



PRODUCT: **JK 2.5" Dual-Rate Lift Kit**

REV: I | 08-04-2022 | II-7116

**READ INSTRUCTIONS IN FULL BEFORE INSTALLATION.**  
**QUESTIONS? CALL 916-631-8071 M-F 7:00 AM – 5:00 PM PST**

The MetalCloak experience includes the ease of installation of our products. We design for most contingencies, but installation may be different based on different Jeep condition, configuration and/or year.

We are continually trying to improve our products and instructions – please help us by providing feedback and pictures if you find any part of the instructions that do not match your particular Jeep or are not easily understandable.

If you have any difficulties at all, please give us a call. Thank you and enjoy your MetalCloak Products!

**IMPORTANT NOTE: We use Stainless Steel Hardware where possible. Therefore, a tube of Silver Anti-seize is provided and should be used on all bolts—only a small amount is needed.**

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**SUSPENSION WARRANTY INFORMATION:** MetalCloak products are warranted to be free of defects in material and workmanship for one year from the original purchase date. All products produced by MetalCloak are designed exclusively for off road applications and therefore do not have any warranty or guarantee of performance. No warranty or representation is made as to this products ability to protect the user from injury or death. The user assumes that risk. Because of the wide variety of applications of our products, the effectiveness, warranty and longevity of this equipment are directly related to the manner in which it is installed, used and/or maintained. The entire risk as to the quality and performance of these MetalCloak products is with the purchaser. Working on your vehicle can be a dangerous activity. If you are unsure of what you are doing, please leave mechanical or safety critical work to a skilled mechanic. We take no responsibility for how MetalCloak products are installed.

# Section 1: Tools & Notes on Installation



**Tools Required:** This list is the recommended tools for ease of installation. Other versions of the same tool can be used. For example, Allen Wrenches instead of Allen Drive Sockets. Be sure to use metric on metric and SAE on SAE.



Socket & Ratchet Wrench

Metal Head Hammer



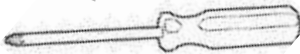
10" Socket Extension

Electric Drill



Center Punch

Philips Screwdriver



Retaining Ring Pliers

5/16" Allen Drive Socket  
5/32" Allen Drive Socket



Cut-Off Disc and Grinder  
*(Optional)*

12mm Brake line Wrench  
17mm Brake line Wrench



10mm Socket    11mm Socket  
12mm Socket    14mm Socket  
15mm Socket    16mm Socket  
18mm Socket    21mm Socket  
5/8" Socket    3/4" Socket  
13/16" Socket    7/8" Socket  
1/2" Socket

12mm Wrench    14mm Wrench  
17mm Wrench    18mm Wrench  
19mm Wrench    1-1/2" Wrench  
1-7/8" Wrench    3/4" Wrench  
9/16" Wrench    3/8" Wrench  
5/8" Wrench    9/32" Wrench  
1/2" Wrench



I Drill Bit    L Drill Bit  
1/4" Drill Bit    1/2" Drill Bit  
7/16" Drill Bit    9/16 Drill Bit

## Section 1: Tools & Notes on Installation



**HOW TO USE THIS GUIDE:** The installation guide contains ALL steps for installation. Please read and follow the instructions in order of each page top to bottom, and left to right.

**Jeep Model:** Instructions may apply to multiple Jeep models, but are labeled separately where appropriate (i.e. TJ vs. LJ).

**Options:** Because of the number of component options we offer, these instructions may contain steps that will not match your particular configuration. You can skip these steps.

**Images:** Pictures are provided and parts are labeled throughout the instructions. Each text box contains guidance based on the pictures next to it. The text will refer to alphabetical labels (A, B, etc) found in the images.

**Installation Notes:** Terms may be used in the body of the instructions that you may not be familiar with, if you have any questions feel free to contact us at the number below, or email [techhelp@metalcloak.com](mailto:techhelp@metalcloak.com)

**QUESTIONS:** Any questions or comments about the instructions? Call us at 916-631-8071 M-F 7:00 AM – 5:00 PM PST.

# Section 4: Product Components

DC-0001 REV A

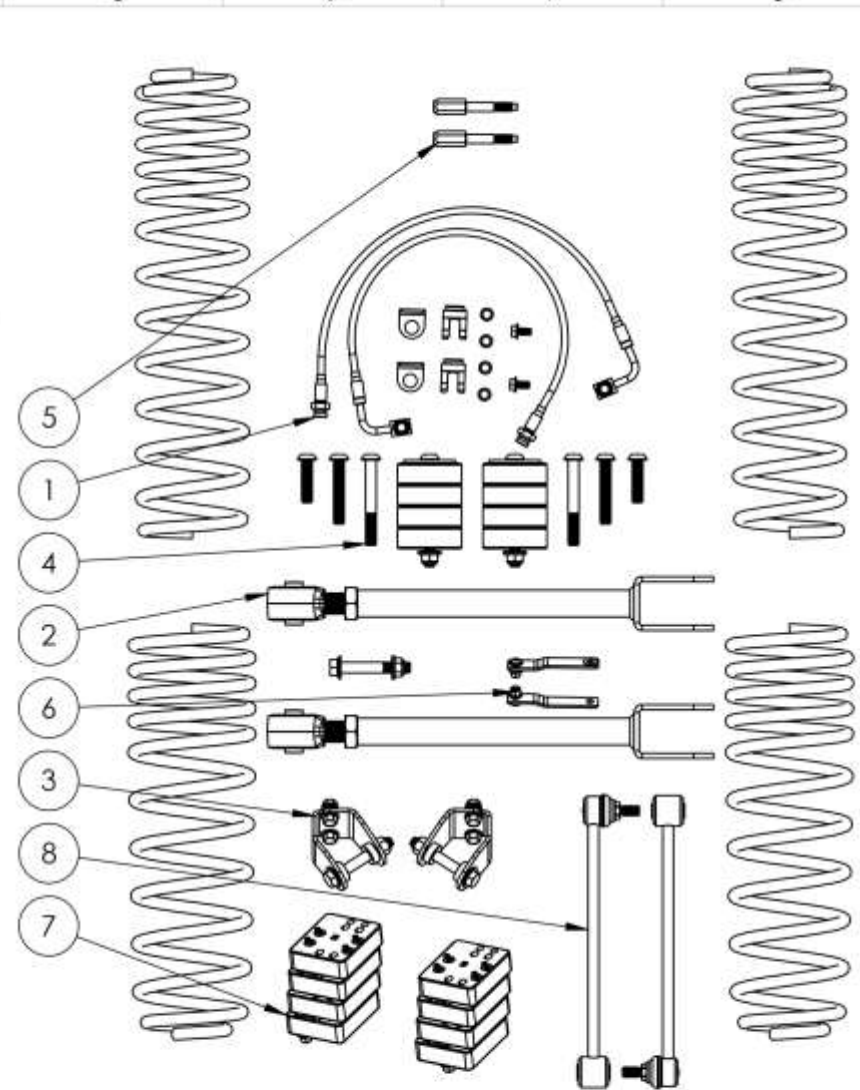
SHEET 1 OF 1

ITEM	PART NUMBER/DESCRIPTION	QTY
1	1101 BRAKEQUIP KIT, JK FRONT-REAR 24.5L	1
2	7002 CONTROL ARMS, JK UPPER FRONT	1
3	7025 STOCK SHOCK MOUNT KIT, JK LOWER REAR	1
4	7040 BUMP STOP KIT, 1.0-4.0 JK FRONT	1
5	7041 STOCK SHOCK EXTENSION KIT, JK FRONT	1
6	7042 STOCK BRAKE LINE RELOCATION, JK	1
7	7043 BUMP STOP KIT, 1.0-4.0 REAR	1
8	7270 SWAY BAR LINK KIT, 12.25IN REAR	1

