

E-WM05-0000105

MOUNTING INSTRUCTION



IMPORTANT! READ THIS FIRST!

Installation of shock absorbers or other suspension components requires special tools and expert knowledge. Accordingly, installation of all BILSTEIN products must be performed by a professional automotive suspension technician.

When replacing other brands, BILSTEIN shock absorbers or other suspension components should always be installed as a set. All BILSTEIN products must only be used for the specific, intended application as indicated in the application guide. **Any use of any BILSTEIN product other than for its intended use may result in serious bodily injury or death.**

Always use a chassis hoist for the installation of BILSTEIN products and make certain that the raised vehicle is securely attached to the hoist and/or supported to prevent the vehicle from slipping, falling, or moving during the installation process.

If you install any BILSTEIN product without the necessary special tools, expertise, and chassis hoist, you may subject yourself to the risk of serious bodily injury or death.

BILSTEIN shock absorbers are gas-filled and are highly pressurized.

- Never place any BILSTEIN shock absorbers in a vise or use a clamp on any BILSTEIN shock absorber.
- Never apply heat near any BILSTEIN shock absorber.
- Never attempt to open or repair any BILSTEIN product, in order to prevent **serious bodily injury or death**.

Any attempt to misuse, misapply, modify, or tamper with any BILSTEIN suspension product voids any warranty and **may result in serious bodily injury or death.**

While installing any BILSTEIN product:

- Do not use impact tools for loosening or tightening fasteners, because this may destroy the screw threads.
- Self-locking fasteners must only be used **once!**
- Reuse original equipment components only if they are in good condition, otherwise replace them with new components.
- Never remove the slight film of oil on the shock absorber piston rod and seal.
- All mounting fasteners for shock absorbers and other suspension components must be securely tightened before tension is placed on the suspension system, unless otherwise specified in the manufacturer's service manual or in this instruction.

After installing any BILSTEIN product:

- The suspension caster and camber must be checked and/or adjusted to comply with the vehicle manufacturer's specifications.
- The (load dependent) brake compensator and the anti-lock brake system must be checked and/or reset to comply with the vehicle manufacturer's specifications.
- The headlight aim must be checked and adjusted. Or, if applicable, adaptive headlights must be checked and recalibrated to comply with the vehicle manufacturer's specifications.
- If applicable, any/all Advanced Driver Assistance Systems (ADAS) must be checked and recalibrated to comply with the vehicle manufacturer's specifications.

CAUTION for COILOVER TYPE SUSPENSIONS!!!

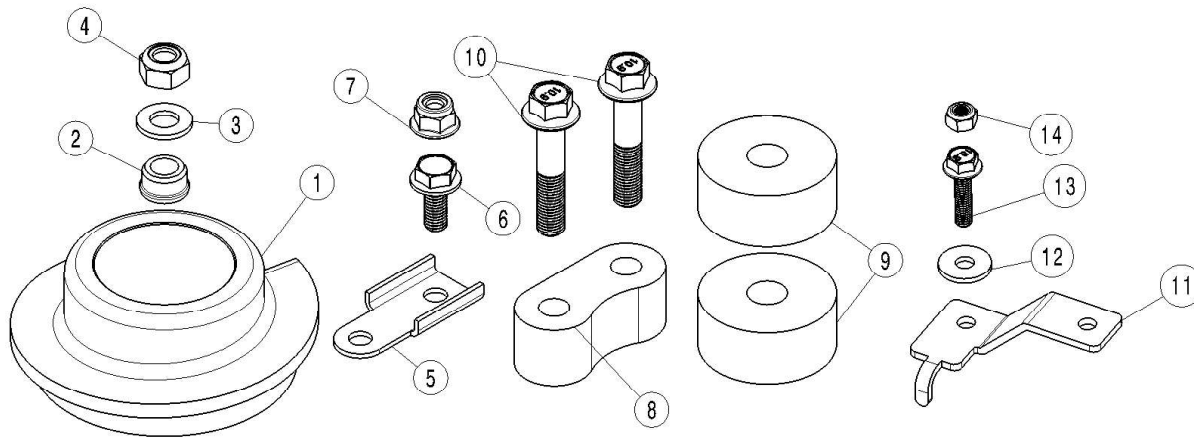
If disassembling a coilover type suspension, refer to the vehicle manufacturer's service manual for proper procedures. The coil spring is preloaded and must be compressed with a spring compressor to release load before the upper mount is disassembled. Failure to follow the vehicle manufacturer's procedures may cause serious injury or death, and may damage the vehicle.

