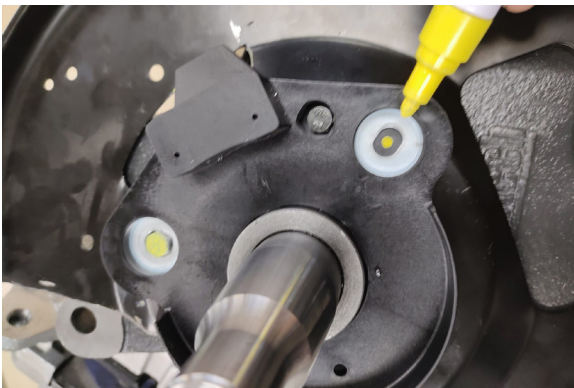
26. A new hole will need to be drilled out on the speed sensor bracket. Use template 2503B-887 to mark the hole to be drilled.



27. Start with a smaller drill bit, then increase up to a 8mm drill bit (5/16in).



28. Use the speed sensor bracket as a guide to mark where a new bolt hole needs to be drilled out on the dust shield.



SPEED SENSOR MODIFICATION CONTINUED

29. Use a center punch to mark and center where the 6mm (1/4") hole will be drilled out.



30. Feed the speed sensor cable through the elongated opening in the dust shield.

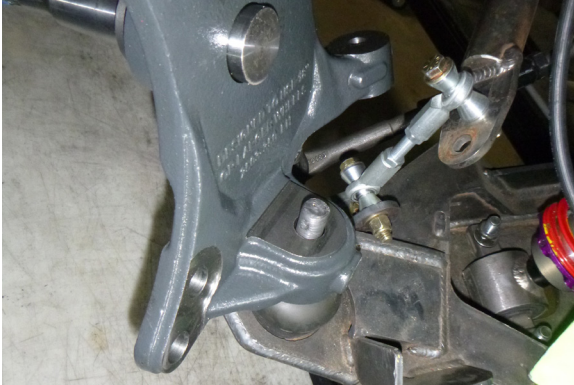


31. Use the original bolt and nut to attach the speed sensor bracket to the dust shield at the new bolt hole.

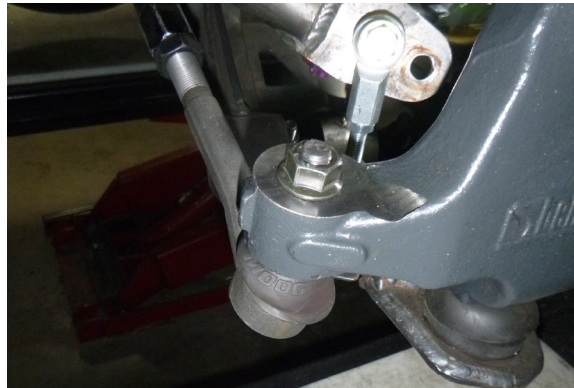


BELLTECH SPINDLE INSTALLATION

32. With the lower control arm supported to control the height of the suspension during the installation, place the new Belltech drop spindle on the lower control arm ball joint and secure it with the castle nut. Lift the upper control arm and place the upper ball joint into position on the spindle. Torque the upper ball joint nut to 74 ft lbs. and the lower ball joint nut to 94 ft lbs. Secure them with the supplied cotter pins.



33. Place the tie rod end into the steering arm on the new spindle and torque the nut to 46 ft lbs. Install a new cotter pin.



34. Attach two 10mm male to female hex standoff adapters to the face of the spindle, above and to the side of the shaft. Apply the supplied threadlocker to the threads and torque to 5 ft lbs.



