



### **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.**

This instruction is for both front left (driver) and front right (passenger) B8 8100 shocks. A bill of materials (BOM) of the included mounting parts kits is shown on the next 2 pages.

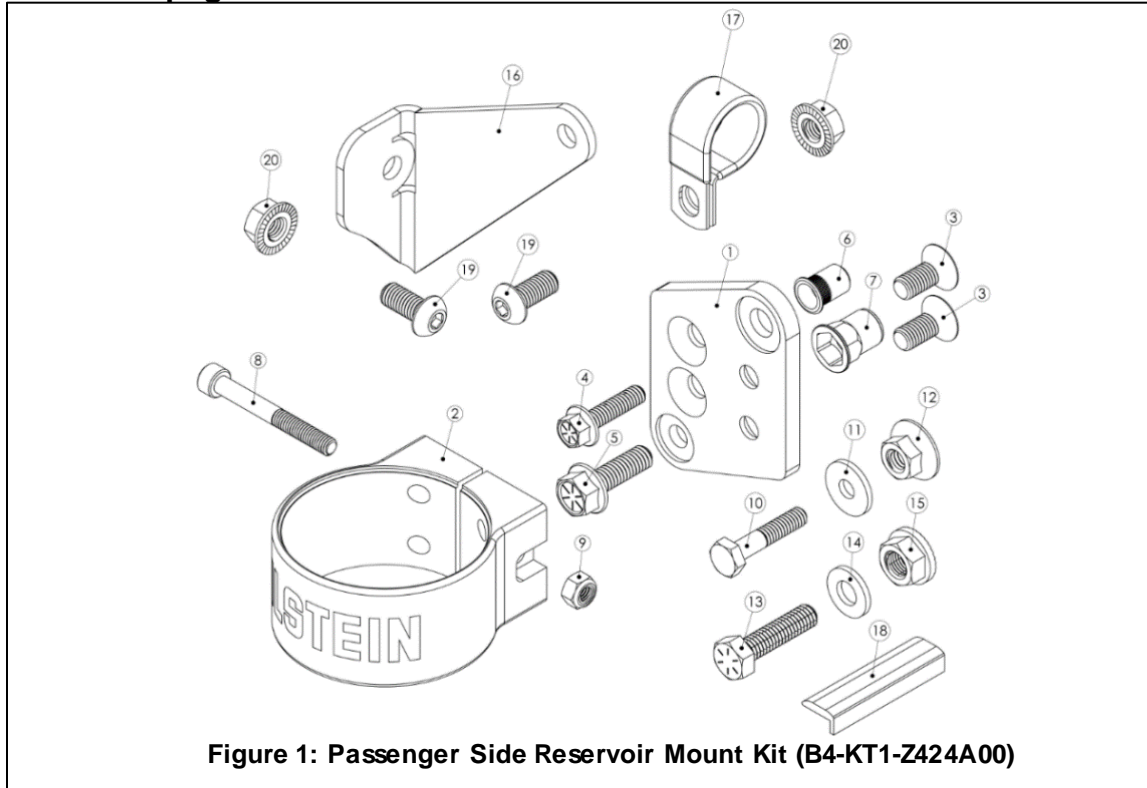


Figure 1: Passenger Side Reservoir Mount Kit (B4-KT1-Z424A00)

Item	Description	Qty.
1	RESERVOIR MOUNT PLATE	1
2	RESERVOIR CLAMP	1
3	M8 x 1.25 x 18mm COUNTERSUNK SCREW	2
4	1/4"-20 x 1" HEX SCREW	1
5	5/16"-18 x 1" HEX SCREW	1
6	1/4"-20 THREADED INSERT	1
7	5/16"-18 HEX THREADED INSERT	1
8	M6 x 1 x 50mm SOCKET HEAD CAP SCREW	1
9	M6 x 1 LOCK NUT	1
10	1/4"-20 x 1.25" CAP SCREW	1
11	1/4" WASHER	1
12	5/16"-18 SERRATED FLANGE NUT	1
13	5/16"-18 x 1.25" HEX SCREW	1
14	5/16" WASHER	1
15	3/8"-24 SERRATED FLANGE NUT	1
16	MOUNT BRACKET, RESERVOIR HOSE	1
17	LOOP CLAMP	1
18	RUBBER STRIP	1
19	M8 x 1.25 x 18 BUTTON SCREW	2
20	M8 x 1.25 SERRATED FLANGE NUT	2

