



**PRODUCT: TJ/LJ/YJ FRAME-BUILT BUMPER SYSTEM**

REV: D | 08-11-21 | II-2100

**READ INSTRUCTIONS IN FULL BEFORE INSTALLATION.  
QUESTIONS? CALL 916-631-8071 M-F 8:00 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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**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.

## Phase 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.



Socket & Ratchet Wrench



7/32" Allen Drive Socket  
5/16" Allen Drive Socket  
3/8" Allen Drive Socket



9/16" Crescent and/or Box Wrench  
3/4" Crescent and/or Box Wrench  
15/16" Crescent and/or Box Wrench



9/16" Hex Drive Socket  
3/4" Hex Drive Socket  
15/16" Hex Drive Socket



Needle Nose Pliers



T55 Torx Drive Socket



Surface Sander or Grinder



Bolt Hole Alignment Bar  
(or) Large Phillips Head Screw Driver

**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 call us at 916-631-8071 M-F 8:00 AM – 5:00 PM PST, or email [techhelp@metalcloak.com](mailto:techhelp@metalcloak.com)

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

**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.

**TJ/LJ vs. YJ:** The MetalCloak Frame-Built Bumper system works with both TJ/LJ Wranglers (97-06) and YJ Wranglers (87-96). In the instructions, you will see sections for each type of Jeep. Please follow the appropriate section for your model Jeep.

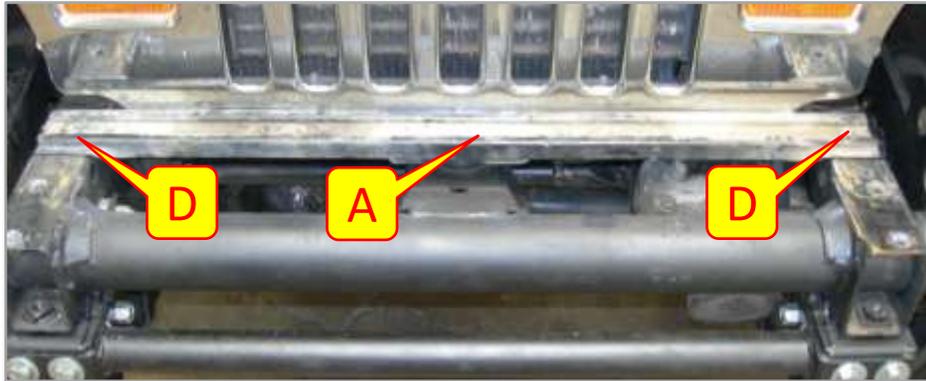
**Images:** Pictures are provided and parts are labeled throughout the instructions. Each text box contains guidance based on the pictures next to it. The text will refer to alphabetical labels (A, B, etc) found in the images.

**QUESTIONS:** Any questions or comments about the instructions? Call us at 916-631-8071 M-F 8:00 AM – 5:00 PM PST.

## Phase 1: JEEP Preparation

**Step 1:** Completely remove existing bumper and winch from front frame of Jeep TJ-LJ-YJ. **Save all stock hardware.**

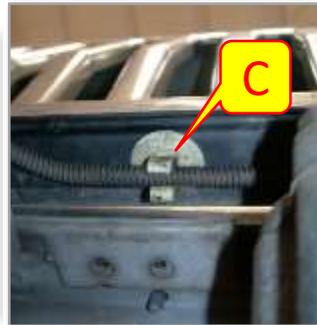
**YJ OWNERS:** Remove the sheet metal bracket(A) parallel to front grill and attached to both main frame rails.



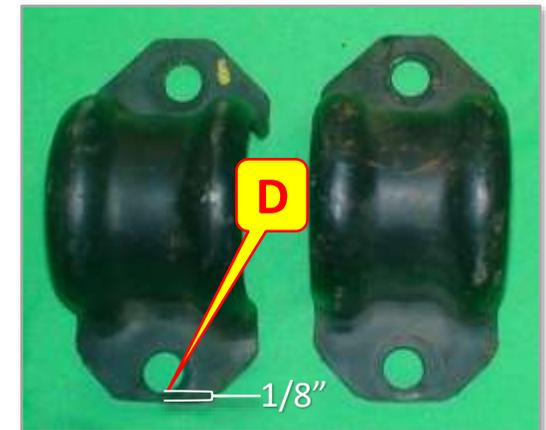
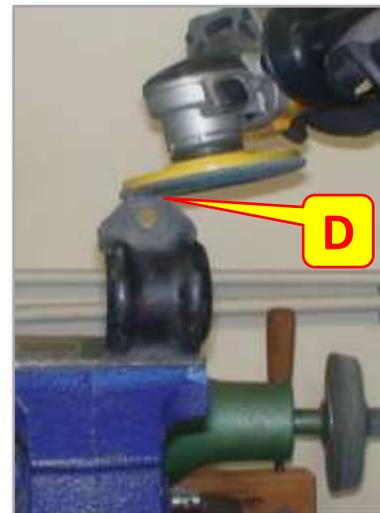
**TJ-LJ OWNERS WITH STOCK SWAY BAR(A):** Remove the sheet metal “U” brackets(B) retaining the rubber grommets holding the sway bar(A) in place. Do not remove sway bar.



