



### 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!!!**

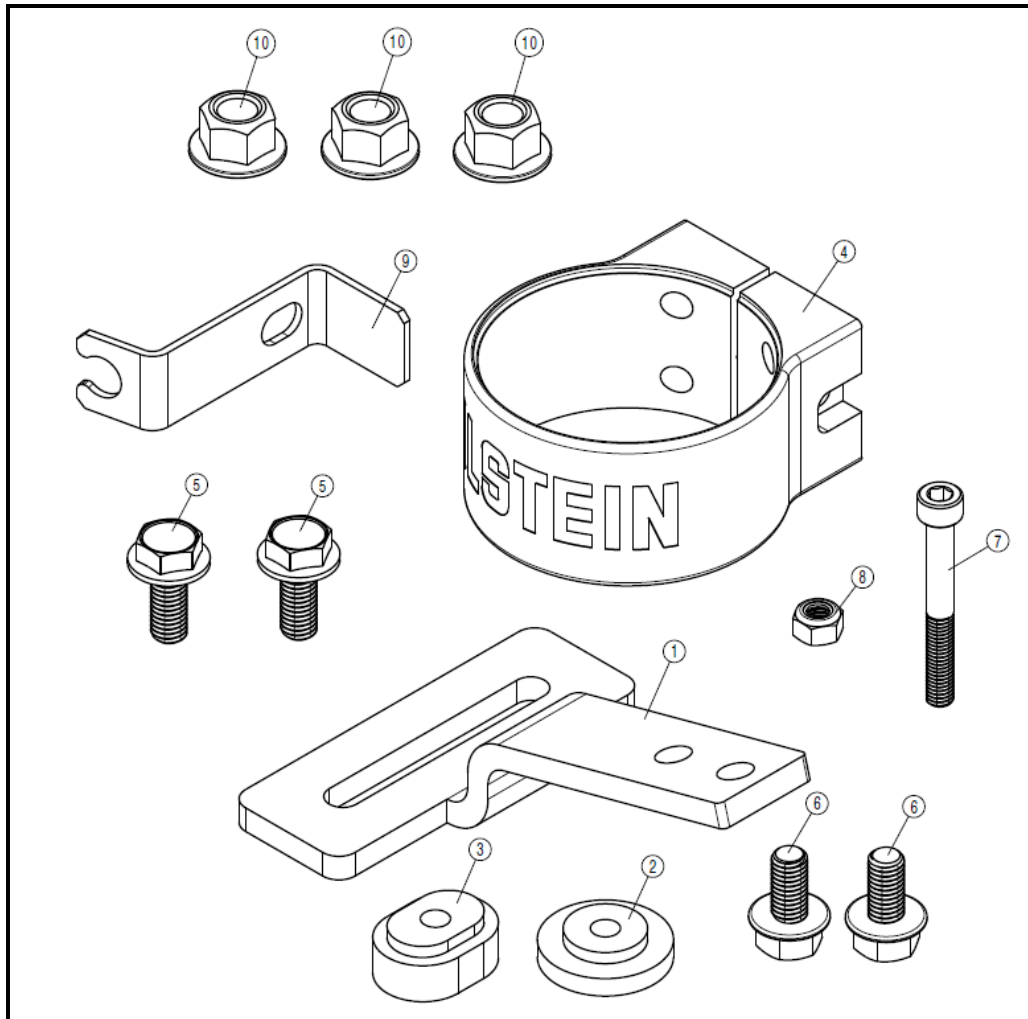
If disassembling a coilover type suspension, refer to the vehicle manufacturer's service manual for proper procedures. The coil spring is preloaded and must be compressed with a spring compressor to release load before the upper mount is disassembled. Failure to follow the vehicle manufacturer's procedures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