IMPORTANT!!!

This BILSTEIN product may or may not be compatible with non-BILSTEIN aftermarket products and/or vehicle modifications. It is the responsibility of the professional automotive suspension technician performing the installation to identify any non-OEM components and/or modifications on the vehicle that may interact with the suspension system. These must be evaluated for any potential physical static or dynamic interference with and/or effect on the function of this BILSTEIN product.

B8 TerraSport Rear Parts Kit:

Bill of Materials		
Item #	Description	Qty.
1	Spring Seat	1
2	Rod Adapter	1
3	M10 Washer	1
4	Nyloc Nut M10x1.25	1
5	Brake-line Relocation Bracket	1
6	Flange Head Cap Screw; M8x1.25	1
7	Nyloc Nut M8x1.25	1
8	Cradle Bracket Spacer	1
9	Cradle Drop Spacer	2
10	Flange Cap Screw M10x1.25	2
11	Ride Height Sensor Relocation Bracket	1
12	M6 Washer	1
13	Flange Head Cap Screw M6x1	1
14	Nyloc Nut M6x1	1



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** Lift heights indicated are typical. Actual lift height is influenced by which factory suspension the vehicle is equipped with and its condition; optional equipment and accessories on your vehicle, and other vehicle modifications such as replacement coil springs, wheel and tire combinations, etc.

Modifying/lifting the suspension to your vehicle may raise its center of gravity and may make it more susceptible to loss of control and/or rollover, which may result in death or serious injury. We strongly recommend that you offset the loss of rollover resistance as much as possible by increasing tire track width, and that you equip the vehicle with a functional roll bar and cage system.

Wear seat belts and shoulder harnesses at all times, and avoid situations where a side rollover may occur.

Instructions for disassembly of rear OE shock absorber module:

- A. Remove the existing shock and spring unit from the vehicle following all procedures in the vehicle manufacturer's service manual.
- B. Note the clocking of the lower mount bushing relative to the studs on the upper mount. Also note the clocking of the end of the upper coil relative to the studs on the upper mount (important for reassembly).
- C. Using an appropriate spring compressor, compress the spring until it can rotate freely by hand. Then, disassemble the shock and spring unit.
- D. If equipped with auto adjust headlight system, loosen the OE fasteners securing the ride height sensor bracket to the control arm as shown below in Figure 1.



Figure 1. Driver's side depicted

E. Loosen the OE flange bolt securing the brake line to the spindle as shown below in Figure 2.



Figure 2. Driver's side depicted

Note: The shocks/components depicted herein may differ slightly in appearance from what is supplied.

Instructions for installation of Bilstein cradle spacers:

- F. While supporting the rear subframe, start by removing the 2 OE cradle bracket M10 bolts in Figure 3. Then, loosen the 2 OE cradle drop M14 bolts as shown below in Figure 3 and Figure 4. Repeat the process for the passenger's side.

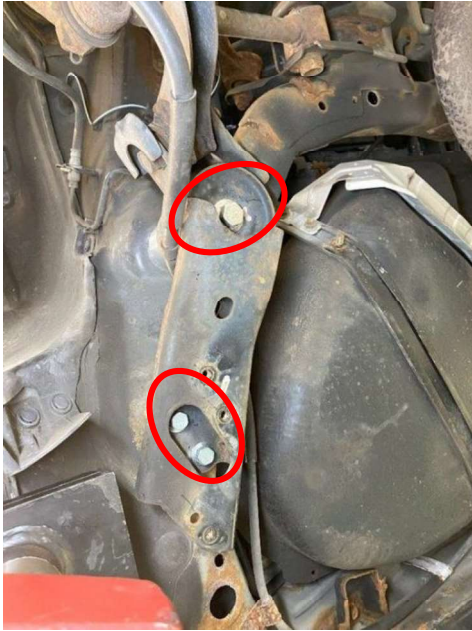


Figure 3. Driver's side depicted



Figure 4. Driver's side depicted

- G. On the driver's side, remove the OE cradle drop bolt as shown below in Figure 5. On the passenger's side, continue loosening until the supplied Bilstein Cradle Drop Spacer (Item #9) fits into place as shown below in Figure 6. Apply a high strength, permanent thread locker to the driver's side OE cradle drop bolt. Then reinstall it and tighten it to the vehicle manufacturer's specifications. Repeat the process for the passenger's side.



