



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.

Subaru Crosstrek '21+; 1.25" Lift**

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

Front B8 Terrasport Twin-Tube Strut (Driver side shown, passenger side is a mirror image and the same steps will be followed as shown below):

Instructions for disassembly of front OE shock absorber module:

1. Disconnect the brake hose (12mm socket wrench; *Figure 1*) and the ABS wiring (plastic clip removal tool; *Figure 2*) from the strut assembly. Make sure to handle both lines with care and to keep clear of strut upon removal.



Figure 1

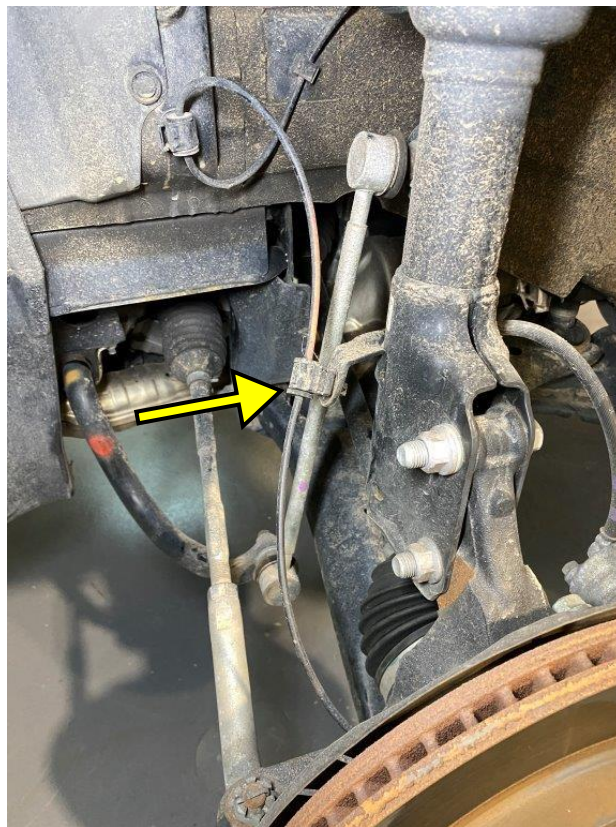


Figure 2

E-WM05-0000127

MOUNTING INSTRUCTION



2. Remove the sway bar link from the from strut assembly using a 17mm socket, or wrench, to break the nut loose. (A T40 torque bit with a 17mm wrench may be necessary if both the nut and bolt spin during removal. *Figure 3*)
3. Before removing both lower mount bolts, secure the knuckle assembly with a bungee cord, or bailing wire, to prevent the assembly from swinging downward and pulling the CV shaft out from its housing.
4. Mark the twelve o'clock point of the camber bolt (top bolt), for camber alignment on reassembly (See *Figure 4 & 5*).
5. Using a 19mm wrench, remove the lower mount bolts. Make sure the knuckle assembly is supported before removing from the strut. (Make sure the bolts go back in the way they came out, with the cam bolt and washer on top and the bolt heads towards the cabin.)

