INSTALLATION INSTRUCTIONS

300 W. Pontiac Way Clovis, CA 93612 toll free: 1-800-445-3767 web: www.belltech.com

2508
2" DROP SPINDLE 2WD, 4WD or AWD
(Must Use 17" Wheels or larger)
99-06 SILVERADO/SIERRA 1500 and SS
07 SILVERADO/SIERRA CLASSIC
00-06 TAHOE, SUBURBAN, YUKON, YUKON XL, AVALANCHE, SIERRA C3, DENALI or ESCALADE

Thank you for being selective enough to choose our high quality BELLTECH PRODUCT. We have spent many hours developing our line of products so that you will receive maximum performance with minimum difficulty during installation.

Note: Confirm that all the hardware listed in the parts list is in the kit. **Do not** begin installation if any part is missing. Read the instructions thoroughly before beginning this installation.

Warning: **DO NOT** work under a vehicle supported by only a jack. Place support stands securely under **the vehicle in the manufacturer's specified locations unless otherwise instructed.**

Warning: **DO NOT** drive vehicle until all work has been completed and checked. Torque all hardware to values specified.

Reminder: Proper use of safety equipment and eye/face/hand protection is absolutely necessary when using these tools to perform procedures!

Note: It is very helpful to have an assistant available during installation.

Warning: Not all possible wheel sizes and backspacing can be tested. Cautiously check wheel assembly to spindle, suspension component, and fender/body clearance before tightening 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.

RECOMMENDED TOOLS:

- Properly rated floor jack, support stands, and wheel chocks
- Combination wrench set
- Allen wrench set
- Screwdriver set
- Pliers
- Chisel or punch and hammer
- Abrasive cutter or grinder
- Torque wrench: *up to 200 ft lbs. range*
- Socket sets
- Safety Glasses

PREPARATION

1. Open the hardware kit and remove all the contents. Refer to the part list (Page 6) to verify that all parts are present.
2. Park the vehicle on a smooth, level concrete or seasoned asphalt surface and activate the parking brake. Block the REAR wheels of the vehicle with appropriate wheel chocks; making sure the vehicle's transmission is in 1st gear (manual) or "Park" (automatic).
   Using a properly rated floor jack, lift the front wheels of the vehicle off the ground. Place support stands, rated for the vehicle's weight, in the factory specified locations. Refer to the vehicle Owner's Manual. Prior to lowering the vehicle onto the stands, make sure the supports will securely contact the chassis.
3. Slowly lower the vehicle onto the stands and, before placing the vehicle's entire weight on them, again check that they properly and securely contact the chassis as described above. Check for possible interference with any lines, wires, cables, or other easily damaged components.

! It is very important that the vehicle is properly supported during this installation to prevent personal injury and chassis damage! Make sure that the supports stands are properly placed prior to performing the following procedures. We **DO NOT RECOMMEND** using wheel ramps while performing this installation.

1. STEERING KNUCKLE REMOVAL

a) Starting on the passenger side of the vehicle, remove the wheel from the steering knuckle. Detach the brackets connecting the hydraulic brake line to the top of the steering knuckle and on the upper control arm using a 10mm socket (Photo 1). Disconnect the electronic ABS sensor from the connector behind the shock. Using a screwdriver and/or pliers disconnect the plastic hold down clips on the frame, control arm, and brake line bracket freeing the sensor wire from the suspension (Photo 1).

b) Remove the brake caliper assembly from the steering knuckle. With a metal hook or wire attach the caliper to chassis to prevent damage to the brake line.

c) Remove the brake rotor.

d) **4WD ONLY:** Remove the drive shaft nut in the center of the hub assembly with a 36mm socket (Photo 2).

e) Remove the three bolts on the backside of the hub assembly, detach it from the steering knuckle (Photo 3). Remove the hub assembly and backing plate (Photo 4).

f) With a 18mm socket, break loose the upper control arm ball joint nut but keep the ball joint nut partially threaded on the stud to keep the arm from swinging up and to keep it in place while removing the lower ball joint. Using a ball joint removal tool, free the upper control arm ball joint from the steering knuckle (Photo 5).

! Use a jack or other lifting device to raise the lower control arm while removing the spindle ball joints. Be cautious when lifting the lower control arm because it is under extreme load. Ensure the lifting device base is stable and the portion connected to the lower control can't slip out.

g) Remove the tie rod end using the same ball joint removal tool and detach it from the steering knuckle.

h) With a 24mm socket, break loose the lower ball joint nut. Depending on the type of ball joint removal tool you have available, it might be necessary to devise a tool to free the lower ball joint (Photo 6).