BELLTECH SPINDLE INSTALLATION CONTINUED

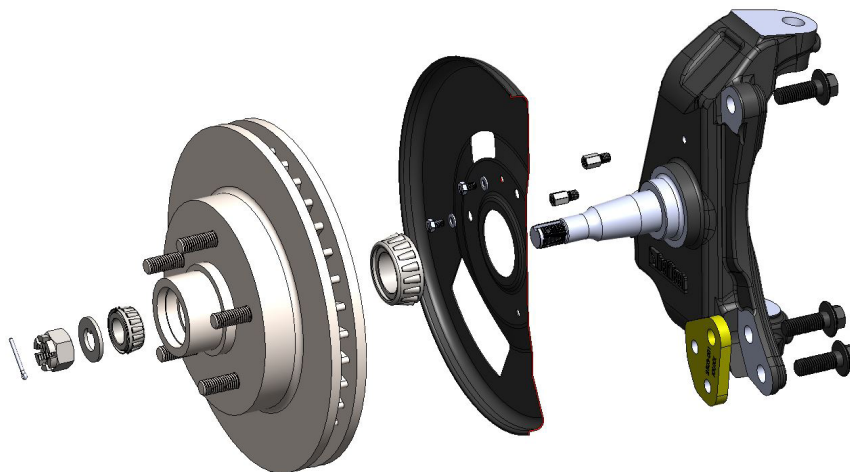
35. Attach the lower caliper brackets to the spindles with the M14-2.0 x 45mm flange bolts. Apply the supplied threadlocker to the threads and torque to 100 ft lbs.



36. Place the dust cover gasket on the spindle shaft and attach the brake dust shield to the hex standoff adapters with the supplied M6 x 1.0 - 10mm bolts and M6 washers; torque to 5 ft lbs.



37. Before mounting the hub and rotor assembly, take time to determine that the seal and bearings are in good condition and are packed with enough grease. Inspect the inner bearing cavity of the rotor to determine that it is sufficiently coated with grease. When in doubt, repack the bearings and coat the inner bearing cavity. Apply grease to the spindle at the inner and outer bearing seat, shoulder, and seal seat.
38. Mount the hub and rotor assembly onto the new Belltech spindle. Ensure the bearing, washer, and nut are in the correct position.

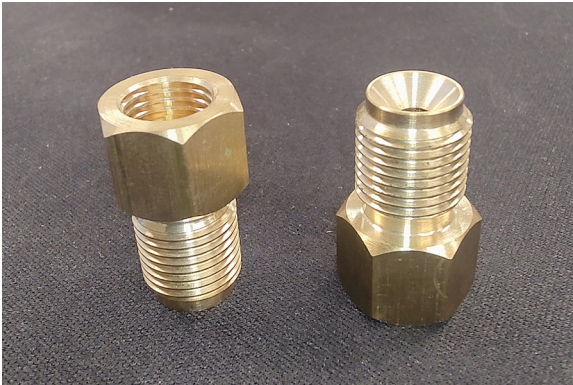


BELLTECH SPINDLE INSTALLATION CONTINUED

39. Torque the spindle nut to 12 ft lbs. While turning the rotor forward by hand to seat the bearings. Back the nut off to a “just loose” position. Hand-tighten the spindle nut to align the nearest hole in the spindle pin with the slots in the nut.
40. Insert the cotter pin into the hole in the spindle pin. Bend the ends of the cotter pin against the nut and cut them off; install the dust cap.



41. Attach the supplied brake line adapter to the original brake hardline. Ensure the threaded surfaces are clean before fastening. The new rubber brake hose is fastened to the supplied brake line adapter. Secure the brake lines to the chassis with the original retaining clip.

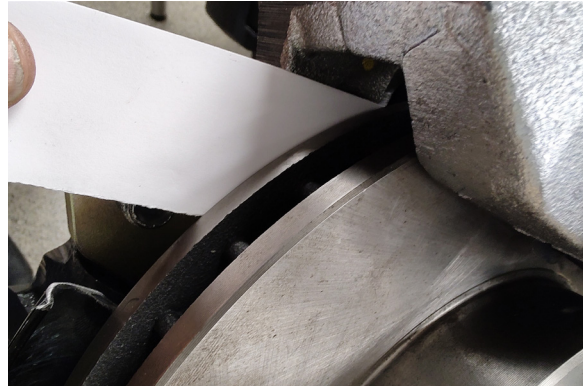


Technician reminder:

