



PRODUCT: JL 3.5" Game Changer Suspension, 6Pak

REV: E | 06-21-2024 | II-A2225/A2235

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!

WARRANTY INFORMATION: This article is sold without warranty expressed or implied. No warranty or representation is made as to this products ability to protect the user from injury or death. The user assumes that risk. The effectiveness, warranty and longevity of this equipment are directly related to the manner in which it is INSTALLED, USED and/or MAINTAINED. THE USER ASSUMES ALL RISK. By purchasing this product and opening the packaging, purchasers expressly acknowledge, understand and agree that they take, select and purchase these MetalCloak products from Armored Works, LLC, its affiliates and distributors and agents as is and with all faults. 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 the incorrect use and/or installation of MetalCloak products.

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

Set of SAE & Metric Sockets & Wrenches



Metal Head Hammer

Metric Hex Sockets and/or Hex (Allen) Wrenches



10" Socket Extension

3/8" Flare Nut Wrench (10mm will work) for Brake Lines



Cut-Off Disc and Grinder
(Optional)

Electric Drill
1/2" Drill Bits



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

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

Section 3: Installation Instructions

Important Note: MetalCloak recommends replacing the factory drive shaft. The factory drive shaft binds at transfer case side and the factory drive shaft is too short for additional travel. An aftermarket drive shaft clears t-case and is optimal for maximum travel

Factory Drive Shaft T-Case Bind



Factory Drive Shaft Misalignment



Aftermarket Drive Shaft Correction



Section 3: 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 (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: MetalCloak provides "rear specific" end-links that have shorter bolt lengths that will keep for optimal fitment.



Important Note: All shocks are marked on the shock plate to identify the shocks corresponding location.
JLF – Front Shocks
JLR – Rear Shock



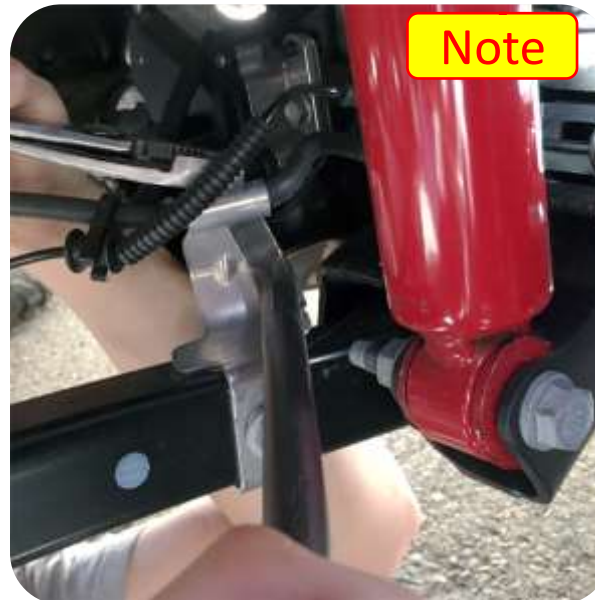
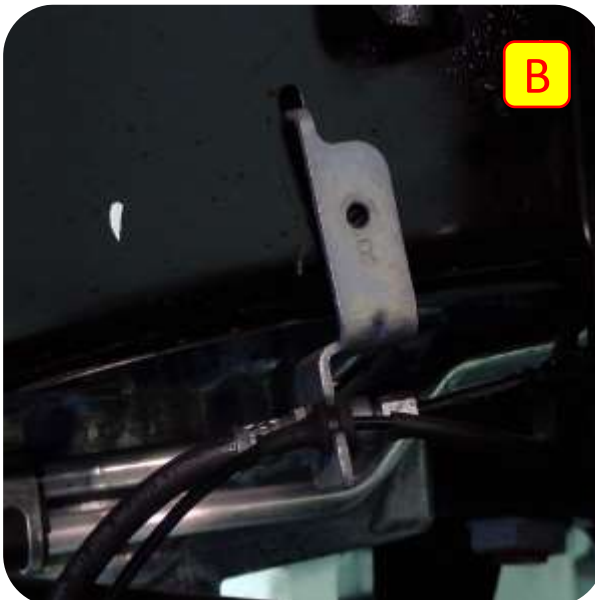
Section 3: Installation Instructions

Step 1: Remove Stock Components

- A. Disconnect front sway bar links using a 18MM wrench and 6MM Allen Wrench. **Save all Hardware**
- B. Using a 10MM Socket disconnect the brake line brackets that is attached to the frame. **Save all Hardware.**

Important Note: The brake line on the lower front control arms (drivers and passenger side) must be removed from the bracket. It may be pried out or cut; be VERY careful not to damage the brake line!!!

Important Note: To help prevent strain on the brake lines MetalCloak recommends clipping all zip ties attached to the brake lines.

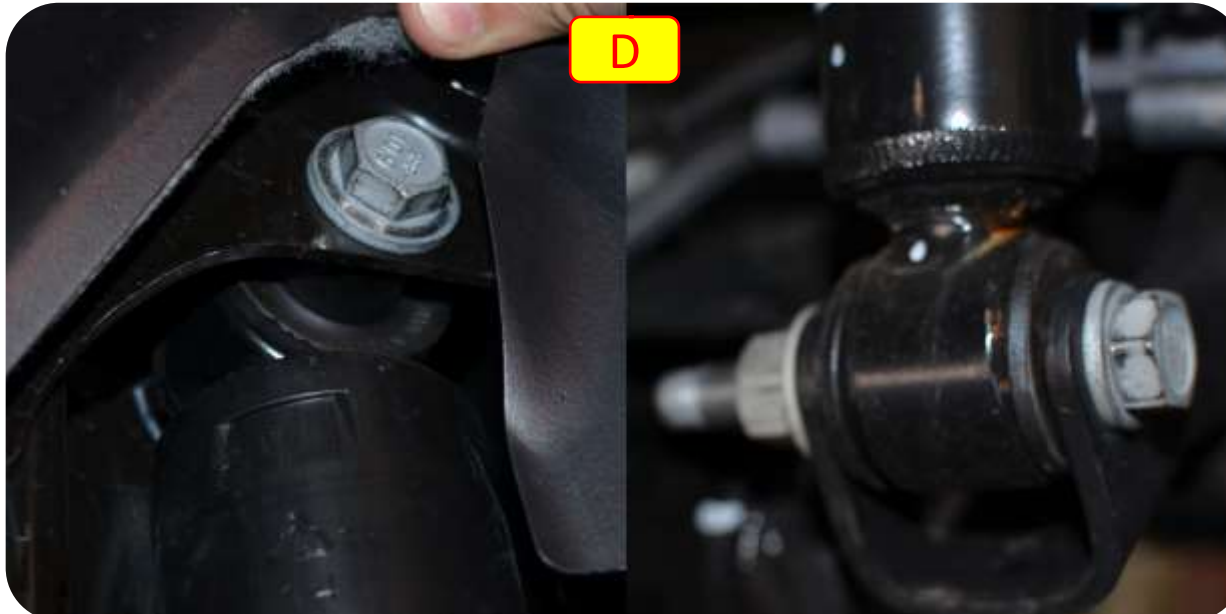


Section 3: Installation Instructions

Step 1: Remove Stock Components

Important Note: Disconnect any electronics attached to the axle (Locker plug, Front axle disconnect plug, etc.)

- C. Using a 21MM Socket disconnect the stock track bar. Save all hardware.
- D. Use a 18MM Socket and Wrench to remove the shocks. Save all hardware
- E. Remove stock springs, and any spacers that have been used if vehicle has been previously lifted.



Section 3: Installation Instructions

Step 1: Remove Stock Components

F. Disconnect the upper control arm heat shield on both sides at the frame using a 10MM Socket. Save heat shields and all hardware.