Figure 5. Driver's side depicted



Figure 6. Driver's side depicted

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- H. Apply a high strength, permanent thread locker to the 2 supplied 50mm long M10 flange bolts (Item#10), then use them to install the cradle bracket spacer (Item #8) as shown below in Figure 7. Tighten the supplied M10 flange bolts to the vehicle manufacturer's specifications. Repeat the process for the passenger's side.

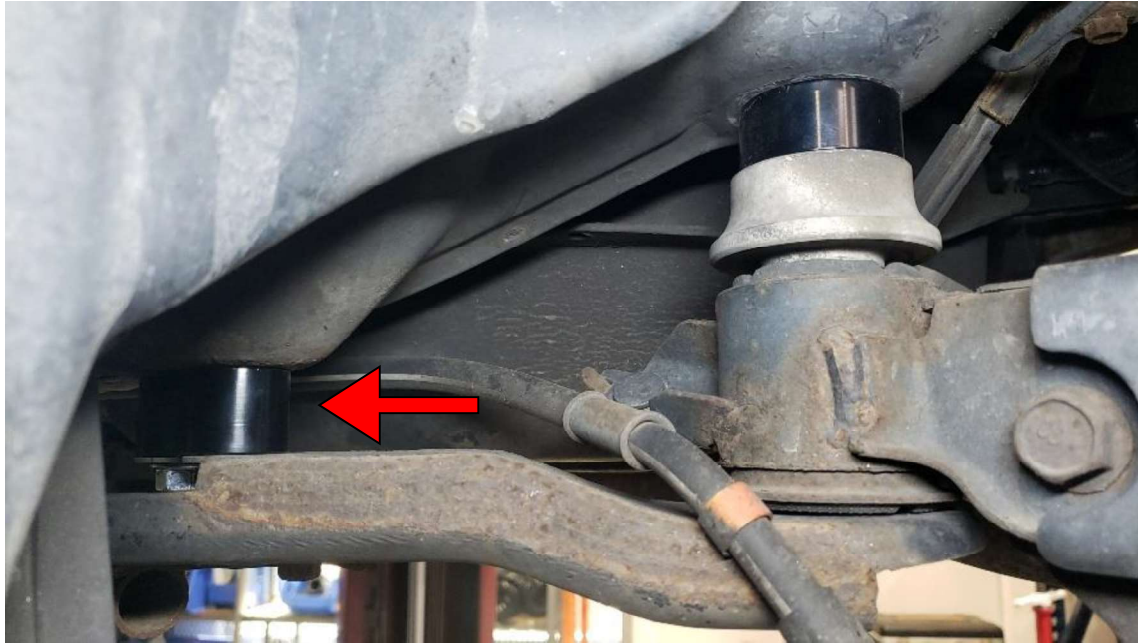


Figure 7. Driver's side depicted

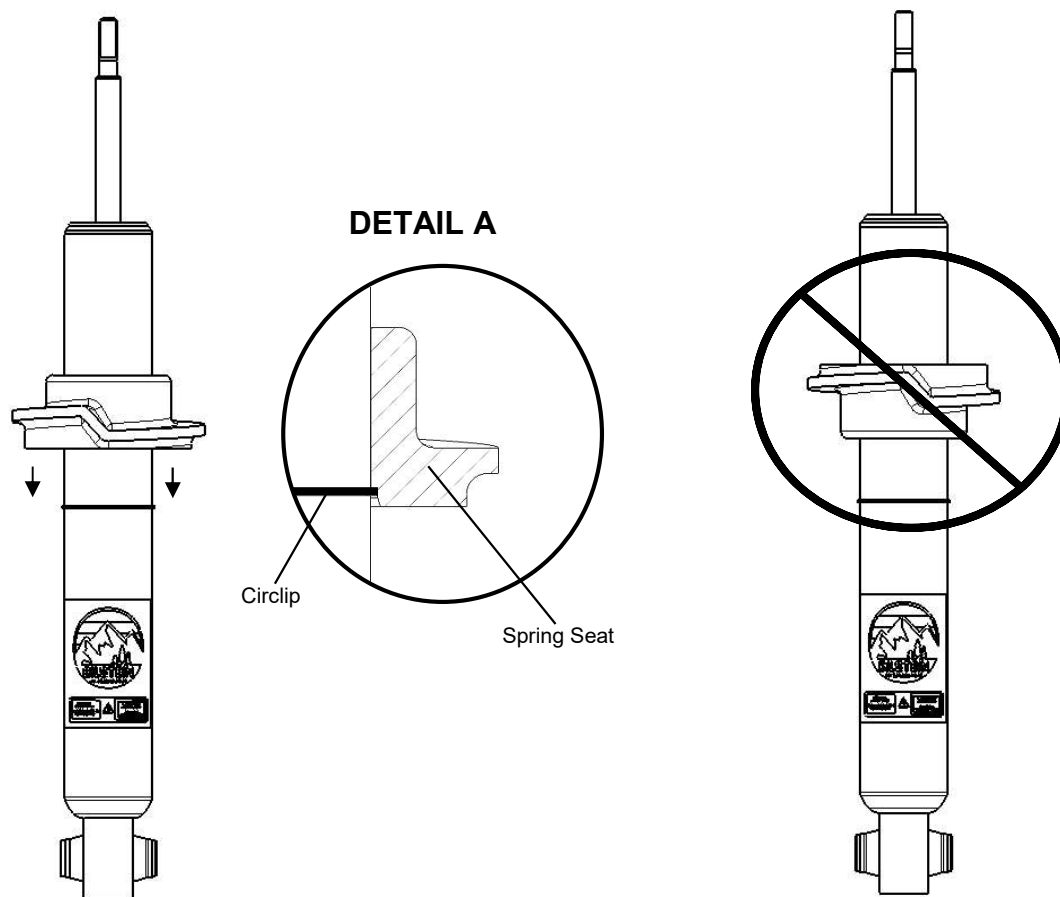
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Instructions for assembly of rear Bilstein shock absorber module:

[Refer to Figure 8 on page 8 for steps K-O]

- I. Install the supplied spring seat (Item #1) on to the new Bilstein shock such that the groove inside the spring seat fits over the circlip on the shock body as shown below. Install the spring seat in the direction shown only. The circlip must fit completely in the groove inside the spring seat (see DETAIL A below). Improper installation will cause permanent damage to the shock.



- J. Install the supplied rod adapter (Item #2) (counter bore side down) onto the stem of the rod as shown. Ensure that the rod adapter is oriented correctly (see Detail B).
- K. Install the OE bump stop and OE dust cover.
- L. Using an appropriate spring compressor, compress the OE coil spring and assemble it with the new Bilstein shock.
- M. Install the OE spring isolator and OE upper mount over the threaded stem on the new Bilstein shock and on top of the spring. Rotate the upper mount so the studs are aligned with the end of upper coil as noted in Step B. Rotate the shock so that the lower mount is aligned with the upper mount studs as noted in Step B. Rotate the spring seat so the ramp is indexed with the bottom coil.
- N. Install the supplied washer (Item #3) onto the threaded stem.