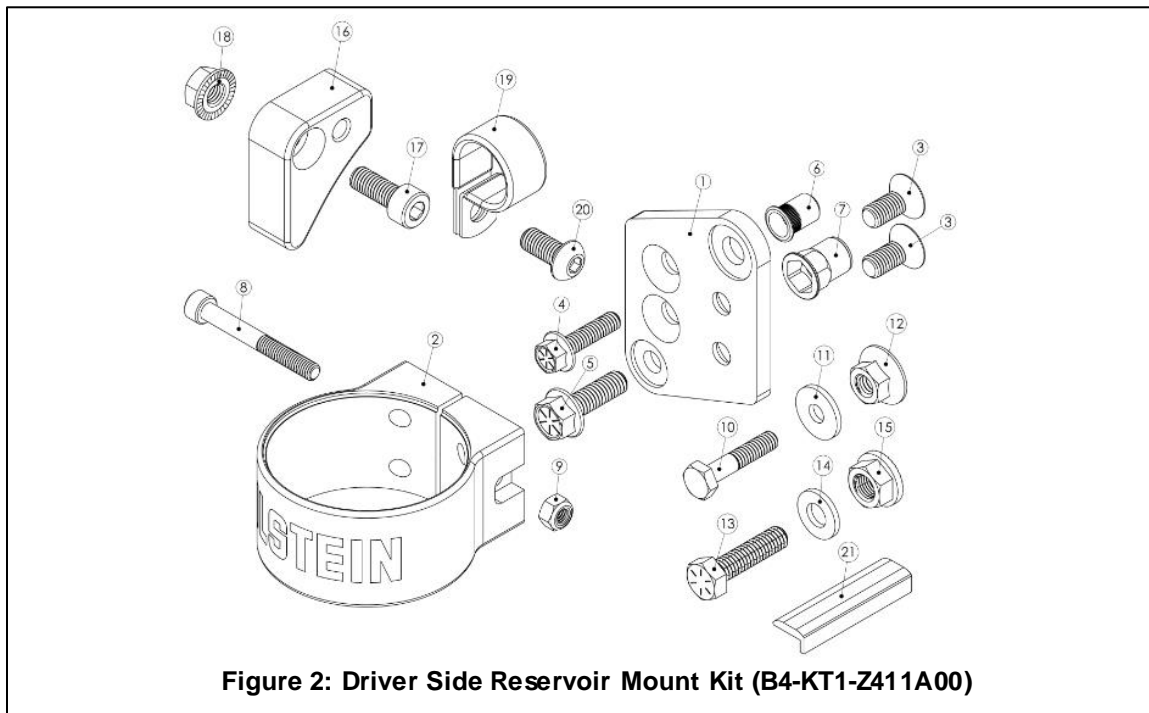


Figure 2: Driver Side Reservoir Mount Kit (B4-KT1-Z411A00)

Item	Description	Qty.
1	RESERVOIR MOUNT PLATE	1
2	RESERVOIR CLAMP	1
3	M8 x 1.25 x 18mm COUNTERSUNK SCREW	2
4	1/4"-20 x 1" HEX SCREW	1
5	5/16"-18 x 1" HEX SCREW	1
6	1/4"-20 THREADED INSERT	1
7	5/16"-18 HEX THREADED INSERT	1
8	M6 x 1 x 50mm SOCKET HEAD CAP SCREW	1
9	M6 x 1 LOCK NUT	1
10	1/4"-20 x 1.25" CAP SCREW	1
11	1/4" WASHER	1
12	5/16"-18 SERRATED FLANGE NUT	1
13	5/16"-18 x 1.25" HEX SCREW	1
14	5/16" WASHER	1
15	3/8"-24 SERRATED FLANGE NUT	1
16	MOUNT BRACKET, RESERVOIR HOSE	1
17	M8 x 1.25 x 20mm SOCKET HEAD CAP SCREW	1
18	M8 x 1.25 SERRATED FLANGE NUT	1
19	LOOP CLAMP	1
20	M8 x 1.25 x 18 BUTTON SCREW	1
21	RUBBER STRIP	1