Section 3: Installation Instructions



Step 2: Install Control Arms

Important Note: *These Control Arm Specifications are Just Starting Points. Measured from eye to eye. **ALL JEEPS ARE DIFFERENT.** MetalCloak Recommends Seeing a Suspension Specialist for Correct Control Arm Lengths for **YOUR** Jeep.*

		Front Control Arms		Rear Control Arms	
	Castor Angle	Upper	Lower	Upper	Lower
Factory Control Arms	Stock	20 1/4"	24"	17 1/2"	20"
MetalCloak 3.5" Lift	6 Degrees	19 3/4"	24"	17 1/2"	20 1/8"

Step 2: Install Control Arms

Important Note: *MetalCloak Recommends installing one control arm at a time. Loosening but not removing all control arm bolts first will make removal easier.*



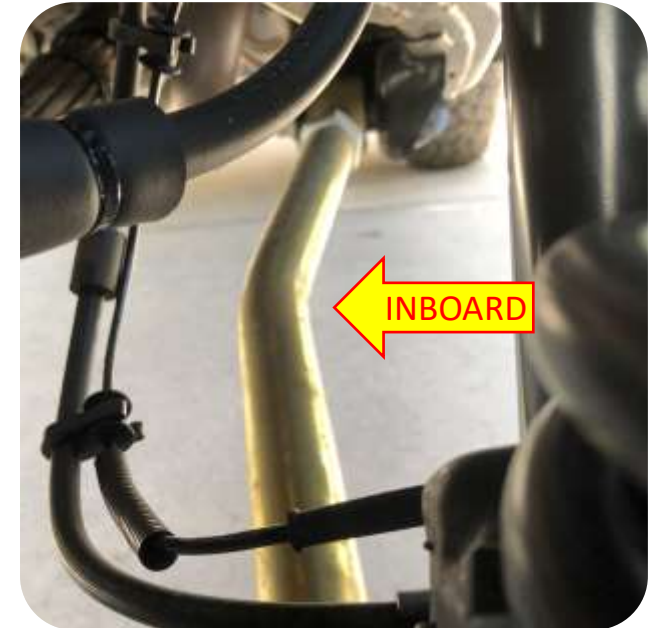
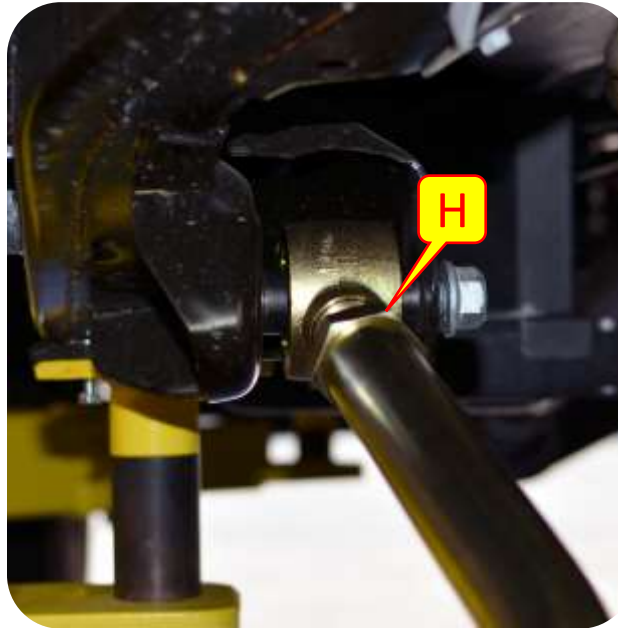
- G. Use a 24mm Socket & Wrench to remove the stock bolts from the front lower control arms. **Save all hardware.**

Section 3: Installation Instructions

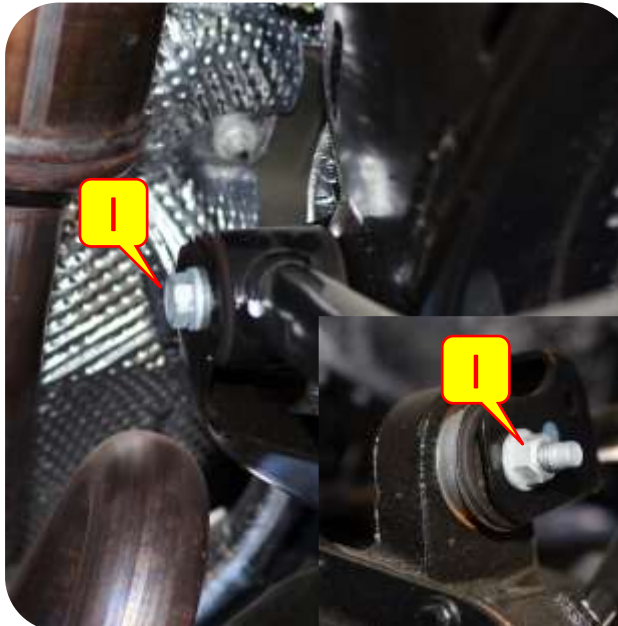


Step 2: Install Control Arms

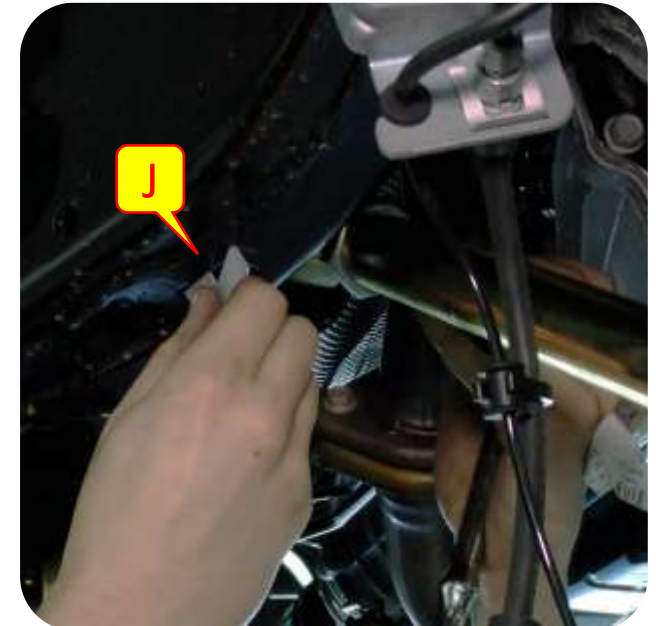
H. Install the Front Lower Control Arms so that the adjustable joint is in the rear, and the arm angles INBOARD to provide tire turning clearance.



I. Using a 18mm wrench and socket remove the Front Upper Control Arms. Save all hardware.






J. Install the MetalCloak Front Upper Control Arm using the stock hardware.



Section 3: Installation Instructions

Coil Isolator Information Guide

Important Note: MetalCloak's suspension systems include a unique coil design that utilizes upper isolators to position the coil. The following table will help you identify where to install the isolators included with your kit. You must remove the stock isolators before installing the provided coil isolators. If you have any questions give us a call at 916-631-8071.