Remove two bolts(D) on each end of bracket(A) and save with hardware. The bracket holds a hydraulic line(B) in place with plastic clamps(C) on the underside of the bracket; these plastic clamps should be removed without damage. Leave hydraulic line in place.



Grind front end of each sheet metal “U” bracket(B) as shown in white(C). Leave 1/8” of material between bolt hole on front edge(D) of each sheet metal “U” bracket. Paint exposed steel from grinding and allow to dry for later reinstall.

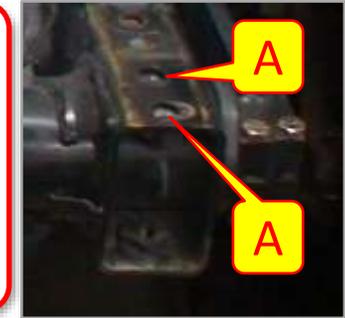


## Phase 1: JEEP Preparation

### Step 2: Prepare front frame rails for bumper installation



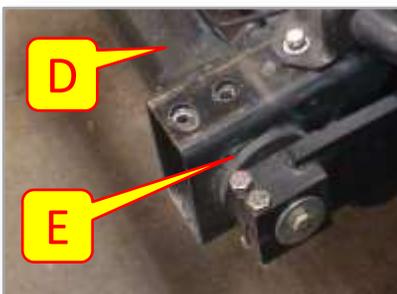
Locate and inspect the FOUR 1/2"-13 threaded holes(A) [two per side] on the TOP of the main frame rails. These threaded holes *must be stock*, unmodified and undamaged in order to properly mount the Frame-Built™ Bumper System. Repair if necessary.



Locate and inspect TWO 1/2"-13 threaded holes(B) [one per side] on the BOTTOM of the main frame rails. These threaded holes must be stock, unmodified and undamaged in order to properly mount the Frame-Built™ Bumper System. Repair if necessary.



Grind any brackets, welds, or protrusions(C) that are not flush with the top surface or bottom surface of the main frame rails. The Frame-Built™ Base, after proper assembly, slides snugly over the main frame rails on the front of the Jeep TJ-LJ-YJ. Therefore the main frame rails must be cleared of obstructions that may prevent the Bumper Assembly from sliding into position during the installation process. *NOTE: If significant removal of welds was required to prepare the main frame rails to be flush, fill welding may be required.*

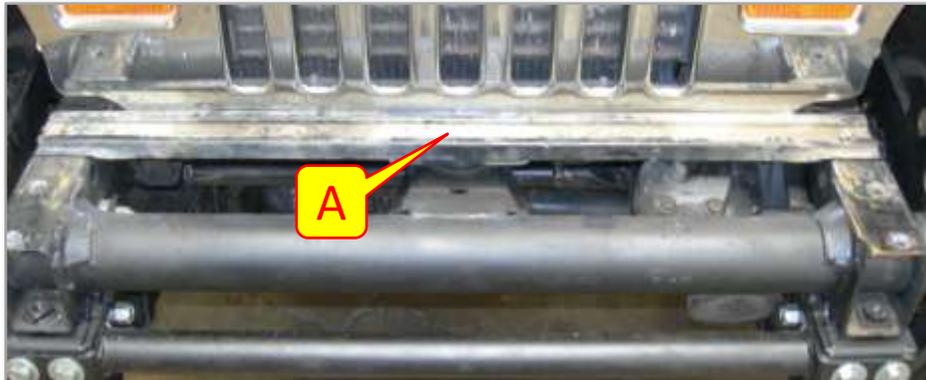


A tubular main frame member(D) spans across and through both main frame rails. Grind any protrusions, weld beads or extra coating on the butt ends(E) of this tubular main frame member. *NOTE: Stubby Caps fit tightly over the butt ends of this tubular main frame member, any protrusions may prevent the Bumper Assembly from sliding into position during the installation process.* This image shows an aftermarket sway bar covering the butt end(E) described. Primer or Paint any exposed steel after grinding and allow proper amount of time to dry.

