belltech®

INSTALLATION GUIDE

PART NUMBER: 2650
DROP SPINDLE SET
DODGE RAM 1500 | 1994-1999

-2” FRONT 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 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: 3-4 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 130 ft lbs.

SPECIALTY TOOLS:

- Angle grinder or die grinder
- 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.

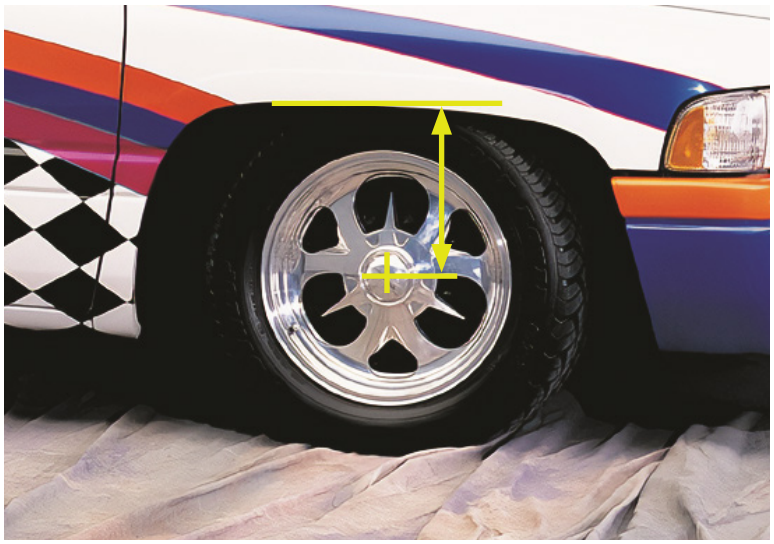
Before:

LF:_____

RF:_____

LR:_____

RR:_____



After:

LF:_____

RF:_____

LR:_____

RR:_____

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.

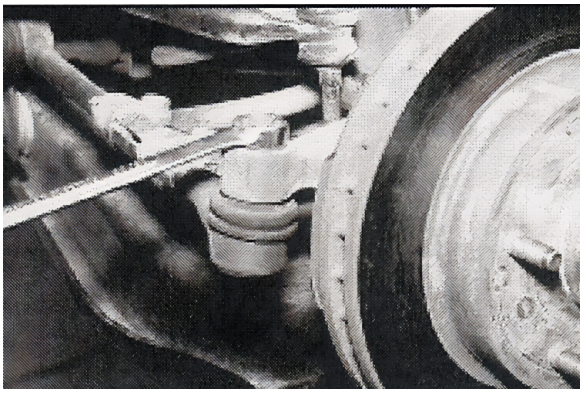
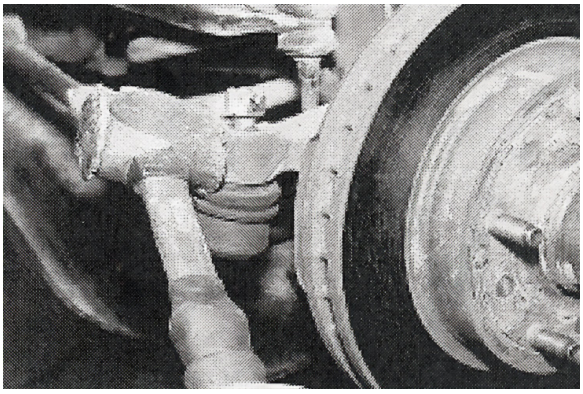
Technician reminder:

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.

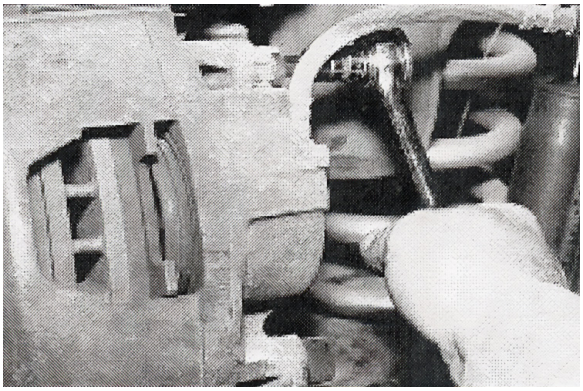
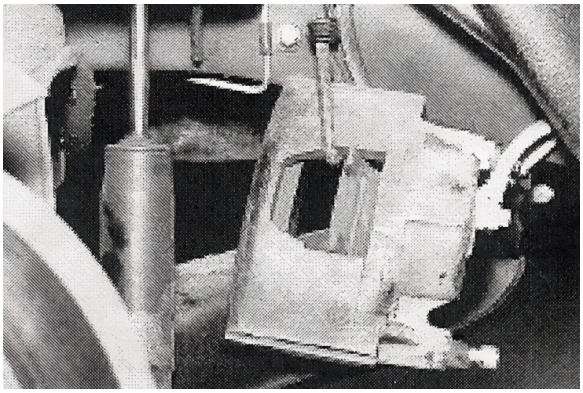
OEM SUSPENSION REMOVAL