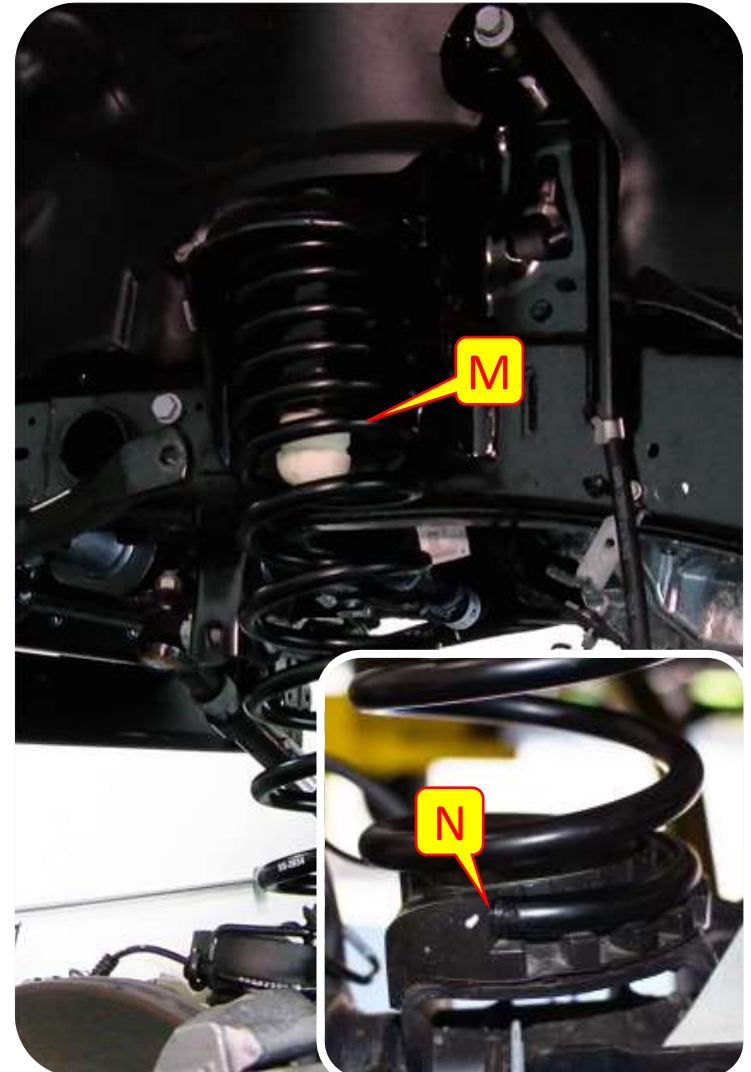
Coil Isolator Jeep Locations		
Tall Isolator	Jeep Model	Installation Locations
	JL Wrangler 3.6L Non-E Torque	Upper Front Passenger
	JL Wrangler 2.0T E-Torque	Upper Front Driver & Passenger
	JL Wrangler 4xE	Upper Front Driver & Passenger
	JL Wrangler Diesel	Upper Front Driver & Passenger
	JT Gladiator Diesel	Upper Front Driver & Passenger
Short Isolator	Jeep Model	Installation Locations
	JK Wrangler (All Models)	Upper Front Driver & Passenger
	JL Wrangler 3.6L Non-E Torque	Upper Front Driver
	JL Wrangler 3.6L E-Torque	Upper Front Driver & Passenger
	JL Wrangler Turbo	Upper Front Driver & Passenger
	JL Gladiator 3.6L Motor	Upper Front Driver & Passenger
Rear Isolator	Jeep Model	Installation Locations
	JL Wrangler 3.6L Non-E Torque	Upper Rear Passenger
	JL Wrangler 4xE	Upper Front Driver & Passenger

Section 3: Installation Instructions

Step 3: Install Coils and Bump Stops

- K. Using a 10mm socket disconnect the bracket from the spring perch on the axle.
- L. Drill out the center hole using a step bit or you can start your hole with a smaller drill bit and work your way up to a 1/2".
- M. Install the front coils. Make sure the tightly wound coils are oriented upward.
- N. Slip the bottom of the coil onto the coil base on the axle. Rotate the coil until it is seated properly on the coil base.

Important Note: Droop your suspension to gain access to the spring perch. Be sure to watch the ABS lines so they do not get over extended and break.



Important Note: 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.

Section 3: Installation Instructions

Step 3: Install Coils and Bump Stops

Important Note: Your individual build may require an addition or removal of bump stop pucks for your tire size fitment.

- O. Select the appropriate Screw length so that the threads stick out of the bottom Disks approximately $\frac{3}{4}$ ". Assemble your bump stops inside the installed coil by feeding the $\frac{1}{2}$ " 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.
- P. The $\frac{1}{2}$ " Screw is backed by a $\frac{1}{2}$ " Flanged Nylon Lock Nut. Install the nut and tighten the hardware using a $\frac{5}{16}$ " Hex Key Socket or Allen Wrench and a $\frac{3}{4}$ " Wrench. Tighten until everything is tight; the hardware will not bottom out, but instead will begin to compress the Disks.



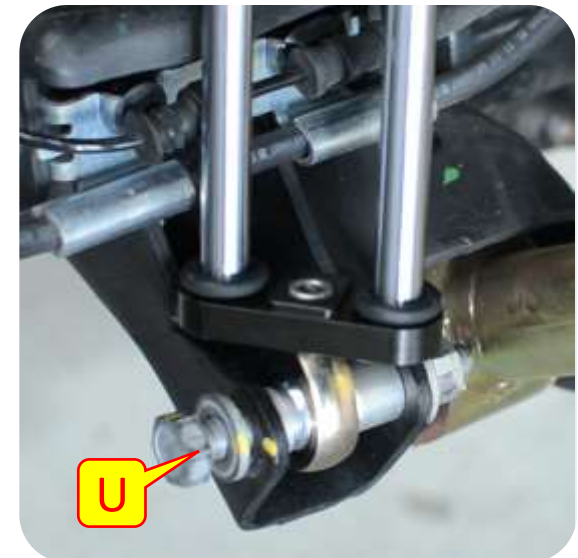
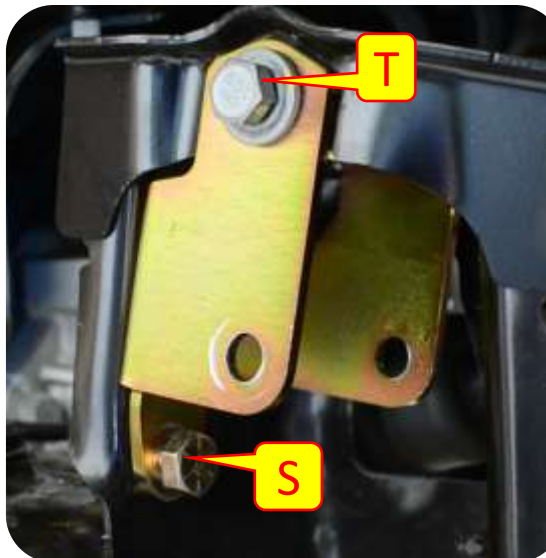
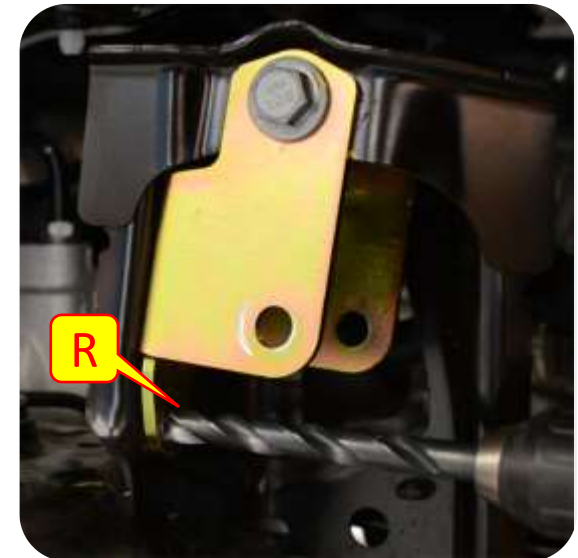
Section 3: Front Shock Installation Instructions

Step 4: Install 6Pak Shocks

- Q. Place the shock bracket into place aligning the top bracket hole to the factory location and install the stock bolt into the top hole of the bracket and tighten with the side hole against the coil bucket.
- R. Using a 1/2" drill bit drill out the side hole. Once the hole is drilled loosen the top shock bracket bolt.
- S. Using a 3/4 socket and wrench tighten down the side bolt.
- T. Install the bushing end (top) of the 6Pak shock and the spacer on the inboard side of the bushing end.
- U. The axle side shock mounts into the stock bracket with aluminum spacers pushing the shock outboard; big spacer on the inboard side and short spacer on the outboard side. Tighten using a 18MM Socket and wrench.