## Phase 1: JEEP Preparation

**Step 3:** Specific TJ/LJ and YJ assembly preparation for Bumper Installation.

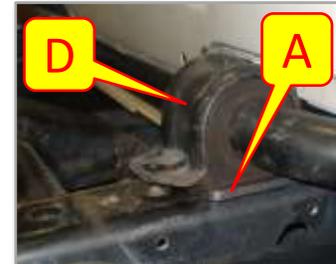
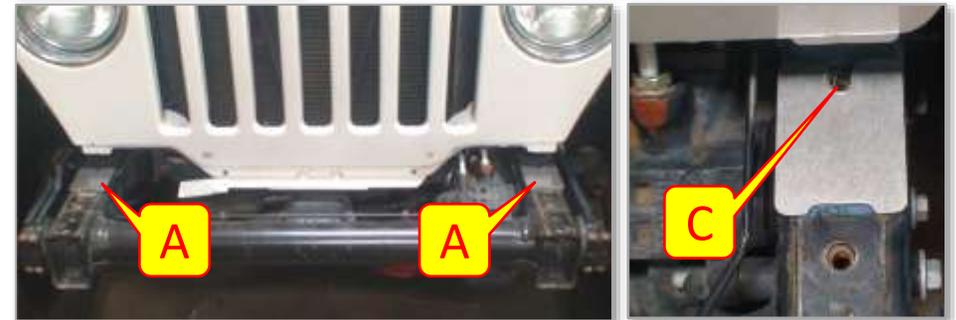
**YJ OWNERS:** If you do **not** plan to reinstall sheet metal bracket(A) parallel to front grill after Bumper Installation, then use zip ties(B) or other methods to retain the hydraulic line(C) in place.



**TJ-LJ OWNERS WITH STOCK SWAY BAR:** Install Sway Bar Kit.



Place rectangular flange(A) provided on top surface of each main frame rail with the bolt slot(B) oriented toward the back of the Jeep and aligned with the back mounting hole(C) of the sheet metal "U" bracket(D) for the stock sway bar.

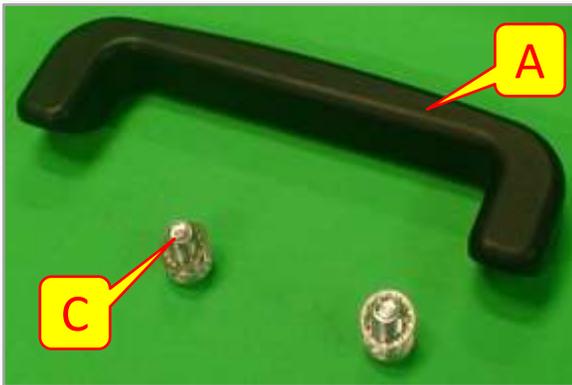


Place the "U" bracket(D) of the stock sway bar in its stock position, but on top of rectangular flange(A) previously positioned. Loosely install 3/8"-16 X 1" Hex Head Cap Screw(E) and 3/8" Washers in the back mounting hole(C). These fasteners will be tightened after the complete Bumper Assembly has been installed. Do **not** install fastener in front mounting hole(F) at this time.

## Phase 2: Pre-Assembly of Bumper

**IMPORTANT NOTE:** Bumper components must be pre-assembled prior to installation on the Jeep TJ-LJ-YJ. The following order of assembly should be followed step-by-step for ease of installation.

### Step 1: Mount Fixed Fairlead



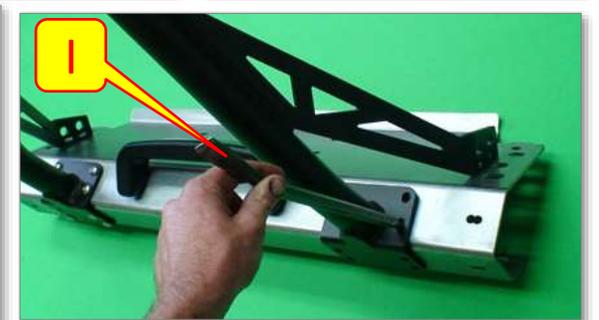
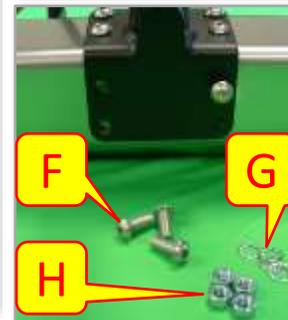
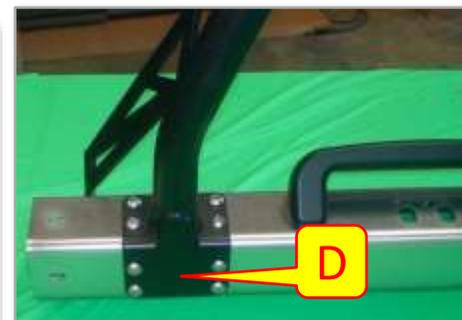
Mount Fixed Fairlead(A) on front upper angled face(B) of Bumper Base using 5/8"- 11 X 1" Socket Head Cap Screw and 5/8" Lock Washers(C) provided. Tighten Screws.



