

E-WM05-0000005

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!!!

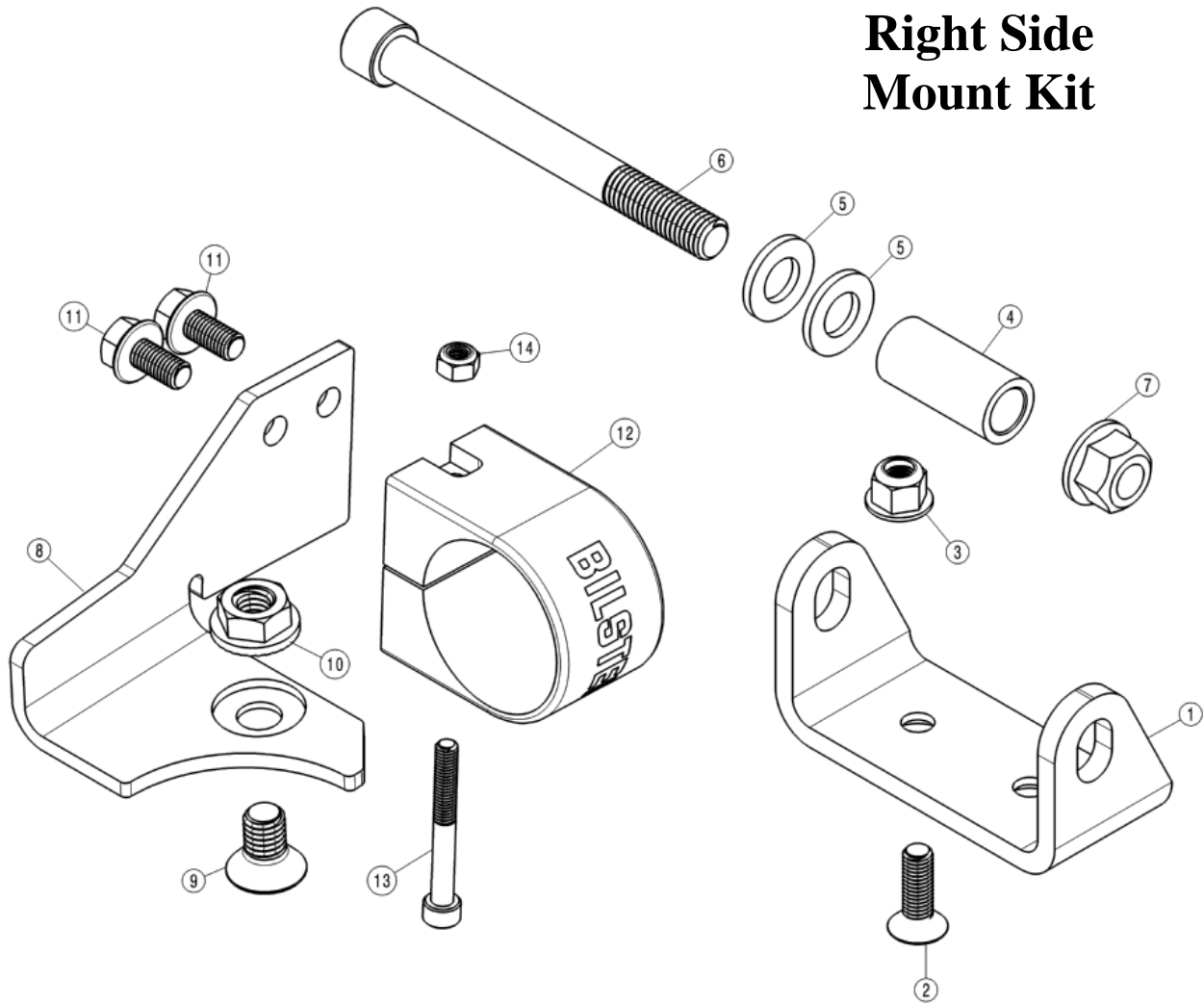
If disassembling a coilover type suspension, refer to the vehicle manufacturer's service manual for proper procedures. The coil spring is preloaded and must be compressed with a spring compressor to release load before the upper mount is disassembled. Failure to follow the vehicle manufacturer's procedures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

IMPORTANT!!!