## **B8 8100 smooth body shock installation procedure:**

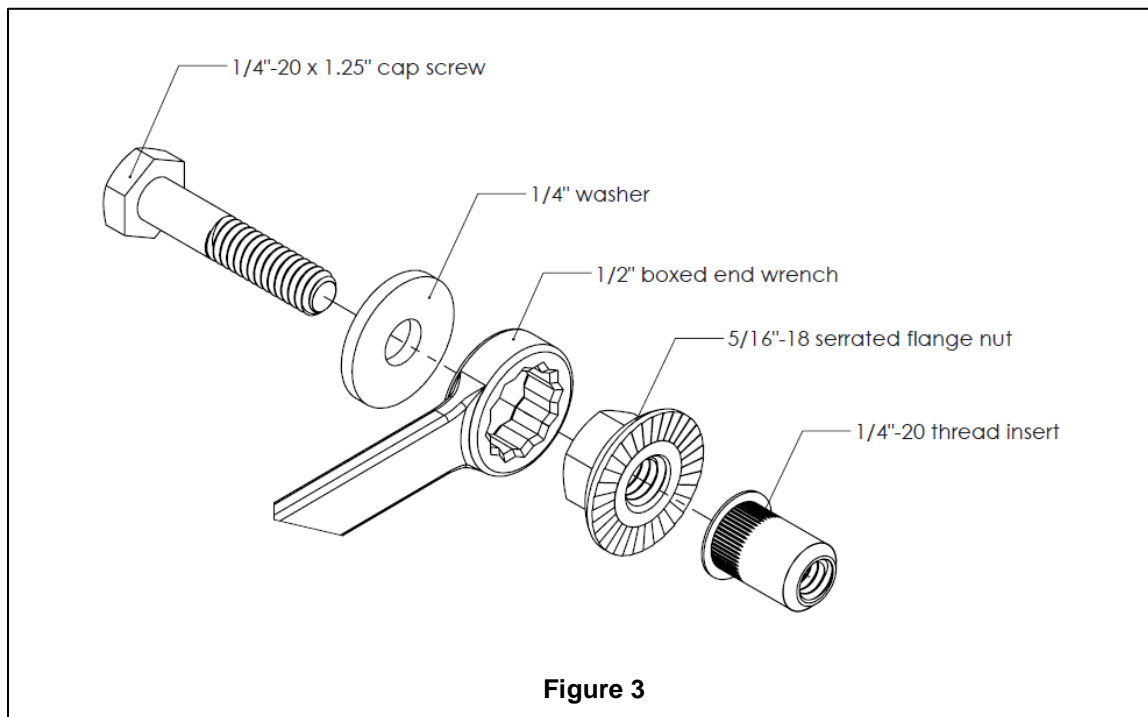
B8 8100 shocks are corner specific. The step by step procedure is shown with pictures of both sides. See page 14 and 15 for the end result.

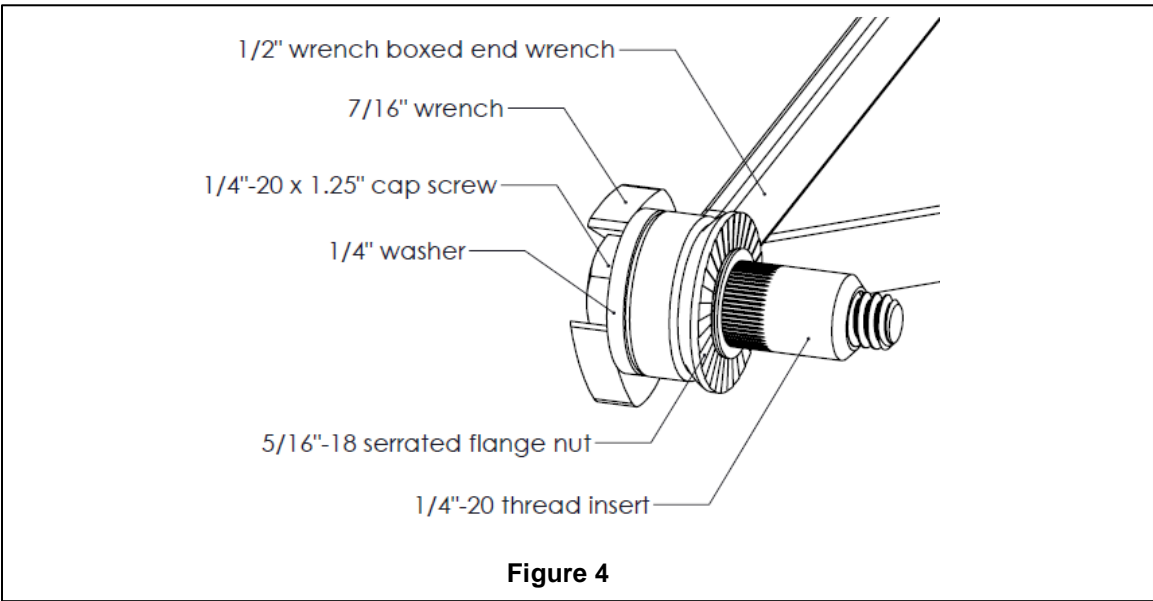
**\*Installation of B8 8100 shocks requires the use of wheels with a maximum of 4.5" backspacing to ensure clearance between the tire and the shocks.\***

- A. Remove the existing front shocks from the vehicle following all procedures in the vehicle manufacturer's service manual. Inspect the OE upper bolts/washers for any excessive wear. If damage or excessive wear is present in any of these components, purchase the required replacement OE components.
- B. A mount kit is included to allow the remote reservoir to be attached to the vehicle frame rail behind the front bumper. This kit is depicted in Figure 1 and 2.

## **Threaded Insert installation**

- C. If you have access to a nutsert gun or pliers, that may be preferable to set the provided threaded insert. Otherwise, start with the 1/4"-20 threaded insert by using the items in Figure 3 and a 1/2" box end wrench. Arrange them as shown and turn the 1/4"-20 screw by hand until it is snug as shown in Figure 4.
- D. **Note that the screw will pass through the serrated flange nut without engaging the threads. The serrations on the flange nut prevent the threaded insert from rotating while setting it.**





E. For the driver side, place the 1/4"-20 threaded insert into the holes shown in Figure 5. For the passenger side, insert the 1/4"-20 threaded insert into the holes shown in Figure 6.