9. Remove the 17mm lower end link nut to detach the end link from the lower control arm.

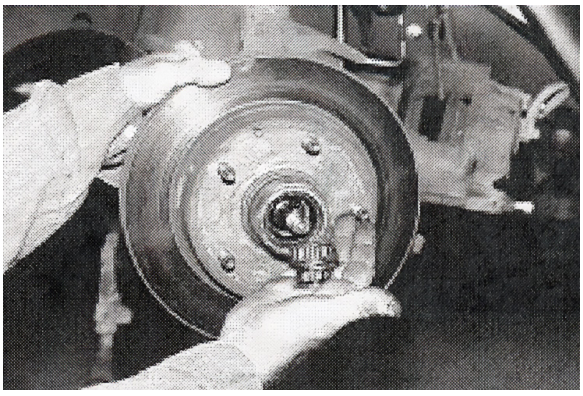
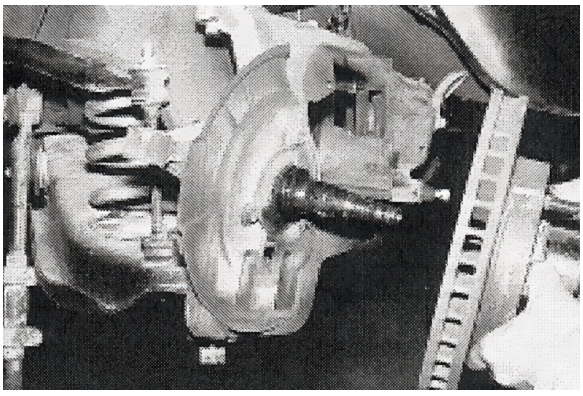
10. Remove the cotter pin from the nut on the tie rod end. Loosen the 21mm nut, but don't remove it completely. Use a tie rod puller or use a hammer to strike the side of the steering arm until the tie rod end is dislodged; swing the rod end out of the way.

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 motor, ensure not to stretch or damage the rubber brake hose. When the brake caliper is removed, do not allow it to hang unsupported from the brake line. Support the caliper with a piece of wire or cord to prevent damage to the brake line.

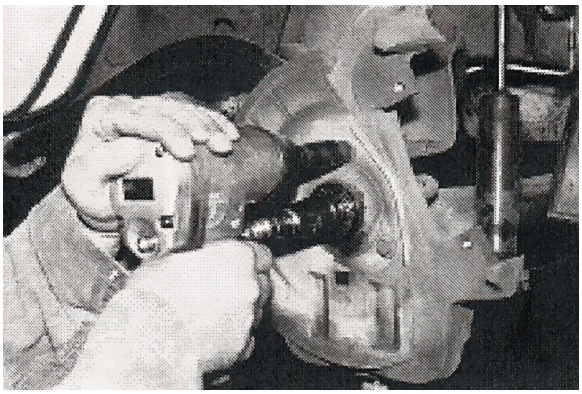



12. Remove the hub and rotor assembly from the spindle by removing the grease cap, cotter pin, and the nut from the spindle pin. Carefully slide the rotor assembly off the spindle pin, do not let the outer bearing fall out of the hub.

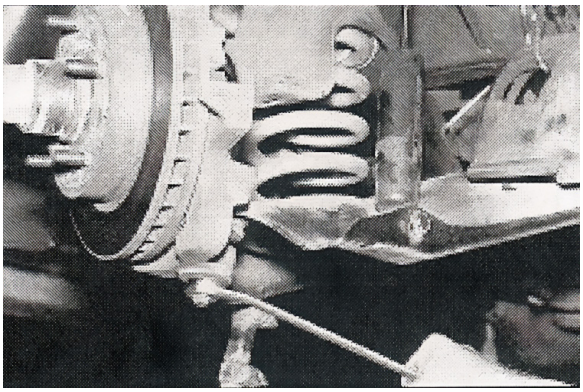
OEM SUSPENSION REMOVAL CONTINUED

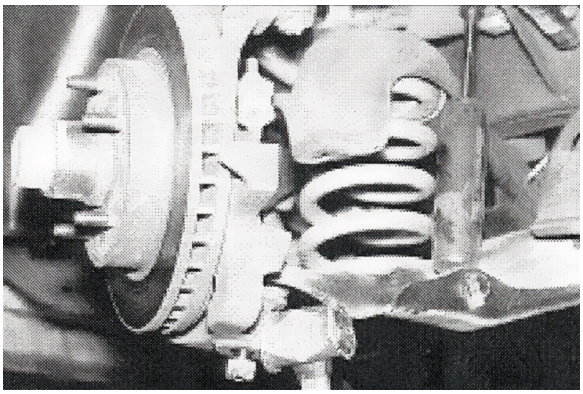
13. Detach the dust shield by removing the three 13mm bolts on the face of the spindle.



