

E4-WM5-Y517A00

MOUNTING INSTRUCTION



IMPORTANT! READ THIS FIRST!

Installation of shock absorbers requires special tools and expert knowledge. Accordingly, installation of all BILSTEIN products must be performed by a qualified suspension specialist.

When replacing other brands, BILSTEIN shock absorbers 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 choose to install any BILSTEIN product without the necessary special tools, expertise or chassis hoist, you may subject yourself to the risk of serious bodily injury or death. If you elect not to use a chassis hoist, at least make sure the vehicle is on level ground, that all tires on the ground during installation are blocked to prevent movement, that at least two tires are on the ground at all times, and that adequately secured safety stands (jack stands) are used to support the chassis. **NEVER** get under the vehicle until you have checked to make sure all of these steps are performed.

BILSTEIN suspension products are gas-filled and are highly pressurized.

- Never place any BILSTEIN product in a vise or use a clamp on any BILSTEIN product.
- Never apply heat near any BILSTEIN product.
- 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 piston rod and seal.
- All mounting fasteners for shocks and struts must be securely tightened before tension is placed on the suspension system.

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.

CAUTION!!!

Before disassembling the front 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.

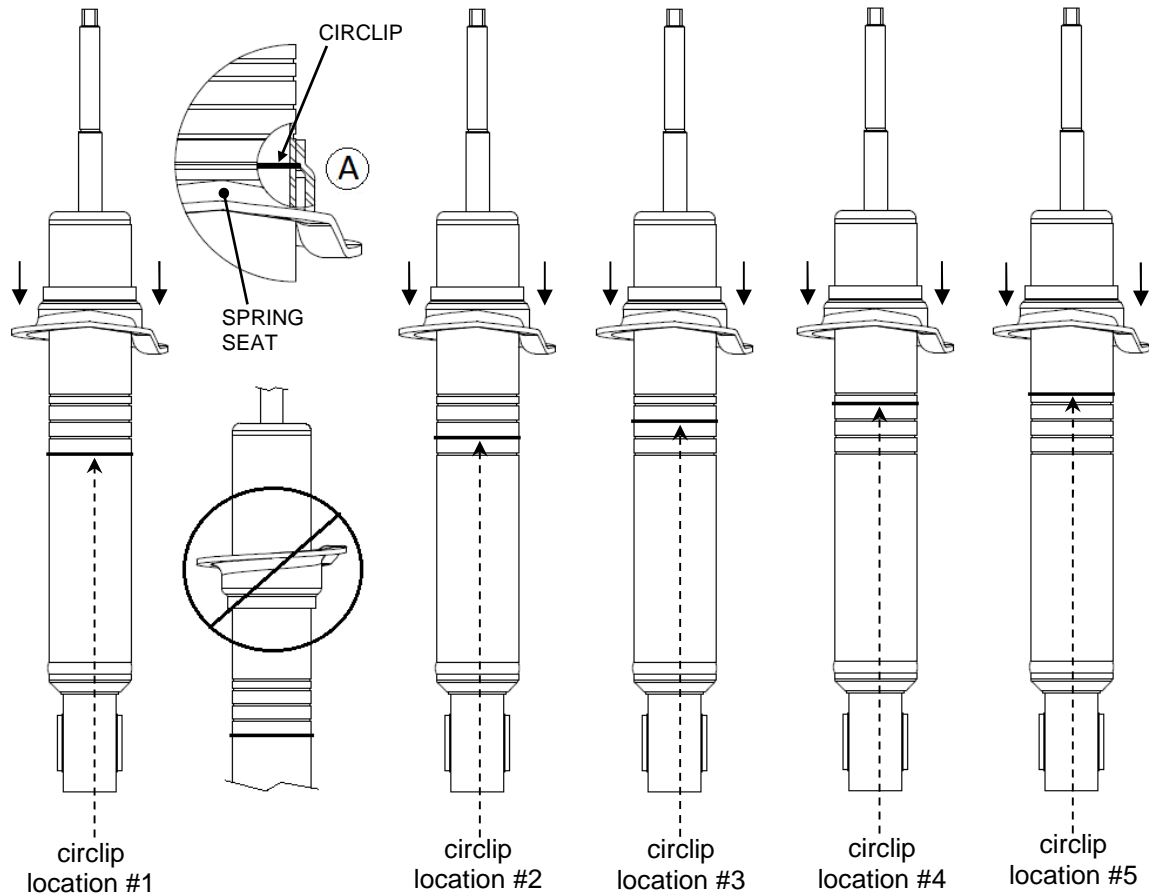
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IMPORTANT:

PLACE CIRCLIP IN APPROPRIATE GROOVE TO ADJUST RIDE HEIGHT.