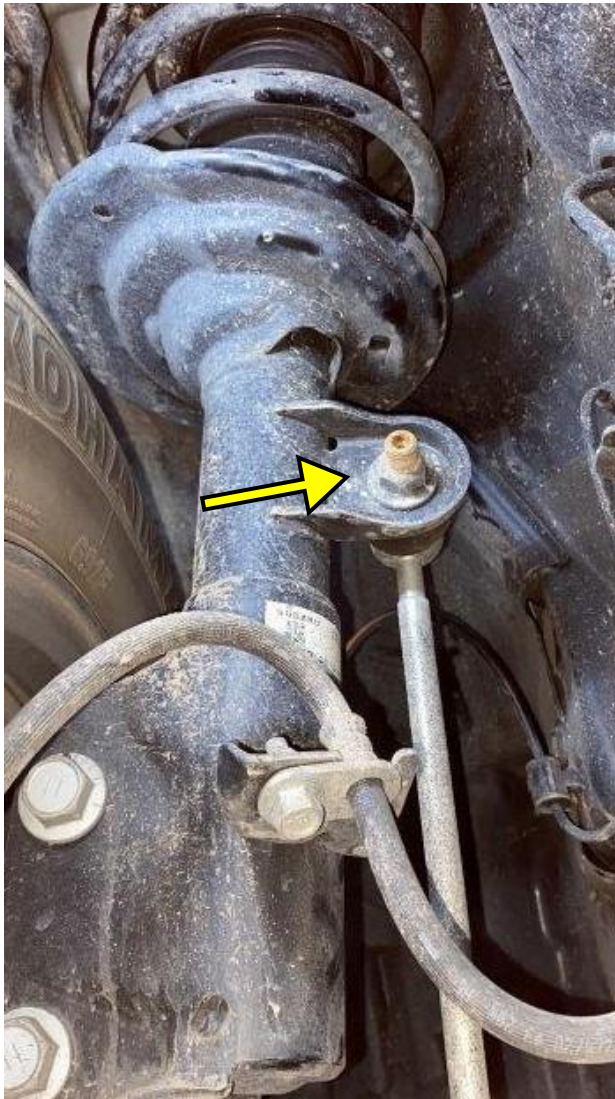


Figure 3



Figure 4



Figure 5

E-WM05-0000127

MOUNTING INSTRUCTION



6. Support the strut while removing the three upper strut mounting bolts with a 14mm wrench (*Figure 6*). Remove the strut assembly from vehicle. (Be cautious of the brake and ABS line mentioned in step 1 when removing the strut assembly.)
7. Note the top hat orientation from the housing during removal and mark the spring's upper coil orientation to the upper spring isolator and top hat using a paint pen or marker (*Figure 7*).



Figure 6



Figure 7

8. Using a spring compressor, compress the spring until the spring is no longer seated on the lower isolator and remove the stem nut from the top hat using a 17mm pass through socket & 6mm Allen wrench. (Strut depicted below will not resemble your strut.)



Figure 8



Figure 9



Figure 10

Instructions for assembly of front BILSTEIN B8 Terrasport strut module:

9. Prime the BILSTEIN B8 Terrasport twin tube strut by holding the strut assembly vertically, fully compressing the strut until it bottoms, and then allow to return to full extension. Repeat this process four to five times until the movement is smooth and consistent. Keep the strut vertical at all times after priming and during installation, or repeat the priming process.



Figure 11

10. Transfer the lower spring isolator, jounce bumper, and the dust boot to the B8 Terrasport strut.



Figure 12

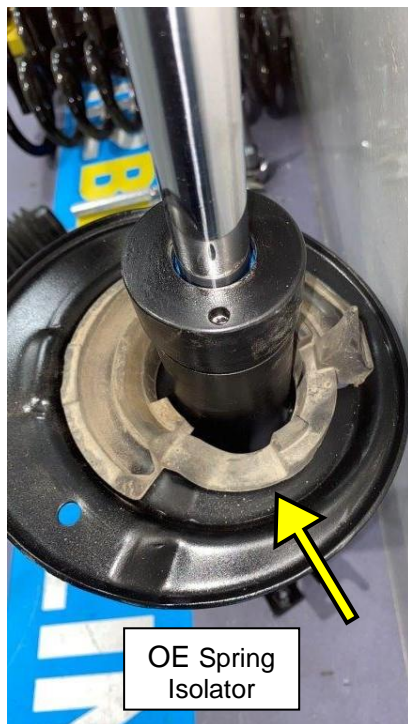


Figure 13



Figure 14



Figure 15

- 11.** Reinstall in the spring and top hat using the BILSTEIN supplied stem nut ensuring the correct orientation of the spring and top hat noted in step 5. (19mm deep socket or wrench and 6mm Allen wrench; *Figure 16.*)