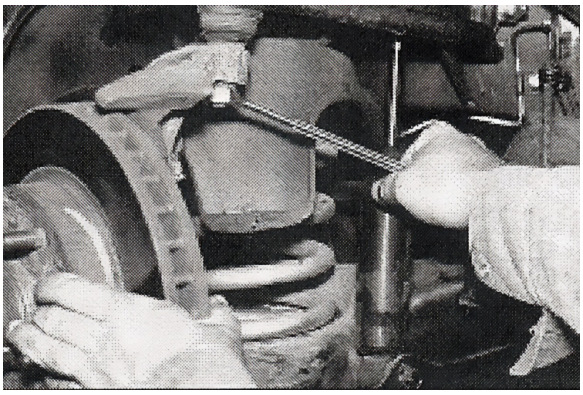
14. Place a floor jack under the lower control arm and lift until a slight compression of the suspension is achieved. Turn the spindle to access the ball joints without interference.

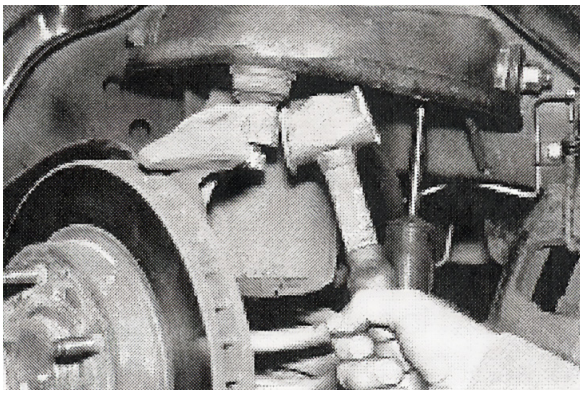
15. Remove the cotter pin and loosen but do not remove the 24mm lower ball joint nut. Strike the lower portion of the spindle beside the ball joint, this will dislodge it from the taper.





16. Remove the cotter pin and loosen but do not remove the 22mm upper ball joint nut. Strike the lower portion of the spindle beside the ball joint, this will dislodge it from the taper.

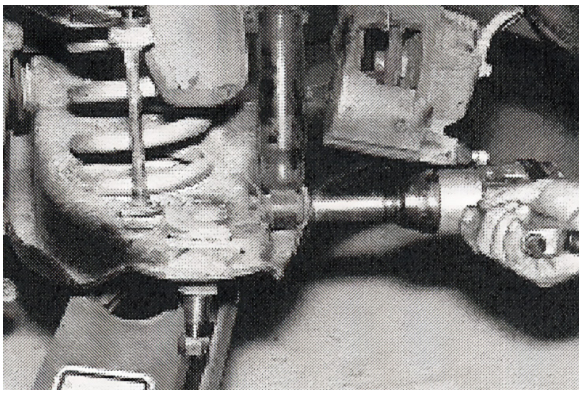




17. Once both ball joints are dislodged, remove the upper nut and lift the control arm to free the spindle. Remove the lower nut and slide the spindle off the lower ball joint.

OEM SUSPENSION REMOVAL CONTINUED

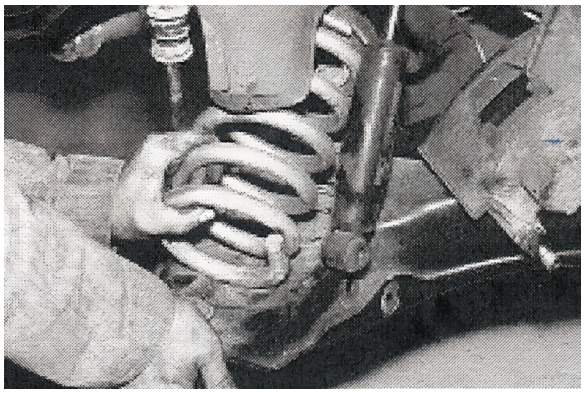
18. Keep the lower control arm supported. Remove and retain the lower shock absorber 21mm bolt.



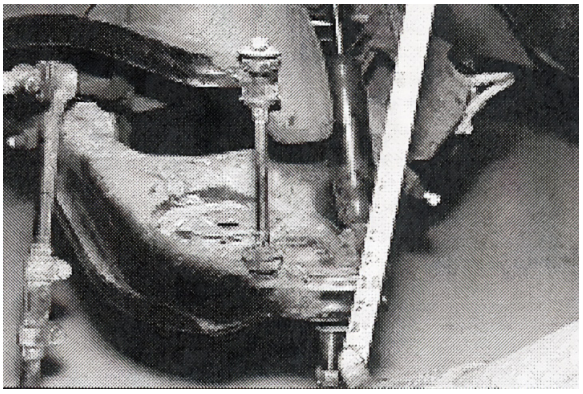
19. Slowly lower the control arm so the coil spring can be removed.