### Step 2: Mount Front Flanges of Hoop



Install hand tight hardware to one side of front flanges(D) of Hoop(E) [Winch Guard, Mid-Stinger, Comp Guard, etc.] to the Bumper Base at the upper and lower front angled faces of the base using the 3/8"-16 x 1" Socket Head Cap Screws(F), 3/8" Washers(G) and 3/8"-16 Nylock Nuts(H) provided. Use Bolt Alignment Bar(I) to align flange bolt holes to base bolt holes and install the rest of hardware.

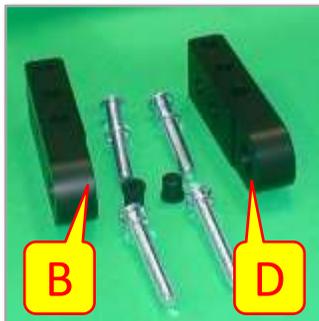


## Phase 2: Pre-Assembly of Bumper

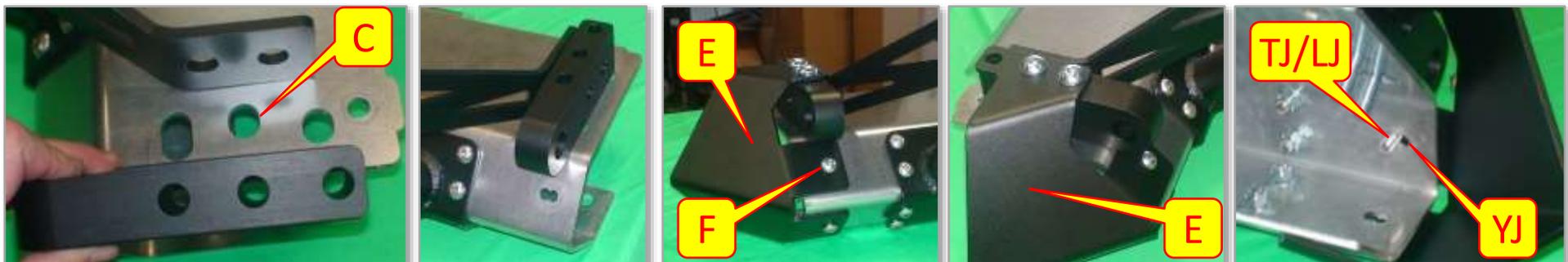
**IMPORTANT NOTE:** The Frame-Built™ Bumper System is designed to work with both the TJ-LJ Wrangler and YJ Wrangler. For this reason some of the holes on the Bumper Base will not be used during the installation and assembly process, dependent upon the model of your Jeep. On the front angled faces at both ends of the Bumper Base there are four holes shaped like the number 8 (A). When assembling Bumper Caps (next step) to the Bumper Base the inside portion(TJ/LJ) of the holes shaped like the number 8 are used to mount TJ-LJ Bumper Caps and the Hi-Mount Shackle Mounts. Alternatively the outside portion(YJ) of the holes shaped like the number 8 are used to mount YJ Bumper Caps and the Hi-Mount Shackle Mounts.



### Step 3: Assemble Hi-Mount Shackles and Hi-Mount Bumper Caps



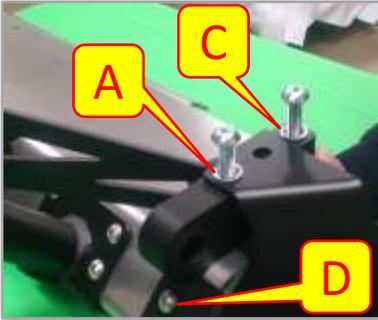
Place Hi Mount Shackles(B) into position on the top surface of Bumper Base aligning the 3 oval holes(C) on the Bumper Base with the 3 holes in Hi-Mount Shackles (B). Recessed surface(D) on Hi-Mount Shackle should face toward the center of the Jeep. Position Bumper Caps(E) as shown locating components so the three holes on the Bumper Base, Hi-Mount Shackles, and Hi-Mount Bumper Caps align. Use 3/8"-16 X 1" Socket Head Cap Screws(F), 3/8" Washers and 3/8"-16 Nylock Nuts to assemble Hi-Mount Bumper Caps(E) to the front angled faces of the Bumper Base through the holes shaped like the number 8; hand tight only at this time. *REMEMBER: (TJ/LJ) inside portion of hole (YJ) outside portion of hole.*