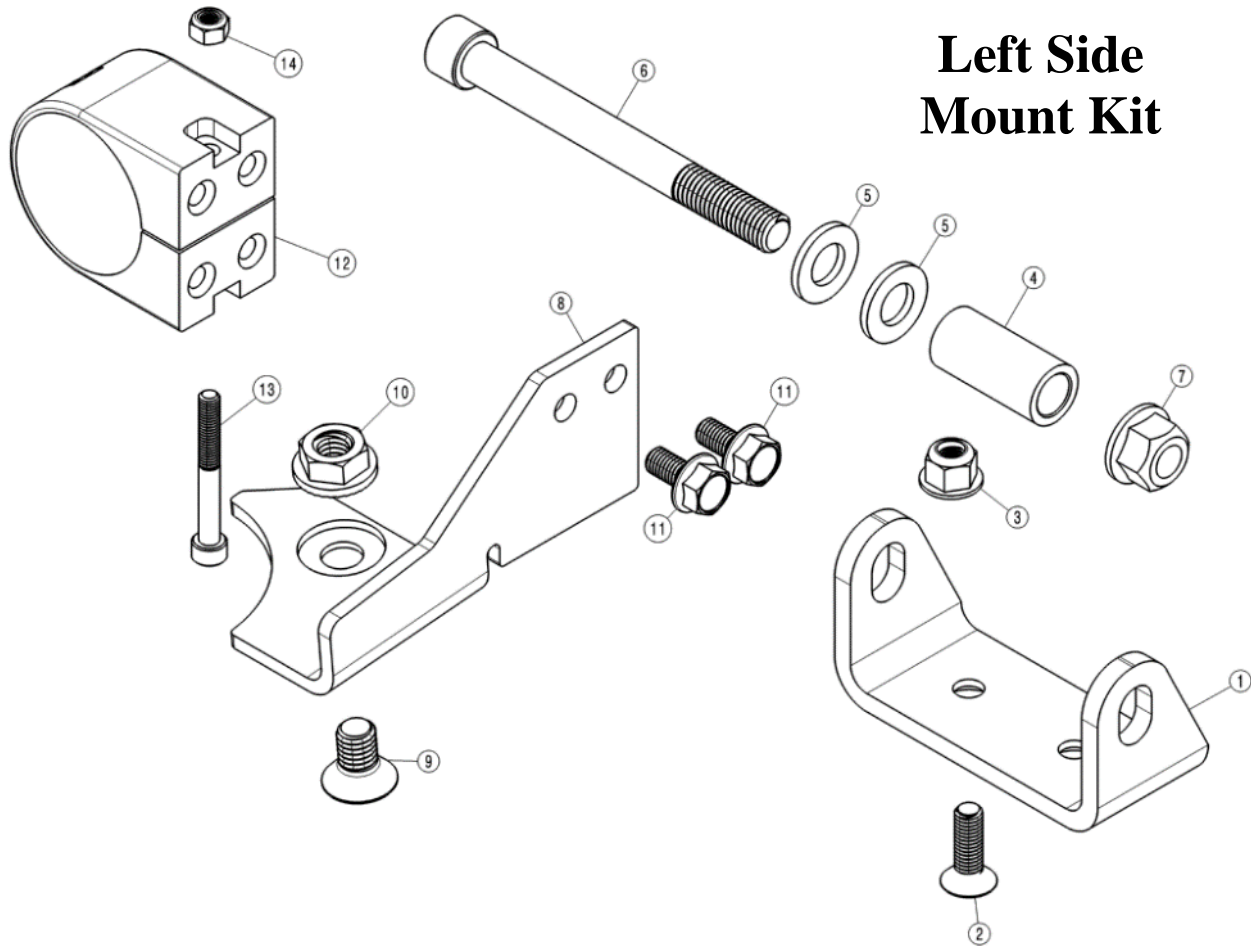
This BILSTEIN product may or may not be compatible with non-BILSTEIN aftermarket products and/or vehicle modifications. It is the responsibility of the professional automotive suspension technician performing the installation to identify any non-OEM components and/or modifications on the vehicle that 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.



Right Side Mount Kit



Item No.	Description	Qty.
1	Shock Relocation Mount (Right Side)	1
2	Flat Head Screw, M8x1.25, L = 25	1
3	Nut, M8 x 1.25	1
4	Spacer, 12.8 ID, L = 40	1
5	Washer, M12	2
6	Socket Head Cap Screw, M12x1.75, L=120, Class 12.9	1
7	Nut, M12x1.75	1
8	Reservoir Mounting Bracket (Right Side)	1
9	Flat Head Screw, 7/16"-14, L=3/4"	1
10	Nut, 7/16"-14	1
11	Flanged Hex Head Screw, M8x1.25, L=16	2
12	Reservoir Clamp	1
13	Socket Head Cap Screw, M6x1, SS, 50mm	1
14	Nylock M6x1, Class 8	1