! If you decide to use this method, it is advised you use extra caution to avoid damage to the ball joint stud and threads.

h1) Unthread the lower ball joint nut about ½ inch.

h2) Locate a piece of thick wall tubing or solid stock with a relived hole for the ball joint stud.

h3) Hold the tool up to the bottom of the nut and forcefully strike the tool in an upward motion. It should only take one blow to break the ball joint loose. Repeat only if necessary (Photo 6).

! An alternative method is to use a large hammer and forcefully strike the lower ball joint boss. This striking action will usually free the ball joint with one swing.

i) Remove the steering knuckle from the vehicle (Photo 7).

2. BELLTECH STEERING KNUCKLE INSTALLATION

a) **4WD ONLY:** Trim 3/8" to 1/2" off the lower portion on the upper control arm ball joint for clearance to the drive shaft grease boot (Photo 8 & 12).

b) Insert the upper hub bolt in from the back of the new Belltech steering knuckle. This must be done before the upper ball joint is attached.

STOP! If you are installing a 3" lowering spring, along with this 2" spindle, for a total of 5" of lowering, please jump to section 3 and complete that section. After completion of Section 3, come back and proceed forward.

c) Attach the new steering knuckle to the upper and lower ball joints and loosely thread the nuts in place. (**4WD ONLY:** Make sure to place the drive shaft end inside the hub opening without damage to the splines)

! Use a jack or other lifting device to raise the lower control arm while attaching the ball joints. Be cautious while lifting the lower control arm as it is under extreme load. Ensure the lifting device base is stable and the portion connected to the lower control can't slip out.

d) Tighten the upper ball joint nut in place and torque to 37 ft lbs.

Attention! When using 17" wheels you must use the supplied half nut and lock washer on the lower ball joint then trim the ball joint stud for adequate clearance (Photo 18). Photo 16 shows the backside of the 2508 steering knuckle with a stock 17" wheel. BEFORE the ball joint stud is trimmed, the supplied lock washer and nut should be installed and torqued to 60 ft lbs. We recommend that when you remove the lower portion of the stud you leave at least 1/16" of the stud extended out from the nut. It is also recommended that once the stud is trimmed off you use a chisel or punch to score the edge of the threads to prevent the possibility of the nut coming loose (Photo 18).

e) Torque the lower ball joint to 74 ft lbs. for the OEM nut or 60 ft lbs. for the supplied half nut (Photo 9).

f) Attach the steering tie rod end to the steering knuckle and torque to 37 ft lbs.

Attention! Some vehicles may be equipped with a larger brake caliper & backing plate. If the vehicle has the backing plate that is shown in photo 17, it will need to be trimmed as shown.

g) Install the backing plate and hub assembly onto the knuckle.

h) Thread in the three stock hub bolts from the backside of the steering knuckle and torque to 133 ft lbs. (Photo 10).

i) **4WD ONLY:** Torque the drive shaft hub center nut to 175 ft lbs. (Photo 11).

j) **4WD ONLY:** Rotate the hub to ensure the upper ball joint stud or nut does not contact the drive shaft boot (Photo 12).

k) Mount the brake rotor.

l) Attach the brake caliper assembly and torque the original bolts to 130 ft lbs. (Photo 13).

m) Attach the brake line brackets to the top of the steering knuckle and to the control arm (Photo 14 & 15).

n) Re-attach the ABS sensor connector and the hold down clips (Photo 14).

o) Rotate the steering knuckle in both directions to check if the brake line and ABS cable have enough slack (Photo 15). If either is too tight, then you pull it thru the bracket to give it the proper amount of slack.

p) The passenger side installation is complete (Photo 16). Repeat the previous steps for installation on the driver's side.

q) Upon completion of both sides, check that all components and fasteners have been properly installed, tightened, and torqued.

! All hardware being fastened to the vehicle's original fastening points should be torqued to the proper specifications. To prevent chassis damage, never over torque the hardware.

r) Check the brake hoses and other components for any possible interference.

s) Re-install the wheels and tighten the lug nuts.

t) Lift vehicle and remove support stands. Carefully lower the vehicle onto the flat ground.

u) Torque the lug nuts to 140 ft lbs.

v) Test drive the vehicle in a remote location so that you can become accustomed to the upgraded driving characteristics and handling. Be aware that the vehicle will handle substantially different now that it has been modified.

w) We recommend the vehicle be taken to a qualified wheel alignment facility to be realigned to factory specifications. This should be done after the vehicle has been test driven and all modifications have been completed.

x) Check all the hardware and retorque at intervals for the first 10, 100, 1000 miles.