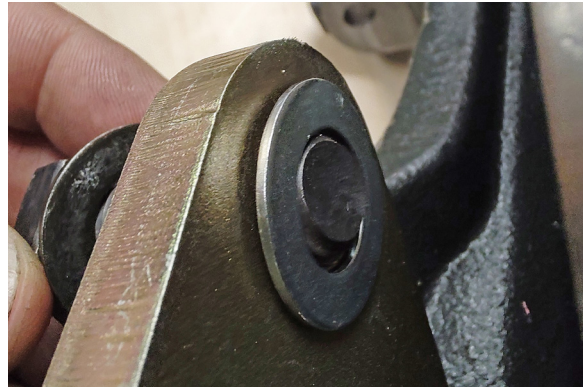
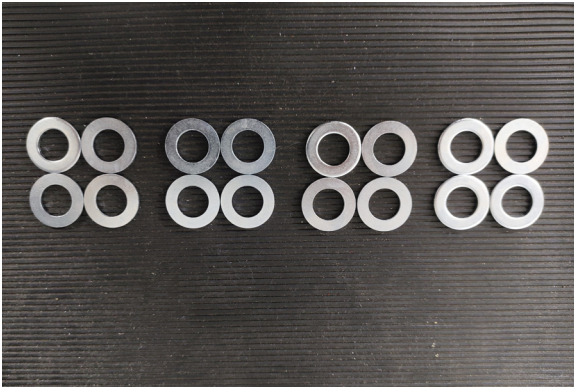
Before securing the brake lines to the chassis with the original retaining clip, ensure the bends in the caliper hose are in the correct direction and similar to the original hose. This will ensure clearance and prevent excessive tension.

BELLTECH SPINDLE INSTALLATION CONTINUED

42. Due to manufacturing tolerances or difference between the Belltech spindle, OEM calipers and rotors, shims may need to be used to adjust the centering of the caliper to ensure there is no unwanted contact between components. To confirm where adjustment is needed, use a sheet of paper to test contact points.



43. The shims are supplied in four different thicknesses. Based off the points that need to be adjusted, select the correct shim to add to the mounting bolts. The caliper bolts must be torqued first to ensure complete clearance.

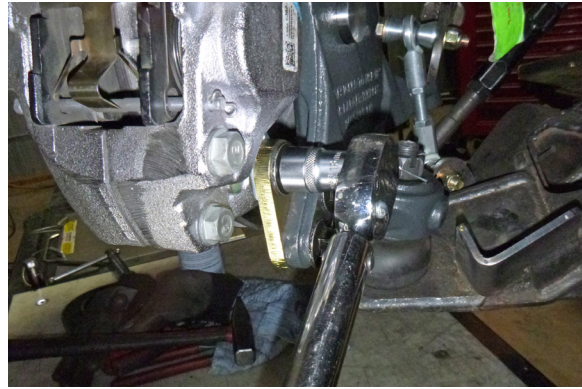
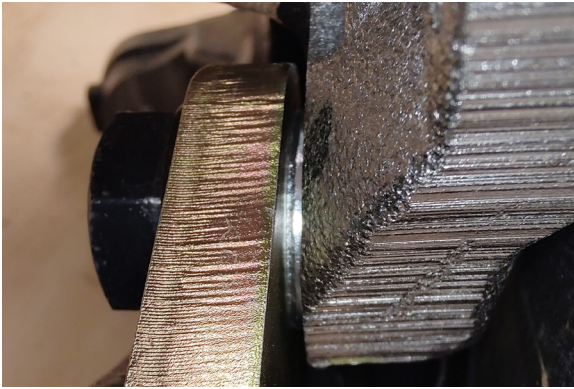


44. Mount the new brake caliper assembly onto the spindle and the caliper bracket. Confirm the brake pads are set in their correct position, if needed, compress the pistons with a spreader tool.



BELLTECH SPINDLE INSTALLATION CONTINUED

45. Fasten the brake caliper to the spindle and caliper bracket with the M14-2.0 x 45mm flange bolts. Apply the supplied threadlocker to the threads and torque to 37 ft lbs. + a 30° - 45° turn.