**Figure 5 – Driver Side**



**Figure 6 – Passenger Side**

F. For the 1/4"-20 threaded insert, keep the insert's flange firm and parallel against the bumper support, and tighten the screw using a 7/16" box end wrench or socket. Turn it 2 rotations to set the threaded insert. Tightening in 1/4 turn increments tends to work well.

G. Remove and discard the 1/4"-20 x 1.25" cap screw, 1/4" washer and 5/16"-18 serrated flange nut. The threaded insert should now be rigidly fixed in the hole.

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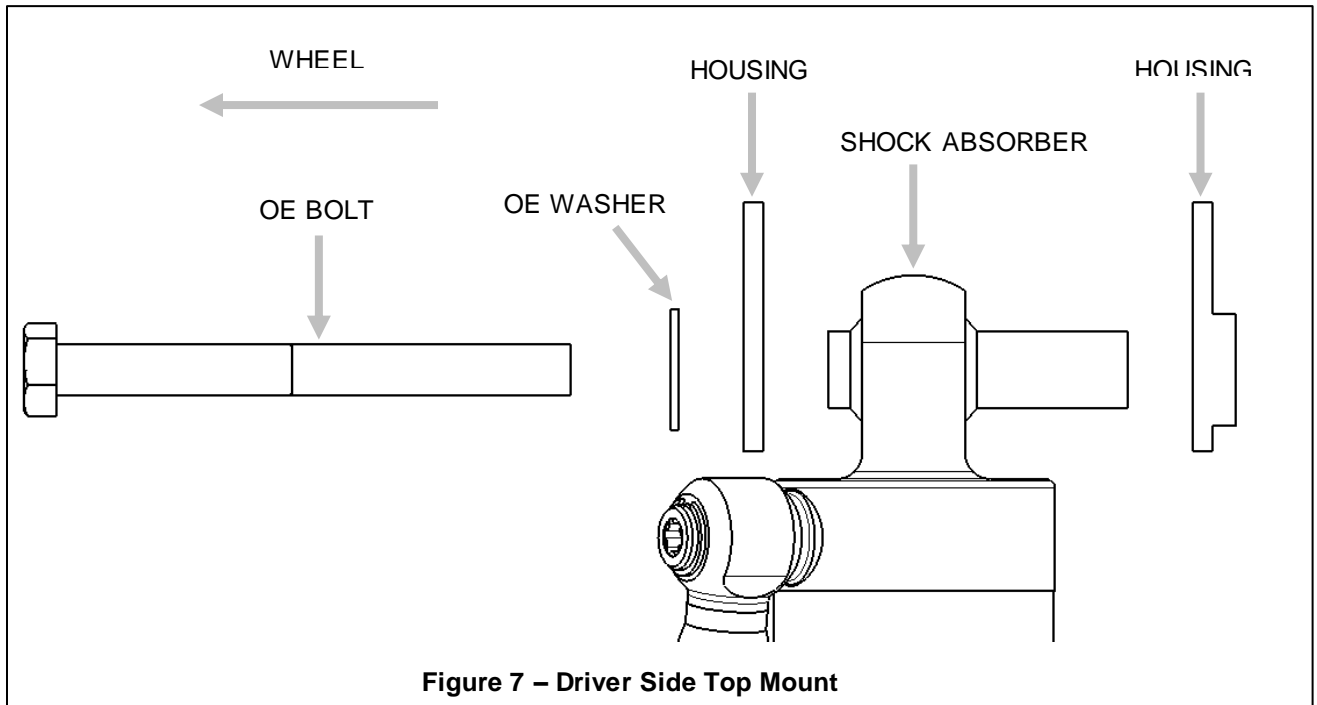
## MOUNTING INSTRUCTION