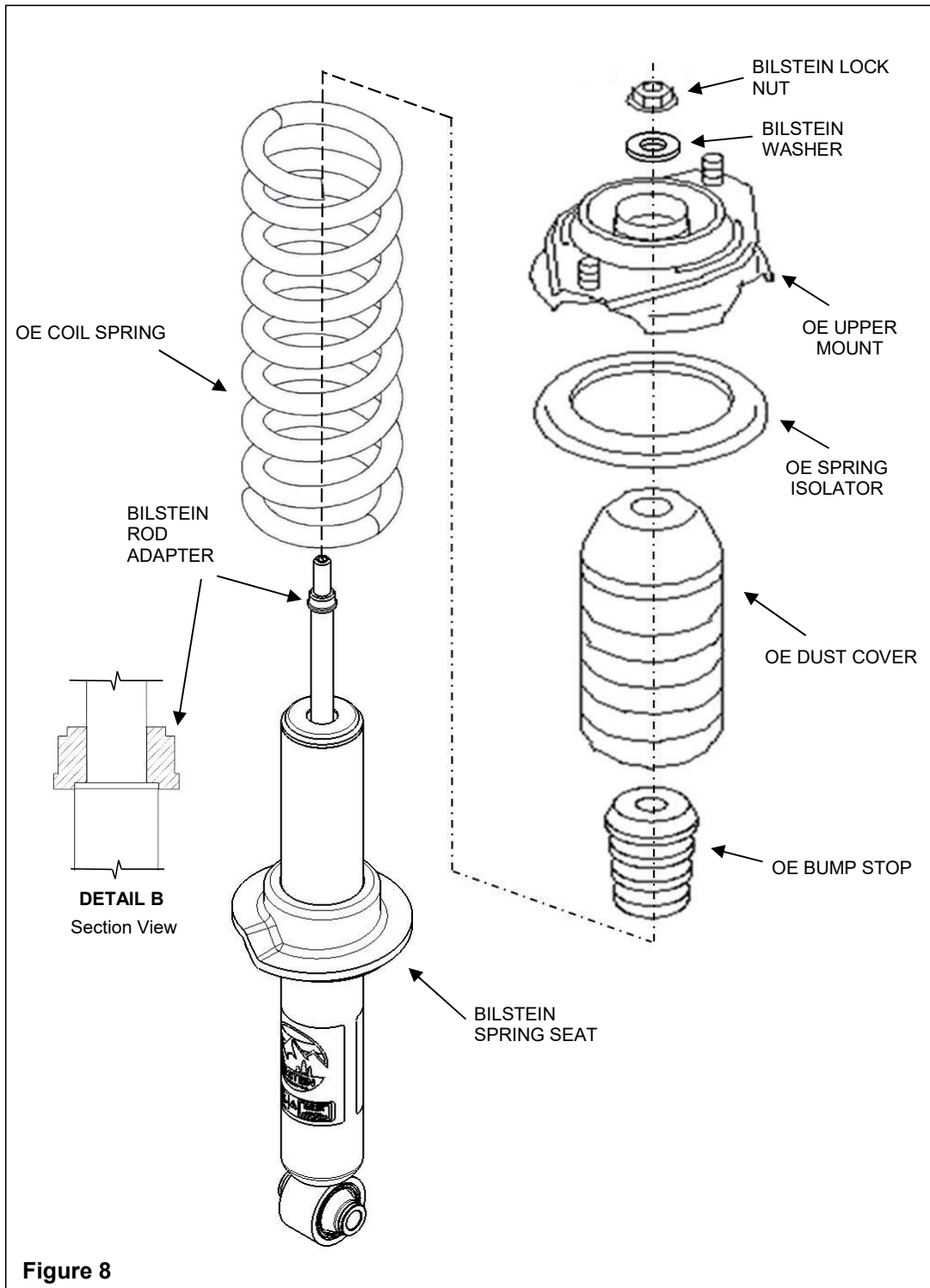
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O. Install the supplied locknut (Item #4) and tighten to 27 N·m (20 lb·ft). Use a 5mm allen key to prevent the piston rod from rotating while tightening the locknut.

****** DO NOT USE AN IMPACT WRENCH TO TIGHTEN THE LOCKNUT! ******

P. Slowly release the spring compressor while ensuring that everything remains aligned as noted in Step M.



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- Q. Install the module assembly on to the vehicle and tighten all fasteners to vehicle manufacturer's specifications excluding the OE flange bolt that was removed from the spindle in Step E, and the ride height sensor bracket (if equipped) that was removed from the control arm in Step D.
- R. Apply non-permanent thread locker to the OE flange bolt and use it to install the rounded end of the supplied Bilstein brake line relocation bracket (Item #5) to the spindle. Make sure to orient the relocation bracket so the bent flanges are pointing towards the front of the vehicle as shown below in Figure 9.

