



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.

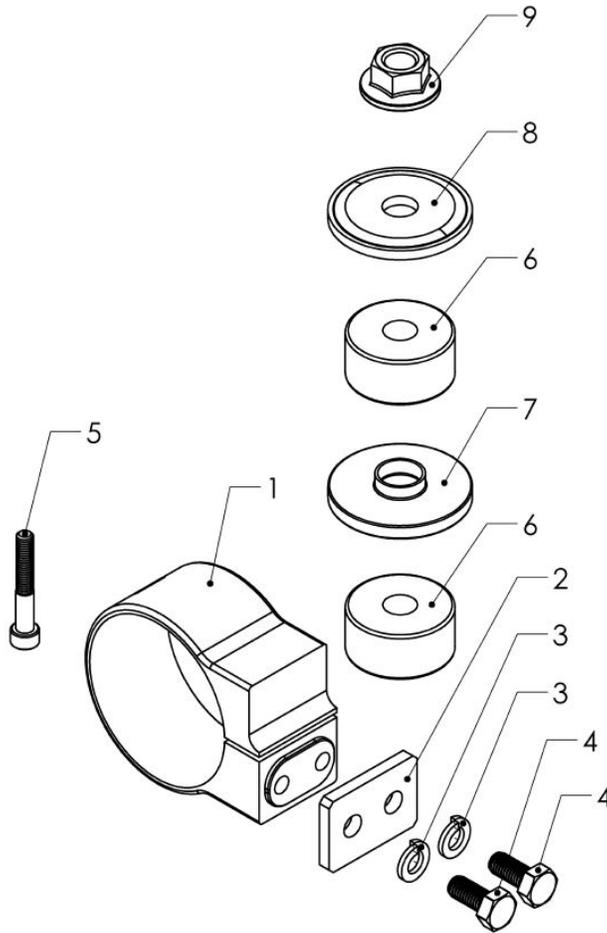
IMPORTANT!!!

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.

E-WM05-0000014 MOUNTING INSTRUCTION



B8 8100 bypass shocks are corner specific. This instruction applies to both the left (P/N: 25-320442) and right (P/N: 25-320459) rear shocks. The step by step procedure is shown with images of the right side only. Skip to page 8 to see the final result for both sides. A bill of materials of the included mounting parts is shown below.



Bill of Materials		
Item #	Description	Qty
1	Reservoir Bracket, 60mm	1
2	Mount Plate	1
3	Stainless Steel Split Washer, 8mm	2
4	Stainless Steel Cap Screw, M8x1.25, L=18mm, 13mm Hex Head	2
5	Stainless Steel Socket Head Cap Screw, M6x1, L=40mm, 5mm Hex	1
6	Upper Cushion	2
7	Alignment Washer	1
8	Retainer Washer	1
9	Flange Nut, M12x1.25, 18mm Hex Head	1

E-WM05-0000014 MOUNTING INSTRUCTION



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 shock installation procedure:

B8 8100 bypass shocks are corner specific. This instruction applies to both the left (P/N: 25-320442) and right (P/N: 25-320459) rear shocks. The step by step procedure is shown with images of the right side only. Skip to page 8 to see the final result for both sides.

- A. Remove the existing shock from the vehicle following all procedures in the vehicle manufacturer's service manual. Inspect the OE lower shock bolt, washer, and flange nut for any damage or excessive wear. If these components are in good condition, save them for reuse later. If damage or excessive wear is present in any of these components, purchase the required replacement OE components.



- B. Carefully slide the reservoir bracket (BOM item #1) over the reservoir as shown below. Apply non-permanent thread locker to the M6x1 socket head cap screw (BOM item #5) and slide it through the counter-bored hole in the reservoir bracket. Thread the socket head cap screw in enough so it won't fall out, but loose enough so you can still slide the reservoir in the bracket for adjustment.



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- C. Slide one of the upper cushions (BOM item #6) and the alignment washer (BOM item #7) over the threaded pin on the shock body as shown below.