Figure 16

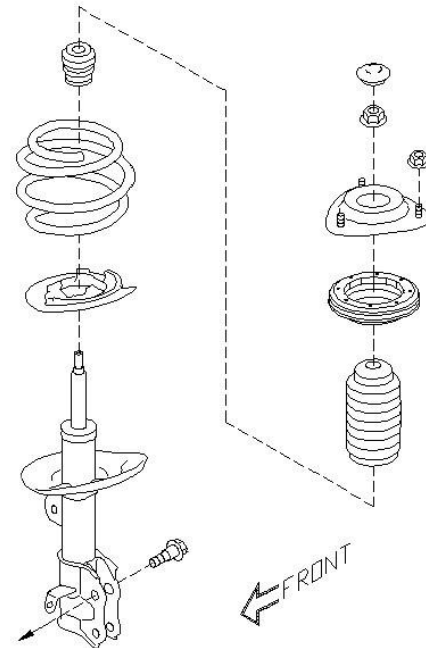


Figure 17

- 12.** Install the assembled B8 Terrasport strut in the reverse order, using all the original fasteners. Hand tighten the top mount. Torque lower mount nuts/bolts to the manufacturer's specifications.
- 13.** Repeat all installation procedures for the other side.
- 14.** Once on the ground and the suspension settles, torque all fasteners on the front struts to the manufacturer's specifications. (Driver and passenger sides pictured below in *Figures 18* and *19*, respectively.)

Final Assembly of BILSTEIN B8 Terrasport Front Struts



Figure 18 (Driver side)



Figure 19 (Passenger side)

B8 Terrasport Rear Parts Kit:

Bill of Materials		
Item #	Description	Qty.
1	Spring Seat	2
2	Rod Adaptor	2
3	Washer, M10 20x2	2
4	Nyloc Nut, M10x1.25	2
5	Cradle Bracket Spacer	2
6	Cradle Drop Spacer	4
7	Flange Head Cap Screw; M10x1.25; L=50	4

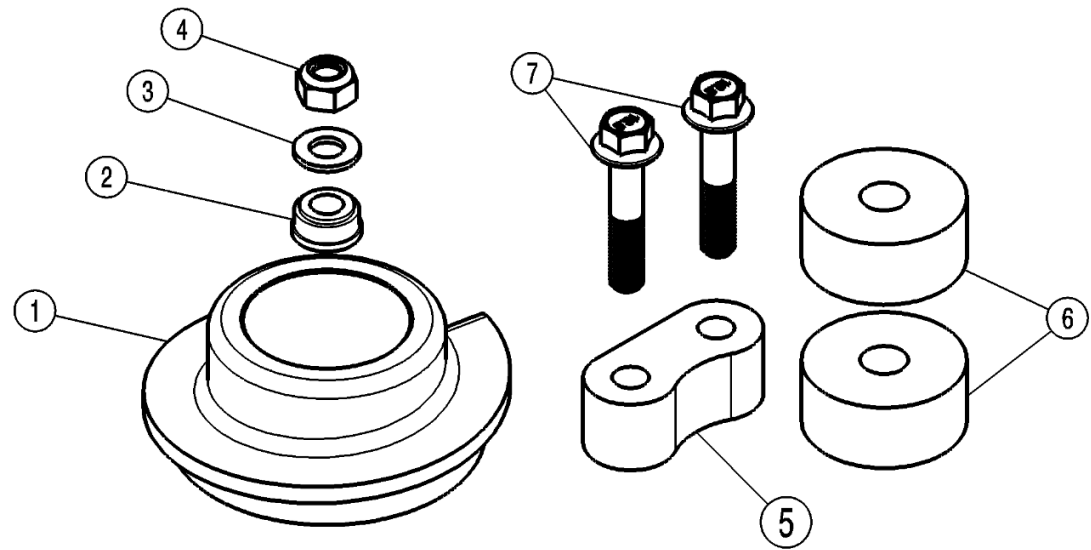


Figure 20

Rear B8 Terrasport shock and spacer kit (Driver side shown, passenger side is a mirror image and the same steps will be followed as shown below):