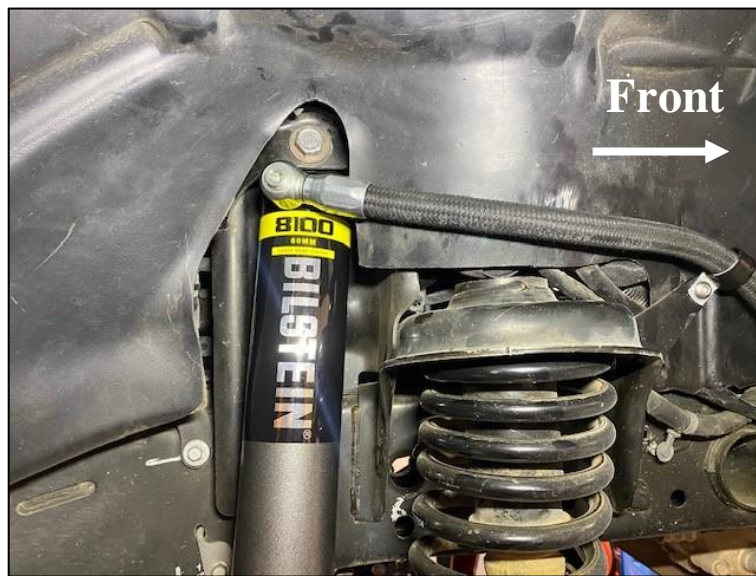
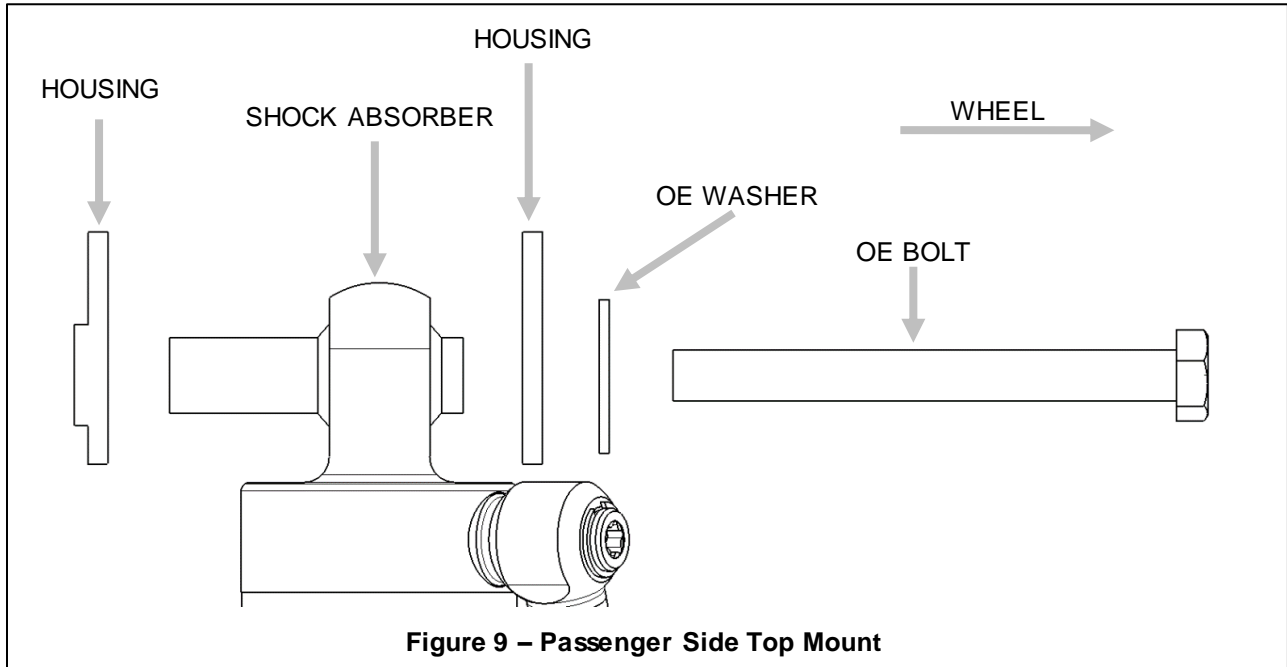
- H. Assemble the 5/16"-18 hex screw, 5/16" flat washer, a 9/16" boxed end wrench, the 3/8" serrated flange nut and hex threaded insert the same way as in Figure 3.
- I. For the driver side, place the 5/16"-18 hex threaded insert into the holes shown in Figure 5. For the passenger side, insert the 5/16"-18 hex threaded insert into the holes shown in Figure 6.
- J. While keeping the threaded insert flange firm and parallel against the bumper support, tighten the 5/16"-18 hex screw using a 1/2" box end wrench or socket. Turn it 2 rotations to set the threaded insert. Tightening in 1/4 turn increments tends to work well.
- K. Remove and discard the 5/16"-18 x 1.25" hex screw, 5/16" washer and 3/8"-24 serrated flange nut. The threaded insert should now be rigidly fixed in the hole.

### Shock Installation

- L. Install the driver side shock in the original location with the top mount offsetting outboard away from the vehicle and hose fitting angled towards the rear of the vehicle as shown in Figures 7 & 8



- M. Install the passenger side shock in the original location with the top mount offsetting outboard away from the vehicle and hose fitting angled towards the rear of the vehicle as shown in Figures 9 & 10.