Use appropriate tools to move the circlip. Ensure that the circlip is fully seated in the groove after moving it (you should be able to rotate it manually in the groove). Install the spring seat in the direction shown only. The circlip must fit completely in the groove inside spring seat (A). **Improper installation will cause permanent damage to the shock!**



circlip location #	Typical Front Lift Height**			
	crew cab 4x4	access cab 4x4	crew cab 4x2	access cab 4x2
#1	stock	stock	stock	stock
#2	0.53"	0.53"	0.63"	0.66"
#3	1.07"	1.05"	1.25"	1.33"
#4	1.60"	 	1.88"	2.00"
#5	 	 	2.50"	2.65"

On Crew Cab 4x4 models, do not use circlip location #5.

On Access Cab 4x4 models, do not use circlip locations #4 or #5.

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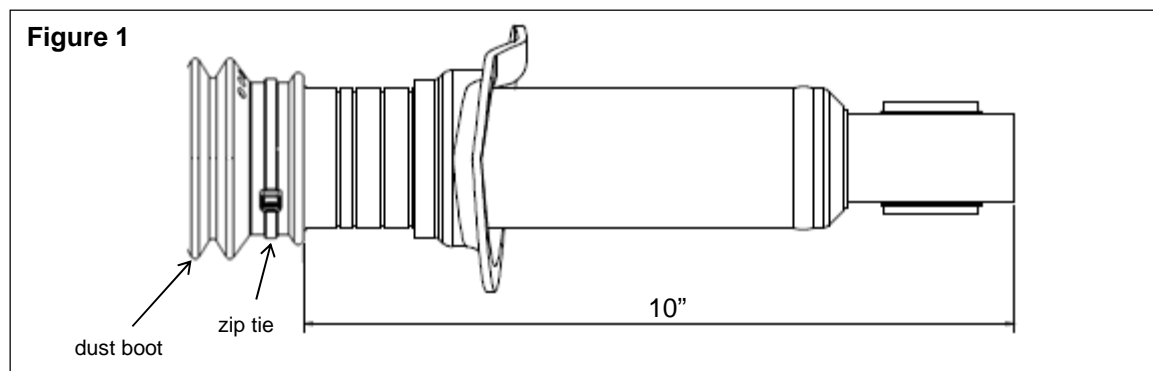
** Ride heights indicated are typical. Actual ride height is influenced by which factory suspension the vehicle is equipped with and its condition; optional equipment and accessories on your vehicle, and other vehicle modifications such as replacement coil springs, wheel and tire combinations, etc. Modifying/lifting 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 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 (important for reassembly).
- C. Using an appropriate spring compressor, compress the spring until it can be rotated freely by hand. Then, disassemble the shock and spring unit.

Instructions for assembly of Bilstein 5100 Series shock absorber module:

- D. Temporarily remove the dust boot from the new Bilstein shock.
- E. Install the supplied spring seat on to the new Bilstein shock such that the groove inside the spring seat fits over the circlip on the shock body as shown on page 2. Install the spring seat in the direction shown only. The circlip must fit completely in the groove inside the spring seat (see detail view A on page 2). Improper installation will cause permanent damage to the shock.
- F. Reinstall the new dust boot back on to the new Bilstein shock.
- G. Position the dust boot such that the bottom edge of the boot is approximately 10 inches from the bottom of the shock as shown in Figure 1. Secure the boot with the provided zip tie. Trim the excess zip tie length after installation.



- H. Install the supplied lower washer (concave side up) onto the stem of the rod as shown. Ensure that the lower washer is oriented correctly (see Figure 3).

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- I. Using an appropriate spring compressor, compress the OE spring and assemble it with the new Bilstein shock. Align the bottom coil of the spring with the ramp on the spring seat. Refer to Figure 3 for the order of the remaining components.
- J. Install the OE upper mount over the threaded stem on the new Bilstein shock and on top of the spring. Rotate the shock so that the lower mount is aligned with the upper mount studs as noted in step B.
- K. Install the supplied upper bushing and supplied upper washer (concave side down) as shown. Ensure they are oriented correctly (see Figure 3).
- L. Install the provided new locknut and tighten to 27 N·m (20 lb·ft). **DO NOT USE AN IMPACT WRENCH TO TIGHTEN THE NUT!**
- M. Release the spring compressor while ensuring that the bottom coil of the spring remains aligned with the ramp on the spring seat.
- N. Install the assembly on to the vehicle and tighten all fasteners to vehicle manufacturer's specifications.
- O. Check wheel alignment. If necessary, adjust to the vehicle manufacturer's specifications.
- P. This completes the installation, **unless you are using one of the following ride height settings:**
 - 1.05" lift on Access Cab 4x4 (circlip location #3)
 - 1.6" lift on Crew Cab 4x4 (circlip location #4)

If one of the above ride height settings is being used, continue on to steps Q and R:

- Q. Remove original chassis jounce bumpers (two per side) according to vehicle manufacturer's procedures.
- R. Install the supplied spacer washers as shown in the pictures in Figure 2 and reinstall the jounce bumpers in their original positions. Torque to 27 N·m (20 lb·ft).