Instructions for disassembly of rear OE shock absorber module:

15. Remove the existing shock and spring unit from the vehicle following all procedures in the vehicle manufacturer's service manual.
16. 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 with a paint marker, shown in *Figure 21* (important for reassembly).
17. Using an appropriate spring compressor, compress the spring until it can rotate freely by hand. Then, disassemble the shock and spring unit. Make sure to remove dust boot cover and jounce bumper



Figure 21

Instructions for installation of Bilstein Spacers:

- 18.** Remove plastic debris covers by removing the 12mm bolts and retaining clips shown on *Figures 22 & 23.*

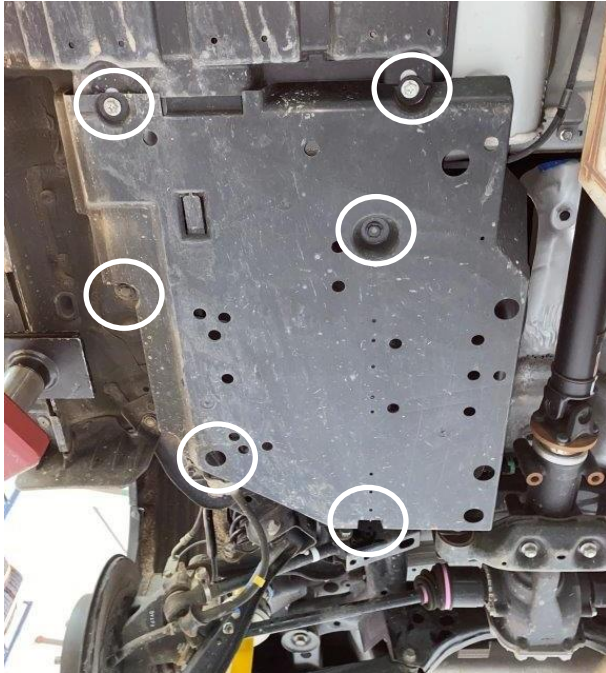


Figure 22

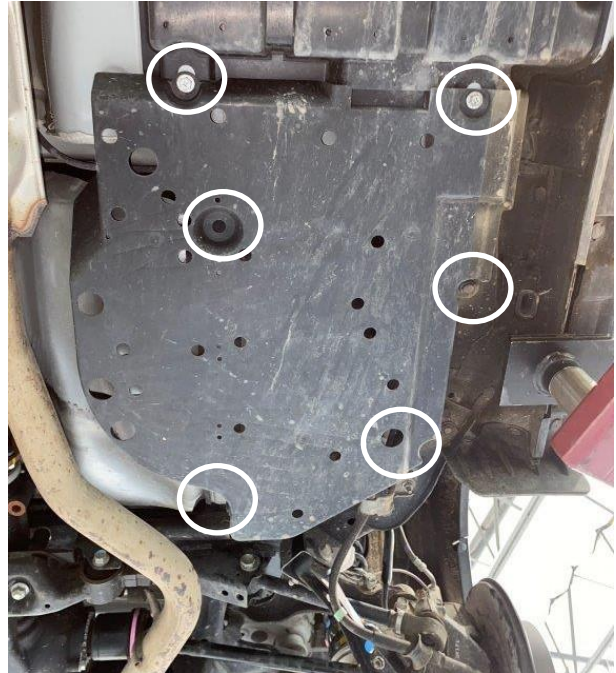


Figure 23

- 19.** Support the subframe with a jack stand, as shown in *Figure 24.*

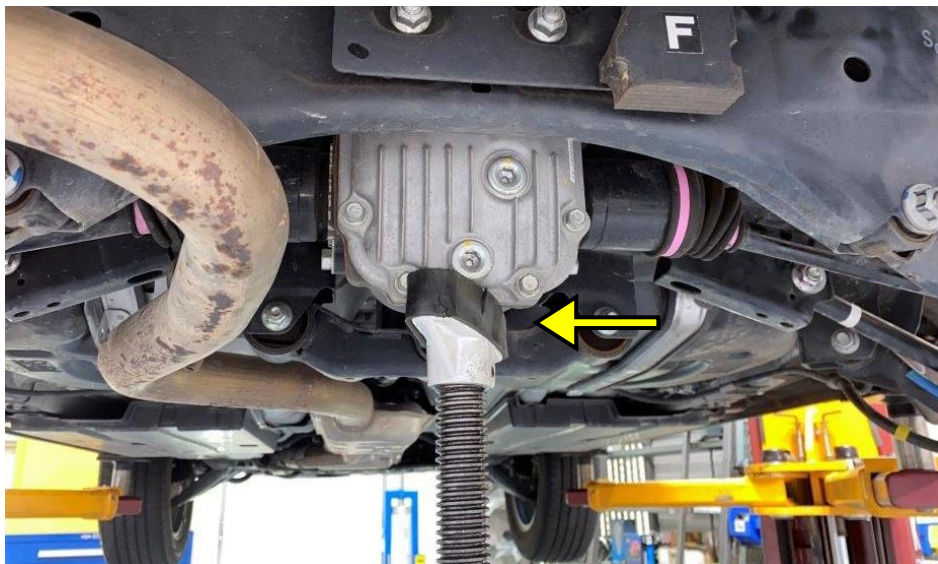