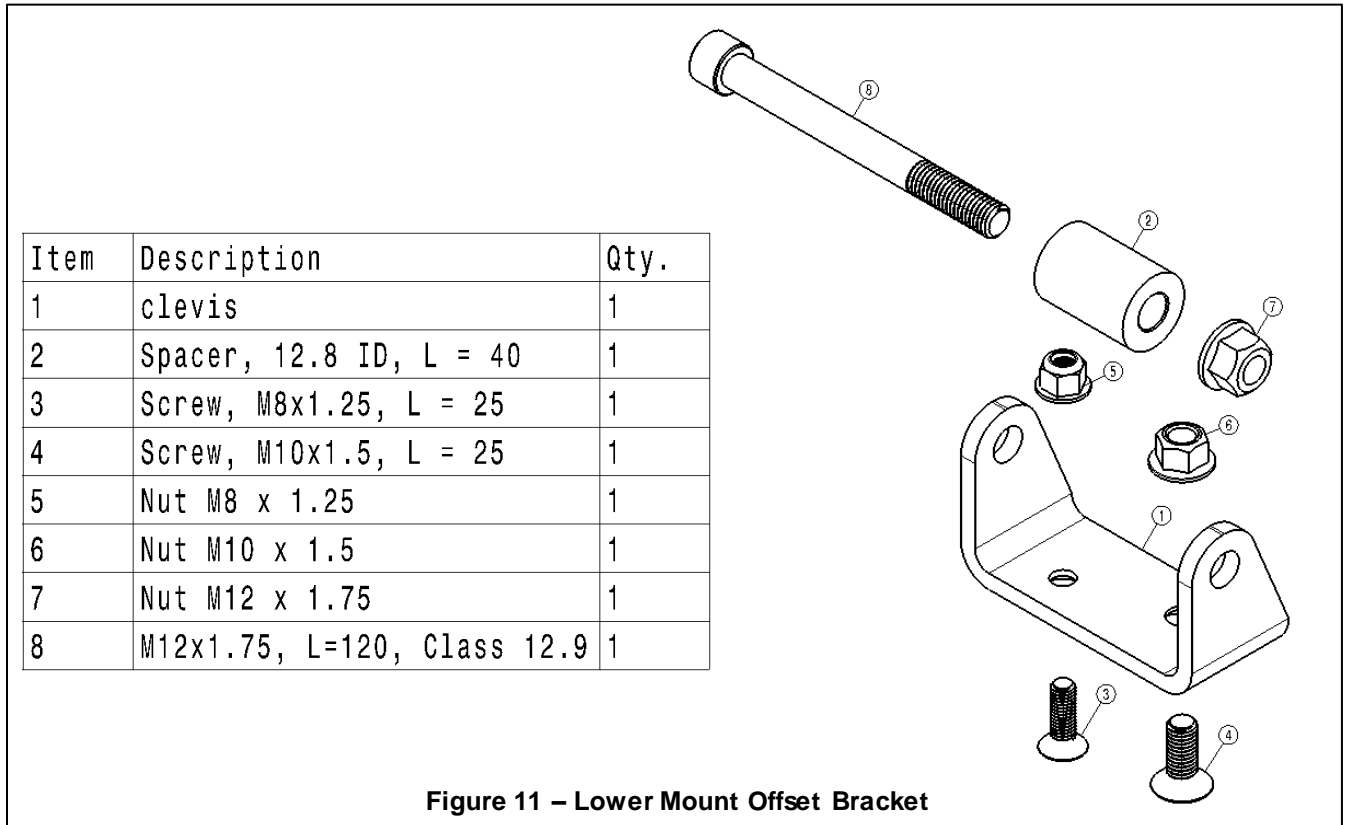




# E-WM05-000052 MOUNTING INSTRUCTION



- N. A mount kit is included to allow the lower shock mount to be offset outboard away from the frame. This kit is depicted in Figure 11



# E-WM05-000052 MOUNTING INSTRUCTION



- O. Install the clevis from the mount kit in Figure 11 as shown in Figures 12 & 13. The position of the clevis should allow the shock lower mount to be offset outboard towards the wheel. Use the M10 screw and nut for driver side and torque fastener to 31 lb•ft (42 N•m). Use M8 screw and nut for passenger side and torque fastener to 19 lb•ft (25 N•m).

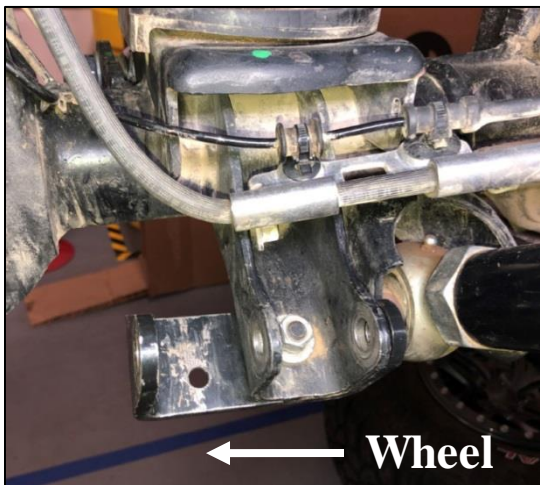


Figure 12 – Driver Side Offset Bracket

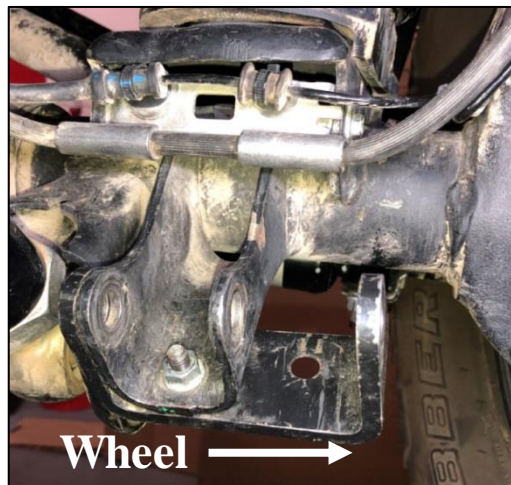


Figure 13 – Passenger Side Offset Bracket

- P. Place the spacer in between the flanges of the OE mount. Then position the shock's lower mount outside of the OE's mount as shown in Figures 14 & 15 with the rod positioned rearward and inboard of the lower eyelets center. Secure it with the M12 bolt and nut.



