

E4-WM5-Y628A00

MOUNTING INSTRUCTION



IMPORTANT! READ THIS FIRST!

B8 8100 bypass shocks are corner specific. This instruction applies to both the left (P/N: 25-284539) and right (P/N: 25-284522) rear shocks. Skip to page 10 and 11 to see the final result for both sides. A bill of materials of the included mounting parts is shown on the next two pages.

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.**

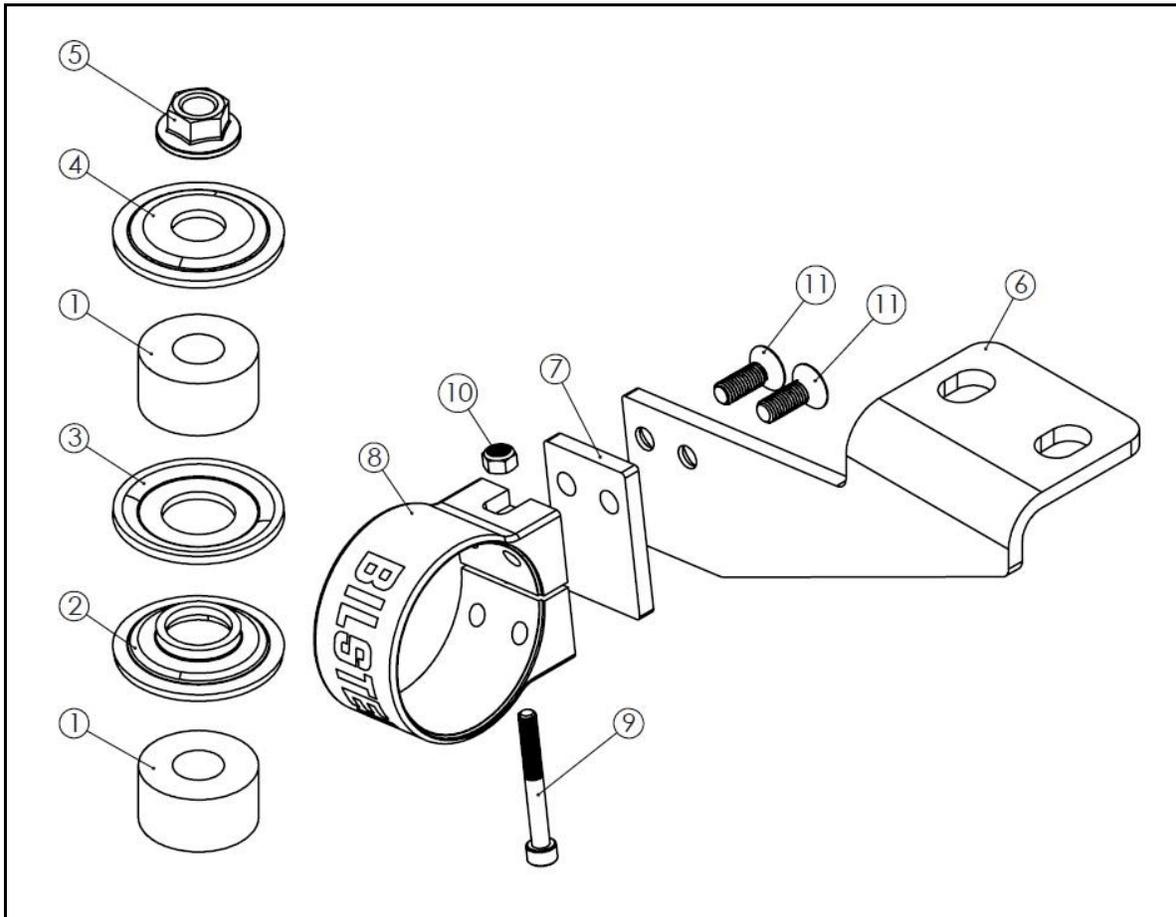
While installing any BILSTEIN product:

- 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 the vehicle is operated.