Note: The 6-Pak Shock Reservoir Tubes (RED) should point away from the vehicle, perpendicular to the frame of the JEEP

Important Note: The front driver side shock will hit the lower shock mount during articulation you must grind the shock mount before installing. (See page 13)

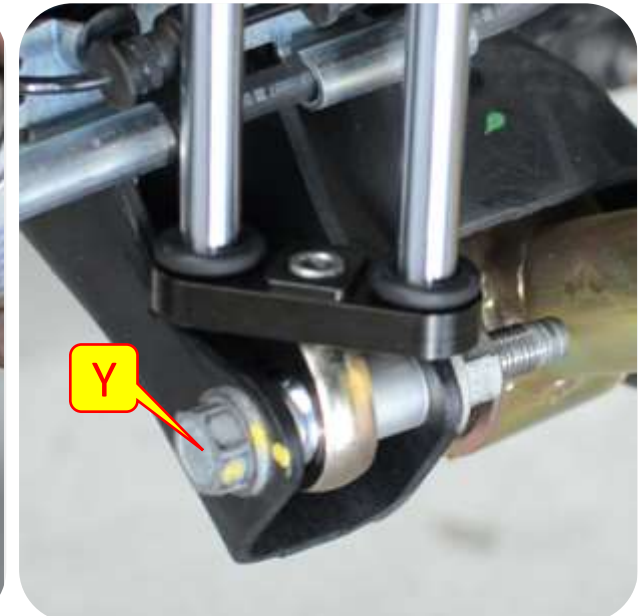


Section 3: Front Shock Installation Instructions

Step 4: Install 6Pak Shocks (Driver Side)

- V. Align the shock with the lower shock mount on the driver side and mark the area in preparation for removal.
- W. Using a cutoff wheel remove the marked area on the driver side lower shock mount.
- X. MetalCloak recommends painting all exposed metal to help prevent rust.
- Y. Install the shock into the lower shock mount. The axle side shock mounts into the stock bracket with aluminum spacers pushing the shock outboard; big spacer on the inboard side and short spacer on the outboard side. Tighten using a 18MM Socket and wrench.

Note: The 6-Pak Shock Reservoir Tubes (RED) should point away from the vehicle, perpendicular to the frame of the JEEP



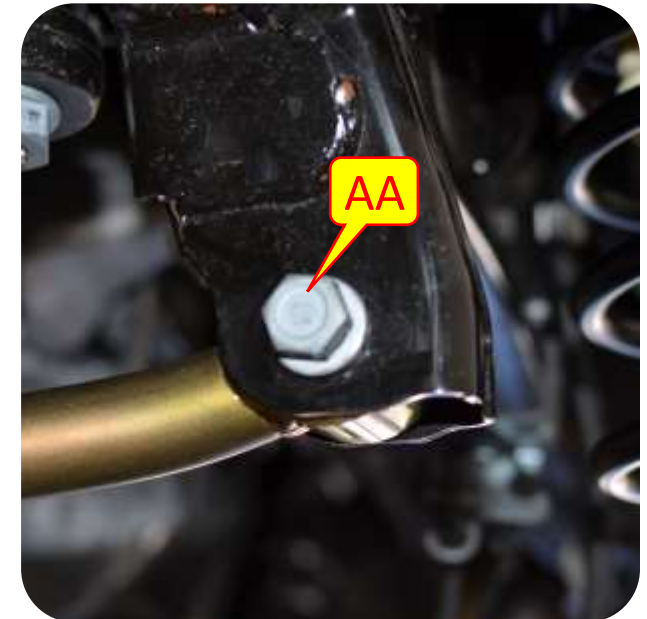
Section 3: Installation Instructions



Step 5: Install Front Track Bar

- Z. Install the front track bar. Making sure the adjustable end of the track bar goes into the stock bracket on the axle. Re use the stock hardware.
- AA. Install the fixed end of the track bar into the stock frame bracket. The clearance bends should point towards the front bumper, up and away from the differential cover. Re use the stock hardware.
- BB. Fully tighten the stock hardware on both ends of the Track Bar using a 21MM socket and wrench, and then tighten the Jam Nut on the Track Bar.
- CC. MetalCloak **STRONGLY RECOMMENDS** having your alignment checked by a professional after changing any suspension components.

Note: It is helpful to have someone push the vehicle to the driver or passenger side to help align the hole; if you don't have an extra pair of hands you can use a ratchet strap on the frame/axle to pull the frame in the desired direction. Lower the Jeep to the ground to ensure the axle is centered once the bolt is in place. If not then remove the bolt, adjust the Track Bar length, replace the bolt, and re-check axle centeredness. Repeat until the axle is as close to center.



Section 3: Installation Instructions

Step 5: Install Front Track Bar

Note: MetalCloak uses an over-sized forged housing for additional strength; the factory window pocket may need additional clearance for optimal fitment. Use a die grinder and cutting bit to enlarge the existing window in the factory track bar bracket.