Figure 14 – Driver Side Bottom Mount



Figure 15 – Passenger Side Bottom Mount

- Q. Torque the top and bottom mounting fasteners to factory specification.

## Reservoir Mounting

- A. Apply rubber strip on the flanges of the chassis body mount for both driver and passenger side. Place it on the flange towards the rear as shown in Figure 16 and 17. This will help protect the reservoir hose from being damaged.



Figure 16 –Driver Side



Figure 17 – Passenger Side

- B. Prepare the reservoir mount assembly by applying non-permanent thread locker to the M8x1.25 countersunk screws. Assemble the reservoir bracket onto the mounting plate using the M8x1.25 countersunk screws as shown in Figure 18. Tighten the M8x1.25 countersunk screws using a 5mm hex. Torque the M8x1.25 countersunk screws to 16 lb•ft (22 N•m).
- C. Place the M6x1 Nylocks in the slots of the Reservoir Clamps as shown in Figure 18. Then insert the M6x1x50 Socket Head Cap Screws into the holes in the Reservoir Clamps, threading them into the M6x1 Nylocks as shown in Figure 18. Using a 5mm Hex, tighten the M6x1x50 Socket Head Cap Screws only a few turns, leaving them loose enough so the reservoirs can be installed at the next step of these instructions.

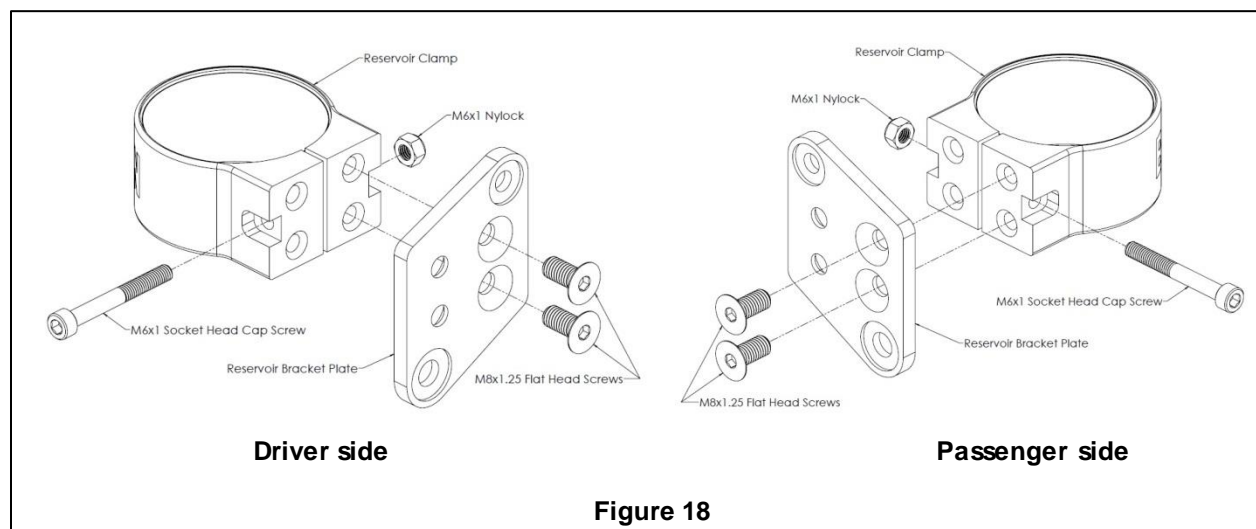


Figure 18

# E-WM05-000052 MOUNTING INSTRUCTION



- D. Apply non-permanent thread locker to the 5/16"-18 x 1" Flange Head Cap Screws and install the reservoir mount assemblies with the screws at the bottom threaded inserts. Leave the screws loose for now. Rotate the assemblies toward the rear of the vehicle and slide the reservoirs into the clamps as shown in Figures 19 and 21.
- E. Rotate the reservoir mount assemblies back to vertical. Apply non-permanent thread locker to the 1/4"-20 x 1" Flange Head Cap Screws and install them in the upper threaded inserts as shown in Figures 20 & 22.



Figure 19 – Driver Side



Figure 20 – Driver Side



Figure 21 – Passenger Side



Figure 22 – Passenger Side

# E-WM05-000052 MOUNTING INSTRUCTION



- F. Torque the two (1/4"-20 x 1" and 5/16"-18 x 1") hex screws to 10 lb•ft (13.6 N•m).
- G. Position the end of both reservoir tubes approximately 40mm below the bottom side of the clamp as shown in Figure 23.