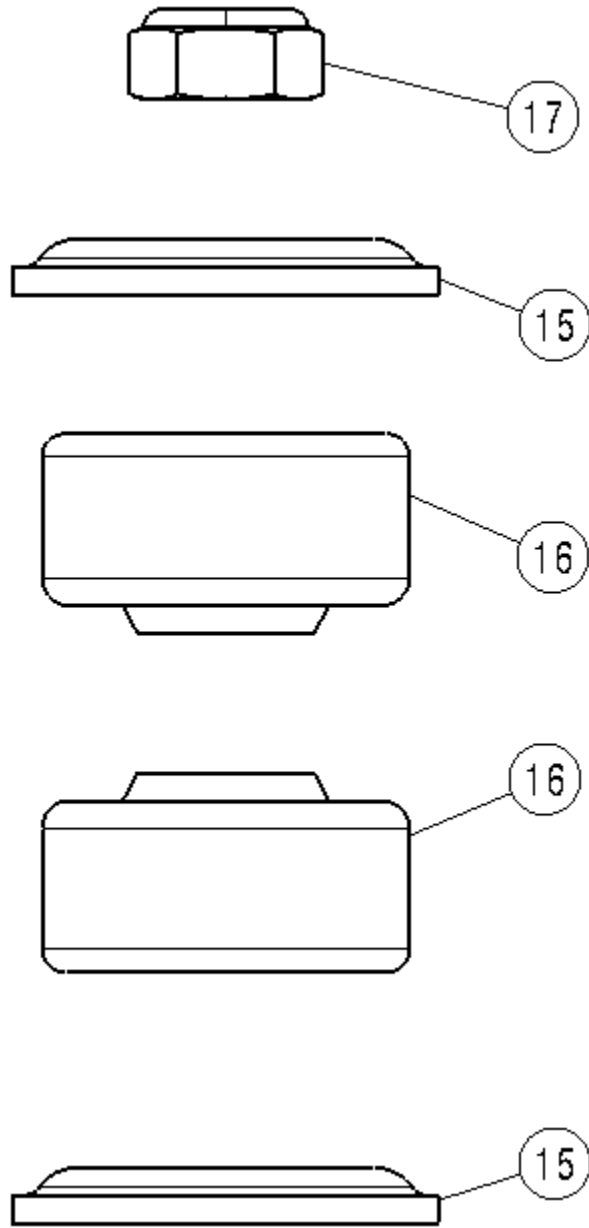


Left Side Mount Kit

Item No.	Description	Qty.
1	Shock Relocation Mount (Left Side)	1
2	Flat Head Screw, M8x1.25, L = 25	1
3	Lock Nut, M8 x 1.25	1
4	Spacer, 12.8 ID, L = 40	1
5	Washer, M12	2
6	Socket Head Cap Screw, M12x1.75, L=120, Class 12.9	1
7	Lock Nut, M12x1.75	1
8	Reservoir Mounting Bracket (Left Side)	1
9	Flat Head Screw, 7/16''-14, L=3/4''	1
10	Lock Nut, 7/16''-14	1
11	Flanged Hex Head Screw, M8x1.25, L=16	2
12	Reservoir Clamp	1
13	Socket Head Cap Screw, M6x1, SS, 50mm	1
14	Nylock M6x1, Class 8	1



Top Mount Kit



Item No.	Description	Qty.
15	Cup Washer	2
16	Bushing	2
17	Lock Nut, M12 x 1.5	1

B8 8100 bypass shock installation procedure:

B8 8100 bypass shocks are corner specific. The step by step procedure is shown with pictures of both sides. See page 12-15 for the end result.

Installation of B8 8100 bypass shocks requires the use of wheels with a maximum of 4.5" backspacing to ensure clearance between the tire and the shocks.

- A. Remove the existing shocks from the vehicle following all procedures in the vehicle manufacturer's service manual.
- B. Using a 10mm wrench/socket, remove the brake line bracket from the axle as shown below.



- C. Disconnect the sway bar link at the axle. Slowly extend the front suspension while ensuring adequate slack in the breather hose, brake lines, and wiring harnesses. (Extending the suspension as much as the spring and lines will allow can ease reservoir bracket installation)



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- D. Using the supplied lower Shock Relocation Mount (BOM Item 1), install the bracket with Socket Head Cap Screw (BOM item 6) and Spacer (BOM item 4) to locate where you will drill the frame. Hold the bracket flush to the original shock mount and center punch the OE shock mount to locate your 3/8" drill hole.