3. INSTRUCTIONS FOR LOWERING THE FRONT OF YOUR VEHICLE 5”

! WARNING: When lowering your vehicle 5” inches in the front with our 2508 steering knuckle combined with any 3” lowering coil spring, you must follow the instructions below. These instructions will show you how to correct the ball joint angle and prevent premature wear or possible failure to the ball joint.

! NOTE: The process below will correct the upper ball joint angle by inverting the control arm, thus changing the angle of the ball joint in relation to the upper ball joint boss. This process will require a hydraulic press, die grinder and possibly some fabricated tools. PLEASE read through them before attempting this procedure. It might be necessary to have a qualified shop perform this procedure.

a) Remove the upper control arm from the vehicle (Photo A).

b) With a flat head screwdriver, pry the blade between the rubber grease cup and ball joint housing (Photo B & C). Rotate the screwdriver slightly to remove the grease cup. You may need to do this in several places to completely remove it from the ball joint (Photo D). Ensure not to damage the cup, it will need to be reinstalled.

c) Remove the grease cup (Photo E). Remove the excess grease off the ball joint (Photo F).

d) Use a deep socket or tubing to insert over the length of the ball joint stud. It may be necessary to construct a spacer for this process (Photo G & H).

e) Press the ball joint out of the control arm. Ensure not to damage the ball joint during this process (Photo I, J, and K).

f) With a die grinder or chamfer type tool break the inner edge of the ball joint thru hole like the opposite side (Photo L & M). This will allow the ball joint to set flush when pressed back in; the chamfer allows clearance for the inner radius on the ball joint.

g) Before pressing the ball joint in from the other side make sure the ball joint is clocked in the correct position. This can be identified by the two flat marks on the end of the ball joint (Photo P & Q), the flattened marks should be perpendicular to the centerline on the rubber bushings. This also identified by the inside of the ball joint, line up the two relieved areas perpendicular to the centerline of the rubber bushing (Photo Q).

! **WARNING**: If the ball joint is not clocked in the correct position, it will cause ball joint damage and you may need to replace the entire control arm.

h) With the ball joint now inverted from its original orientation and clocked in the correct position, press it into the control arm so that it sets flush against the bottom (Photo R).

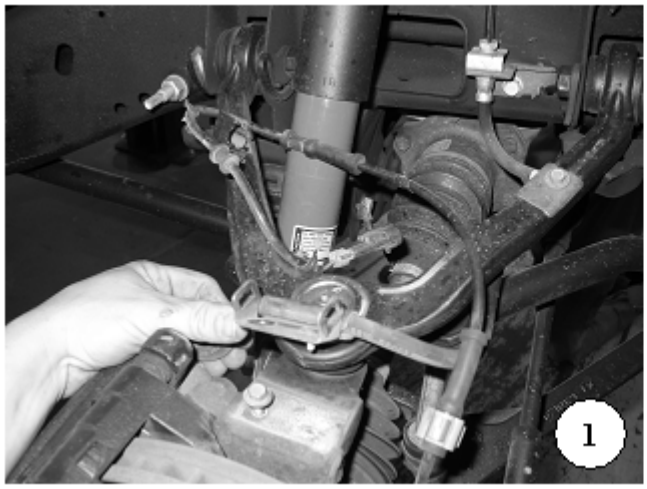
i) Place the grease cup back on the ball joint (Photo S). With a large set of pliers, press the grease cup base back on the ball joint shoulder (Photo T & U).

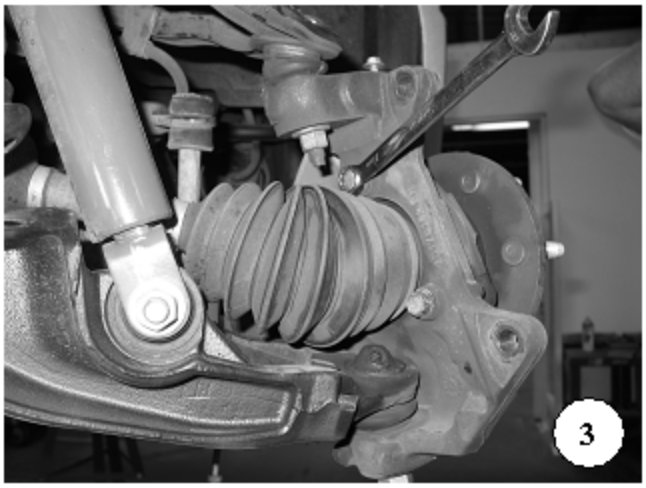
j) The ball joint inversion is complete, reinstall your upper control arm on the original side.