Figure 23 – Reservoir Height

- H. Angle the reservoir hose toward the inside of the vehicle. Adjust the reservoir angle so that the reservoir hose is 6mm from the chassis body mount as shown in Figures 24 and 25. Make sure to maintain the 40mm distance between the end of the reservoir tube, and the bottom side of the clamp as shown in Figure 23. Torque the M6x1 Socket Head Cap Screw in the Reservoir Clamp to 6 lb•ft (8 N•m).

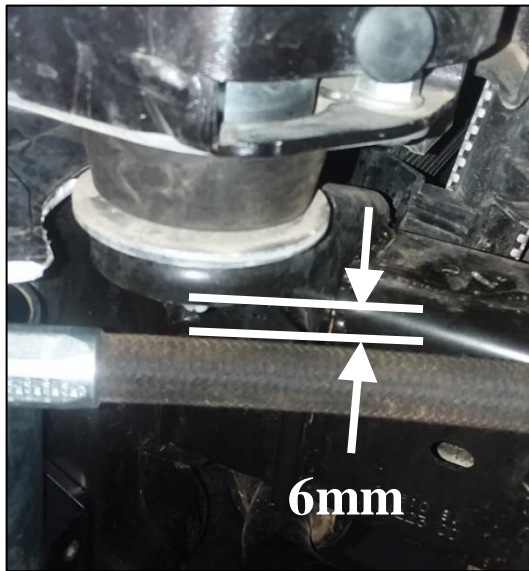


Figure 24 – Driver Side

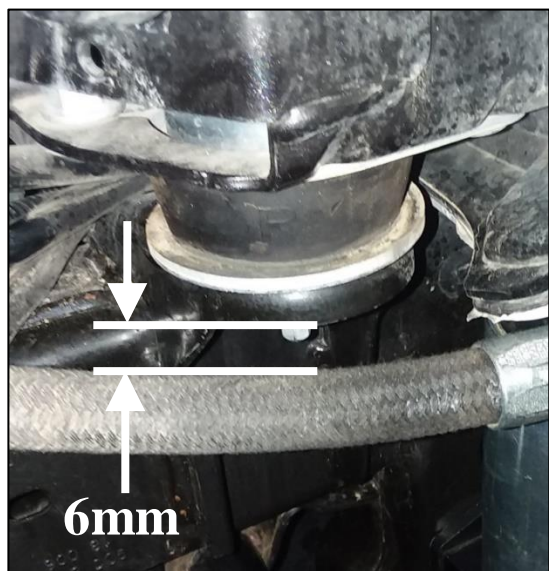


Figure 25 – Passenger Side

## Reservoir Hose Mounting

- A. For driver side locate the hole in the front side of the left spring bucket. Using an M8x1.25 Socket Head Cap Screw, and an M8x1.25 Serrated Flange Nut, attach the Left Reservoir Hose Mount Bracket to the spring bucket and orient as shown in Figure 26. Then put the hose clamp around the reservoir hose and mount it on the bracket with the M8 x 1.25 x 18 button screw as shown in Figure 27. Torque the screws to 16 ft-lb (22 Nm).



Figure 26 – Driver Side



Figure 27 – Driver Side

- B. Route the hose as shown in Figures 27 & 28. The section of hose closest to the shock body should follow the outside perimeter of the spring tower. The other half of the hose at the reservoir should be routed close to the frame.



Figure 28 – Driver Side

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## MOUNTING INSTRUCTION



- C. For the passenger side, locate the hole in the front side of the spring bucket. Using a M8x1.25 Button Screw, and a M8x1.25 Serrated Flange Nut, attach the Right Reservoir Hose Mount Bracket to the spring bucket and orient as shown in Figure 29. Then put the hose clamp around the reservoir hose and mount it on the bracket with the M8x1.25x18 button screw and M8x1.25 serrated flange nut as shown in Figure 30. Torque the screws to 16 ft-lb (22Nm).



**Figure 29 – Passenger Side**



**Figure 30 – Passenger Side**

- D. Route the hose as shown in Figures 30 & 31. The section of hose closest to the shock body should follow the outside perimeter of the spring tower. The other half of the hose at the reservoir should be routed close to the frame.



**Figure 31 – Passenger Side**

- E. If the inner fender liners had been removed, reinstall them behind the reservoir hose.
- F. Carefully check for any possible interference between the reservoirs/hoses and any other components on the vehicle. The reservoir mounting location depicted is appropriate for most vehicles for which this kit is intended, however, some wheel/tire and/or lift kit combinations and/or other vehicle modifications may create interference problems. It is the responsibility of the installer to determine if the reservoirs are mounted appropriately and if there is any potential for interference.
- G. Check for interferences and wheel alignment. If there are no interferences and wheels are aligned to vehicle manufacturer's specification, installation is complete.