- D. Slide the threaded pin on the shock body through the chassis mount and carefully center the alignment washer (BOM item #7) in the mount hole. Slide the second upper cushion (BOM item #6) over the threaded pin, followed by the retainer washer (BOM item #8). Thread the M12x1.25 flange nut (BOM item #9) onto the threaded pin on the shock body. Using an open end or box end wrench, thread the flange nut down the threaded pin until all the gap in the cushions is taken up as shown below. Do not thread the flange nut all the way to the stop point at this time.



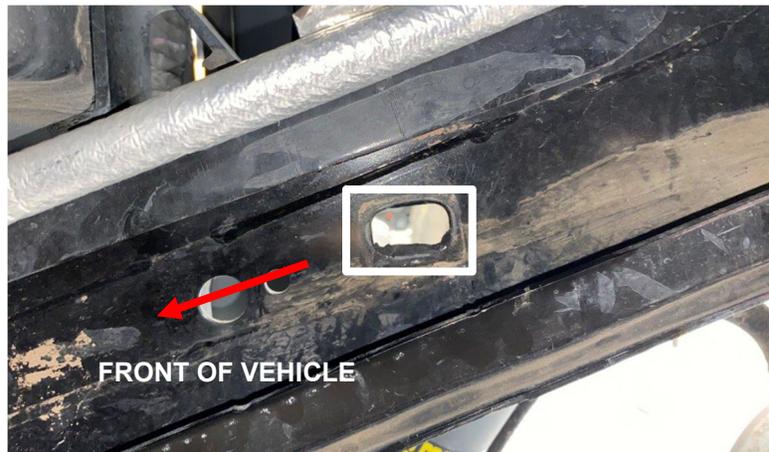
E-WM05-0000014 MOUNTING INSTRUCTION



- E. Align the lower shock mount in the rear axle attachment point using the OE lower shock bolt that was removed in step A (1 per side). Make sure the hex head of the bolt is facing the outside of the vehicle. Slide the OE washer over the bolt threads, and tighten the OE flange nut until the gap between the components and the rear axle attachment point is taken up as shown below. Do not torque the bolt and flange nut at this time. (The lower shock mount should still be free to rotate.)



- F. Locate the rectangular hole in the side of the frame rail. Below is a picture from the back side of the frame rail.



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- G. With the shock attached to the chassis and rear axle, the reservoir can be checked for any clearance issues by keying the reservoir bracket (BOM item #1) into the rectangular hole in the frame rail. Make sure the head of the socket head cap screw (BOM item #5) is facing down as shown below. It may be required to remove some of the inner fender-liner material to ensure it doesn't wear on the reservoir surface, or abrade the reservoir hose. Once the fender-liner material has been removed, double check the clearance, this time moving the fender-liner back and forth. An example of this material removal is shown below.

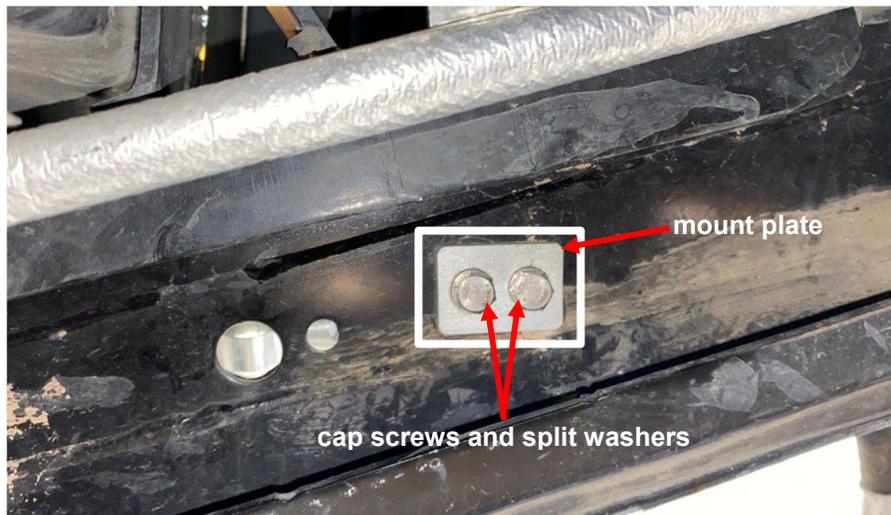


Looking from underside of the frame rail



Inner fender liner clearance

- H. Apply non-permanent thread locker to the M8x1.25 cap screws (BOM item #4). From the backside of the frame rail, secure the reservoir bracket (BOM item #1) using the mount plate (BOM item #2), two 8mm split washers (BOM item #3), and two M8x1.25 cap screws as shown below. **Torque the two cap screws to 27 N•m (275 kgf•cm, 20ft•lbf).**