## Phase 2: Pre-Assembly of Bumper

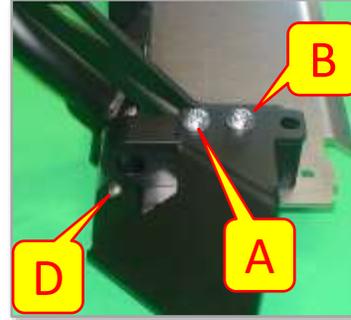
### Step 3: Assemble Hi-Mount Shackles and Hi-Mount Bumper Caps (continued)

**YJ OWNERS:** Position top bumper mounting bolts



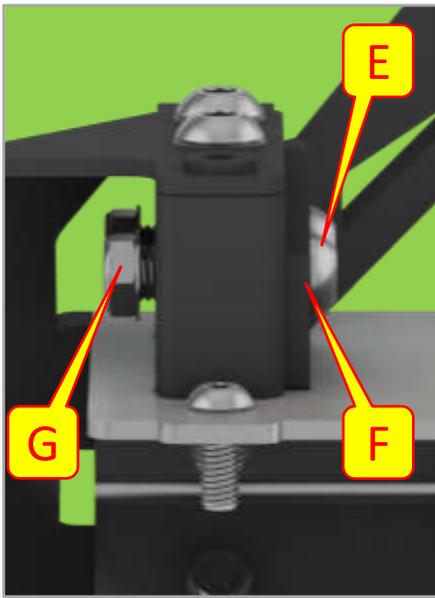
Place the 1/2"-13 X 3 1/2" Socket Head Cap Screws with 1/2" Lock Washers provided through the front most hole(A) and back most hole(C) of the Bumper Base, Upper Shackle Mounts and Bumper Caps.

**TJ-LJ OWNERS:** Position top bumper mounting bolts



Place the 1/2"-13 UNC X 3 1/2" Socket Head Cap Screws with 1/2" Lock Washers provided through the front most hole(A) and middle hole(B) of the Bumper Base, Upper Shackle Mounts and Bumper Caps.

**YJ-TJ-LJ OWNERS:** Position Mid-Stinger Support Hardware



Assemble Mid-Stinger Support Bracket to Hi Mount Shackle using 1/2"-13 X 2 1/2" Socket Head Cap Screws (E), 1/2" Lock Washer (F) and 1/2"-13 Nylock Jamb Nuts (G). Leave 1/2"-13 Nylock Jamb Nuts LOOSE (G) at this time. These will be tightened after the bumper has been installed on the Jeep.

## Phase 2: Pre-Assembly of Bumper

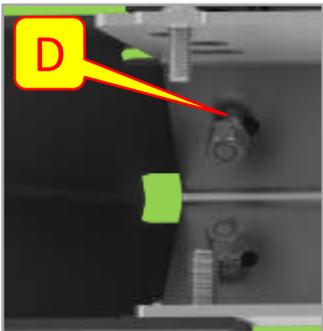
### Step 4: Assemble Bumper Caps [No Hi-Mount Shackles]

Place Bumper Cap in positions shown. Re-read Step 3 of Phase 2 now... including **“IMPORTANT NOTE”** at top of that page. Locate components so that the three holes on the Bumper Base(A) and Bumper Caps(B) align.



Mid-Stinger Support Flanges(C) will mount on top of Bumper Cap and align with the same three holes. Mid-Stinger Support Flanges use the ½” Oversize Washers provided.

#### YJ OWNERS: Position top bumper mounting bolts



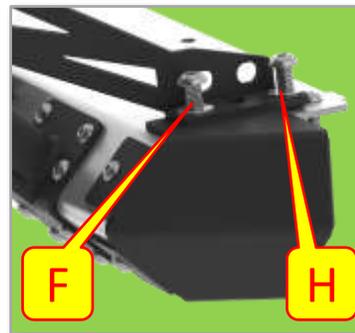
Use 3/8”-16 x 1” Socket Head Cap Screws, 3/8” Washers and 3/8”-16 Nylock Nuts to assemble Bumper Caps to Bumper Base through the holes shaped like the number 8; hand tight only . YJ uses the OUTSIDE(D) portion of holes shaped like the number 8.