k) Return to section 2, line C

PART LIST FOR 2508 KIT

PART#	DESCRIPTION	QTY
2508-325-992	STEERING KNUCKLE LH	1
2508-425-992	STEERING KNUCKLE RH	1
115007	HALF NUT 16MM X 2.0	2
115009	INTERNAL TOOTH LOCK WASHER 5/8	2

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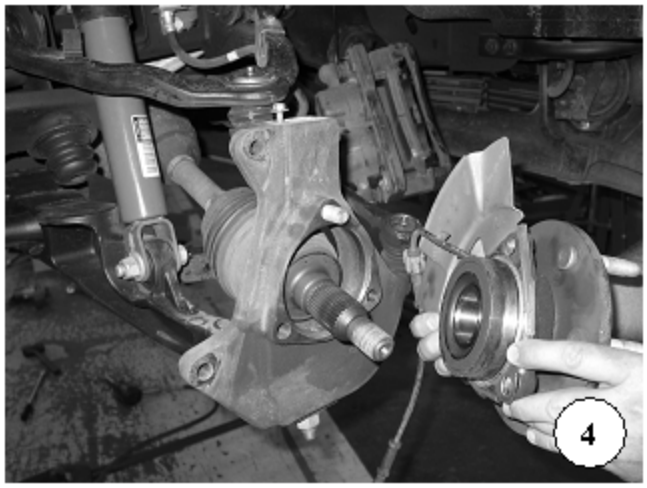
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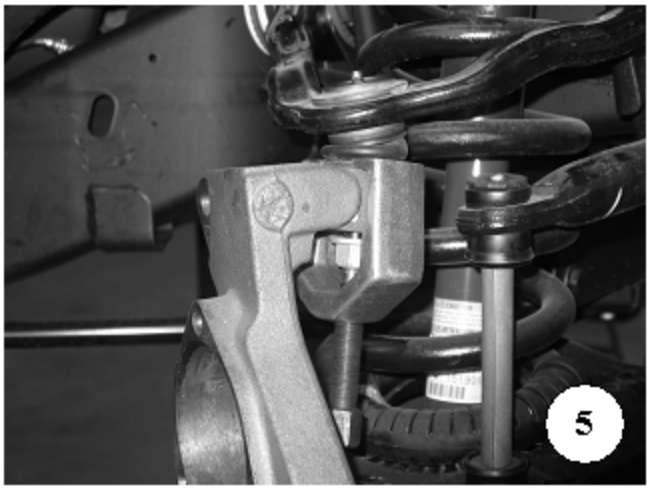