Figure 24

20. While supporting the rear subframe, start by removing the two OE cradle bracket M10 bolts in front of the rear wheels as shown in *Figure 25* and *Figure 26*. Repeat the process for the opposite side.



Figure 25



Figure 26

21. Loosen the two M14 subframe bolts on each side of the vehicle, shown in *Figure 27*. Make sure to leave a few threads engaged to support the cradle at each corner.

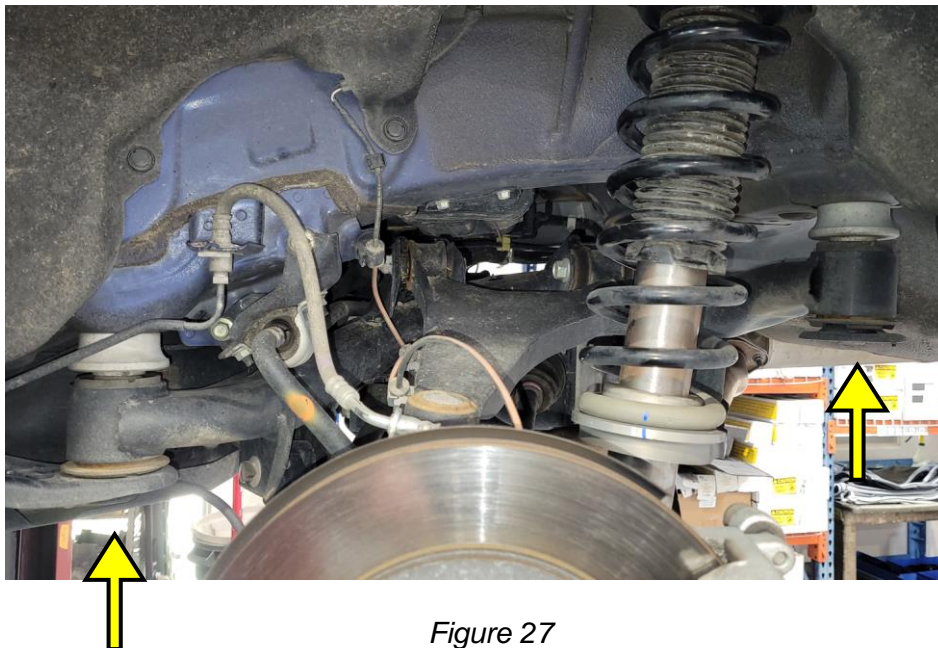


Figure 27

- 22.** After loosening the four M14 subframe bolts, lower the subframe just enough to install the supplied Bilstein Cradle Drop Spacers (*Figure 20; Item #6*), as shown below in *Figure 28* (*Driver side, front of rear axle*) and *Figure 29* (*Driver side, behind rear axle*). Apply a high strength permanent thread locker on the bolts for reinstallation. Then, reinstall and tighten to the vehicle manufacturer's specifications.