Torque the OE flange bolt to 13 N·m (10 ft·lbs).

- S. Attach the brake line to the front side of the relocation bracket so it is in between the two bent flanges (to prevent rotation). Use the supplied Bilstein M8 flange bolt (Item #6) and nut (Item #7) to secure the brake line to the relocation bracket as shown below in Figure 9.

Torque the supplied M8 flange nut to 13 N·m (10 ft·lbs).

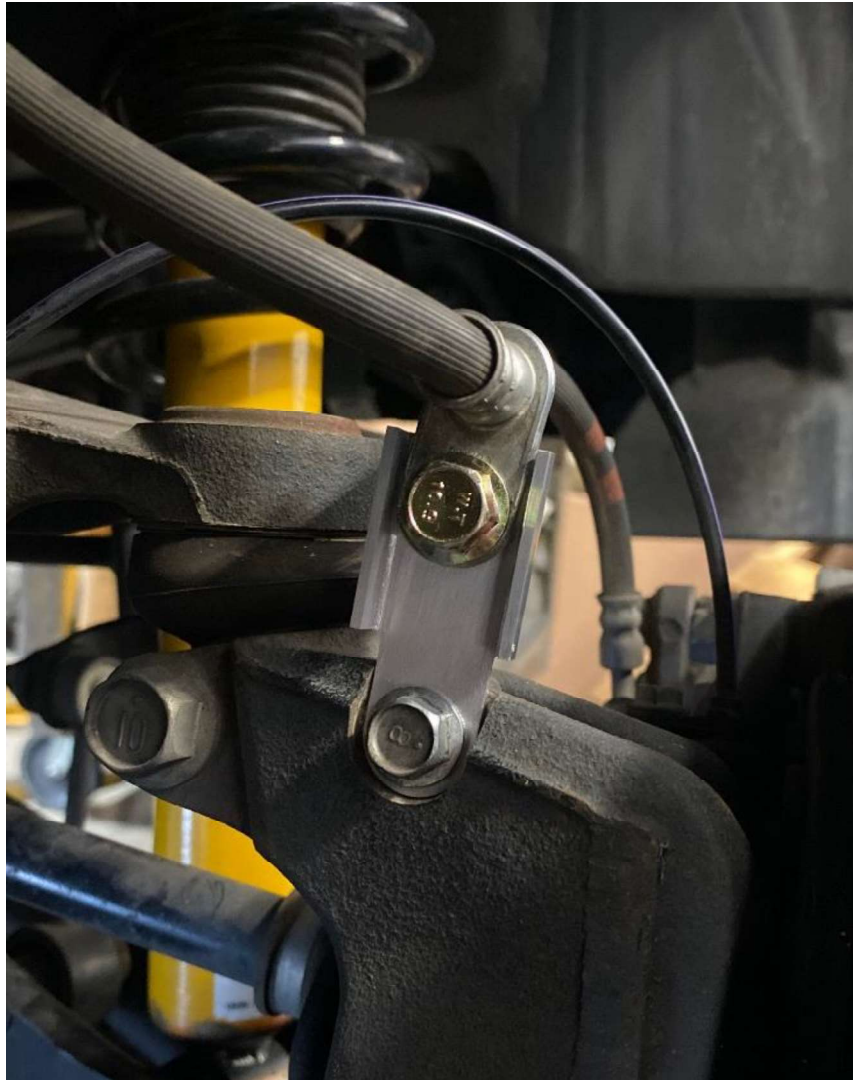


Figure 9. Driver's side depicted

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- T. Position the supplied ride height sensor bracket (Item #11) with locating pin aligned with control arm hole as shown in Figure 10. Install supplied M6 flange bolt (Item #13), washer (Item #12), and nylon lock nut (Item #14) to secure bracket to control arm.

Holding the M6 flange bolt head to prevent rotation, torque the supplied M6 lock nut to 6 N·m (4.5 ft·lbs).

- U. Attach sensor arm to bracket using OE flange nut as shown in Figure 10.

Torque the OE flange nut to 6 N·m (4.5 ft·lbs).



Figure 10. Driver's side depicted

Check wheel alignment and headlight aim, and adjust to the vehicle manufacturer's specifications. This completes the installation.