- E. Drill the 3/8" hole in stages starting small and working up in size. Ensure the drill is centered and straight. After drilling, it is recommended to deburr the holes and apply paint or rust preventative to any exposed steel from the drilling process.



- F. Using supplied Flat Head Screw (BOM item 2) and locknut (BOM item 3), loosely install the relocation bracket as depicted below by hand until you feel the locknut's resistance. (Leaving the nut loose will make lower shock bolt alignment easier during shock installation)

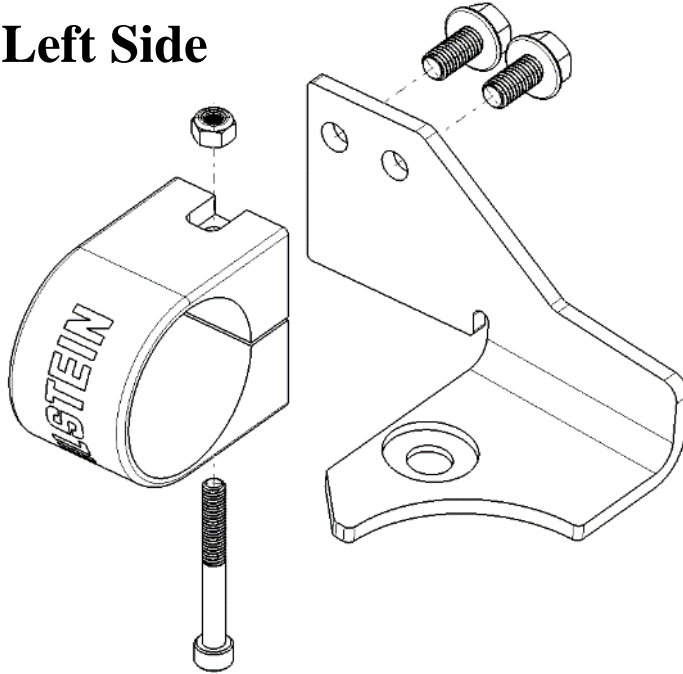


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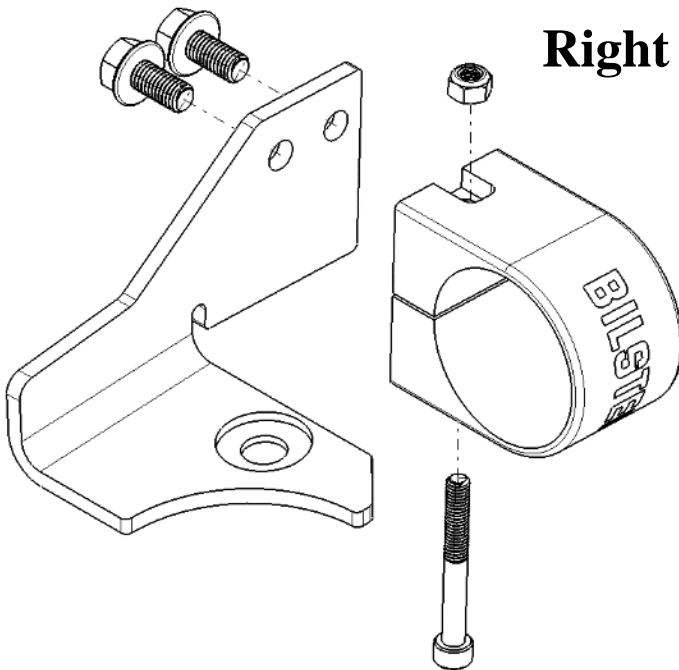


- G. Assemble the Reservoir Mounting Bracket (BOM item 8) with the components as depicted below. Torque the Flanged Hex Head Screws (BOM item 11) to the Reservoir Clamp (BOM item 12) to 25N*m (19lb*ft).

Left Side



Right Side



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H. Locate the factory hole above the spring in the frame's spring bucket as shown below. Using the supplied Flat Head Screw (BOM item 9) and Lock Nut (BOM item 10), loosely install the reservoir mounting bracket assembly from the previous step until you feel the locknut's resistance. (Leaving the nut loose will allow you to easily slide the reservoir into the bracket while installing the shock).



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- I. While supporting the shock and reservoir, slide the reservoir into the reservoir mounting bracket.