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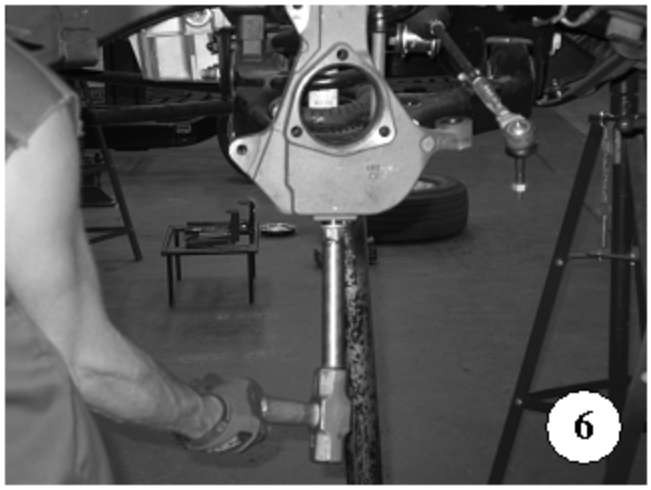
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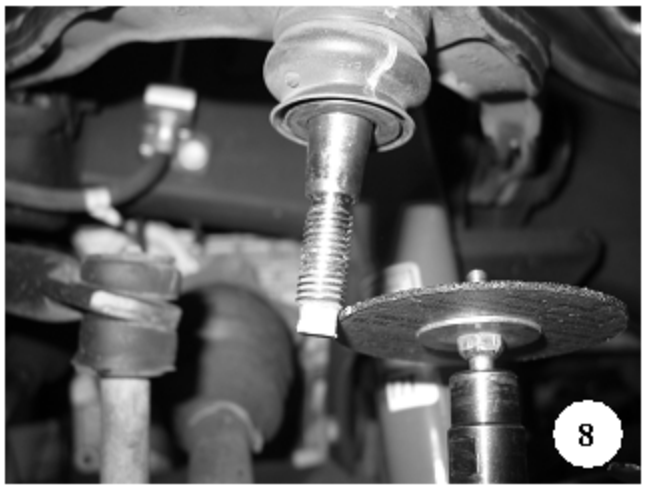
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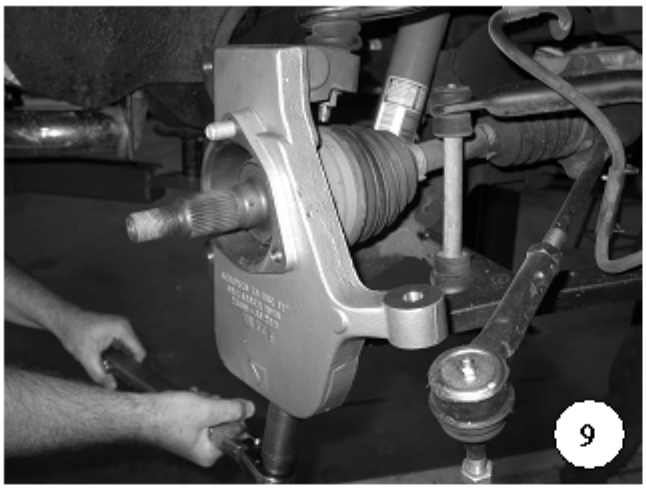
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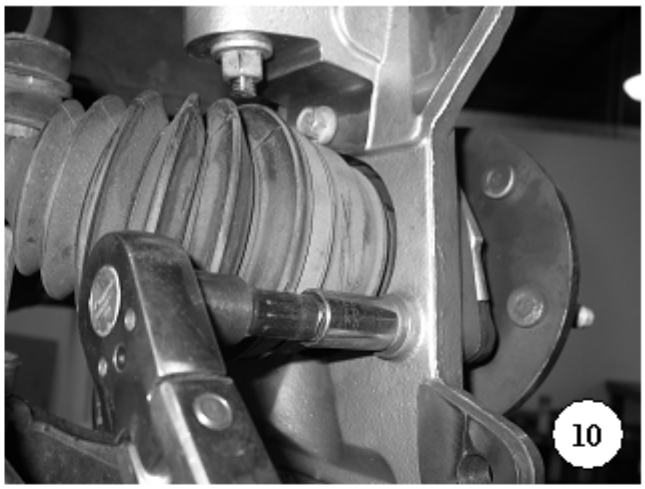