After installing any BILSTEIN product:

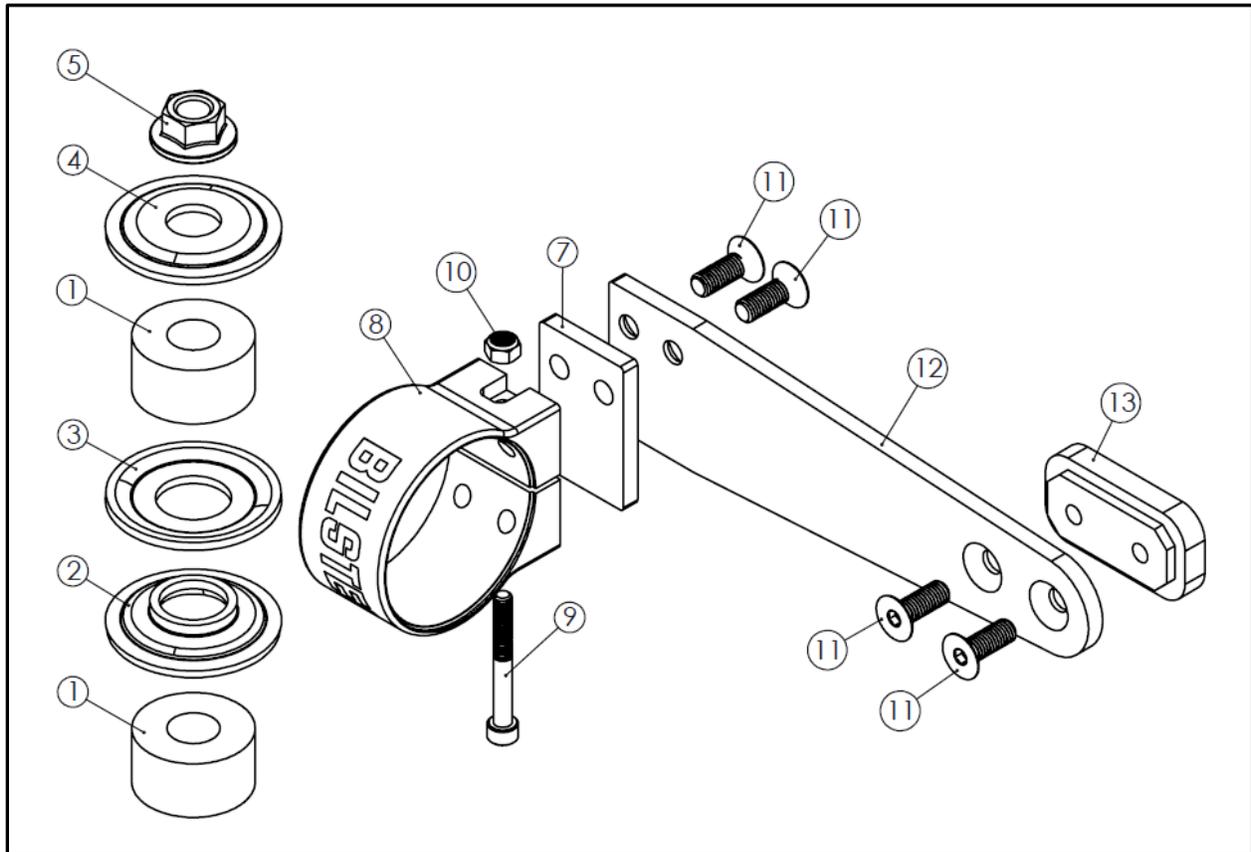
- The suspension caster and camber must be checked and/or adjusted to comply with the vehicle manufacturer's specifications.
- The (load dependent) brake compensator and the anti-lock brake system must be checked and/or reset to comply with the vehicle manufacturer's specifications.
- The headlight aim must be checked and adjusted.

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BILL OF MATERIALS – REAR LEFT		
Item #	Description	Qty
1	Bushing	2
2	Alignment Washer	1
3	Retaining Washer, 24.3mm ID	1
4	Retaining Washer, 17.8mm ID	1
5	Flange Nut, M12x1.25, 18mm Hex Head	1
6	Reservoir Support Plate	1
7	Reservoir Spacer	1
8	Reservoir Clamp	1
9	Stainless Steel Socket Cap Screw; M6x1; L = 50mm	1
10	Nylon-Insert Locknut; M6x1	1
11	Flat Head Screw; M8x1.25; L=22mm	2

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BILL OF MATERIALS – REAR RIGHT		
Item #	Description	Qty
1	Bushing	2
2	Alignment Washer	1
3	Retaining Washer, 24.3mm ID	1
4	Retaining Washer, 17.8mm ID	1
5	Flange Nut, M12x1.25, 18mm Hex Head	1
12	Reservoir Support Plate	1
7	Reservoir Spacer	1
8	Reservoir Clamp	1
9	Stainless Steel Socket Cap Screw; M6x1; L = 50mm	1
10	Nylon-Insert Locknut; M6x1	1
11	Flat Head Screw; M8x1.25; L=22mm	4
13	Reservoir Slot Bracket	1

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B8 8100 bypass shocks feature a proprietary BILSTEIN zinc plated finish. This finish must be serviced in order to maintain its luster. Particularly in moist climates, a protective coating, such as a wax or lubricating oil should be periodically applied to prevent tarnishing. This finish is not covered under warranty.