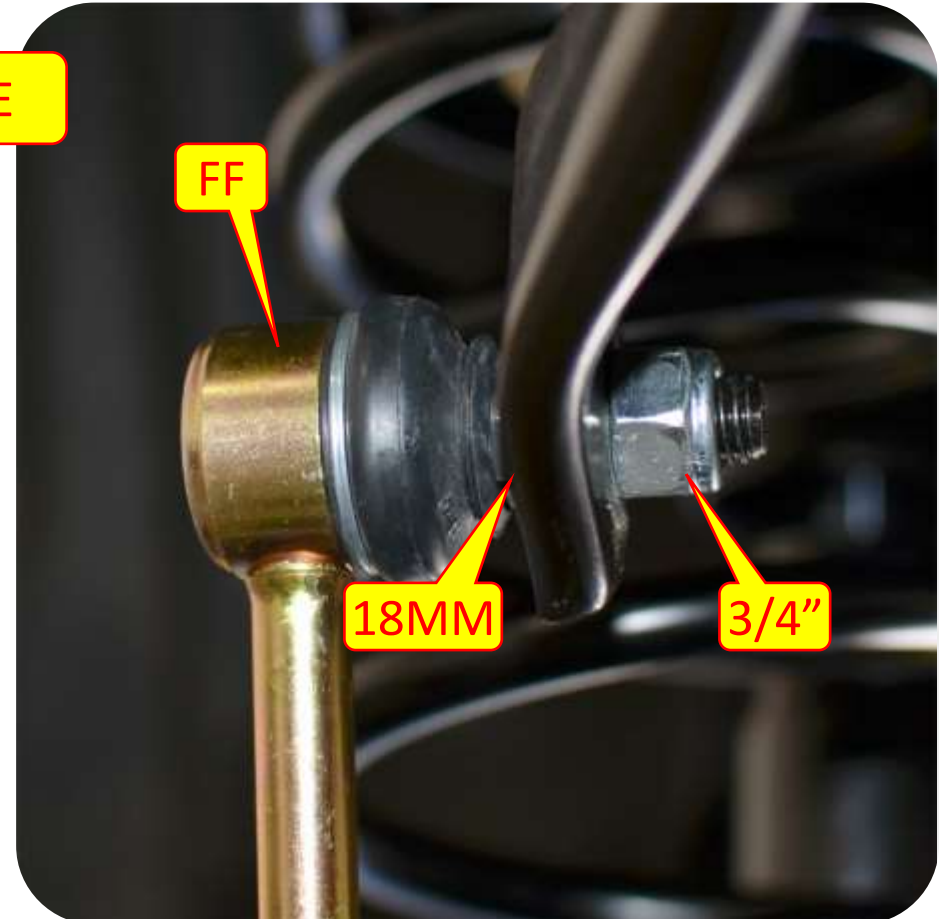
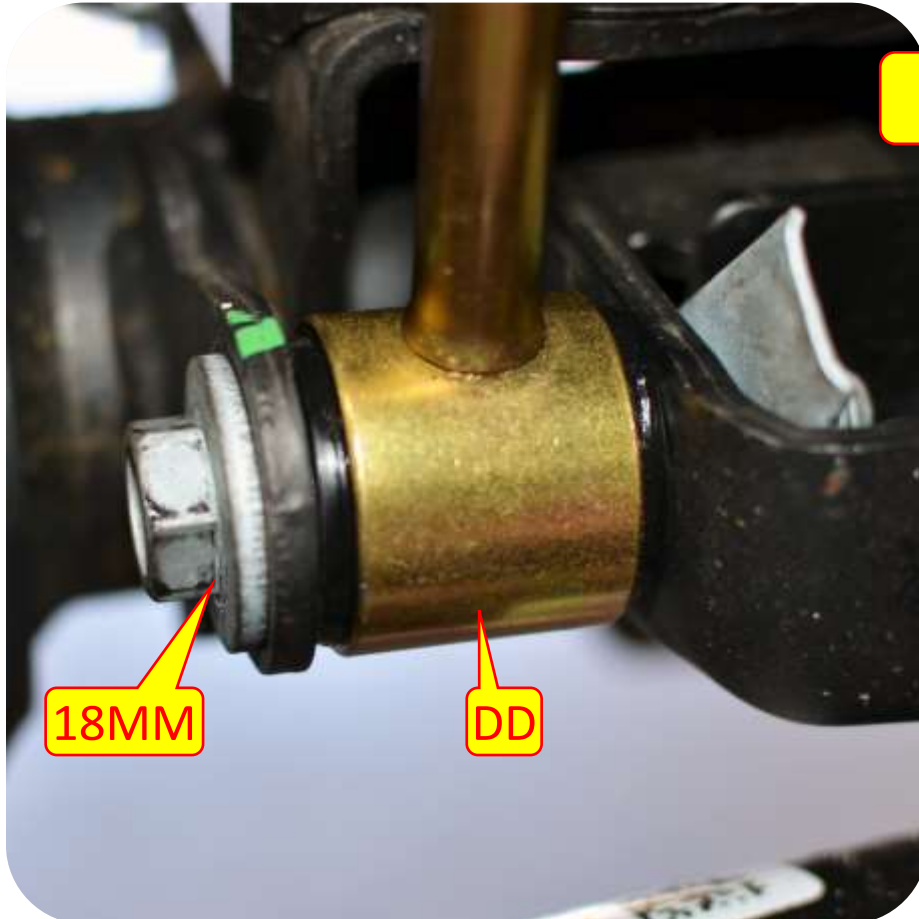
Section 3: Installation Instructions



Step 6: Install Sway Bar End Links

- DD. Using the factory hardware install the bottom of the MetalCloak extended sway bar links.
- EE. Using the supplied hardware install the top of the MetalCloak extended sway bar links
- FF. Tighten sway bar end links with an 18MM Wrench for the factory hardware and a 3/4" & 18MM wrench for the supplied hardware.

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



Section 3: Installation Instructions



Step 7: Finalize Installation

GG. Adjust the caster angle and toe as needed. Once set, tighten all hardware, Re attach all brackets and reinstall the heat shield. Finally, tighten the jam nuts on all control arms.

Note: When lifting any vehicle, basic dynamics are changed. It is important to take your vehicle to a professional for an alignment after installation. Make sure caster setting is adjusted for a lifted vehicle (not stock specs).

Section 3: Installation Instructions



Step 1: Remove Stock Components

Important Note: MetalCloak Recommends removing the bottom rear fender well plate for easier access to the upper shock bolts by using a 8MM socket wrench.



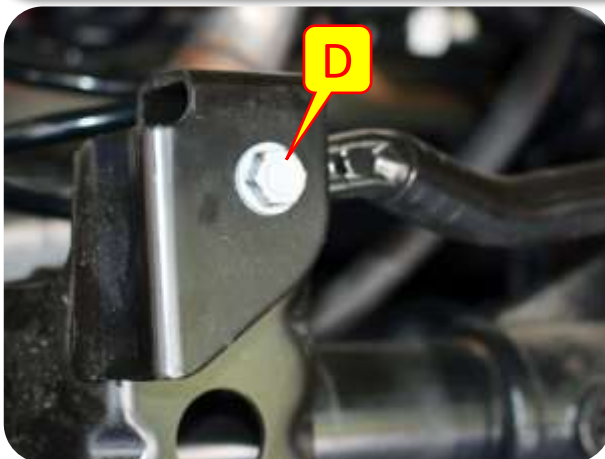
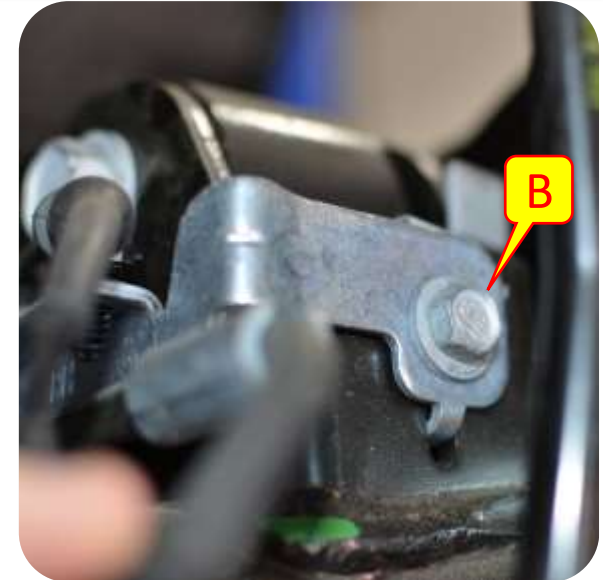
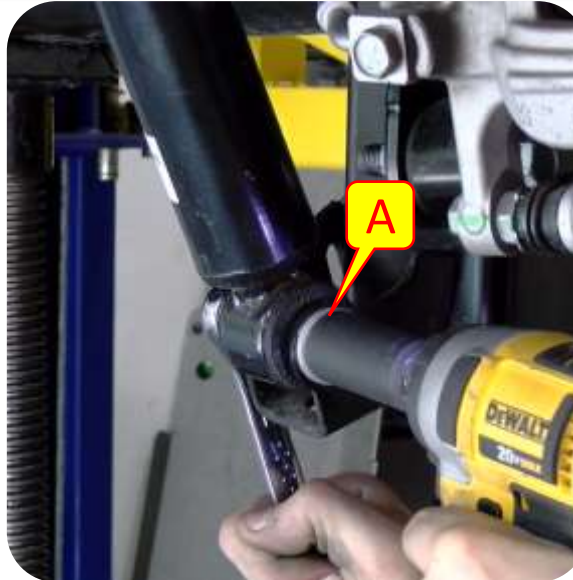
Section 3: Installation Instructions



Step 1: Remove Stock Components

- A. Using a 18mm socket and wrench disconnect the stock shocks. **Save all hardware.**
- B. Disconnect the brake line brackets and E-brake cable on the axle to help allow for full droop.
- C. Disconnect the rear sway bar links using an 18MM wrench and 6MM Allen wrench. **Save all hardware.**
- D. Using a 21MM Socket and wrench disconnect the stock rear track bar. **Save all Hardware.**
- E. Remove Stock Coils.