**REQUIRED**  
BACKSPACING LESS THAN 5.5"

**OPTION 1**  
RUBICON (RELEASABLE SWAY BAR)  
7015 SWAY BAR LINK KIT, 12.25IN FRONT  
NON RUBICON (SOLID SWAY BAR)  
7014 SWAY BAR QUICK DISCONNECT, 12.25 INCH JK

**OPTION 2**  
4 DOOR UNLIMITED  
7009 DUAL RATE COIL SPRING SET, 2.5 INCH JK 4DR  
2 DOOR  
7022 DUAL RATE COIL SPRING SET, 2.5 INCH JK 2DR



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**DO NOT SCALE DRAWING**

**METAL CLOAK**  
A DIVISION OF ARMORED WORKS, LLC

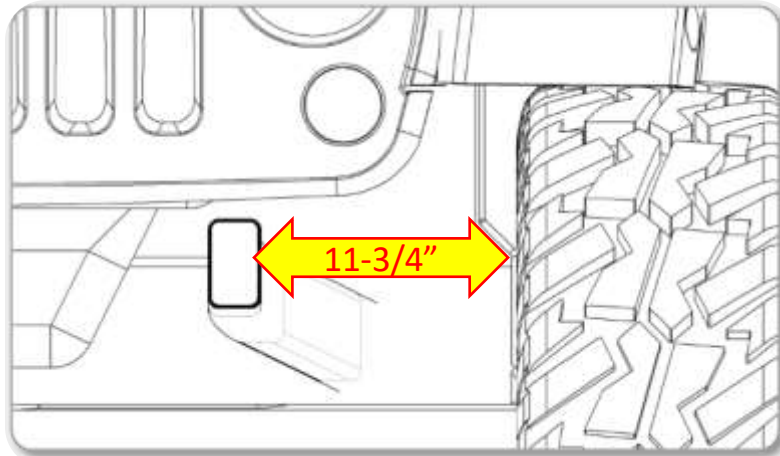
**PART NUMBER DESCRIPTION** 7116 DUAL-RATE LIFT KIT, 2.5IN JK

## Section 2: FRONT SUSPENSION Installation Instructions



**Important Note:** MetalCloak does not recommend powder coating your True Dual Rate Coils. The baking process in powder coating can, in some cases, cause the metallurgical properties of the coils to be changed, resulting in the loss of the lift properties of the coils. As such, the process of powder coating the coils will void any warranty stated or implied in relation to the coils.

**Important Note:** To install lift components you will need to fully 'droop' your suspension in the front and rear (though not at the same time). We strongly recommend that the vehicle be placed on an automotive lift and that all appropriate safety precautions be taken to secure the vehicle while it is off the ground. Always use the necessary axle stands (or equivalent) to support the axle when the suspension components are disconnected for safety, and to ensure the integrity of your suspension system during the installation process.



**Important Note:** To prevent tires from rubbing the shocks at full turn and flex, a clearance of 11-3/4" between inner wall of the tire and the outside of the frame rail is recommended. Wheel backspacing, wheel spacers, axle width and tire width can effect this value. We recommend a wheel backspacing of less than or equal to 4.0" for most common vehicle builds.

**Important Note:** MetalCloak provides "rear specific" end-links that have shorter bolt lengths that will keep for optimal fitment.

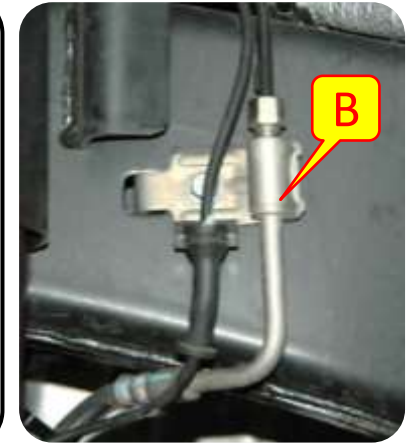


## Section 2: FRONT SUSPENSION Installation Instructions



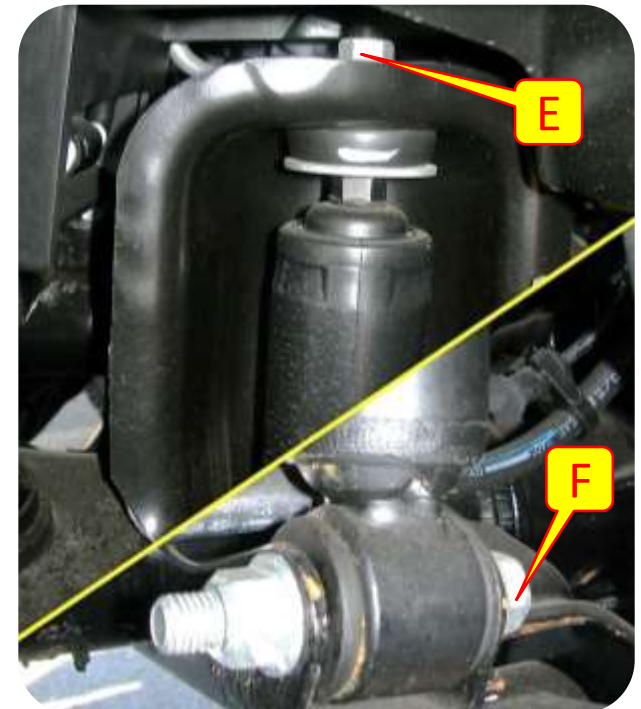
### Step 1: Remove Stock Components

- A. Disconnect front sway bar links.
- B. Watch the brake lines as the axle drops! Unbolt the bracket from the frame in case the lines are stretched while working.
- C. Remove the front track bar.
- D. Remove stock springs, and any spacers that have been used if vehicle has been previously lifted.



### Step 1: Remove Stock Components

- A. Use a 16MM (5/8") Socket and Wrench to remove the stock nut on top of the upper shock mount tower.
- B. Use a 19MM (3/4") Socket and Wrench to remove the stock nut and bolt from the lower shock mount bracket located on the axle.
- C. Remove stock front shocks.