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: 25-284539) and right (P/N: 25-284522) rear shocks. Skip to page 10 and 11 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. Slide one of the bushings (BOM item #1) and the alignment washer (BOM item #2) over the threaded pin on the shock body as shown below.



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- C. Slide the threaded pin on the shock body through the chassis mount and carefully center the alignment washer (BOM item #2) in the mount hole. Slide the first Retaining Washer (BOM item #3) over the threaded pin concave up, followed by the second upper cushion (BOM item #1). Then slide the second Retaining Washer (BOM item #4) over the threaded pin concave down. Thread the M12x1.25 flange nut (BOM item #5) 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.



Left (Driver) Rear



Right (Passenger) Rear

- D. For the left rear, orient the bypass tubes facing towards the front of the vehicle with the reservoir tube clocked 45° outboard as shown above. Allow the reservoir to hang for now.
- E. For the right rear, orient the bypass tubes facing towards the rear of the vehicle with the reservoir tube clocked 45° outboard as shown above. Allow the reservoir to hang for now.

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- F. 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.)



Rear Left Reservoir Mounting

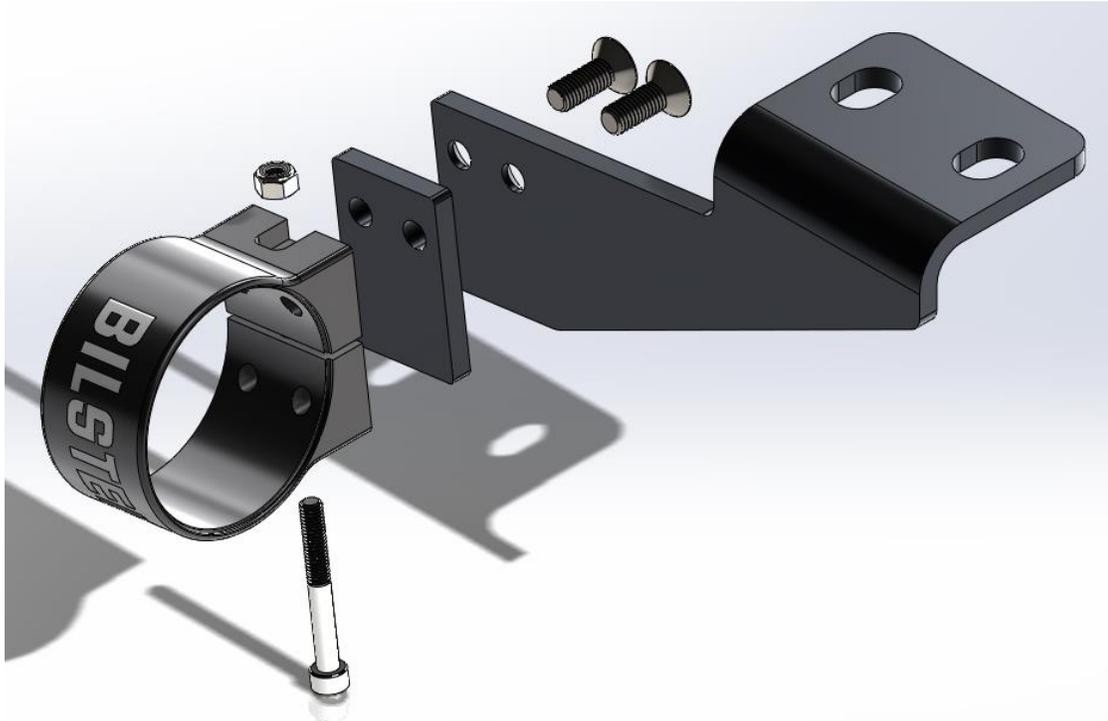
- G. Locate the two flanged hex head screws on the top of the frame behind the left rear wheel well (see circle in image below). Remove these two screws and set aside.



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- H. Assemble the reservoir bracket assembly as shown below. Apply non-permanent thread locker to the M8x1.25 Flat Head Screws (BOM item #11) and **torque to 16 ft-lb (22 Nm)**. Hand-tighten the Stainless Steel M6x1 Socket Cap Screw only. You will need this to be loose in order to slide the reservoir into the Reservoir Clamp. Also, make sure the nut is on the top as this will make it easier to tighten when installed on the vehicle.