Technician warning:

Springs under a load store considerable amount of energy. Lower the control arm slowly and use care as coil spring unloads and comes out of its lower seat.

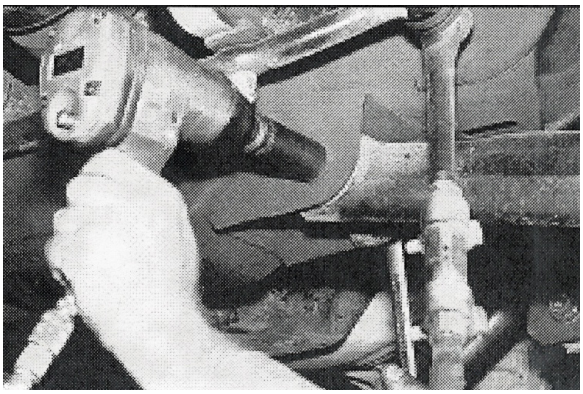


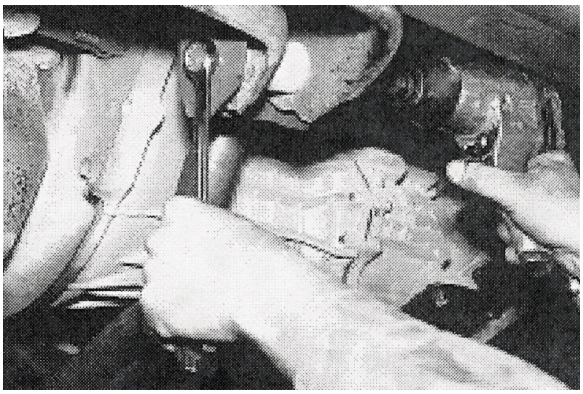
20. Remove the lower control arm support. Measure the distance from the end of the control arm to a fixed point such as the bottom of the fender edge. This distance will be used as a reference when the control arm is installed.



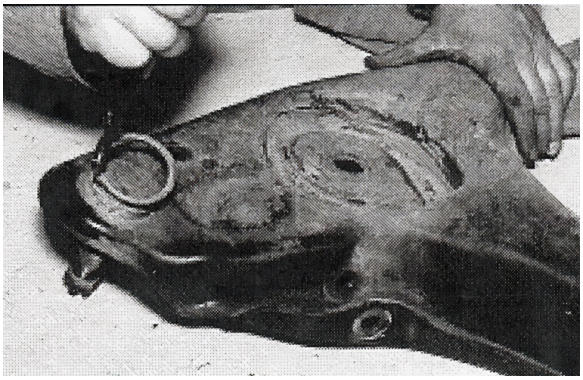
OEM SUSPENSION REMOVAL CONTINUED

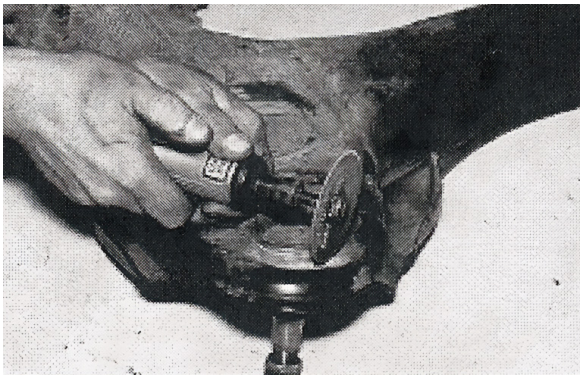
21. Support the lower control arm again and remove the 14mm lower control arm pivot bolts. Detach the lower control arm from the vehicle.





22. Remove the snap ring from the top side of the OEM ball joint. Use a die grinder with a cutoff wheel, or a similar tool, to grind through the spot welds that secure the ball joint to the lower control arm. Ensure not to cut into the material of the lower control arm. Cuts in this area could weaken the control arm and may lead to failure.