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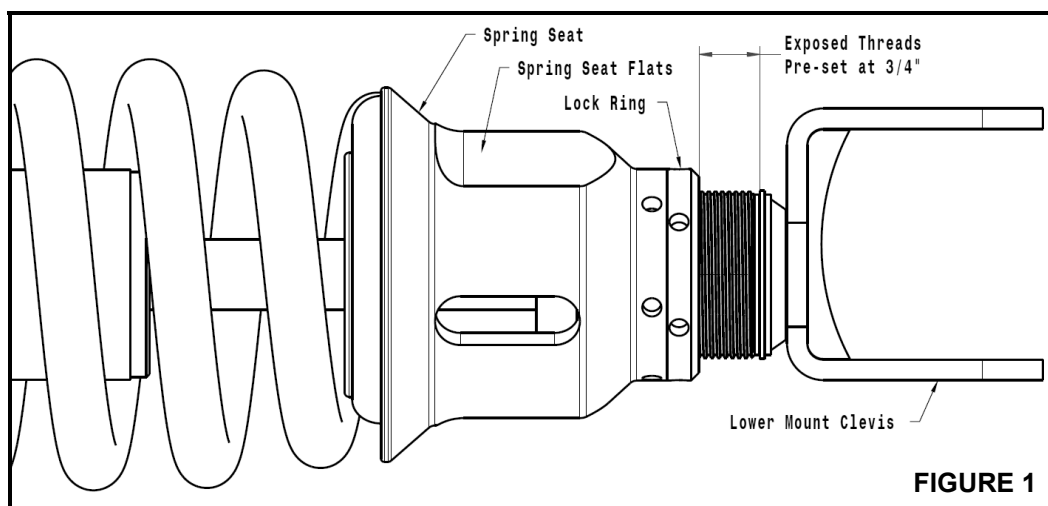
## MOUNTING INSTRUCTION



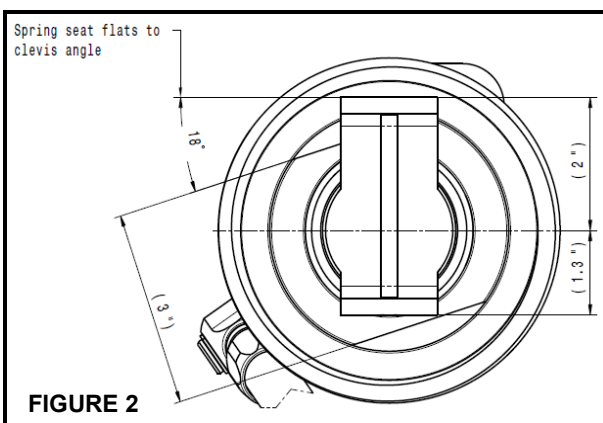
Bill of Materials – FRONT		
Item #	Description	Qty
1	Reservoir Mount Plate	1
2	Reservoir Support	1
3	Reservoir Support	1
4	Reservoir Clamp	1
5	Flange Head Cap Screw; M8x1.25; L = 20mm	2
6	Flange Head Cap Screw; M8x1.25; L = 16mm	2
7	Socket Head Cap Screw; M6x1; L = 50mm	1
8	Nylon-Insert Locknut; M6x1	1
9	ABS relocation bracket	1
10	Lock Nut; M10x1.5	3

## **B8 8112 Shock Installation Procedure:**

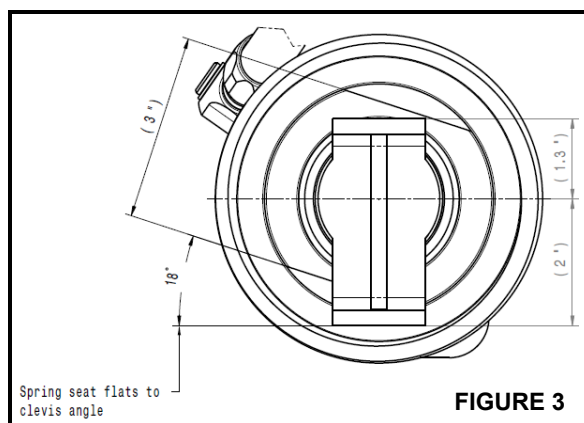
- A. Remove existing shock module from the vehicle following all procedures in the vehicle manufacturer's service manual.
- B. Before installing the B8 8112 shocks on the vehicle, check if they are set at the desired lift height. The pre-set lift height for 4WD models is approximately 2.5" with adjustment down to 1.25". The pre-set lift height is too high for 2WD models and will need to be adjusted before installing on the vehicle.
- C. If the above-mentioned pre-set lift height is not what is desired, or you have a 2WD, proceed to **Step D**. Otherwise, skip to **Step J**.
- D. Break the spring seat lock ring loose with the supplied spanner wrenches. Refer to the figure below.
- E. Note the clocking of the lower mount clevis and the spring seat to the upper mount studs. The lower mount clevis is offset to one side to allow proper axle and tie rod clearance. Be sure to clock the spring seat flats to 18° from the clevis flats. This is also to ensure clearance of the axle and tie rod. Refer to the figures below.
- F. Using an appropriate spring compressor, compress the spring until it can be rotated freely by hand. Then, spin the spring seat up or down depending on what the desired lift height is. See the lift height table below for a few points of reference between the amount of exposed thread and estimated lift height. They are listed for stock weight vehicles.