- I. Using the two flanged hex head screws removed in Step G, install the bracket assembly back as shown in the image below.
Torque Flanged Hex Head Screws to 18 ft-lb (25 Nm).



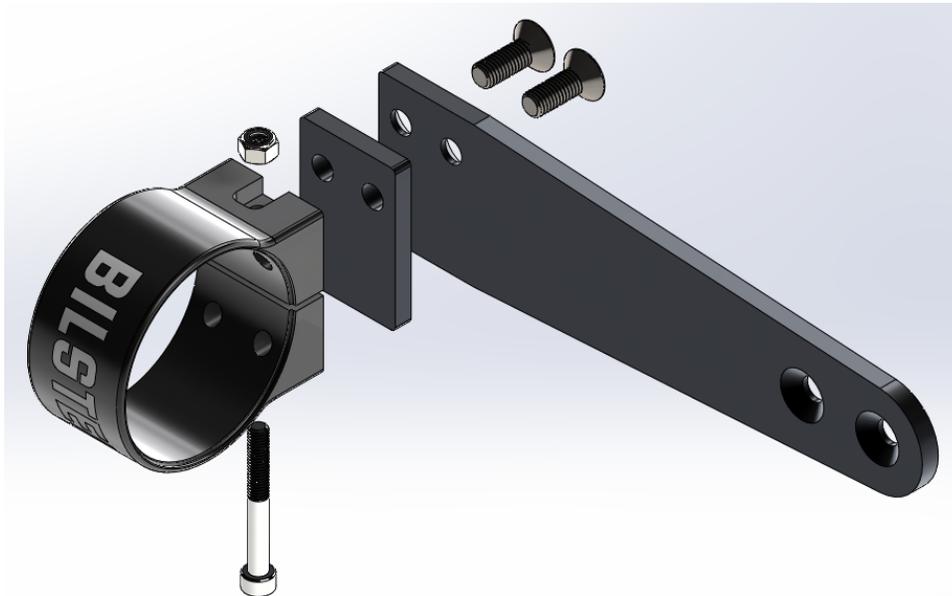
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- J. Now take the reservoir and slide it through the Reservoir Clamp (BOM item #8). If it does not slide in easily, loosen the M6x1 Socket Head Cap Screw slightly to allow the clamp to open a little.
- K. Position the reservoir in the Reservoir Clamp to allow enough slack in the hose and then tighten the M6x1 Socket Head Cap Screw.
Torque the Socket Head Cap Screw to 6 ft-lb (8 Nm).

Rear Right Reservoir Mounting

- L. Assemble the reservoir bracket assembly as shown below. Apply non-permanent thread locker to the M8x1.25 Flat Head Screws (BOM item #11) and **torque to 16 ft-lb (22 Nm)**. Hand-tighten the Stainless Steel M6x1 Socket Cap Screw only. You will need this to be loose in order to slide the reservoir into the Reservoir Clamp. Also, make sure the nut is on the top as this will make it easier to tighten when installed on the vehicle.



- M. Locate the rectangular slot on the frame in front of the right rear wheel well (see circle in image below).



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- N. Insert the Reservoir Slot Bracket (BOM item #13) into the slot from the inside of the vehicle frame as shown below.



- O. Using the other two M8x1.25 Flat Head Cap Screws, apply non-permanent thread locker and fasten Reservoir Bracket assembly to the Reservoir Slot Bracket as shown below.
Torque to 16 ft-lb (22 Nm).



- P. Now take the reservoir and slide it through the Reservoir Clamp (BOM item #8). If it does not slide in easily, loosen the M6x1 Socket Head Cap Screw slightly to allow the clamp to open a little.
- Q. Position the reservoir in the Reservoir Clamp to allow enough slack in the hose and then tighten the M6x1 Socket Head Cap Screw.
Torque the Socket Head Cap Screw to 6 ft-lb (8 Nm).

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Final Shock Mounting

- R. After mounting the reservoirs, ensure the main shock body is still oriented in the position described in Steps D and E.
- S. Once the shock body is oriented properly, thread the Flanged Locknut onto the threaded pin on the shock body.
Torque the Flanged Locknut to 20 ft-lb (27Nm).
- T. 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.
- U. 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.