Important Note: Disconnect any electronics attached to the axle (Locker plug, etc.)



Section 3: Installation Instructions



Step 2: Install Control Arms

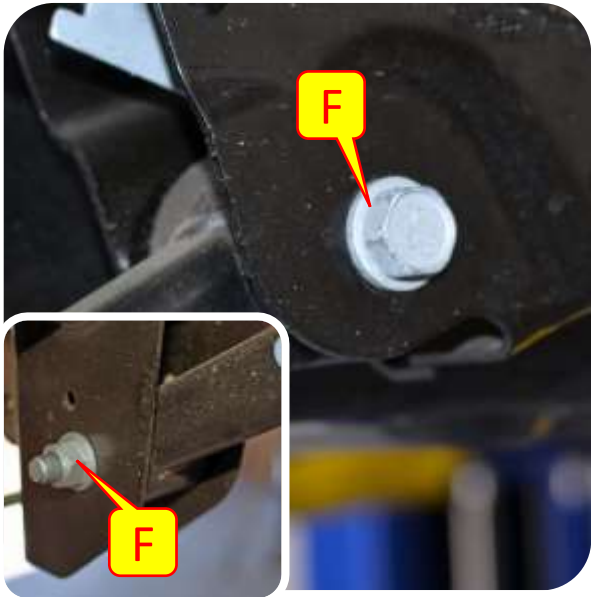
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Step 2: Install Control Arms

Important Note: *MetalCloak Recommends installing one control arm at a time. Loosening but not removing all control arm bolts first will make removal easier.*

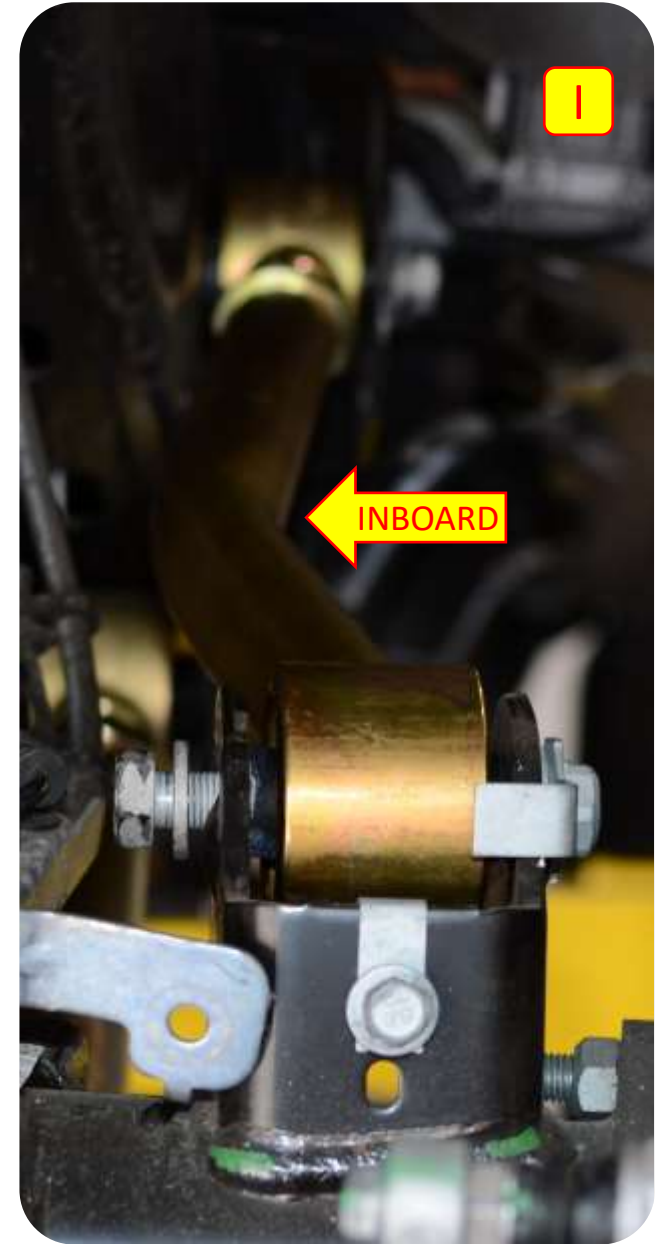
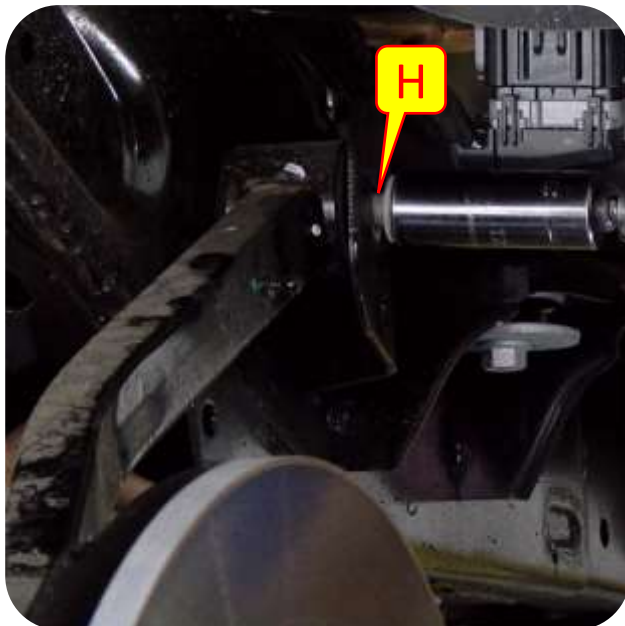
- F. Use a 21mm Socket & Wrench to remove the stock bolts from the rear lower control arms. **Save all hardware.**



Section 3: Installation Instructions

Step 2: Install Control Arms

- G. Using the stock hardware Install the Rear Lower Control Arms so that the adjustable joint is at the frame.
- H. Using a 21mm wrench and socket remove the Rear Upper Control Arms. **Save all hardware.**
- I. Install the Rear Upper Control Arms so that the adjustable joint is in the rear, and the arm angles INBOARD to provide maximum tire clearance.



Section 3: Installation Instructions

Step 3: Install Rear Coils

- J. 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.
- K. Place the Rear Coil Cup on top of the Rear Dual Rate Coil.
- L. Install rear Dual Rate Coils with the tightly wound coils oriented upward.
- M. Slip the bottom of the coil onto the coil base on the axle.



Section 3: Installation Instructions



Step 4: Install MetalCloak Track Bar

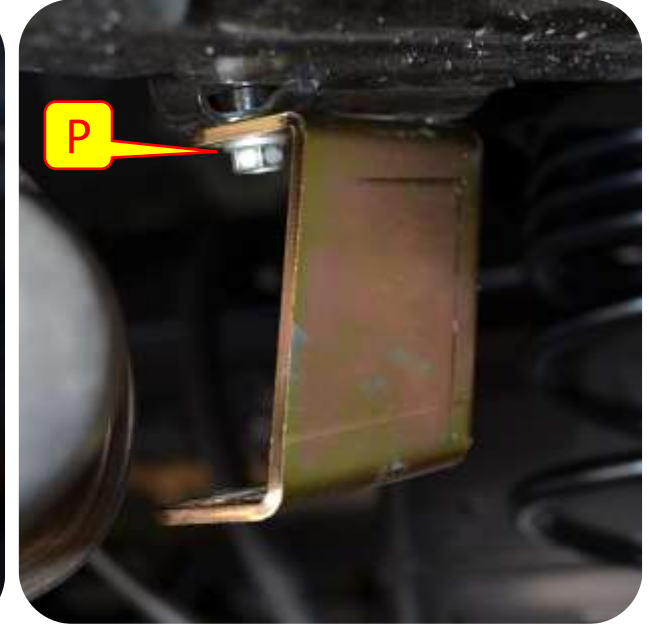
N. Install the MetalCloak Track Bar using the stock hardware. Tighten all hardware using a 21MM Socket and Wrench.