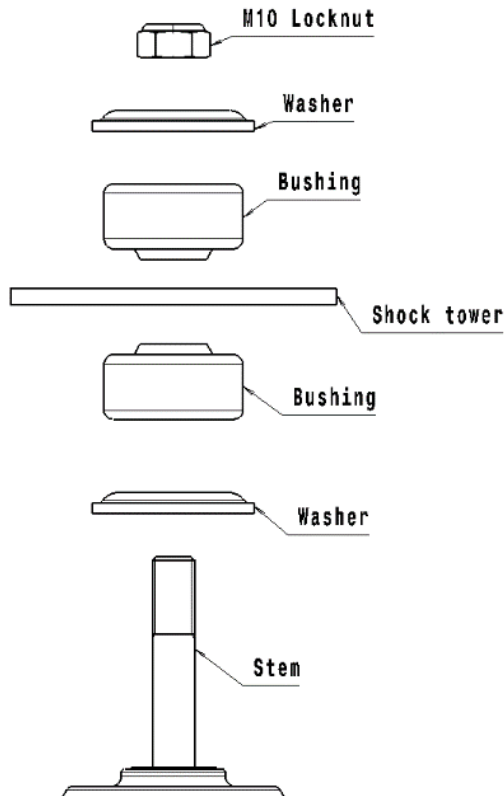
- J. Install the lower Cup Washer (BOM Item 15) with the cup side facing down as shown in the next step and lower Bushing (BOM Item 16) on to the upper shock stem. Guide the stem into the frame and locate the anti-rotation pin into the slot in the shock tower.



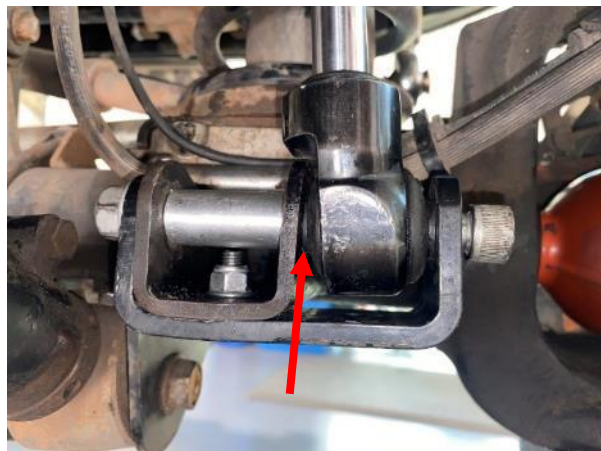
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- K. Install the upper Bushing (BOM item 16), Cup Washer (BOM item 15) with cup side facing down, and Lock Nut (BOM item 17) onto the stem by hand, do not tighten at this point.



- L. Place the lower shock mount into the Shock Relocation Mount (BOM item 1). If there is space between the OE lower mount flange and the shock bushing (indicated with red arrow), use the provided Washer (BOM item 5) to fill the gap. Secure lower mount with Socket Head Cap Screw (BOM item 6) and Lock Nut (BOM item 7) by hand, do not tighten at this point.



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- M. After the top and bottom shock mounts are in place, slide the reservoir so that there is a distance of 105mm from the top of the tube to the top of the reservoir clamp (BOM item 12) as shown below. Check if the bracket's mounting Lock Nut (BOM item 10) clears the tube by more than 2mm. Adjusting the reservoir clamp on reservoir mounting bracket might be required if clearance is not met.