#### TJ-LJ OWNERS: Position top bumper mounting bolts

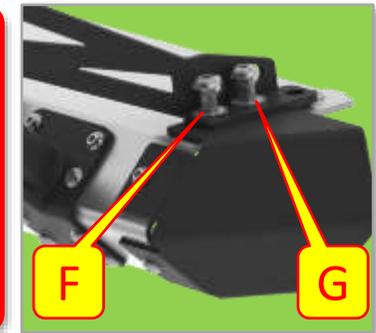


Use 3/8”-16 x 1” Socket Head Cap Screws, 3/8” Washers and 3/8”-16 Nylock Nuts to assemble Bumper Caps to Bumper Base through the holes shaped like the number 8; hand tight only . TJ/LJ uses the INSIDE(E) portion of holes shaped like the number 8.

Place the ½”-13 x 1” Torx Bolts from stock bumper through the front most hole(F) and back most hole(H) of the Bumper Base and Bumper Caps.



Place ½”-13 x 1” Torx Bolts from stock bumper through the front most hole(F) and middle hole(G) of the Bumper Base and Bumper Caps .



## Phase 2: Pre-Assembly of Bumper

### Step 5: Assemble Forward Angle Shackle Mounts

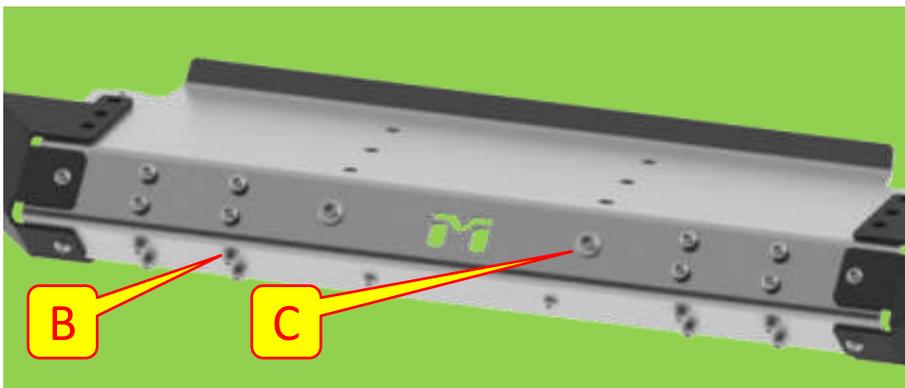


Assemble Forward Angle Shackle Mounts(A) [if a Hoop was NOT purchased] on the forward angled faces of Bumper Base using the 3/8"-16 x 1" Socket Head Cap Screws(B), 3/8" Washers and 3/8"-16 Nylock Nuts provided. Fully tighten Hardware.

### Step 6: Cosmetic Screws

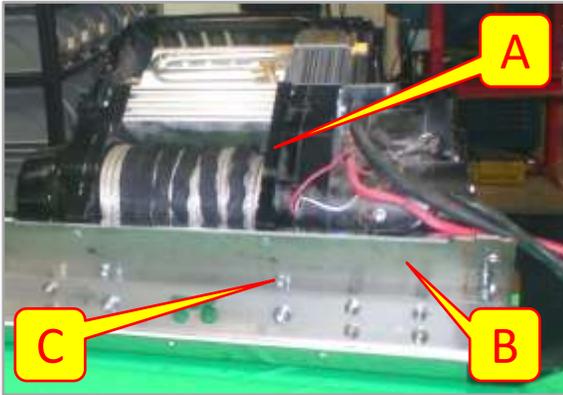
The 3/8"-16 x 1" Socket Head Cap Screws(B), 3/8" Washers and 3/8"-16 Nylock Nuts provided fill empty 3/8" holes on the angled front faces of Bumper Base. Using the 5/8"-11 x 1" Socket Head Cap Screws(C), 5/8" Lock Washers and 5/8"-11 Nuts provided fill empty 5/8" holes on the upper angled front face of Bumper Base. Do not fill winch mount holes on top of bumper base.

NOTE: If front mount bumper accessories (hoops, front shackles, etc.) were NOT purchased four of the 3/8"-16 x 1" Socket Head Cap Screws(B) must be shortened to a length of  $\frac{3}{4}$ " (via grinding or hack saw) and installed in the 4 positions shown below (D) OR these holes (D) may be left unfilled. This prevents 3/8"-16 x 1" Socket Head Cap Screws(B) from interfering with one another on the back side of bumper base during installation.