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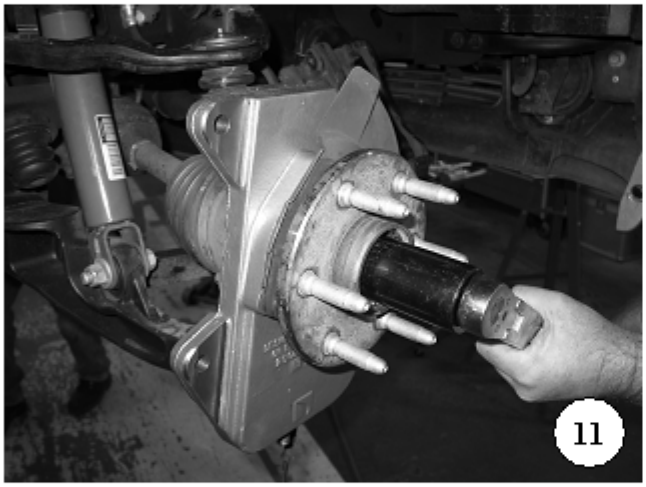
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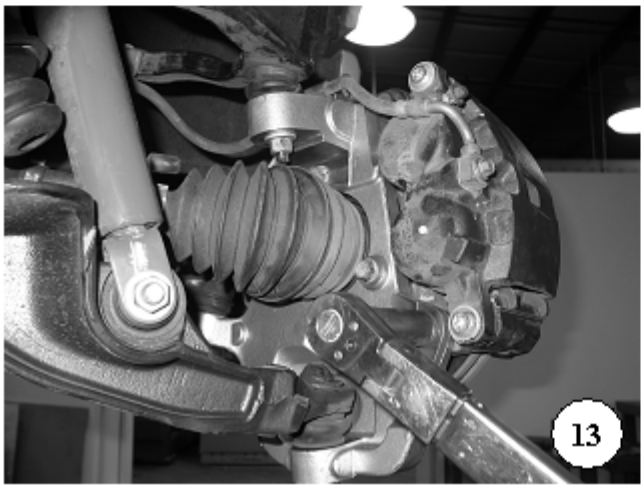
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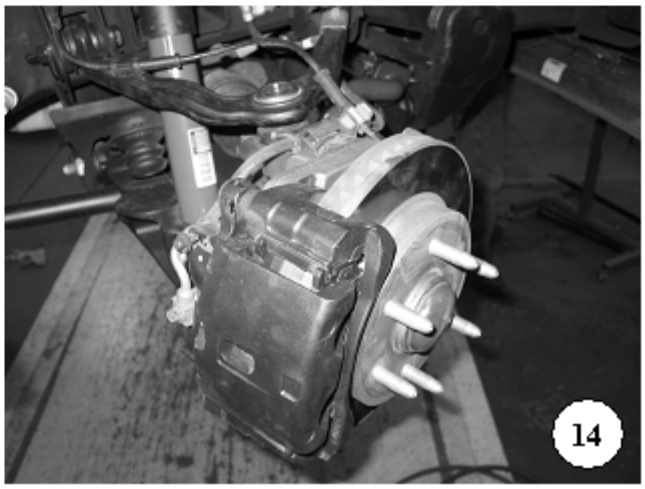
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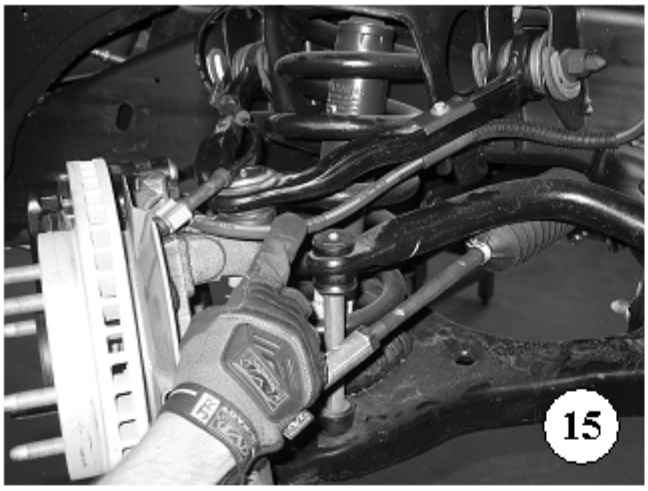