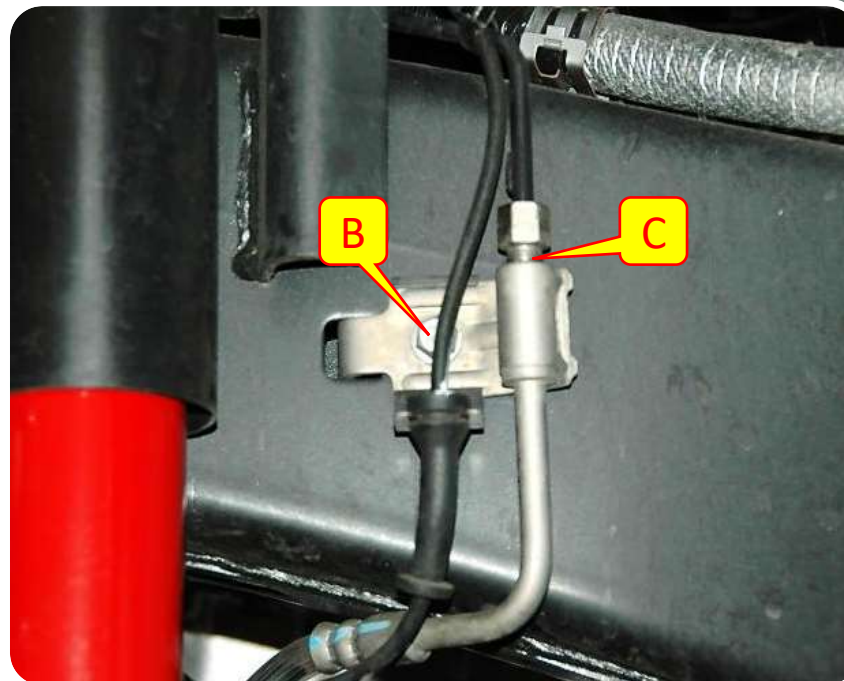
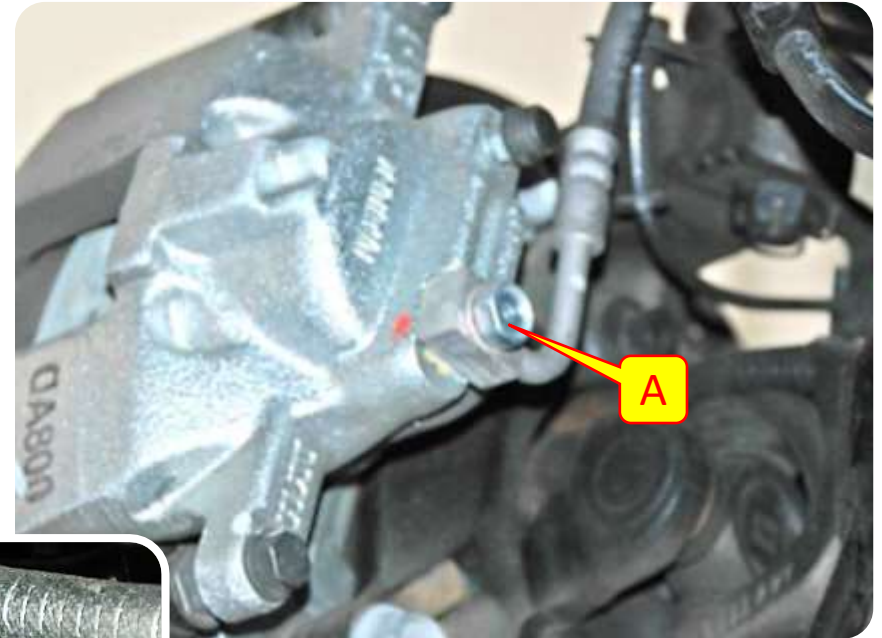


## Section 2: FRONT SUSPENSION Installation Instructions



### Step 2: Install Front Brake Line

- A. Use a 15mm Socket to remove the 'banjo' bolt from the brake calipers. You will want an oil drain pan to catch the brake fluid.
- B. Unclip the ABS line from the brake line (all the way down), and use a 10mm Socket to remove the bolt holding the stock bracket. Remove the frame clip and discard.
- C. Use a 12mm Wrench to unscrew the stock brake line from the frame bracket.

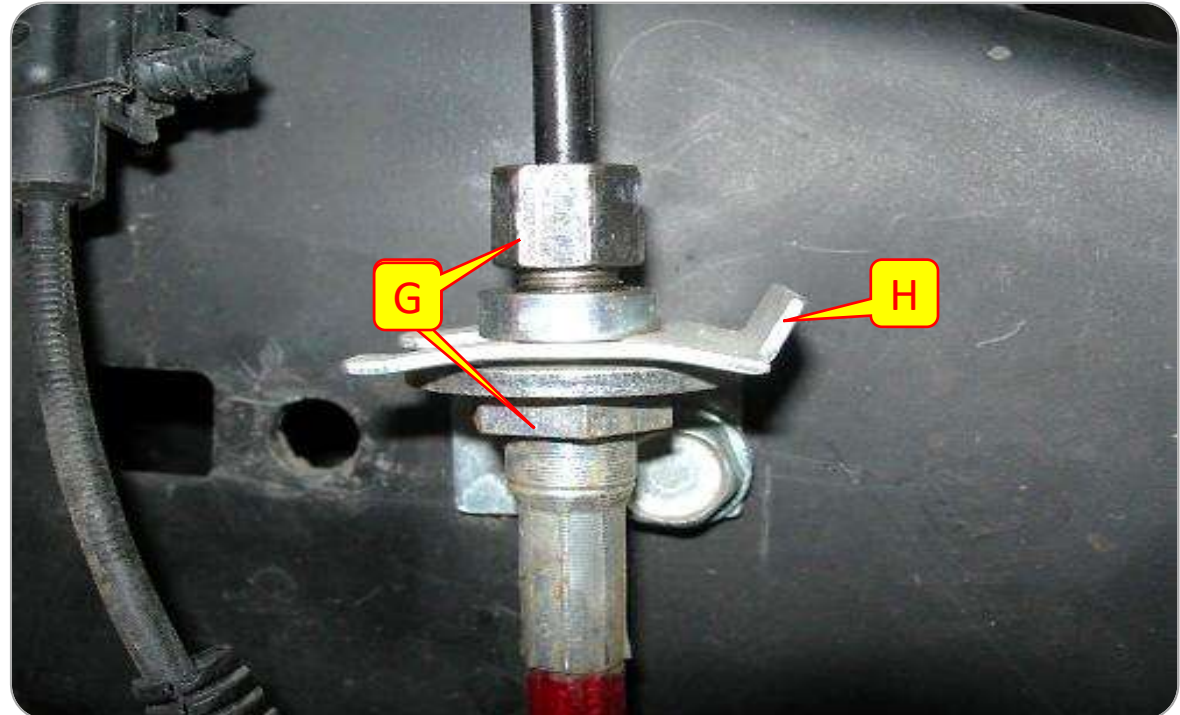


## Section 2: FRONT SUSPENSION Installation Instructions



### Step 2: Install Front Brake Line

- D. Place the L-bracket on the frame in the factory location using the factory hardware.
- E. Install the 24-1/2" Brake Line through the bracket.
- F. Screw the stock line into the new Brake Line, and tighten using a 12mm and 17mm Wrench.
- G. Install the provided Spring Clip to retain the Brake Line in the Bracket. You may need a hammer to lightly tap this clip into place.
- H. Use a 1/2" Socket to install the 5/16"-18 Hex Head Self-Tapping Screw. Do not fully tighten.
- I. Feed the banjo bolt through the square end of the brake line. Use the provided brass washers on both sides of the brake line as shown.
- J. Re-install the banjo bolt into the brake caliper.
- K. Zip-tie the ABS lines to the new brake lines.





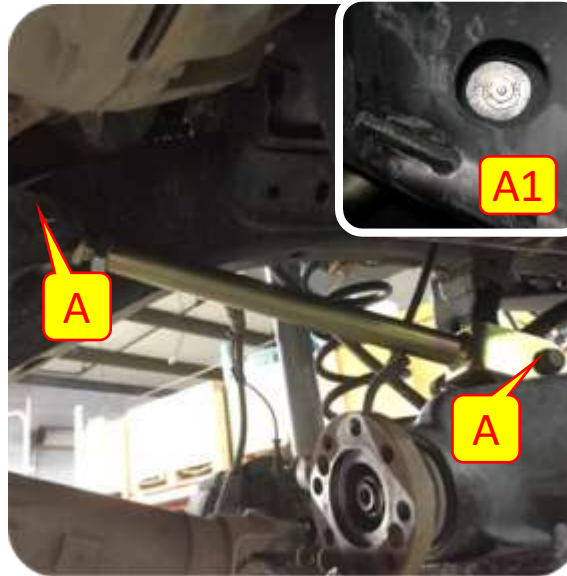
## Section 2: FRONT SUSPENSION Installation Instructions



**Important Note:** MetalCloak ships control arms at the approximate length for 3.5" lift kits. if you are doing a 2.5" kit, they control arms will need to be adjusted. whether 3.5" or 2.5" if you do not know the full dynamics of how to set up your control arms, please take your jeep to a professional for adjusting your caster and aligning your suspension.

### Step 3: Swap Control Arms (Front Uppers)

- A. Use an 18mm Socket & Wrench to remove the stock bolts. You will need a socket extension to access the head of the upper bolt inside the frame [A1].
- B. The exhaust on the passenger side of some models interferes with removal of the upper bolt. Cut the stock bolt and replace it with the 1/2-13 x 3 1/4" Flange Hex Head Bolt and 1/2"-20 Hex Flange Nut provided, install bolt from the outside of frame and the nut inside the frame.