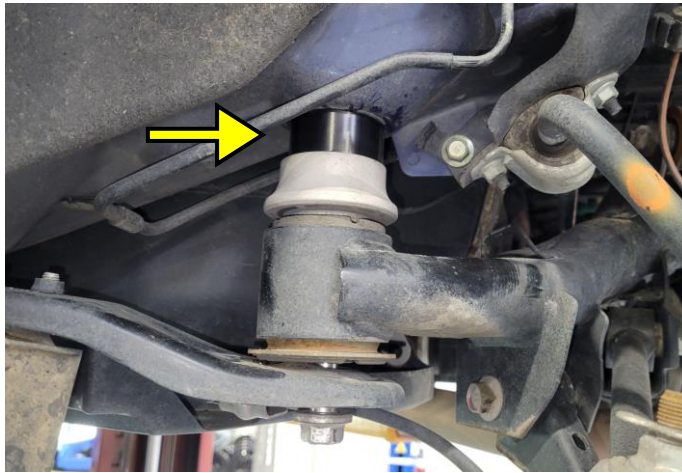


Figure 28



Figure 29

- 23.** Apply a high strength, permanent thread locker to the two supplied M10 flange bolts (*Figure 20; Item #7*), then use them to install the cradle bracket spacer (*Figure 20; Item #5*) as shown below in *Figure 30* and *Figure 31*. Tighten the bolts to the vehicle manufacturer's specifications. Repeat the process for the opposite side.



Figure 30



Figure 31

Instructions for assembly of rear Bilstein shock absorber module:

[Refer to Figure 33 on page 15 for steps 24-26]

- 24.** Install the supplied spring seat (*Figure 20; 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 in *Figure 32*. Install the spring seat in the direction shown only. The circlip must fit completely in the groove inside the spring seat (see **DETAIL A** on *Figure 32* below). Improper installation will cause permanent damage to the shock.