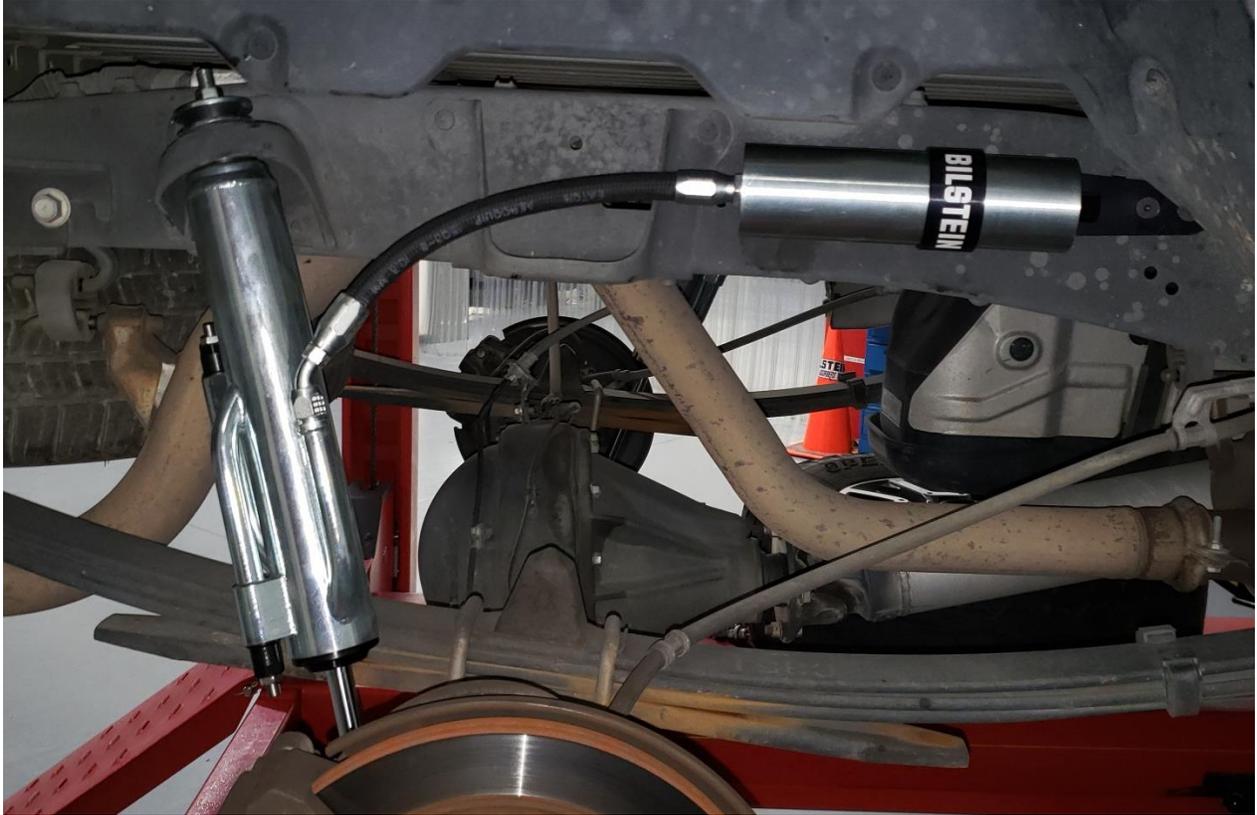
Final left rear (driver) 25-284539 B8 8100 bypass shock installed on vehicle:



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Final right rear (passenger) 25-284522 B8 8100 bypass shock installed on vehicle:



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

Rebound – 6 full turns out from fully closed
Compression – 7 full turns out from fully closed

Note: The bypass adjusters allow adjustment up to 10 full turns out from fully closed.

B8 8100 bypass adjustment procedure:

1. Using an Allen key, hold the adjuster screw from rotating. Loosen the jam nut from the bypass adjuster housing. Back it off far enough that you can make the adjustment without the jam nut bottoming out.
2. Rotate the Allen key to make the desired adjustment.

TURN IN (Clockwise) the adjuster screw to **INCREASE** damping

TURN OUT (Counter Clockwise) the adjuster screw to **DECREASE** damping

3. Tighten the jam nut against the bypass adjuster housing while using the Allen key to hold the adjuster screw from rotating.

Make sure the bypass adjuster housing does not loosen during the adjustment process. It may be necessary to hold the bypass adjuster housing with the appropriate wrench while loosening the jam nut.

B8 8100 bypass service:

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

THYSENKRUPP BILSTEIN OF AMERICA
14102 Stowe Dr.
Poway, CA 92064, USA

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