Note: above image is of the left (driver) side shock. The right side is a mirror image of the left.



**Left (Driver) Side**



**Right (Passenger) Side**

2019+ Ram 1500					
Exposed Threads	B8 8112 Typical Lift Heights**				
	Without Off-Road Package, 5.7 L V8, 4WD	Without Off-Road Package, 5.7 L V8, 2WD	Rebel or Off-Road Package, 5.7 L V8, 4WD	Rebel or Off-Road Package, 5.7 L V8, 2WD	Rebel or Off-Road Package, EcoDiesel 3.0 L V6, 4WD
3/4"	2-½" lift	DO NOT USE	1-⅞" lift	DO NOT USE	1-¼" lift
5/8"	2-⅝" lift	2-⅝" lift	1-½" lift	2" lift	⅞" lift
3/8"	1-⅞" lift	2-⅜" lift	1-¼" lift	1-¾" lift	⅝" lift
3/16"	1-½" lift	2" lift	⅞" lift	1-⅜" lift	¼" lift
0"	1-¼" lift	1-¾" lift	⅝" lift	1-⅞" lift	0" lift

**DO NOT EXCEED MAX LIFT HEIGHT LISTED FOR YOUR VEHICLE**

\*\* 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.

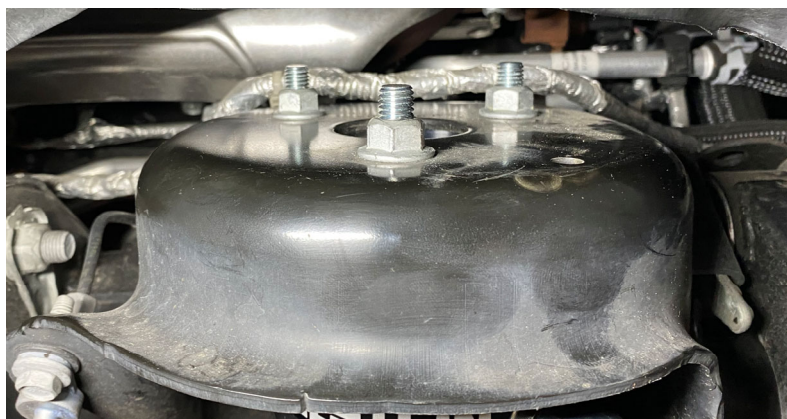
**Front Module Installation Procedure**

- G. Once the desired lift height is set, tighten the lock ring against the spring seat using supplied spanner wrench.

**Torque lock ring to spring seat 37 ft-lb (50 Nm).**

- H. Rotate the lower shock mount so it is aligned with the upper mount studs and clock the spring seat as noted in **Step E**.
- I. Slowly release the spring compressor.
- J. Install the shock onto the vehicle as shown below, ensure the Bilstein lettering on the cap is facing outboard. Use the three Flange Locknuts (BOM item #10) and a 15mm socket to attach the upper mount. Leave reservoir hanging temporarily towards the front of the vehicle (Note: the following images are of the right (passenger) side of the vehicle).

**Torque Flange Locknuts to 33 ft-lb (45 Nm).**





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**BILSTEIN**



- K. Attach the lower shock mount using the OE bolt and nut (hand tighten, do not torque at this time) ensuring the lower clevis and upper mount offset is toward the front of the vehicle as shown below.