Use the chart below to identify and pre-set the length of your Control Arms. Hand tighten the Lock Nuts, for now.

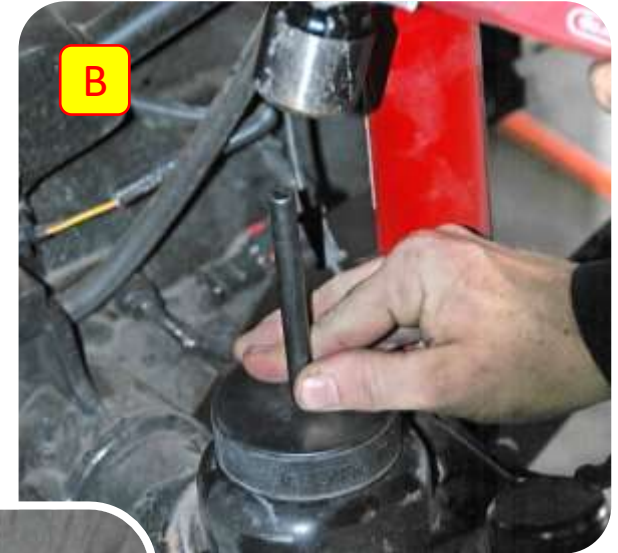
		Front Control Arms		Rear Control Arms	
	Castor Angle	Lower	Upper	Lower	Upper
<b>Factory Control Arms</b>	Stock	22 5/8"	18 3/4"	19 3/4"	17 7/16"
<b>MetalCloak 2.5 - 3.5" Lift</b>	5 Degrees	22 5/8"	18 3/8"	19 3/4"	17 7/16"

## Section 2: FRONT SUSPENSION Installation Instructions



### Step 4: Install Front Bump Stops

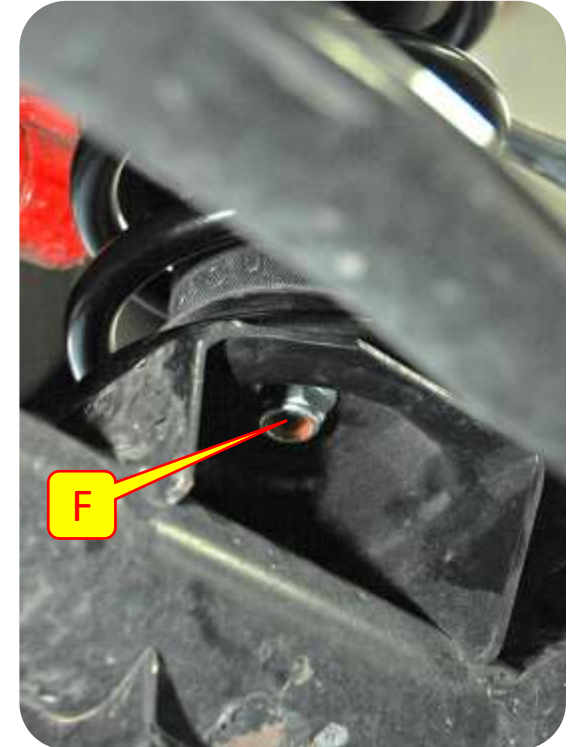
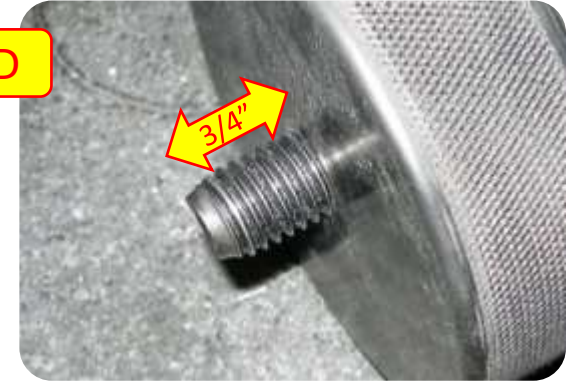
- A. Center a Bump Stop Disk on the top of the spring perch and mark the center of the hole.
- B. Drill a hole at the marked location. You can use any drill size from size 1/2" to size 9/16".



## Section 2: FRONT SUSPENSION Installation Instructions

### Step 4: Install Front Bump Stops

- D. Select the appropriate Screw length so that the threads stick out of the bottom Disks approximately 3/4". Assemble your bump stops by feeding the 1/2" Countersunk Screw through the Cover Plate, and then threading through the Bump Stop Disks. The center hole in the Disk is intentionally small to create the most rigid assembly possible after installation.
- E. **IMPORTANT!** Place the assembled Bump Stop inside the spring before re-installing. Re-install the spring and place the end of the 1/2" Screw in the drilled hole.
- F. The 1/2" Screw is backed by a 1/2" Flanged Nylon Lock Nut. Install the nut and tighten the hardware using a 5/16" Hex Key Socket or Allen Wrench and a 3/4" Wrench. Tighten until everything is tight; the hardware will not bottom out, but instead will begin to compress the Disks.
- G. Repeat all steps for other side.



## Section 2: FRONT SUSPENSION Installation Instructions



### Step 5: Install Dual Rate Coils

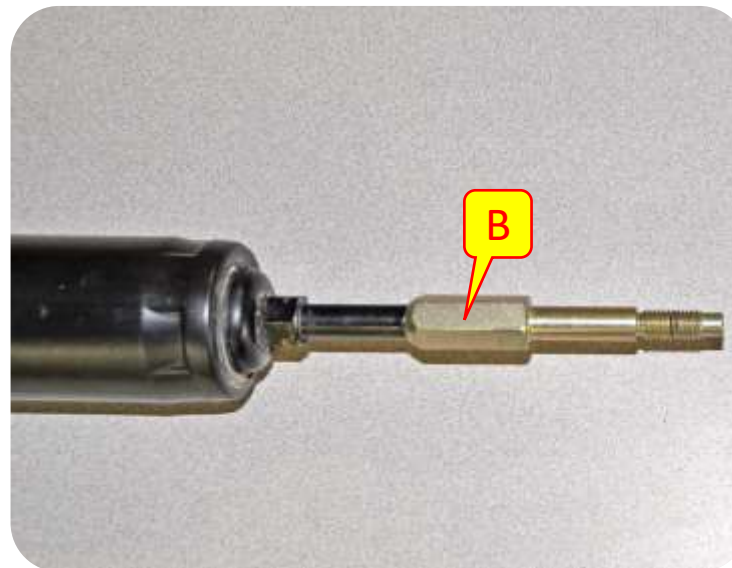
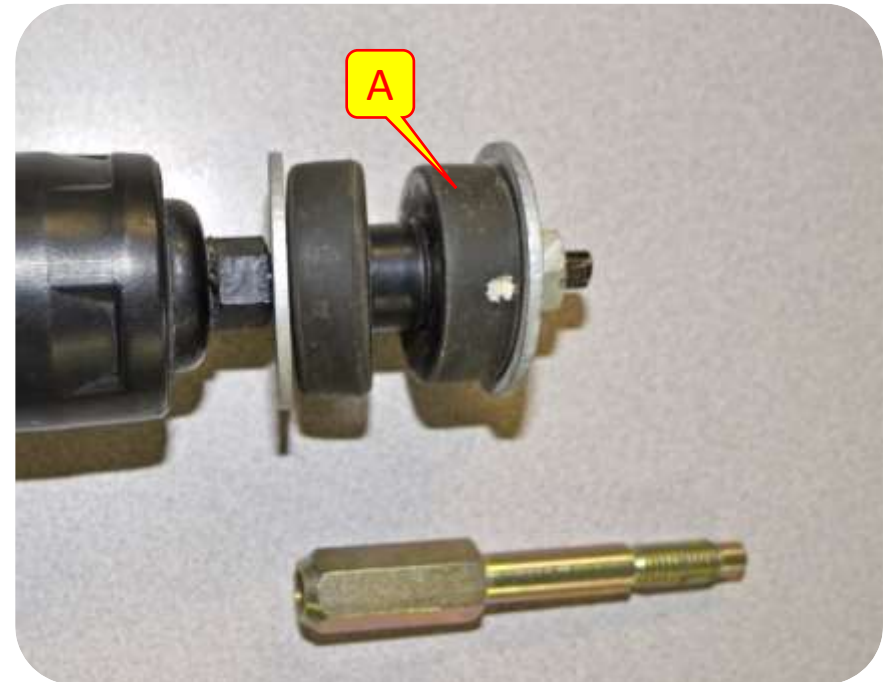
- H. If the axle does not “droop” enough to allow the coil to be put in place a coil compressor can be used to compress the coil to allow fitment.
- I. Install Front Dual Rate Coils with the tightly wound coils oriented upward.
- J. Slip the bottom of the coil onto the coil base on the axle.
- K. Reconnect all disconnected parts except for the shocks.