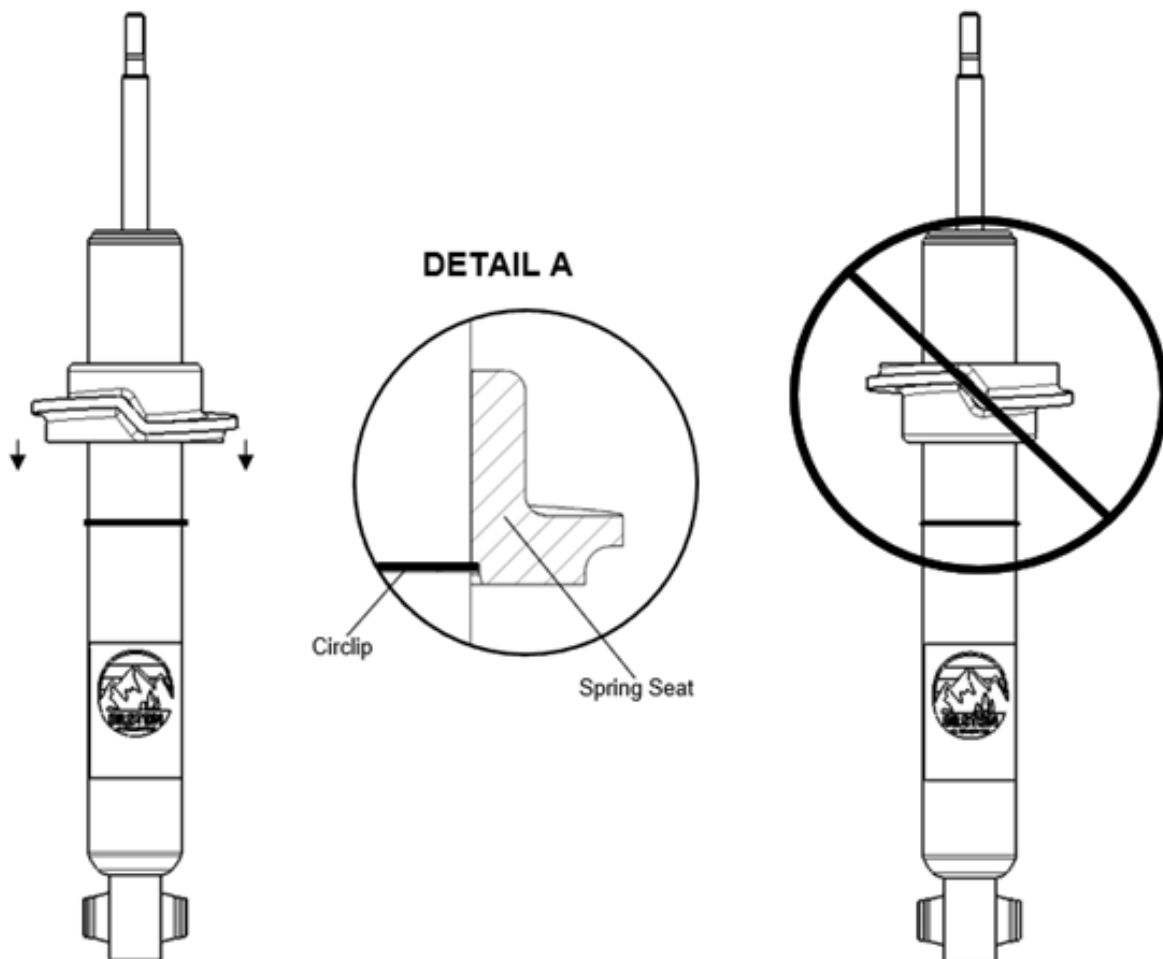


Figure 32

- 25.** Install the supplied rod adapter (*Figure 20; Item #2*) (counter bore side down) onto the stem of the rod as shown in *Figure 33*. Ensure that the rod adapter is oriented correctly (see **Detail B** in *Figure 33*).
- 26.** Install the OE bump stop and OE dust cover.
- 27.** Using an appropriate spring compressor, compress the OE coil spring and install the spring onto the new Bilstein shock.