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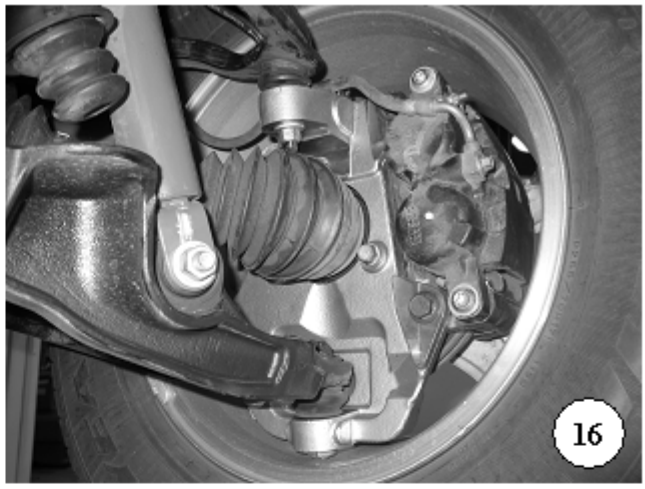
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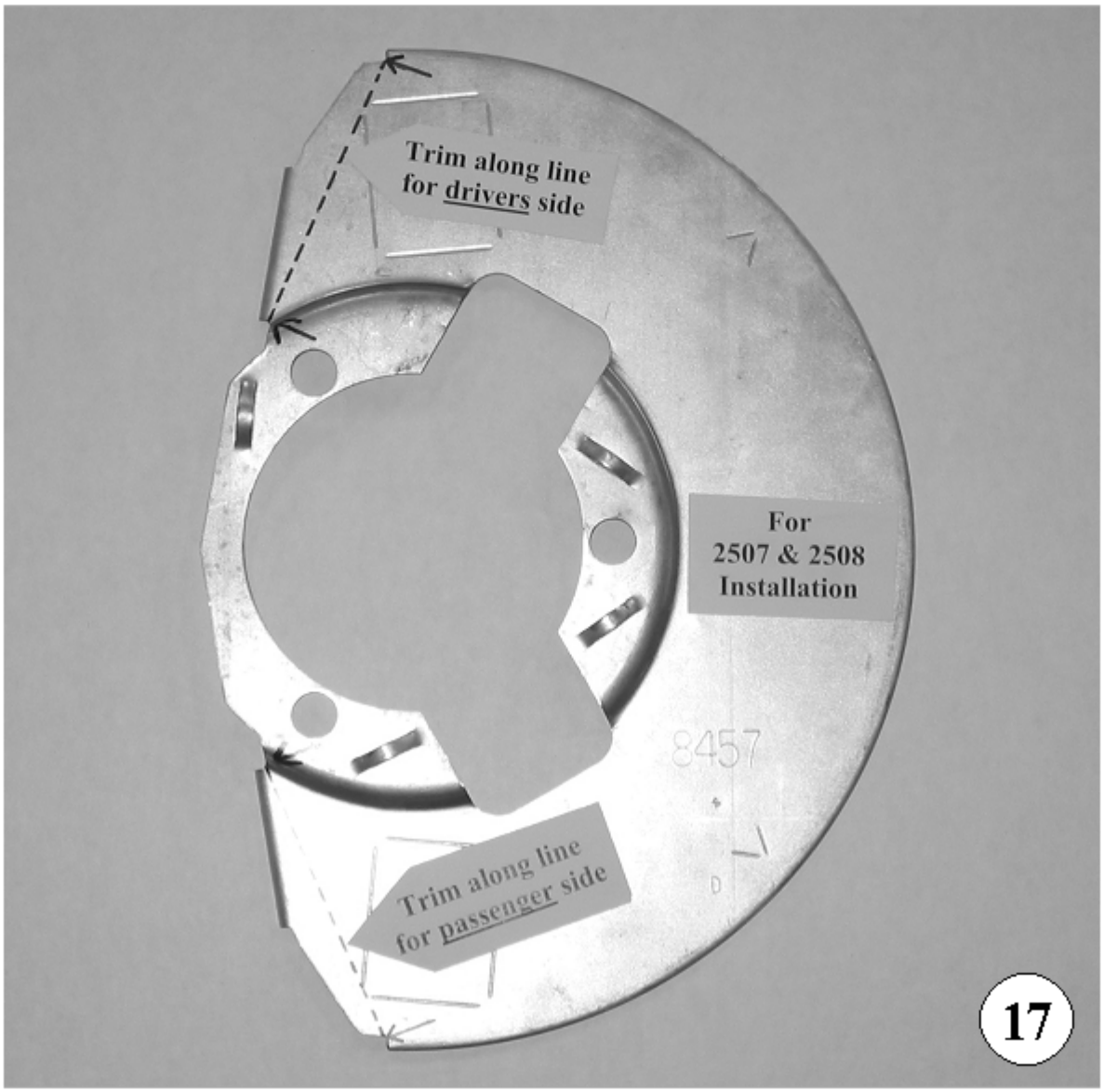
Trim along line
for drivers side
For
2507 & 2508
Installation
8457
Trim along line
for passenger side
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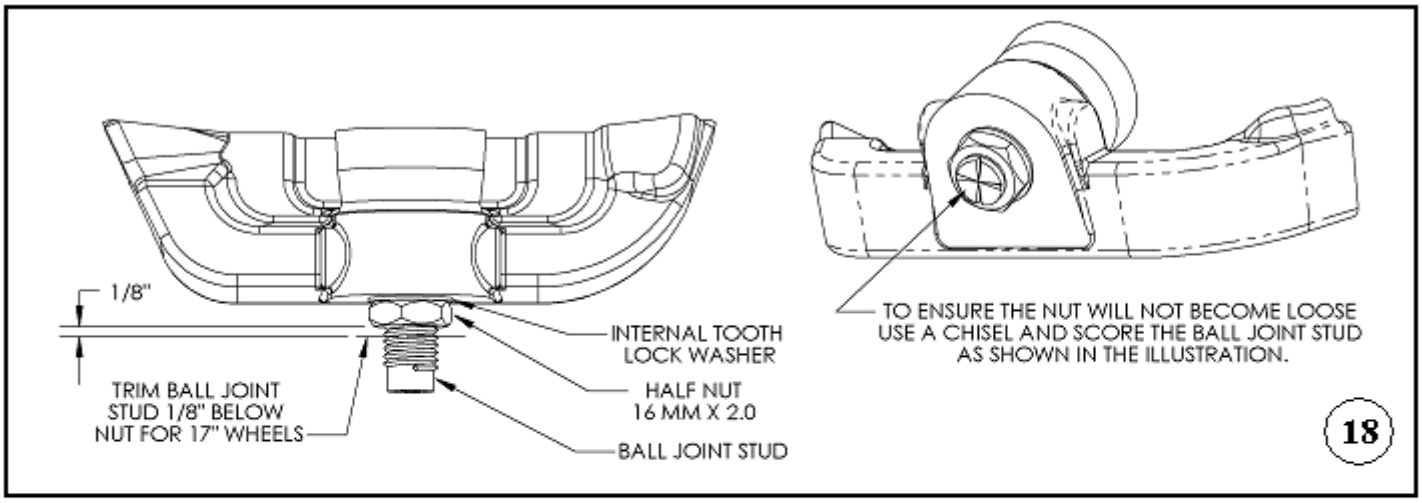
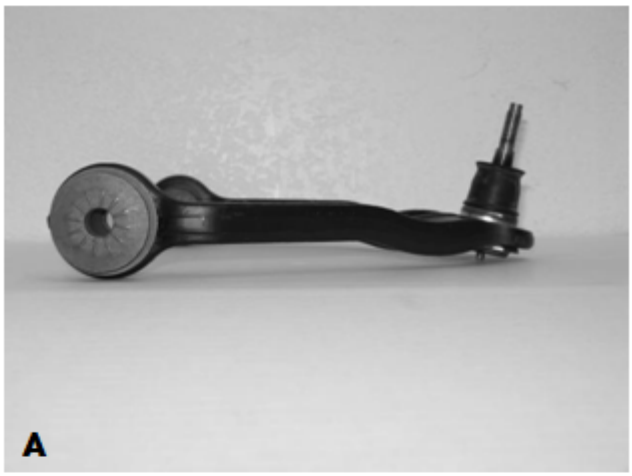