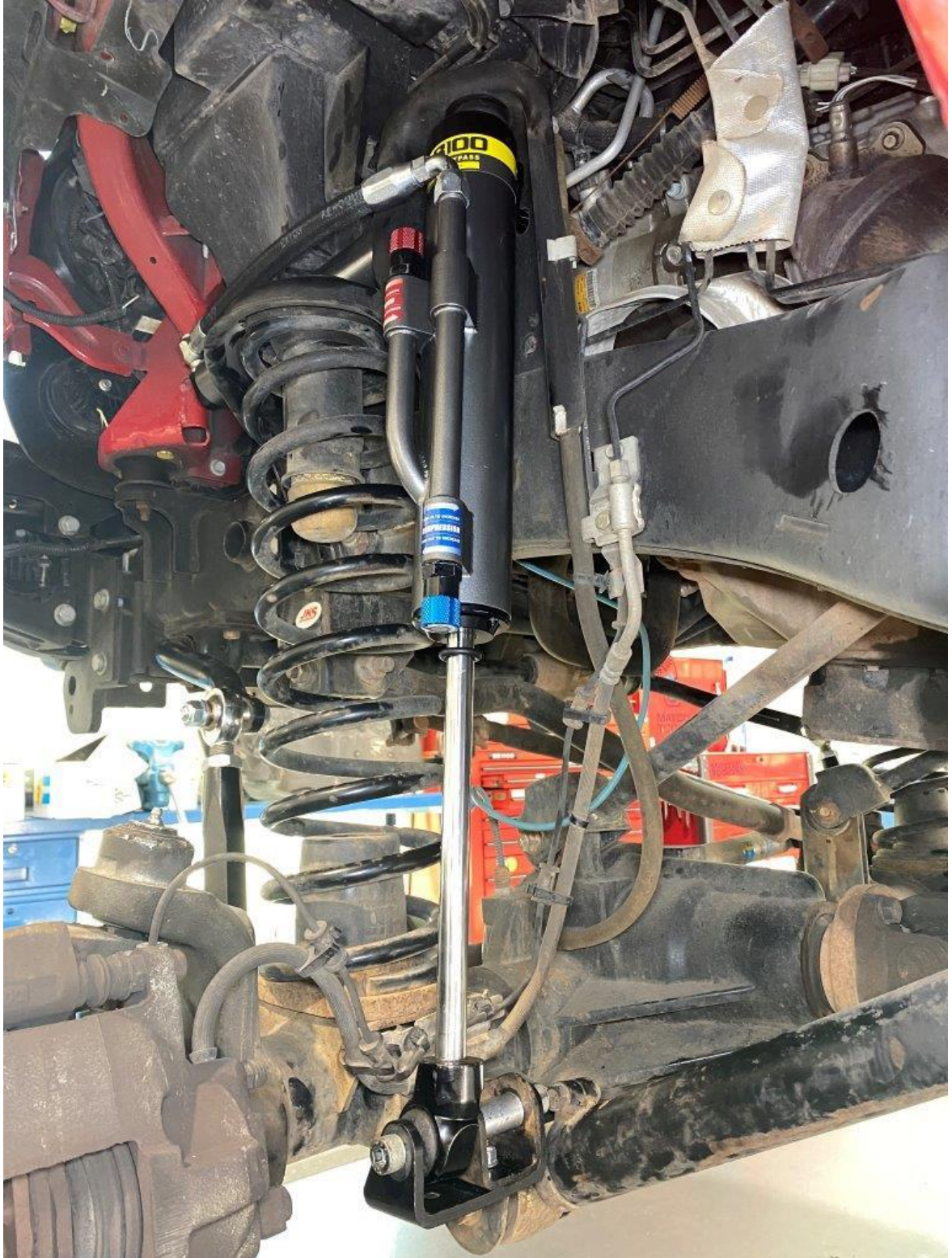


- N. After that, verify the hose port on the reservoir is upward and clocked slightly out board. The hose port should not contact anything. Once the position of the reservoir is optimized, torque the Socket Head Cap Screw (BOM item 13) to 8N*m (6lb*ft). Then torque the 7/16 Flat Head Screw and Nut (BOM item 9 and 10) to 30N*m (23lb*ft).



- O. Install the wheels and ensure the brake lines have adequate clearance throughout the steering and shock travel ranges. It is the installer's responsibility to ensure brake lines have adequate clearance, free from snags or potential damages. If clocking of the bypass tubes is required, see page 16 for instructions on clocking the cap.
- P. Lower the vehicle onto the ground so that the full weight of the vehicle is supported by the suspension. Torque the Lock Nut (BOM item 17) on the upper stem to manufacturer's specification. Use a 6mm Allen key to keep the piston rod from rotating while torquing the locknut.
******DO NOT USE AN IMPACT WRENCH TO TIGHTEN THE LOCKNUT******
- Q. Torque the lower mount Socket Head Cap Screw (BOM item 6) and Lock Nut (BOM item 7) to manufacturer's specification. Then torque the bottom Flat Head Screw (BOM item 2) to 25N*m (19lb*ft).
- R. Check for interferences and wheel alignment. If there are no interferences and wheels are aligned to vehicle manufacturer's specification, installation is complete.