Section 3: Installation Instructions

Step 5: Sway Bar Option 1

- O. Using a 15mm Socket remove the sway bar from the vehicle. **Save All Hardware**
- P. Using a 18mm socket install the 4in drop bracket in the sway bar's stock location using the factory hardware.
- Q. When reinstalling the rear sway bar flip the sway bar so that the driver side becomes the passenger side and the passenger side becomes the driver side.

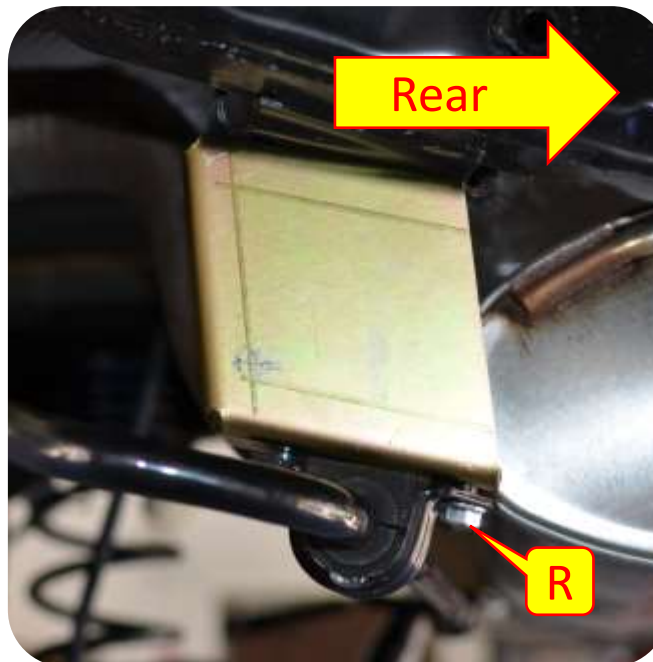


Section 3: Installation Instructions

Step 5: Sway Bar Option 1



- R. Using the provided hardware attach the sway bar to the drop bracket and tighten with a 14mm socket and wrench.
- S. Install the sway bar end links to the sway bar.



Section 3: Installation Instructions



Step 5: Sway Bar Option 2

- T. Using a 15MM socket remove the sway bar mount hardware.
- U. Install the sway bar spacer and tighten the provided hardware using a 17MM socket.
- V. Install the extended sway bar end links on the sway bar.

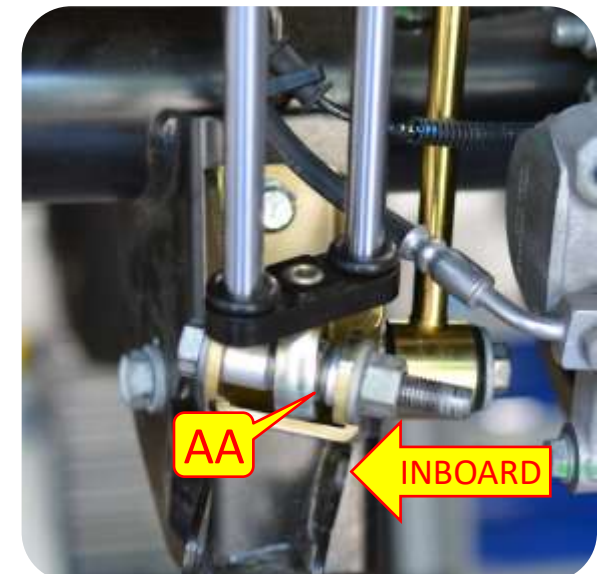
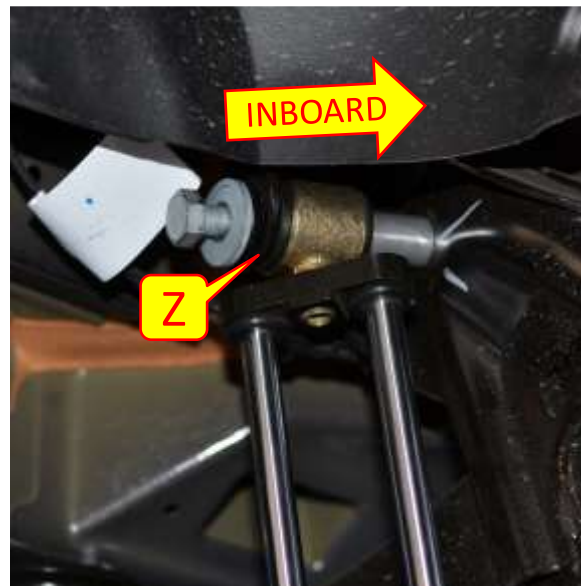
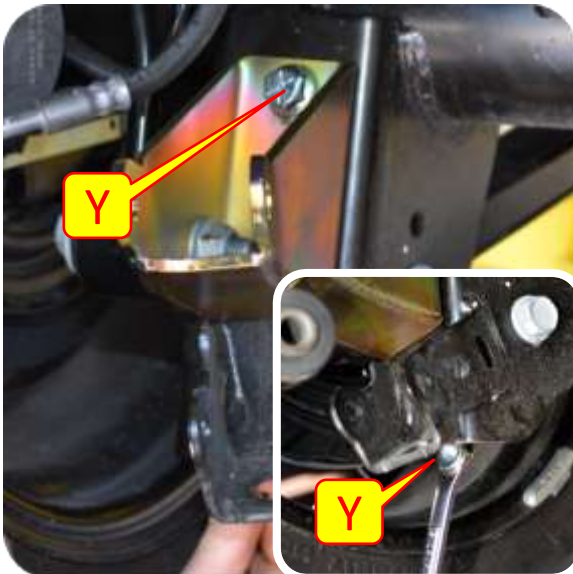
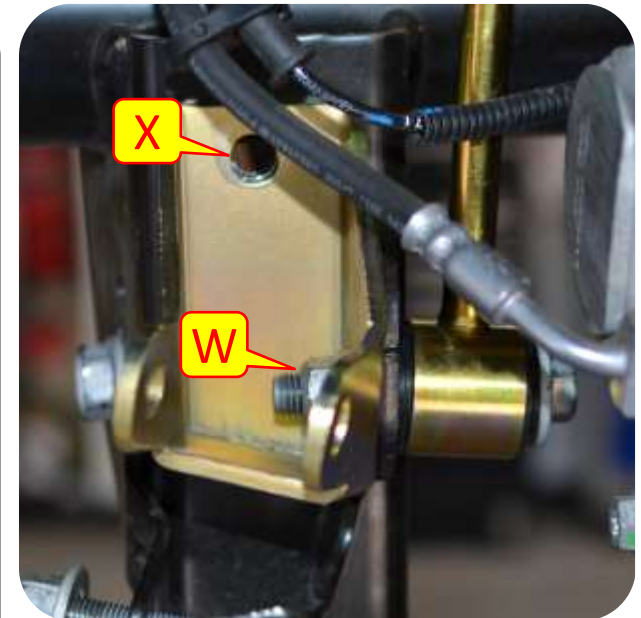