Figure 2

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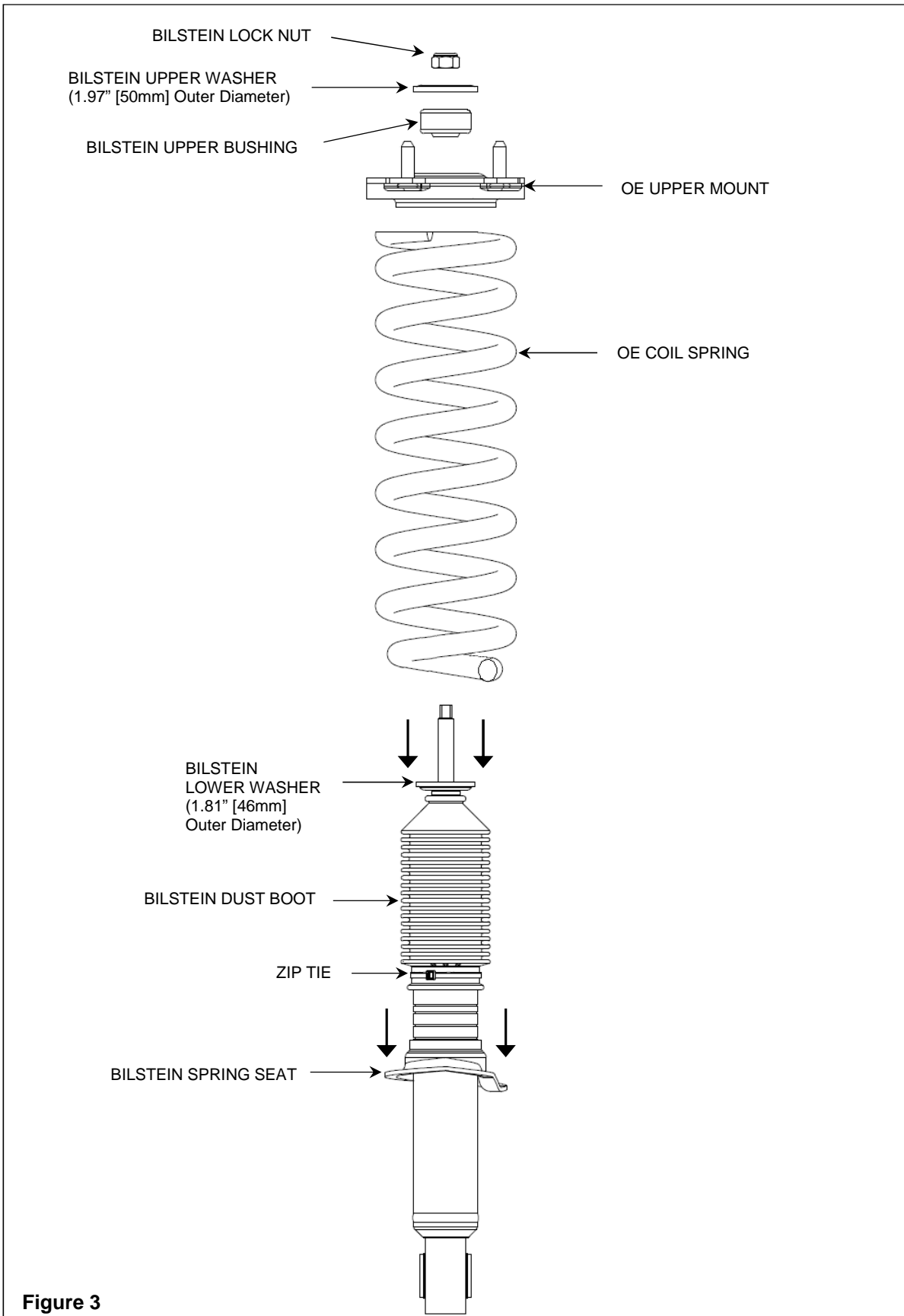


Figure 3