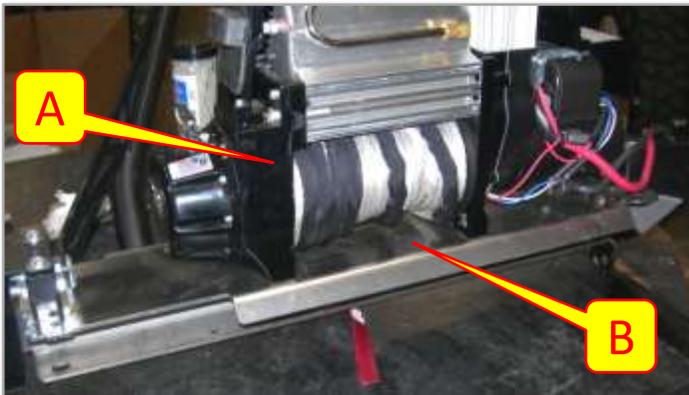
## Phase 2: Pre-Assembly of Bumper

### Step 7: Install Winch



Follow Manufacturer's installation instructions. Assemble Winch(A) on top face of Bumper Base(B) using hardware provided by the Winch Manufacturer(C). Be sure to use flat washers and lock washers when mounting the Winch to Bumper Base. Do not use hardware provided by MetalCloak to mount winch.

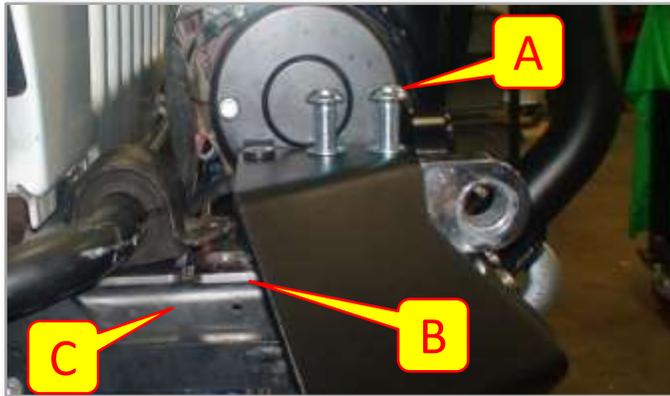
*NOTE: If a Roller Fairlead is to be used mount the Roller Fairlead Bracket(D) before installing the winch.*



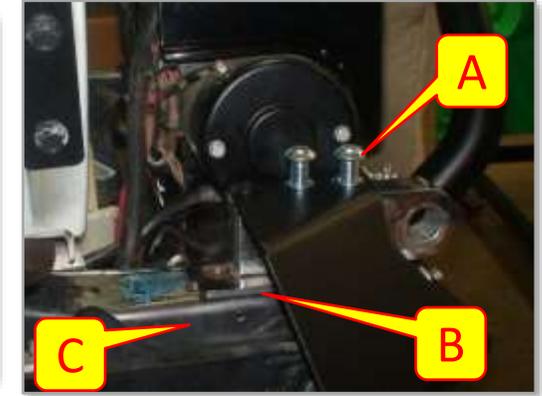
*NOTE: The **Warn PowerPlant Winch** in combination with the **Mid-Stinger or Full-Stinger** will require the drilling of a new bolt pattern for the mounting of the Winch. The new hole pattern should be re-drilled 3/4" toward the drivers side relative to the center line of the current hole pattern in the Frame-Built Bumper. Follow the manufacturer's suggested hole pattern.*

## Phase 3: Frame-Built™ Bumper Final Installation

**Step 1:** Position Bumper Assembly on main frame rails.

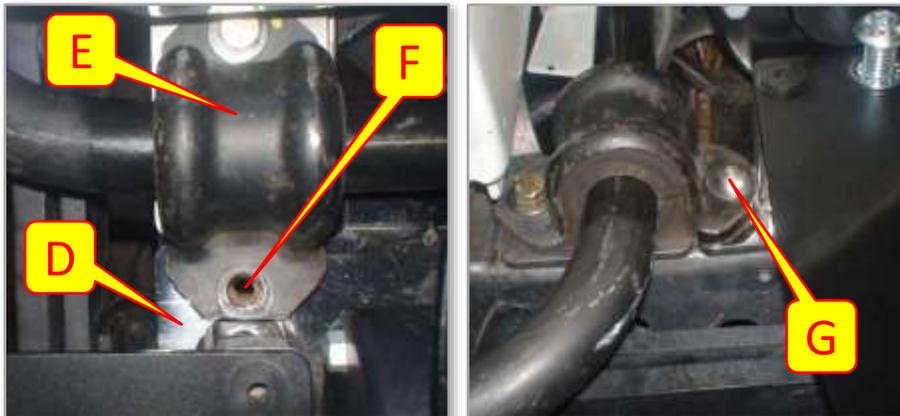


Lift the four 1/2"-13 X 3 1/2" Socket Head Cap Screws(A) [or four 1/2"-13 x 1" Torx Bolts from stock bumper] until end of bolts are flush with the inside surfaces of the Bumper Base, this will prevent bolts from hitting main frame rails during installation. Slide Bumper Assembly into position over the main frame rails(C) of the Jeep.