Section 3: Installation Instructions



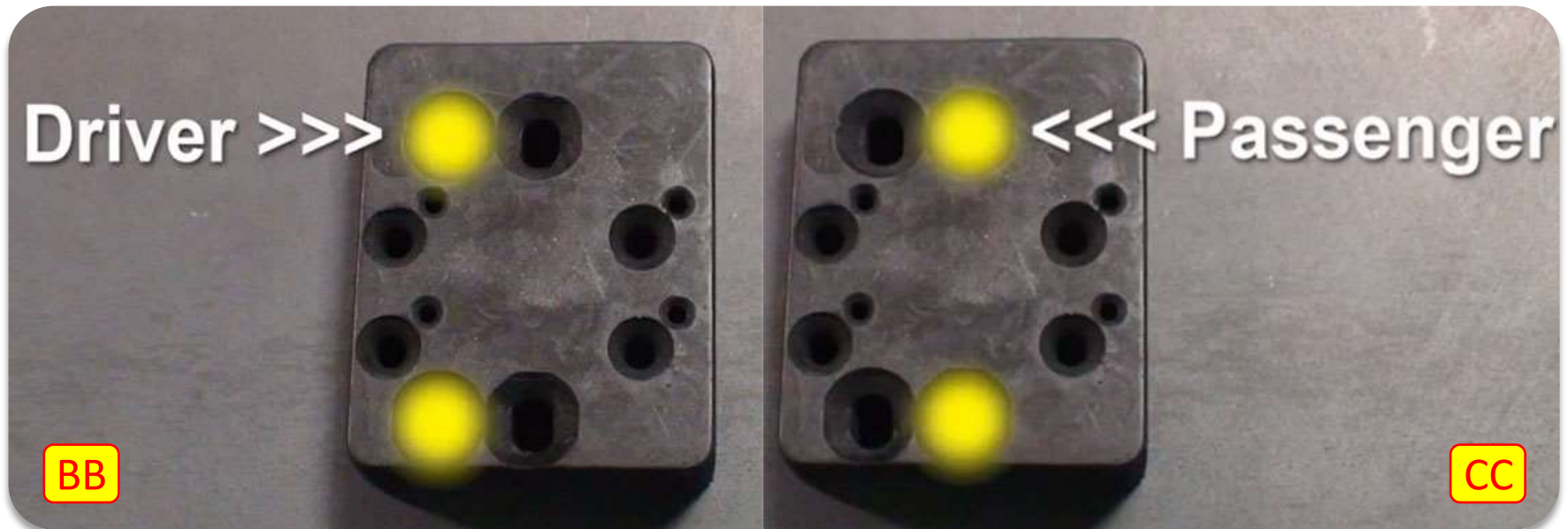
Step 6: Install Rear 6Pak Shocks

- W. Align the MetalCloak rear shock relocation bracket and install the sway bar end link using a 18mm socket and wrench.
- X. Using a drill and 3/8" drill bit drill out the shock mounts upper hole
- Y. Using a 9/16" socket and wrench install the shock mount upper bolt. You must go from behind and underneath the stock shock mount to reach the hole with the nut and wrench.
- Z. Using the stock hardware install the Upper part of the 6Pak Shock (Bushing End) making sure to add the spacer INBOARD side.
- AA. Using the stock hardware install the shock into the new mount using a 18MM Socket and wrench. Make sure the large spacer is on the inboard side of the shock and the thinner spacer is on the outboard side.



Section 3: Installation Instructions

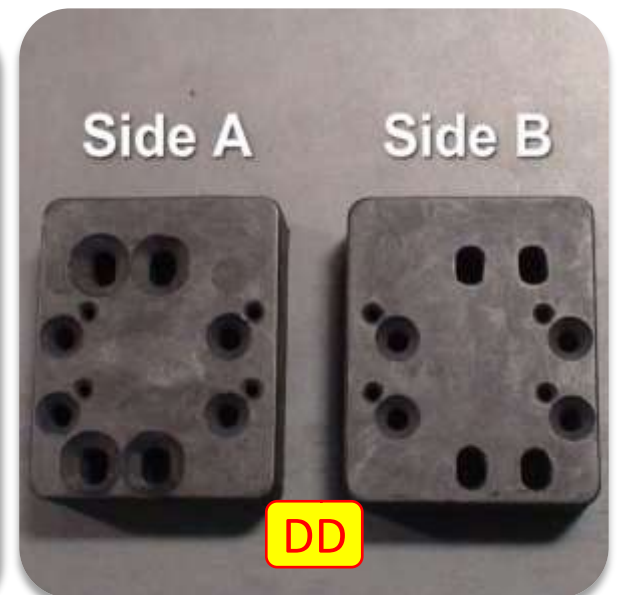
Step 7: Install Rear Bump Stops



BB. Driver Side Bump Stop Holes.

CC. Passenger Side Bump Stop Holes.

DD. Diagram showing the two sides of the Bump Stops.



Section 3: Installation Instructions



Step 7: Install Rear Bump Stops

- EE. 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.
- FF. Install next puck (Side B) using the 1 3/4" woodscrews.
- GG. Continue until desired bump stop height (Side A/Side B/ Side A/Side B).



Step 8: Re-route E Brake

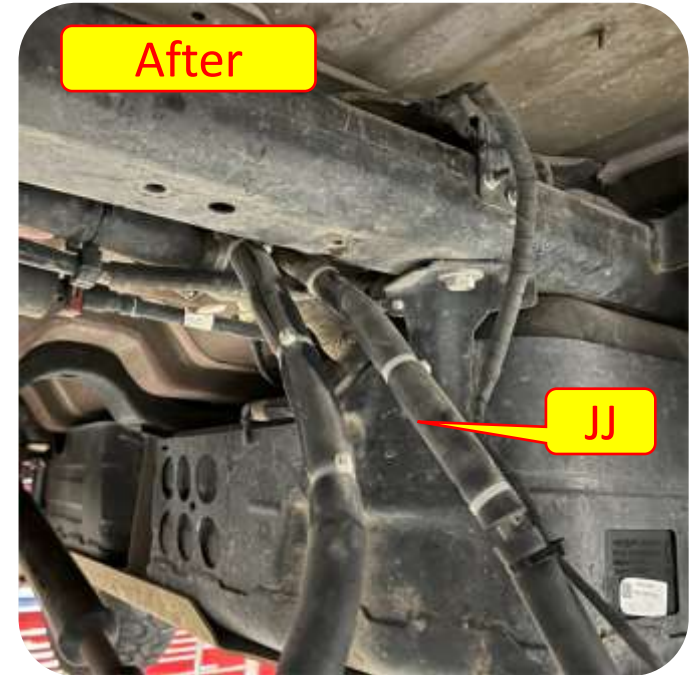
- HH. Disconnect the E brake cables from the brake backing plate.
- II. Disconnect the E brake cables from the cable bracket.



Section 3: Installation Instructions

Step 8: Re-route E Brake

- JJ. Re-route the E brake cables under the crossmember.
- KK. Reconnect the E Brake cable to the cable bracket
- LL. Reconnect the E Brake cable from the brake backing plate.



Step 9: Finalize

Important Note: After re-installing the rear brake line bracket. Bend the brake line bracket in the rear upwards towards the frame to allow slack for extra droop.

MM. Adjust the caster angle and toe as needed. Once set, tighten all hardware, Re attach all brake line brackets. Finally, tighten the jam nuts on all control arms.



Section 3: Installation Instructions



Important Note: For maximum ground Clearance you may trim the lower stock shock mount bracket. This is optional.