## Section 2: Installation Instructions

### Step 6: Install Shock Extenders

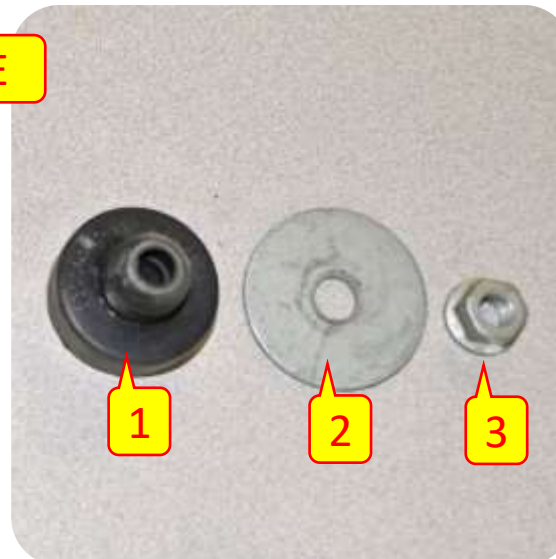
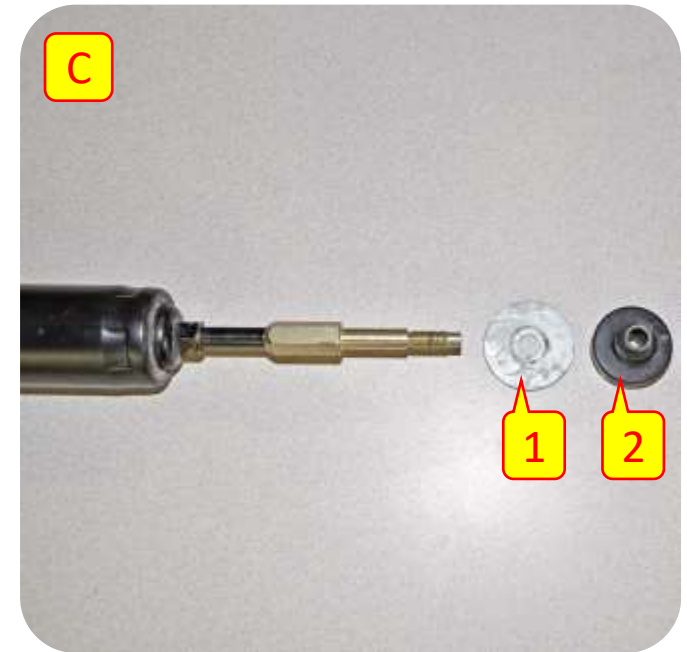
- A. Take rubber isolators and washers off of the top of the shock on the top of the shock (threaded side, Save all hardware for re-installation).
- B. Thread the shock extender on top of the shock (threaded side).



## Section 2: Installation Instructions

### Step 6: Install Shock Extenders

- D. Re-install washer (1) and rubber isolator (2).
- E. Place shock back in location under the Jeep.
- F. Install the upper half of the rubber isolator(1) and washer(2) (threaded side).
- G. Bolt shock back in place with the nut on top and bolts on the bottom.
- H. Tighten to torque specs (56lbs).



## Section 2: FRONT SUSPENSION Installation Instructions



### Step 8: Install Sway Bar Links

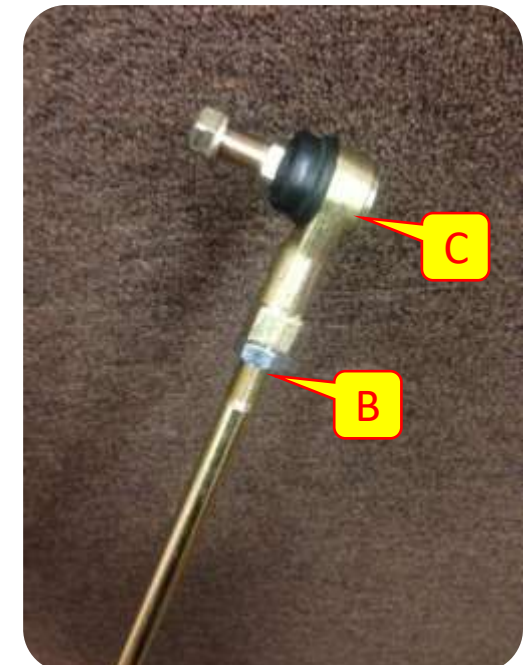
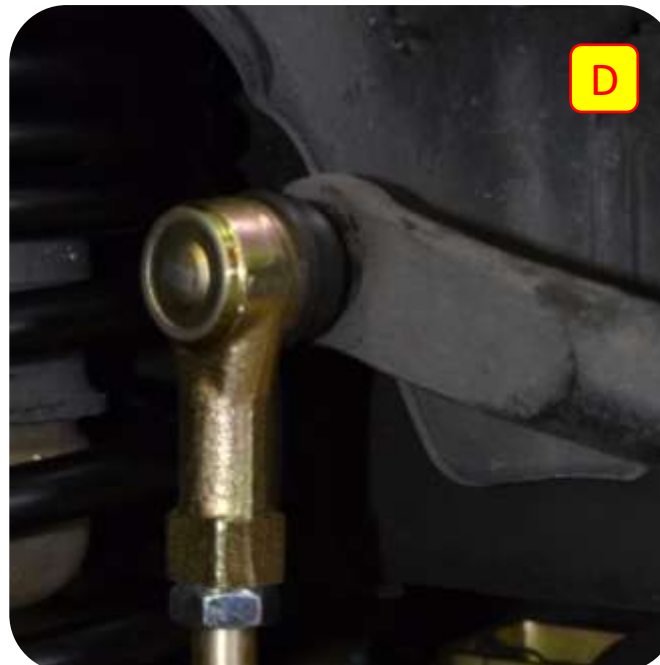
**Note:** These sway bar link instructions are for the non-rubicon sway bar disconnect links. If you have the Rubicon sway bar links re use stock sway bar links.

#### Important Note:

MetalCloak recommends using red Loctite on each of the upper spindles of the sway bar end links.



- A. Install the lower quick disconnect pin in the stock location. Point the pin toward the center of the vehicle, backed by the provided  $\frac{1}{2}$ "-13 hardware. A screwdriver through the hole on the end of the pin is helpful while tightening the nut with a  $\frac{3}{4}$ " wrench.
- B. Assemble the sway bar link by threading a jam nut onto the lower link.
- C. Now thread the link into the ball joint. Set the length to 12.25". Do not tighten Jam nut yet.
- D. Install the ball joint on the outside of the sway bar end. You will need a thin  $\frac{9}{16}$ " box end wrench to keep the ball joint from turning while you tighten the nut with a  $\frac{5}{8}$ " wrench.