Note: the above images are of the right (passenger) side of the vehicle.

- L. Reinstall all OE suspension components according to factory service manual specifications and torque specs.
- M. Prepare the reservoir mount plate assemblies as shown below. Attach the Reservoir Clamp (BOM item #4) to the Reservoir Mount Plate (BOM item #1) using the two 16mm, M8x1.25 Flange Head Cap Screws (BOM item #6). Install left side clamp and support plate in the opposite orientation as the right side (as shown below). Apply a non-permanent thread locker and **torque Flange Head Cap Screws to 18 ft-lb (25 Nm)**.



**Driver Side**

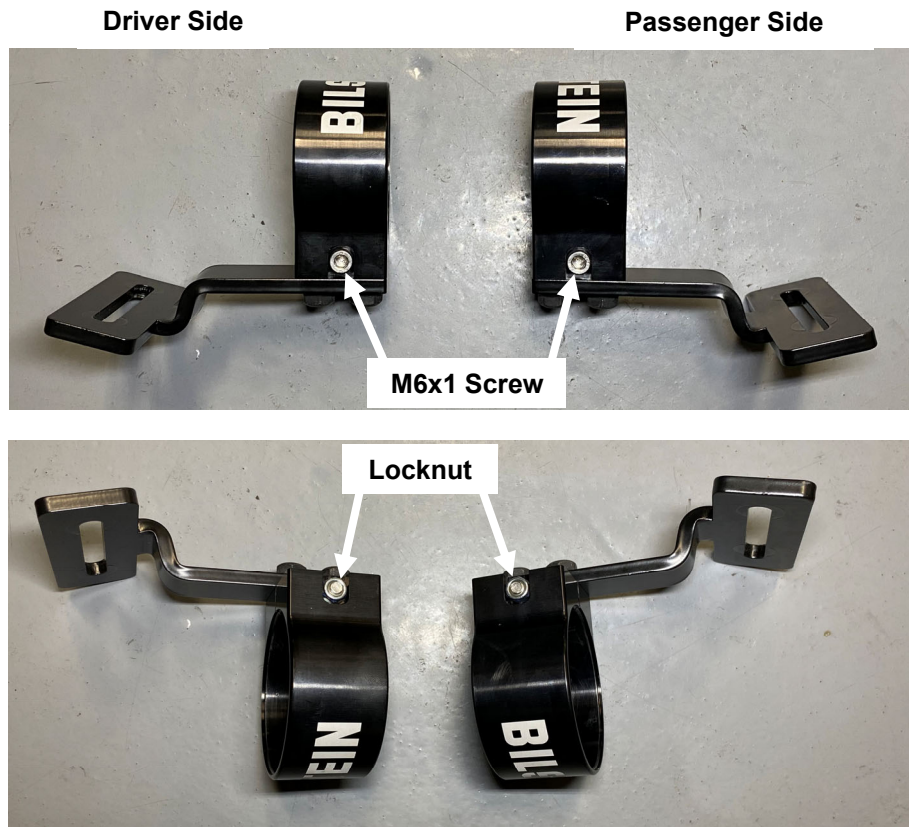
**Passenger Side**

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## MOUNTING INSTRUCTION



- N.** Install the M6x1 Socket Head Cap Screw (BOM item #7) and the M6 locknut (BOM item #8) on the Reservoir Clamp (BOM item #4) as shown below. Ensure the nut is located on the top of the assembly as this side will not be accessible after installation on the vehicle. Hand tighten for now allowing the reservoir to slide freely in and out of the Reservoir Clamp. Refer to **Step P** for images of these assemblies on the vehicle.