Looking at inside of frame rail

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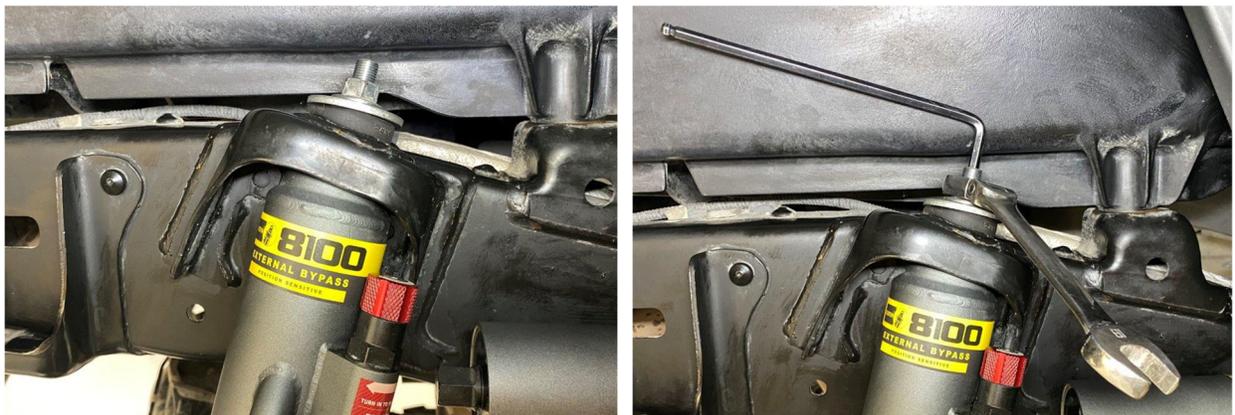


- I. With the reservoir bracket secured to the chassis, adjust the reservoir so that the reservoir decal is flush against the reservoir clamp (approx. 46mm to 50mm from the reservoir bracket for the right and 32mm to 38mm for the left). Also rotate the reservoir body so the swivel banjo hose spigot is 35° outward from vertical as shown below. Once the reservoir is adjusted to the correct position, **torque the socket head cap screw to 8 N•m (80 kgf•cm, 69in•lbf).**

Make sure the swivel banjo hose fitting, as well as the end of the reservoir has a minimum of 6mm clearance from contacting any part of the chassis.



- J. With the reservoir now secured to the chassis, align the shock body outlet port for the reservoir hose pointing toward the front of the truck. (For the left side shock, the shock body outlet port for the reservoir hose should point toward the rear of the truck.) Looking from the side view of the truck, the compression bypass adjusters should be angled slightly toward the axle as shown in the images on the next page. With the shock bodies aligned, tighten the flanged nuts until the threads bottom out. If you are having trouble preventing the shock bodies from rotating while tightening the flange nut, a 6mm hex key can be used to prevent rotation as shown below. ***Be careful not to over tighten / torque the flange nut as this may result in permanently damaging or breaking the threaded pin on the shock.***



E-WM05-000014 MOUNTING INSTRUCTION



Left Side View



Right Side View

- K. Fully tighten the lower shock bolt to the torque specified in the manufactures service manual.

If a chassis hoist has been used, be sure to lower the vehicle such that it's full weight is on the suspension prior to fully tightening the lower shock bolt.

- L. Carefully check for any possible dynamic interference the bypass shock bodies, bypass adjusters, reservoir hoses, and reservoirs may have with any other components on the vehicle. Make any necessary adjustments to the shock alignment and/or reservoir position. The mounting locations depicted are appropriate for this application; however, some aftermarket components such as tires and/or lift kit combinations may create interference problems. It is the responsibility of the installer to determine if there is a potential for interference.

E-WM05-0000014

MOUNTING INSTRUCTION



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 – 7 full turns **COUNTER-CLOCKWISE** from fully firm
Compression – 7 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
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