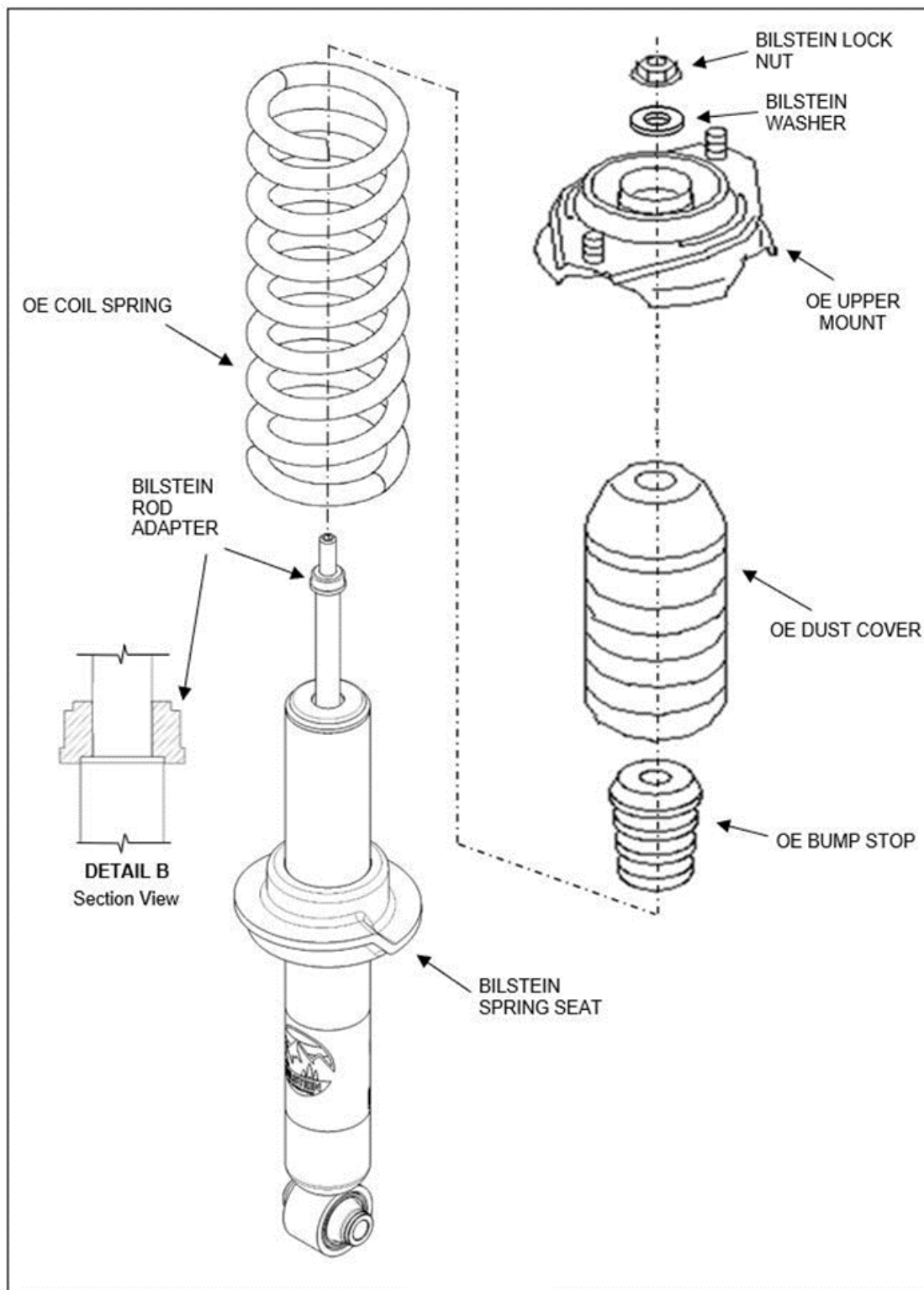


Figure 33

28. Assemble the OE upper mount over the threaded stem and on top of the spring of the new BILSTEIN shock. Rotate the upper mount so the studs are aligned with the end of upper coil, as noted in Step 16/*Figure 21*. Rotate the shock, so that the lower mount is aligned with the upper mount studs as noted in Step 16. Rotate the spring seat so the ramp is indexed with the bottom coil, as shown in *Figure 34*.



Figure 34

29. Install the supplied washer (*Figure 20*; Item #3) onto the threaded stem and secure the washer over the top mount with the supplied locknut (*Figure 20*; Item #4). Tighten to 25 N·m (19 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! ******
30. Slowly release the spring compressor while ensuring that everything remains aligned as noted in step 28.
31. Install the module assembly on to the vehicle. With the exception of the lower shock mount, tighten all fasteners to vehicle manufacturer's specifications. Only hand tighten lower shock mount until vehicle has been lowered onto the ground. Repeat process for the opposite side.
32. Once on the ground and the suspension settles, torque the lower shock mount to the manufacturer's specifications. (Driver and passenger sides pictured below in Figures 35 and 36, respectively.)
33. Check wheel alignment and headlight aim and adjust to the vehicle manufacturer's specifications. This completes the installation.

Final Assembly of BILSTEIN B8 Terrasport Rear Shocks & Spacers



Figure 35 (Driver side)



Figure 36 (Passenger side)