46. Attach the new rubber brake line fitting to the new caliper with the OEM banjo bolt and washers. Ensure the fitting is attached at the correct angle to ensure the rubber hose can move without being stretched. Torque the fitting to 32 ft lbs.

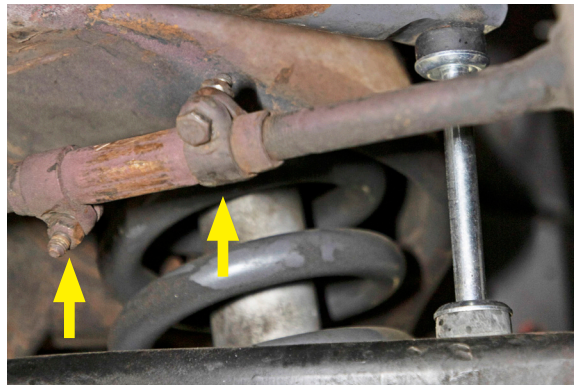


Technician reminder:

Ensure the brake lines are bled to remove air in the system and the brake fluid is replaced to the original levels.



47. Turn the rotor assembly left and right to make sure there is no interference between the brake lines and other components.
48. Attach the brake line and ABS line brackets to the upper control arm using the original hardware; torque to 13 ft lbs.
49. Attach the lower end link to the lower control arm; torque to 13 ft lbs.
50. Mount the wheels and tires onto the truck, tighten but do not torque the lug nuts. Turn the wheels left and right by hand to ensure the wheel and tire do not contact any suspension or brake system components.
51. If there is severe "toe-out" in the wheel positioning, loosen the two 13mm nuts on the tie rod adjusting sleeves and turn them approximately 2 to 2.5 turns or until wheels appear straight. This will temporarily adjust the toe-in of the vehicle to enable you to drive the vehicle to an alignment shop. Tighten the tie rod clamp bolts and torque to 14 ft lbs.

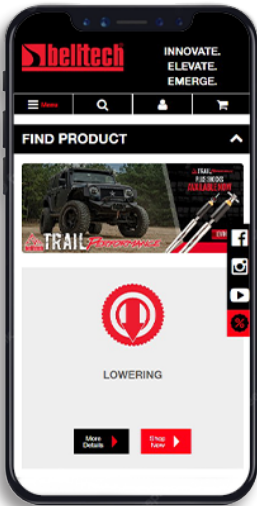


FINALIZING THE INSTALLATION

52. Lift the vehicle and remove the support stands.
53. Carefully lower the vehicle onto flat ground.
54. Torque the lug nuts to 125 ft lbs.
55. Check that all components and fasteners have been properly installed and torqued.
56. 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



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[Belltech Suspension](https://www.youtube.com/BelltechSuspension)



[@belltechsuspension](https://www.instagram.com/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



2504		
Part number	Description	Qty
2503-350-982	LH MACHINED SPINDLE	1
2503-450-982	RH MACHINED SPINDLE	1
2503-001-955	CALIPER BRACKET	2
2100-110	COTTER PIN PACK	1
2503-777	HARDWARE KIT	1
2504-777	HARDWARE KIT	1
2503-887	DUST SHIELD TEMPLATE	1
2503B-887	SPEED SENSOR TEMPLATE	1

2503-777		
Part number	Description	Qty
110010-954	M8 X 1.25 MALE TO M6 X 1.0 FEMALE HEX ADAPTER	4
110267	M6-1.0 X 10MM BOLT	4
110117	M6 WASHER	4

2504-777		
Part number	Description	Qty
110283	M14-2.0 X 45MM FLANGE BOLT	4
9103183-044	BRAKE LINE ADAPTER	2
2504-777A	0.5MM RING SHIM	4
2504-777B	1.0MM RING SHIM	4
2504-777C	1.2MM RING SHIM	4
2504-777D	1.9MM RING SHIM	4



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