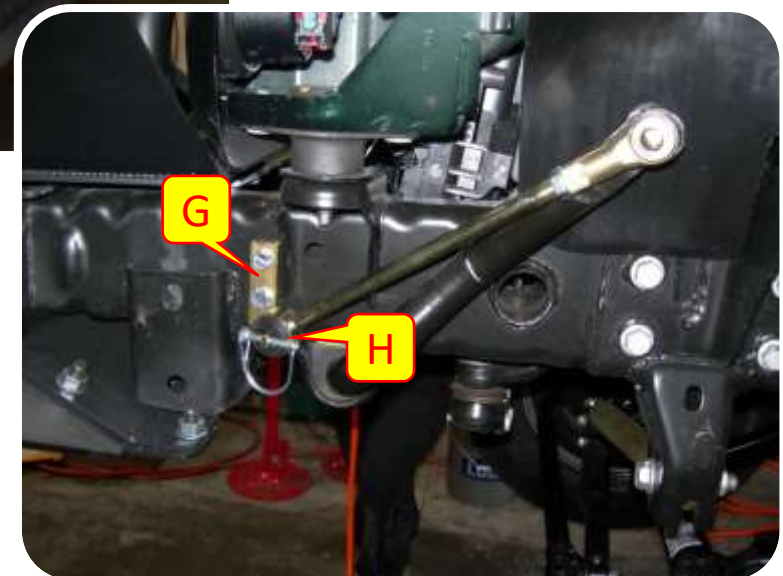


## Section 2: FRONT SUSPENSION Installation Instructions



### Step 8: Install Sway Bar Links

- E. Installed lower rubber bushing on the quick disconnect pin.
- F. Tighten the jam nut.
- G. Disconnect the links and align the provided brackets in the desired location. There is no exact location; the goal is simply to keep the sway bar clear of the tires when stowed. Mark the locations and drill with a 9/32" drill bit. Install the self-tapping screws through the bracket using a 1/2" wrench.
- H. Re-attach the links to the lower pins and install the 1/4" Locking Pins. These may be snug against the rubber bushing, so don't be surprised if you need to use a little muscle to push them through.





## Section 3: REAR SUSPENSION Installation Instructions



**Note:** When lifting any vehicle, basic dynamics are changed. It is important for you to take your vehicle to a professional for alignment after installation. When doing so, make sure he is setting caster for lifted vehicle (not stock specs).

### Step 1: Remove Stock Components



- A. Disconnect rear sway bar links.
- B. Disconnect rear brake lines.

**Note:** The steps to replace the rear brake lines are essentially identical to the front. The only difference is that in the upper rear you will re-use the stock screw and frame clip. Use the M6 screw to install the L-Bracket in the stock location, and then install the Brake Line following the same steps as the front.

- C. Remove the shocks.
- D. Remove stock springs, and any spacers that have been used if vehicle has been previously lifted

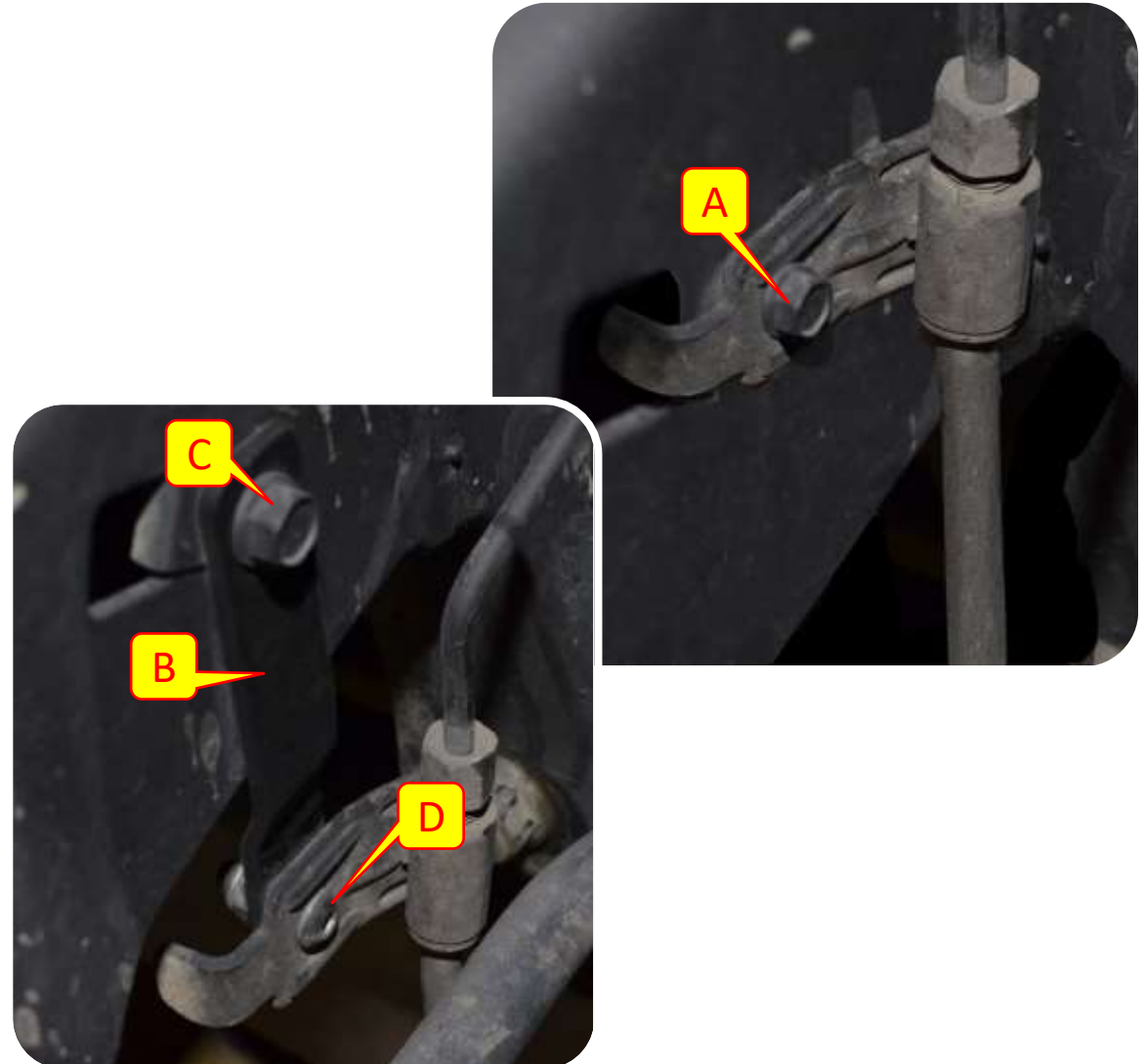
## Section 3: REAR SUSPENSION Installation Instructions



### Step 2: Install Stock Brake Line Relocation Bracket

- A. Unclip the ABS line from the brake line (all the way down), and use a 10mm Socket to remove the bolt holding the stock bracket (Keep frame clip attached to frame).
- B. Stock Brake Line Relocation Bracket.
- C. Place a provided washer behind Stock Brake line relocation bracket and using original hardware use 10mm socket to install bracket in factory location.
- D. Using hardware provided attach brake line bracket to relocation bracket using a 11mm (7/16") socket and a 5/32" hex drive socket or allen wrench.