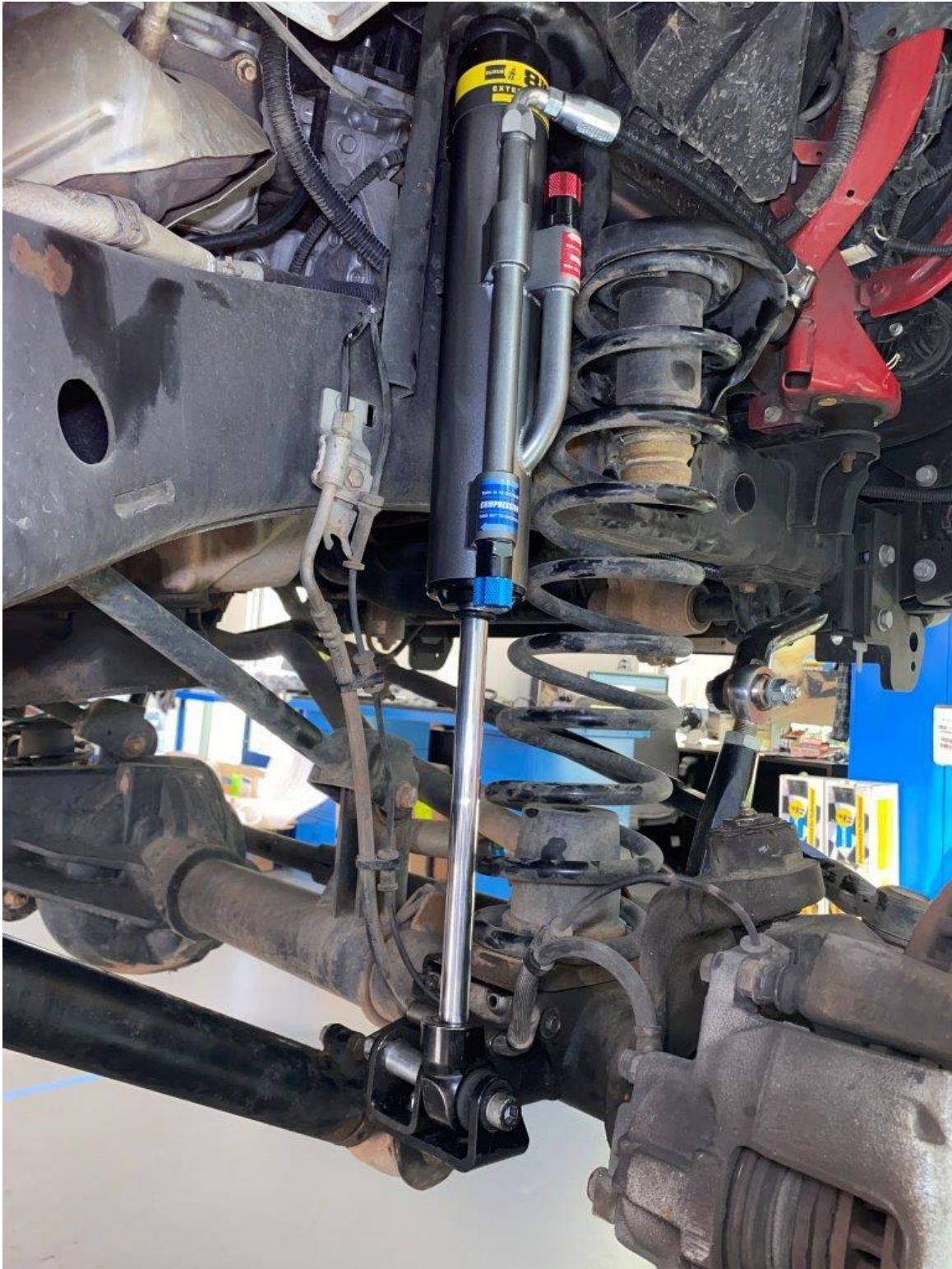
Left Side:



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MOUNTING INSTRUCTION



Right Side:



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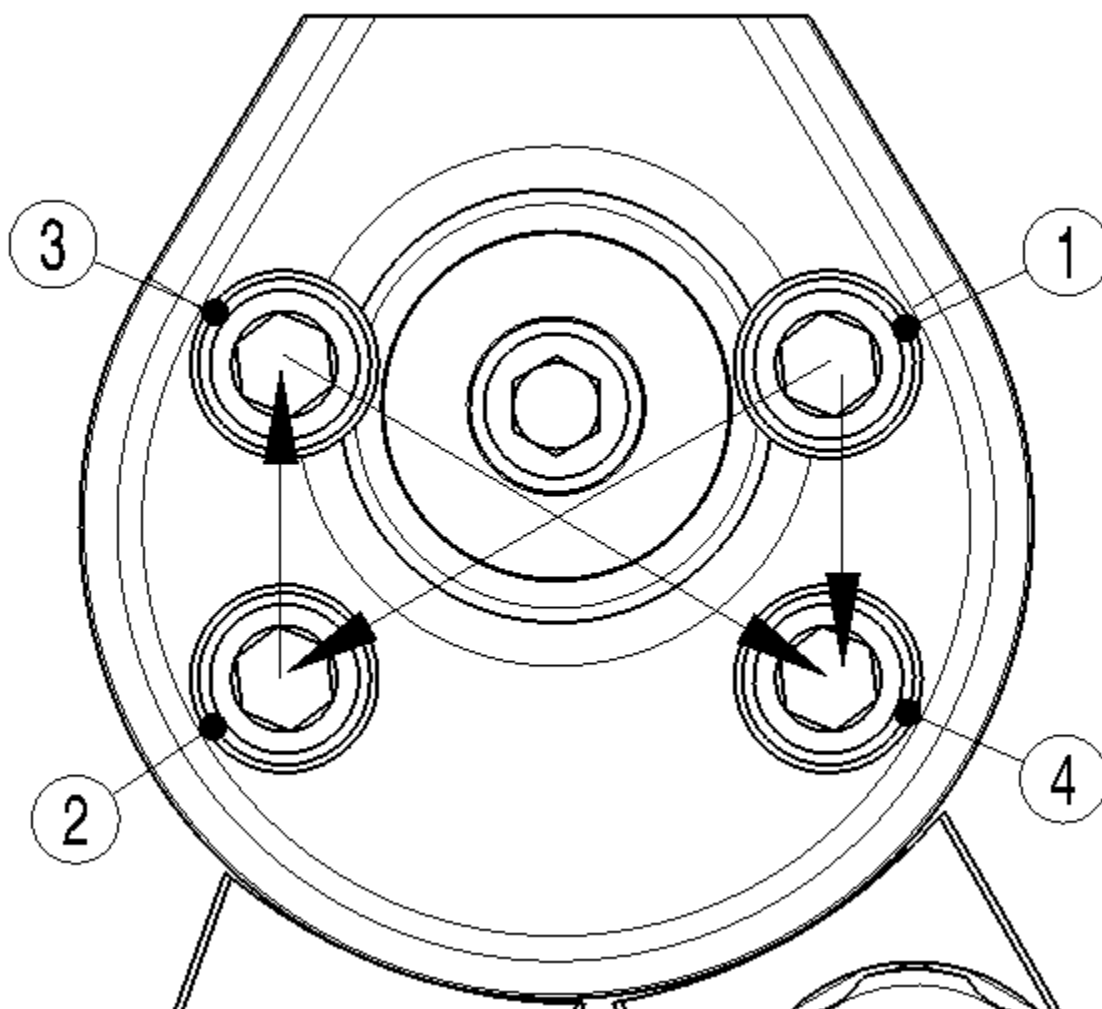
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BILSTEIN Bypass shocks allow the user to rotate the end cap for the best possible clearance on their vehicle.

Bypass Tube Positioning Procedure:

1. Depressurize the shock reservoir.
2. Loosen the four socket head cap screws that clamp the top end cap to the tube. Be sure to only loosen the screws a turn or two. *Do not remove the screws*
3. Rotate the top end cap to the desired angle for optimum tube positioning.
4. Lightly tighten the screws so the top end cap maintains the desired angle.
5. Remove one screw, apply Loctite Threadlocker Red 271, or equivalent, and reinstall. Repeat this for the remaining three screws.
6. Torque the screws to 28 N*m (250 lb*in). Make sure to torque them in the following pattern shown below
7. Pressurize the shock reservoir with nitrogen to 13.8bar (200psi).



Note: The shocks depicted herein may differ slightly in appearance from the supplied components.

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It is normal to hear a slight audible clicking noise during compression and rebound strokes in the B8 8100 bypass shocks, most notably during low velocity events. This is due to the internal check pistons opening and closing to create the externally adjustable compression and rebound zones.

B8 8100 bypass shocks allow the user to tune the damping for the best possible ride quality and performance of their vehicle. The shocks offer multiple zones of compression and rebound damping, depending upon the bypass configuration. The factory setting is:

Rebound – 4 full turns **COUNTER-CLOCKWISE** from fully firm
Compression – 6 full turns **COUNTER-CLOCKWISE** from fully firm
**note: 4 clicks equals 1 full turn*

Note: The bypass adjusters allow adjustment up to 10 full turns counter-clockwise from fully firm.

B8 8100 bypass adjustment procedure:

Rotate the blue and red adjuster knobs to make the desired adjustment.

Turn the adjuster knob **CLOCKWISE** to **INCREASE** damping

Turn the adjuster knob **COUNTER-CLOCKWISE** to **DECREASE** damping

B8 8100 bypass service:

For service of your B8 8100 bypass shocks, please contact:

THYSSENKRUPP BILSTEIN OF AMERICA
Toll Free: 1-800-537-1085
bilsteinus.com