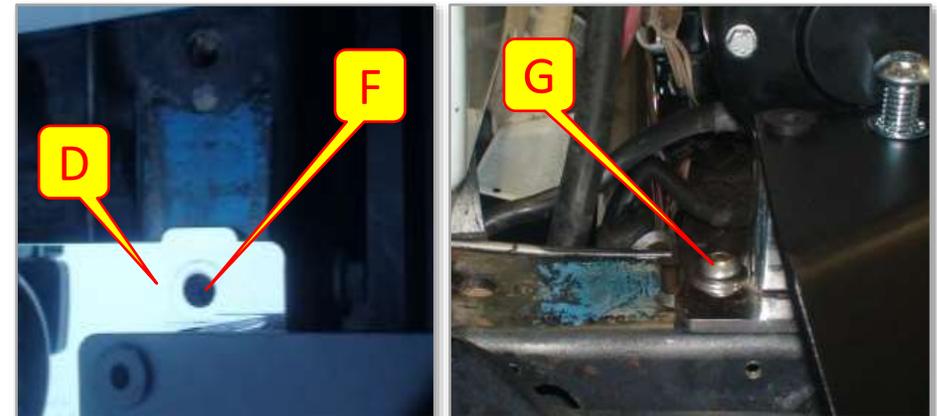
Align and loosely thread the four 1/2"-13 X 3 1/2" Socket Head Cap Screws(A) [or four 1/2"-13 x 1" Torx Bolts from stock bumper] with the four 1/2"-13 threaded holes on the top of main frame rails(B). The Frame Built™ Bumper fits tightly on the main frame rails, it will take a little patience to get proper alignment. Just get the threads on the bolts started - **do not tighten bolts.**

**TJ-LJ OWNERS with STOCK SWAY BAR:**



Bumper Base(D), sway bar "U" bracket(E) and 3/8"-16 threaded hole(F) in main frame rail should align. Loosely thread 3/8"-16 x 1" Socket Head Cap Screws(G) and 3/8" washer into threaded hole(F). Hand tight only.

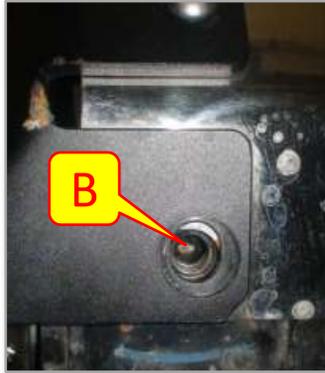
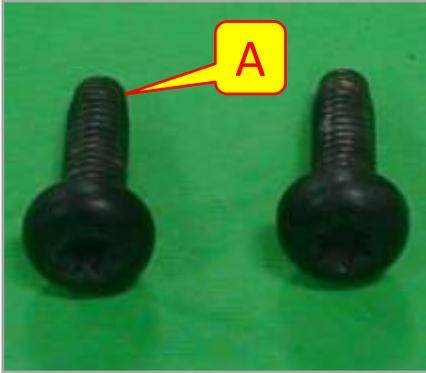
**TJ-LJ with AFTERMARKET SWAY BAR:**



Bumper Base(D), and 3/8"-16 threaded hole(F) in main frame rail should align. Loosely thread 3/8"-16 x 1" Socket Head Cap Screws(G) and 3/8" washer into threaded hole(F). Hand tight only.

## Phase 3: Frame-Built™ Bumper Installation

### Step 2: Position Lower Bumper Mounting Bolts



Align and loosely thread two of the 1/2"- 13 x 1" Torx Bolts(A) from the stock bumper through the bottom of the Bumper Caps, Bumper Base and into the two 1/2"-13 threaded holes(B) located on the bottom face of the main frame rails. Hand tight only.



### Step 3: Carefully and fully tighten all nuts, bolts and screws to complete the Frame-Built Bumper Installation.



## Phase 4: Enjoy your Frame-Built™ Bumper



Remember to post your pic of your Frame-Built Bumper on your favorite forum and at [Facebook.com/metalcloak](https://www.facebook.com/metalcloak).

# BITE BACK