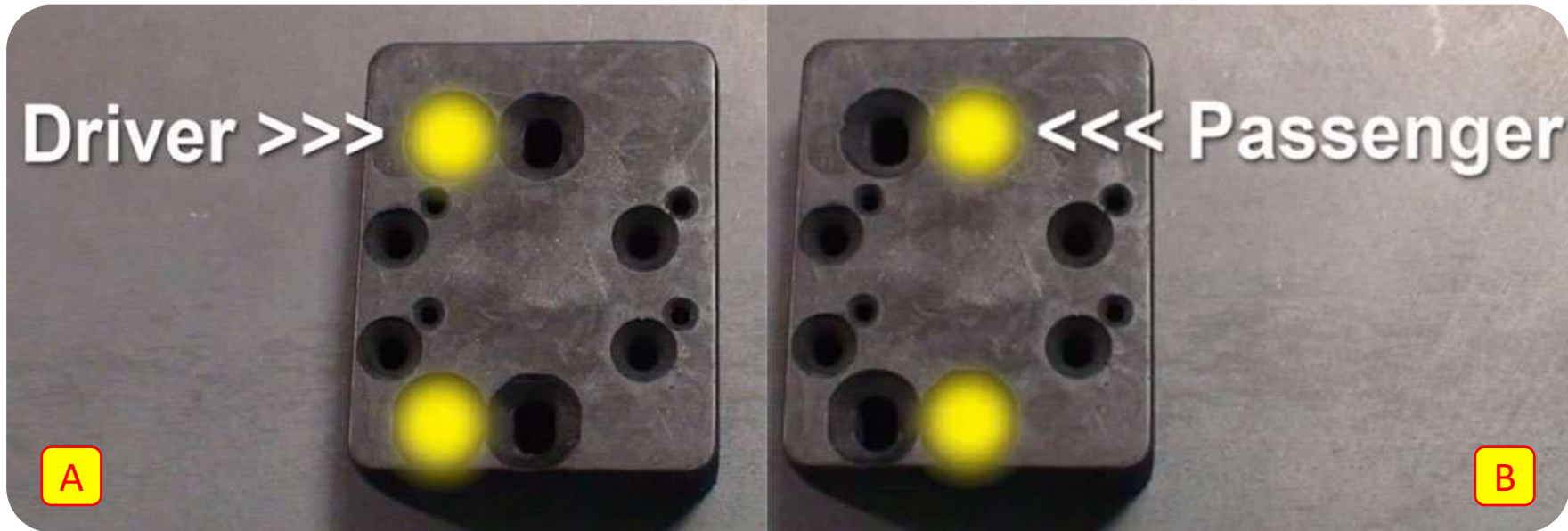
**Note:** You do not have to bleed the rear breaks.



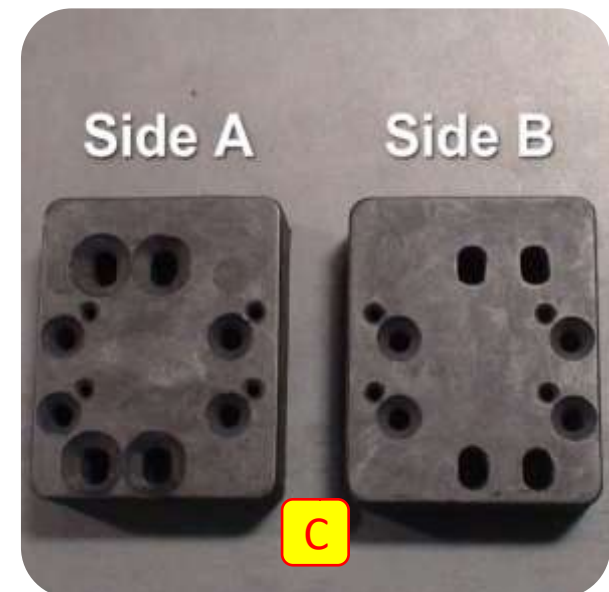
## Section 3: REAR SUSPENSION Installation Instructions



### Step 3: Install Rear Bump Stops



- A. Driver Side Bump Stop Holes.
- B. Passenger Side Bump Stop Holes.
- C. Diagram showing the two sides of the Bump Stops.



## Section 3: REAR SUSPENSION Installation Instructions



### Step 3: Install Rear Bump Stops

- D. Install first bump stop puck (Side A) using the correct holes (shown in step A and B) using the 5/16 bolt with the matching nut and washer.
- E. Install next puck (Side B) using the 1 3/4" woodscrews.
- F. Continue until desired bump stop height (Side A/Side B/ Side A/Side B).



### Step 4: Install Sway Bar Links

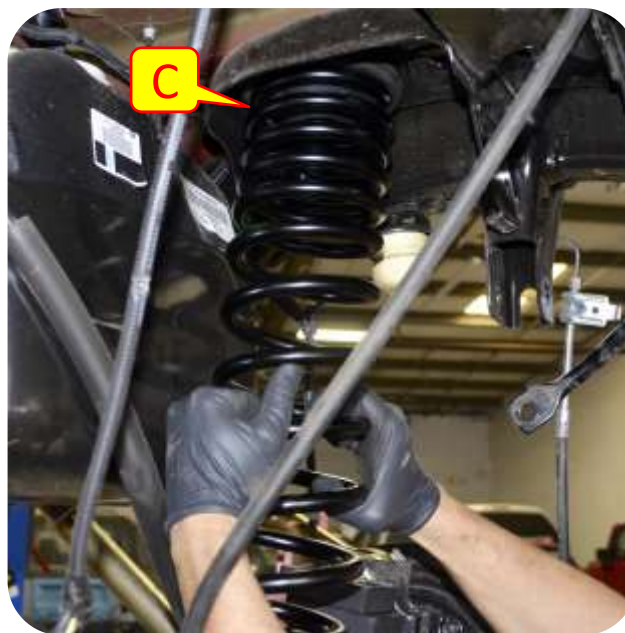
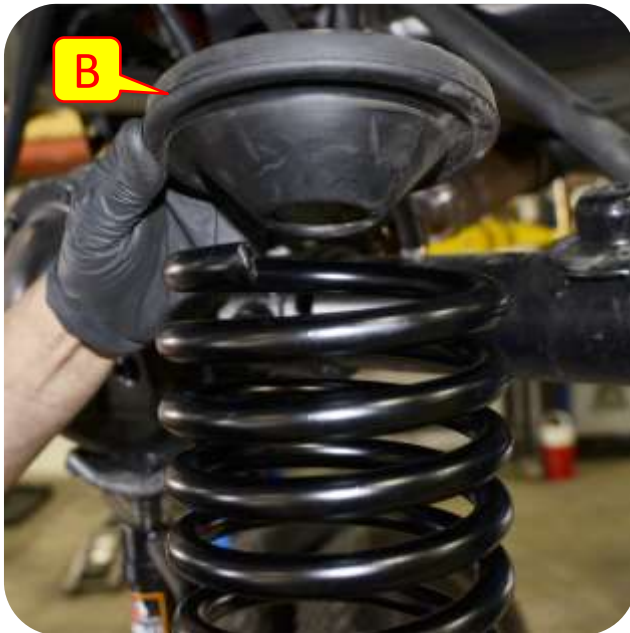
- A. Reconnect the stock rear sway bar links.

## Section 3: REAR SUSPENSION Installation Instructions



### Step 6: Install Rear Dual Rate Coils

- A. If the axle does not “droop” enough to allow the coil to be put in place a coil compressor can be used to compress the coil to allow fitment.
- B. Place the Rear Coil Cup on top of the Rear Dual Rate Coil.
- C. Install Front Dual Rate Coils with the tightly wound coils oriented upward.
- D. Slip the bottom of the coil onto the coil base on the axle.