23. Remove the ball joint removed from the lower control arm, it will be replaced with a new Belltech ball joint.

Technician note:

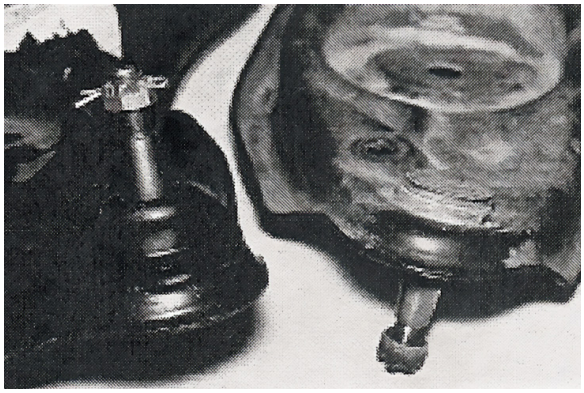
Do not remove or replace ball joints with a hammer or similar tool. Striking the ball joint can distort the housing and may lead to failure of the part. Remove and replace the ball joints using the proper equipment.

BELLTECH SPINDLE INSTALLATION

24. The supplied Belltech ball joint must be installed inverted (upside down) from the original position. The Belltech ball joint is slightly larger than the OEM ball joint and must be pressed into the lower control arm.

Technician note:

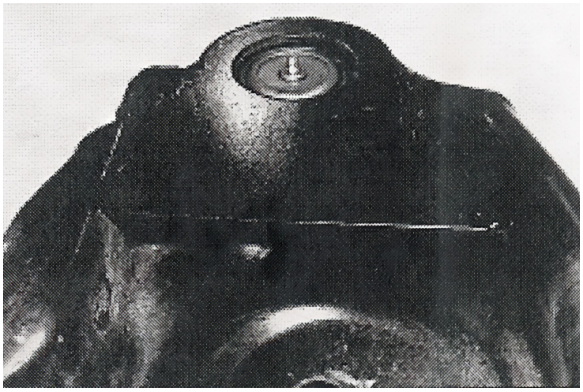
Small tack welds, similar to the OEM spot-welds, may be used to secure the kit supplied ball joint in place after installation. **Do not** tack weld the ball joint using a flame as a heat source.



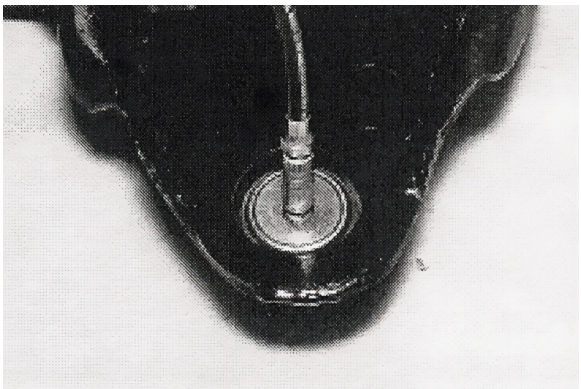
25. Depending on the wheel backspacing, it may be necessary to trim the lower control arm to prevent wheel-to-control arm contact. If control arm trimming is required, the supplied control arm "boxing" plates should be installed. Attach the boxing plates using good welding practices. Several short beads are recommended to reduce heat buildup in the control arm structure or in the ball joint assembly. Once welding is complete, clean and paint all unpainted and welded surfaces to prevent corrosion.

Technician note:

Do not weld the plates using a flame as a heat source and do not use a full perimeter weld.

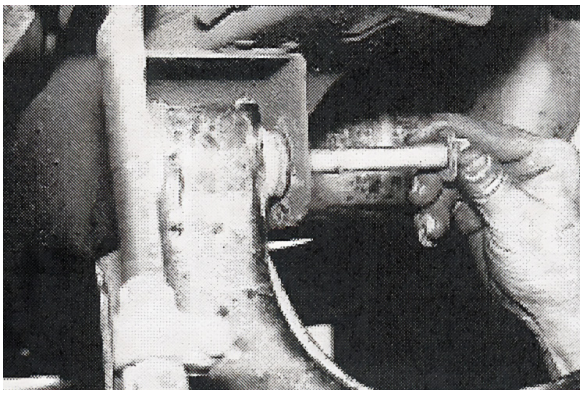


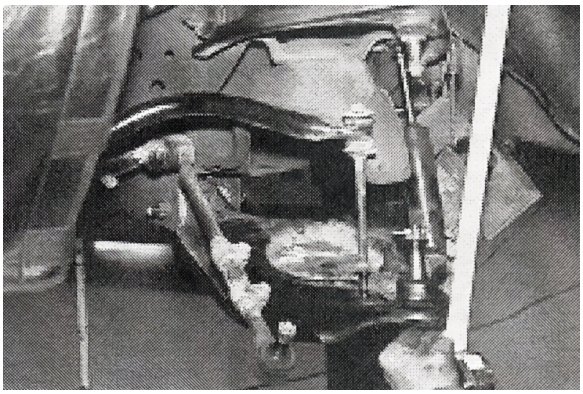
26. Apply high quality grease to the ball joint until the grease squeezes out of the bearing ball channels and slightly fills the ball joint rubber boot seal.