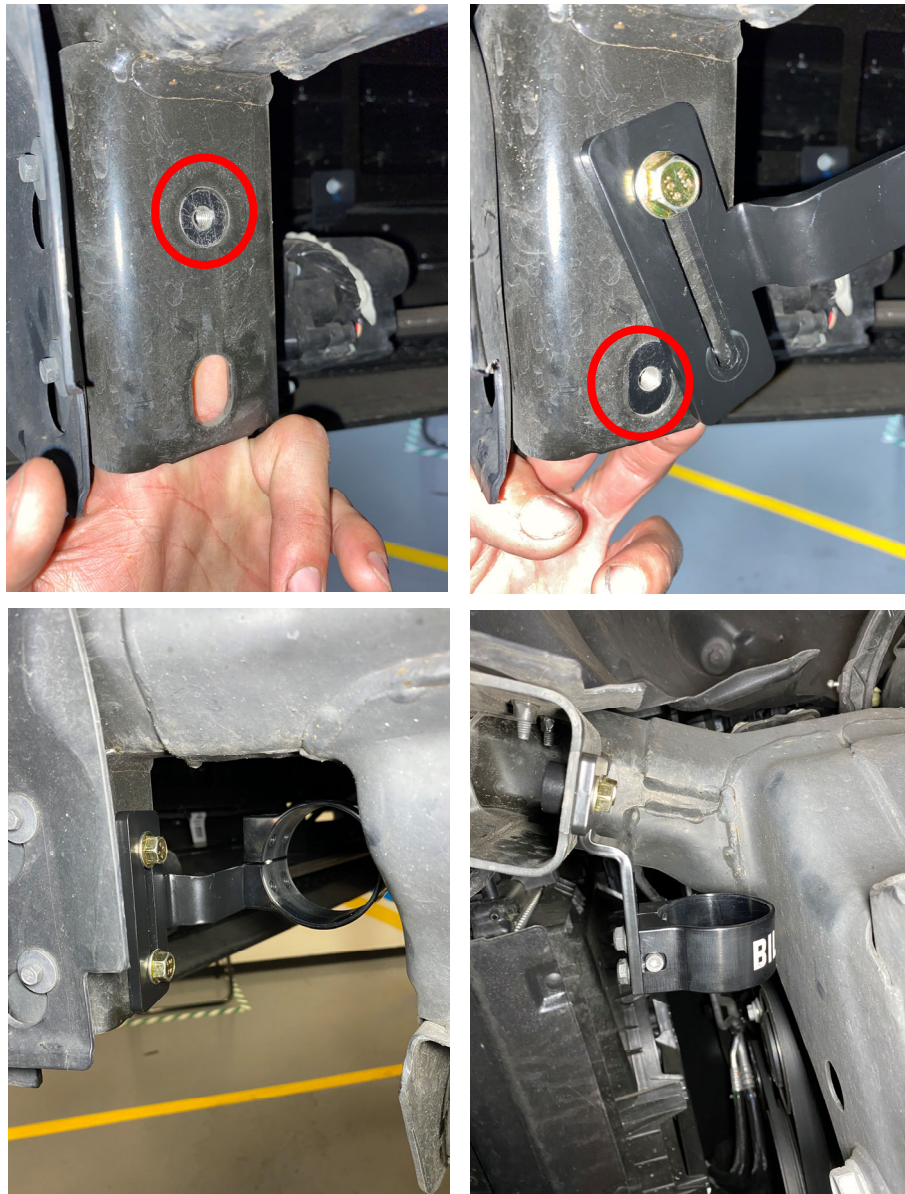


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## MOUNTING INSTRUCTION



- O. Locate the frame rail section in front of the wheel well and install the two inserts provided as shown below. The round Reservoir Support (BOM item #2) is placed in the upper round hole (circled below) and the 20mm, M8x1.25 Flange Head Cap Screw (BOM item #5) should be installed through the bracket and threaded into the insert until hand tight.
- P. The oval Reservoir Support (BOM item #3) is placed on the bottom oval hole (circled below) and the 20mm, M8x1.25 Flange Head Cap Screw (BOM item #5) should be installed through the bracket and threaded into the insert until hand tight. Using a 13mm wrench to hold the circular insert on the backside and a 13mm socket, **torque both Flange Head Cap Screws to 18 ft-lb (25 Nm).**



Note: Above images are of the left (driver) side of the vehicle.



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- Q.** Slide the reservoir through the Reservoir Clamp (BOM item #4). The distance from the reservoir clamp to the bottom edge of the reservoir tube should measure approx. 4" (100mm) as shown below.