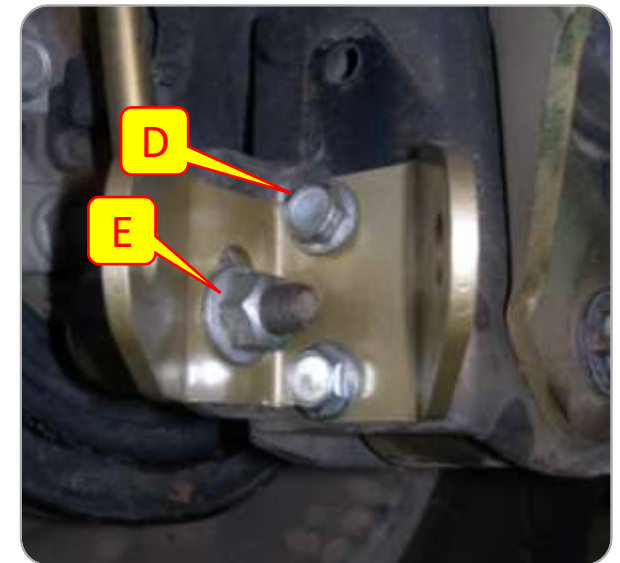
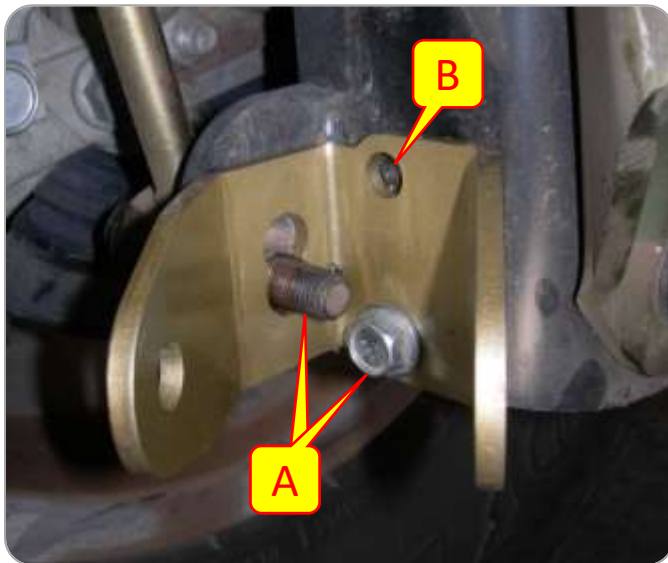
## Section 3: REAR SUSPENSION Installation Instructions



### Step 7: Install Shock Mount Bracket

- A. Locate the MetalCloak Lower Shock Mount Bracket (Bracket is symmetrical and can be reversed for Driver and Passenger Side) using the stock holes. The lower hole of the “figure 8” opening of the Shock Mount Bracket aligns with the stock sway bar link hole as shown.
- B. Mark the upper hole on the Shock Mount Bracket to be drilled.
- C. Remove Shock Mount Bracket and drill marked hole with a 7/16” Drill. The axel mount is made from a very hard steel, and we recommend drilling a 1/4” (or similar) pilot hole first.
- D. Install the 3/8”-16 Flange Hex Head Screws and Nuts using a 9/16” Socket and Wrench.
- E. Reinstall the stock sway bar link bolt. Fully tighten all hardware.

**Important Note:** Depending on your suspension setup, you may need to leave the sway bar links disconnected until after the shock installation.

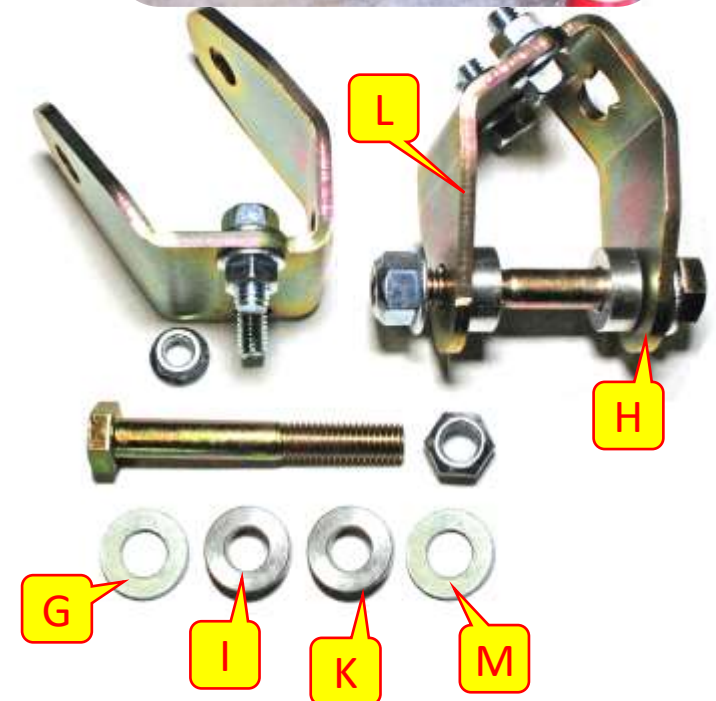
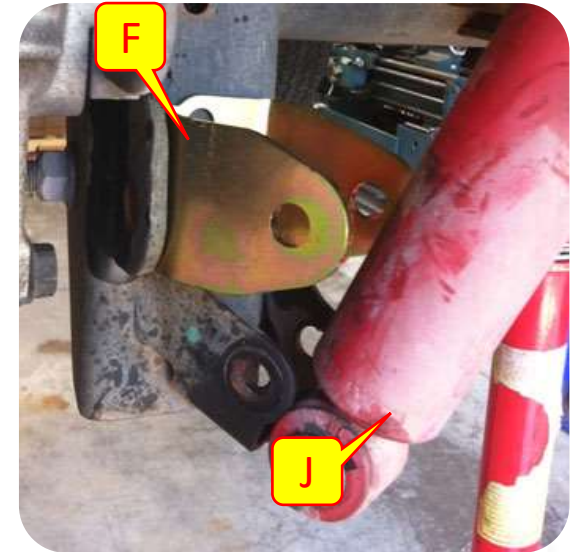


## Section 3: REAR SUSPENSION Installation Instructions



### Step 7: Install Shock

- F. Install the rear shock to the new shock mount using the provided bolt.
- G. Slip on a washer.
- H. Slide bolt through one side of the bracket.
- I. Add first spacer.
- J. Slide shock onto bolt.
- K. Add second spacer.
- L. Slip bolt through second part of bracket.
- M. Add second washer and nut.
- N. Tighten bolt.



**Important Note: If you trim the factory shock mounts for clearance when upgrading your shocks, you may be limiting up-travel unless using MetalCloak's 6Pak Shocks!!!!!!**

## Section 3: REAR SUSPENSION Installation Instructions



### Step 8: Finalize Installation

- A. Adjust the caster angle and toe as needed. Once set, tighten all hardware. Again tighten all hardware. Finally, tighten the jam nuts on all control arms.

### Step 9: Bleed Brakes

**CAUTION!! FAILURE TO PROPERLY BLEED THE BRAKE LINES WILL CAUSE YOUR BRAKES TO BE INEFFECTIVE.** *Before your vehicle is ready to drive you will need to refill the brake reservoir and bleed the air out of the brake lines. If you are not experienced with this process, or have any reservations, consult a professional. For a full write-up of the brake bleeding process for your JEEP Wrangler JK, you can also refer to <http://project-jk.com/jeep-jk-write-ups/jeep-jk-wrangler-maintenance-bleeding-your-brakes>.*



## Section 3: REAR SUSPENSION Installation Instructions



### Step 10: Rear Pinion Angle Adjustment *(if required)*

- A. The Control Arm lengths given are recommended as starting points **ONLY**. Your vehicle will tell you if the pinion needs to be adjusted. When you drive the Jeep for the first time after installing the lift or after installing a new drive shaft, if you notice rear drive line vibrations, pay attention to when the vibrations occur.
- B. If you notice vibrations during acceleration this would indicate that your pinion is too high. You can correct this condition by adjusting your rear upper control arms to a shorter length or by increasing the length of your rear lower control arms.
- C. If you notice Vibrations during Deceleration this would indicate that your pinion is too low. You can correct this condition by increasing the length of your rear upper control arms, or by adjusting the rear lower arms to a shorter length.