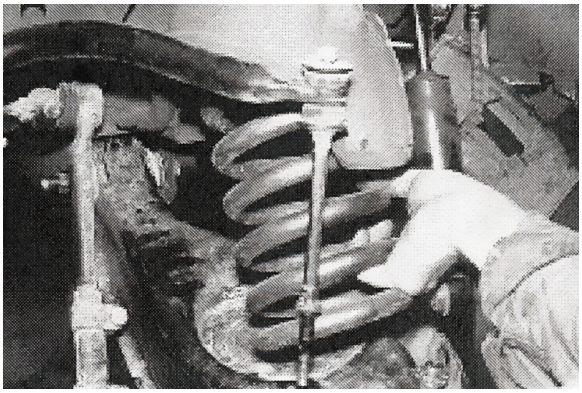
BELLTECH SPINDLE INSTALLATION CONTINUED

27. Mount the lower control arm onto the vehicle using original bolts. Raise the control arm to the same point where the measurement was previously taken; reduce it by 1” inch. Torque the lower control arm pivot bolts to 145 ft lbs.

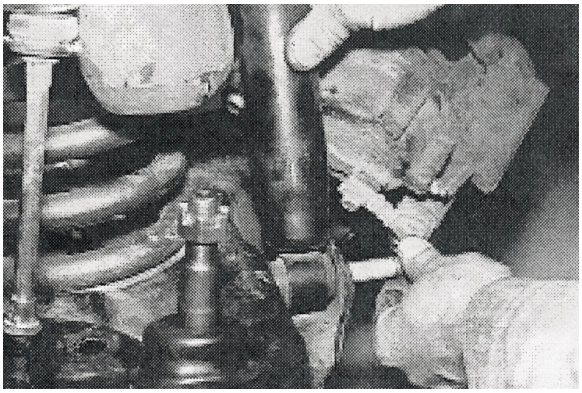




28. Place the coil spring in the upper and lower control are spring pockets. Ensure the spring is seated in the original position.



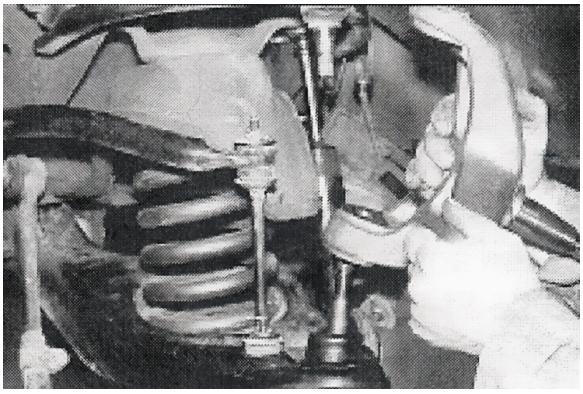
29. Attach the lower shock eye mount to the lower control arm with the original bolt. Torque to 105 ft lbs.

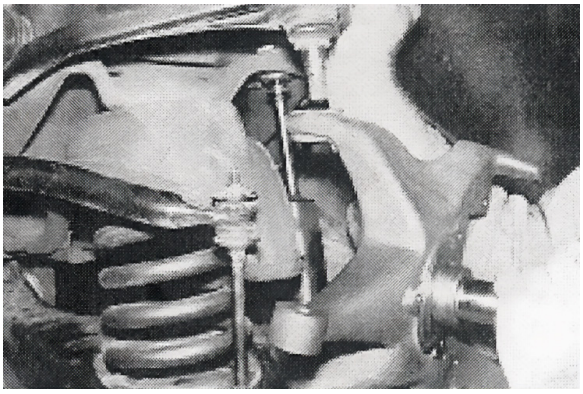


30. Attach the lower end link to the lower control arm. Torque the original nut to 27 ft lbs.

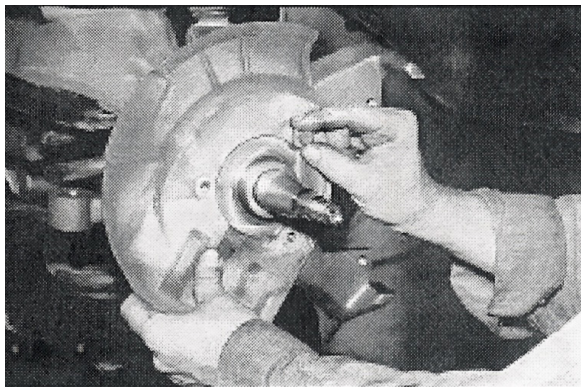
BELLTECH SPINDLE INSTALLATION CONTINUED

31. Support the lower control arm to control the height of the suspension during the installation, place the new Belltech drop spindle on the lower control arm ball joint stud and secure it with the supplied 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 60 ft lbs. and the lower ball joint nut to 95 ft lbs. Secure them with the supplied cotter pins.