**Driver Side**

**Passenger Side**



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- R. Clock each reservoir as shown below. Ensure the hose connection has adequate clearances to the frame and other components. Also make sure the hose is not under tension.

### Driver Side



- S. Now tighten the M6x1 Socket Head Cap Screw (BOM item #7), **torque to 6 ft-lb (8 Nm)**.

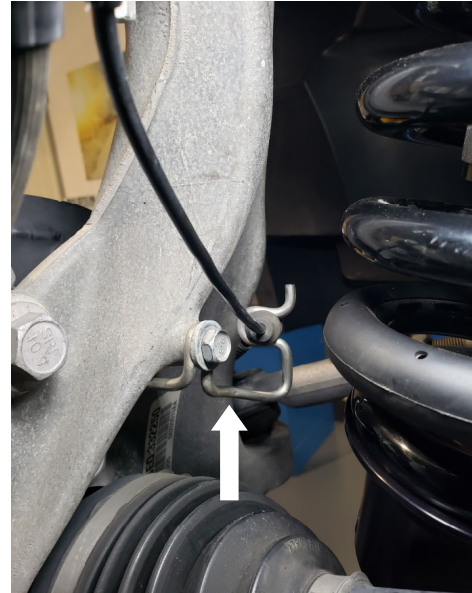
**WARNING:** The front OE ABS line bracket needs to be replaced with the supplied ABS line relocation bracket (BOM item #9) to provide clearance with the spring at full droop / full steering lock. Additionally, the cable clip that connects the brake line with the ABS line may need to be adjusted slightly. The ABS Relocation Bracket installation procedure follows on the next page.

## **ABS Relocation Bracket Installation Procedure:**

- T. After installing the B8 8112 shocks onto the vehicle, locate the ABS mounting bracket on the vehicle. The OE ABS line brackets are different on both sides, but they are located at the same location. See the figures below.

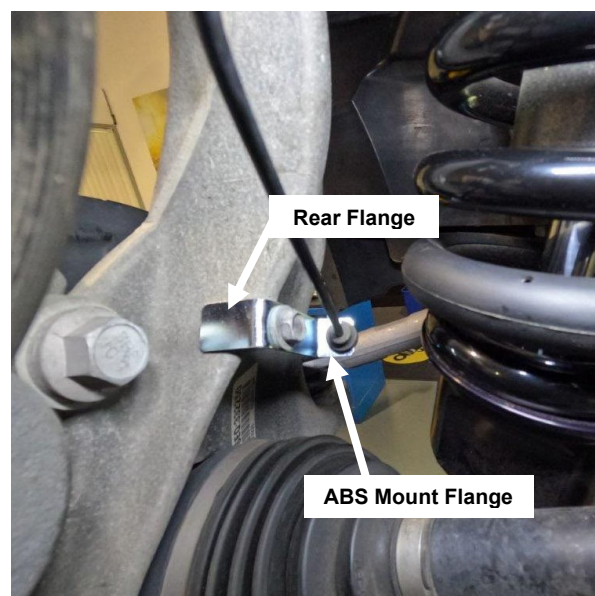


**Left (Driver) Side**



**Right (Passenger) Side**

- U. Starting with the driver side, remove the OE bracket to install the supplied ABS relocation bracket onto the spindle. Use the OE bolt to mount the bracket onto the spindle with the ABS mounting flange pointing away from the spindle. Do not tighten the bolt yet. See image below for reference.
- V. Slide the bracket forward till the rear flange contacts the spindle. Then torque down the bolt to the manufacturer's service manual specification. Clip the ABS line onto the bracket.



**ABS relocation bracket mounted**

- W.** Locate the cable clip that holds the brake line and ABS line together. See image below for reference.



**Cable Clip**

- X.** With the front suspension drooped out, check the tension of the ABS line through the full steering range (full left and full right). Readjust the clip location to relieve tension if necessary.
- Y.** Repeat instruction for the other side.
- Z.** Install wheels and tires and lower from vehicle hoist. Torque lower shock mounting bolt and nut at ride height to factory specification. Check wheel alignment and adjust to vehicle manufacturer's specifications. This completes the installation.