Ball joint inversion photos

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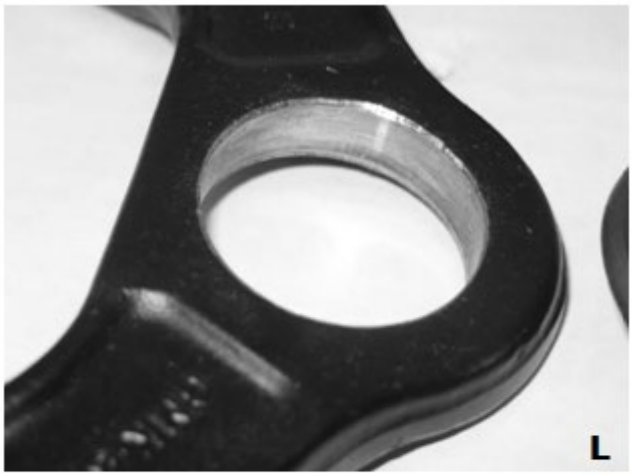
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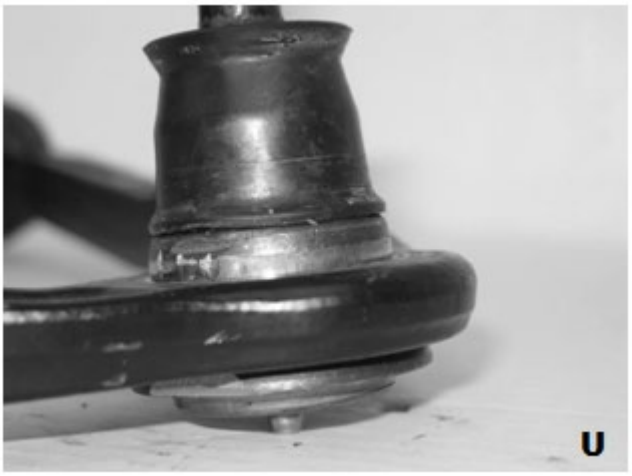

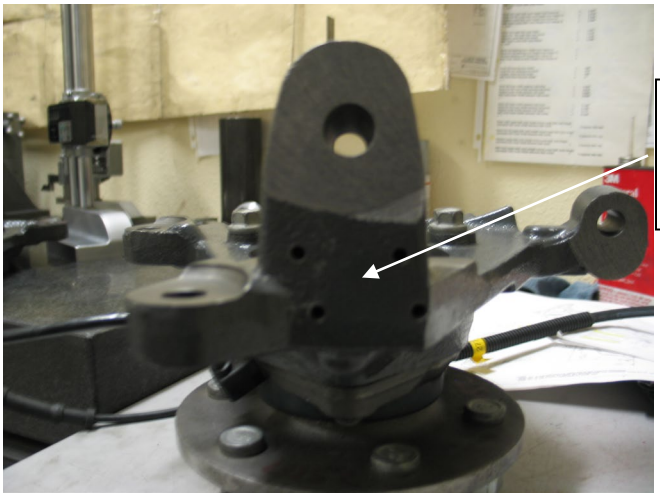

NOTE: Some spindles have multiple mounting locations depending on your bracket size/type.