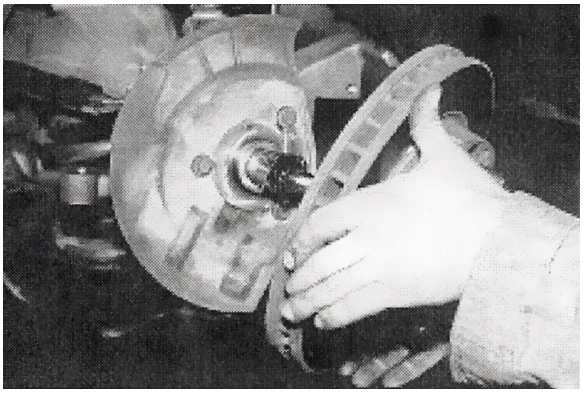
32. Place the dust cover gasket on the spindle shaft and attach the brake dust shield to the face of the Belltech spindle using the original bolts. Torque to 18 ft lbs.

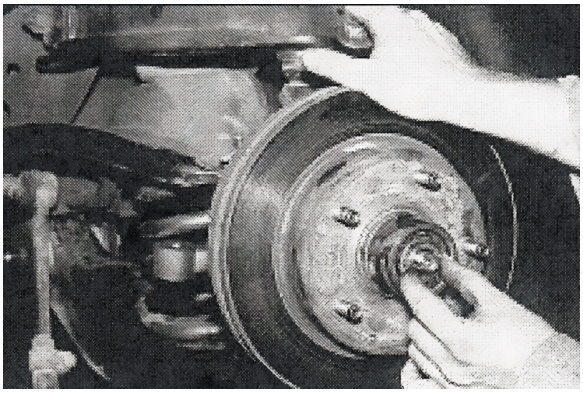


33. Place the tie rod end into the steering arm on the new spindle and torque the nut to 65 ft lbs. Install a new cotter pin.

34. 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.

35. Mount the hub and rotor assembly onto the new Belltech spindle. Ensure the bearing, washer, and nut are in the correct position.



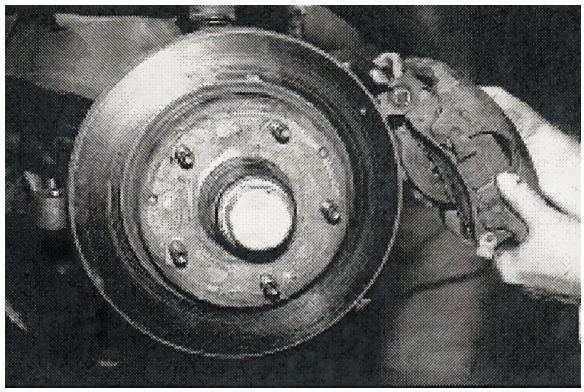


36. Torque the spindle nut to 12 ft lbs. While turning the rotor forward by hand to seat the bearings. Back the nut off to a “just loose” position. Hand-tighten the spindle nut to align the nearest hole in the spindle pin with the slots in the nut.

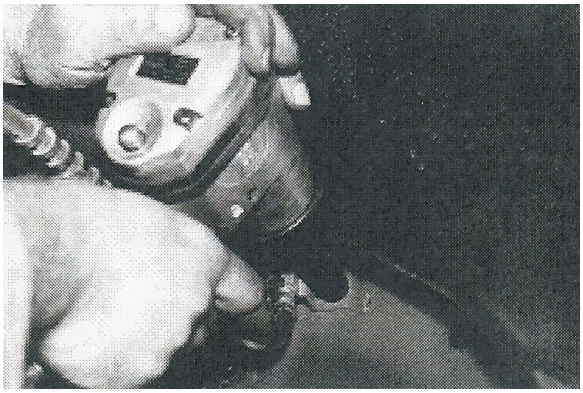
37. Insert the cotter pin into the hole in the spindle pin. Bend the ends of the cotter pins against the nut and cut them off; install the dust cap.

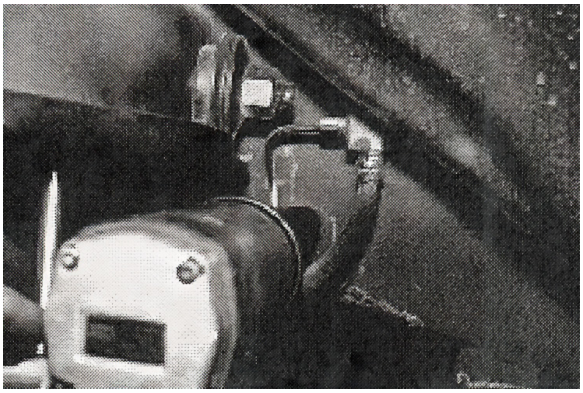
BELLTECH SPINDLE INSTALLATION CONTINUED

38. Mount the brake caliper onto the new spindle. Ensure the brake pads are in their correct position, if needed, compress the piston with a spreader tool. Insert the caliper guide bolts and torque to 38 ft lbs. Turn the rotor assembly left and right to make sure there is no interference between the brake lines and other components.

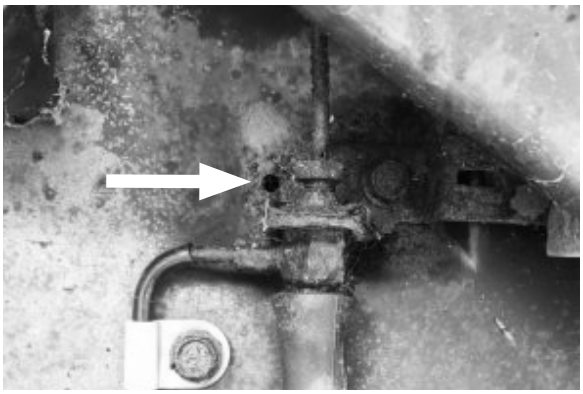


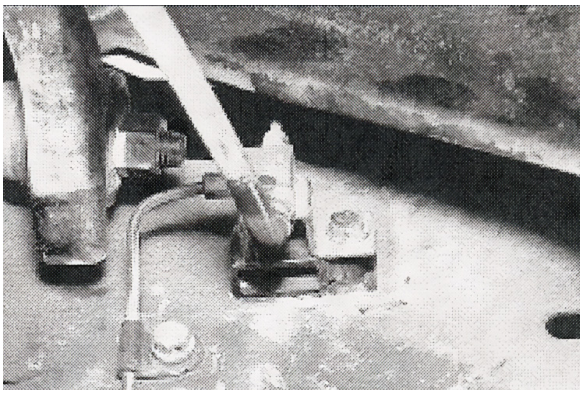
39. Locate the front brake system junction block behind the upper control arm pivot bolt nut, where the rigid brake line transitions into a flexible line. Remove the bolts that secure the junction block and lower hard line to the frame.





40. Place the supplied brake line distribution block spacer against the frame with the roll pin positioned in the hole to the side of the original junction block bolt. Place the junction block bracket over the spacer and secure both the supplied 8mm bolt and 5/16 washer. Tighten by hand but do not over torque.



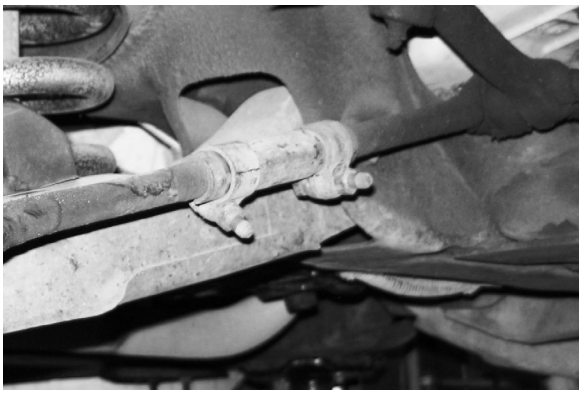


41. If necessary, pull the bracket on the lower hard line down to gain more slack in the line. Place the bracket back in the original position with the original bolt. Do not over torque.

BELLTECH SPINDLE INSTALLATION CONTINUED

42. 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 does not contact any suspension components.

43. If there is severe “toe-out” in the wheel positioning, loosen the two 15mm 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 45 ft lbs.

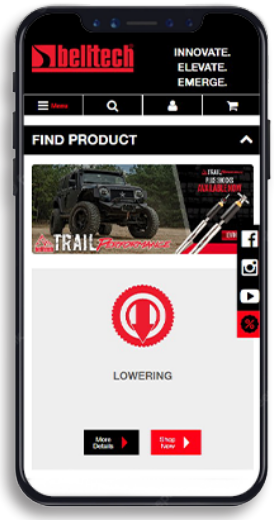


FINALIZING THE INSTALLATION

44. Lift the vehicle and remove the support stands.
45. Carefully lower the vehicle onto flat ground.
46. Torque the lug nuts to 95 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

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

DROP SPINDLE SET		
Part number	Description	Qty
2650-350	LH MACHINED SPINDLE	1
2650-450	RH MACHINED SPINDLE	1
2650-005	RAM LOWER BALL JOINT	2
2650-015	REINFORCEMENT PLATE SET	1
2650-777	HARDWARE KIT	1

HARDWARE KIT		
Part number	Description	Qty
2650-012	BRAKE BLOCK SPACER	2
110204	5/16” FLAT WASHER	2
112010	M8 X 1.25 -45MM BOLT	2
2100-110	COTTER PIN PACK	1