

## **FULL METAL FABWORKS**

### Breakover Series Front Frame Chop Bumper for Jeep JK (2007-2018)

\*At this time we have not had the opportunity to install this bumper on either a JL or JT/Gladiator. All of our research indicates they will fit just fine, but these instructions will only cover installation on a Jeep JK until we can perform a test fit for a JL/JT at our shop\*

Please read these instructions in their entirety before proceeding with installation. If you are not confident in your ability to perform this installation, or lack the necessary tools, please consult the help of a professional.

#### **What Is Included:**

Before beginning the installation, please make sure that all parts and hardware are included in your package and that no damage has been done to the product during shipping. If you are missing parts or the product is damaged please give us a call at (909)-505-7115 and we will make sure that any problems are taken care of.

- 1.) (1) Breakover Series Front Bumper
- 2.) (2) 1/2-13x6.5" Grade 8 Hex Head Cap Screws
- 3.) (4) 1/2" Flat Washers
- 4.) (2) 1/2"-13 Stover/Top Lock Nuts
- 5.) (2) 0.75x0.120x5.375" Vertical Crush Sleeves
- 6.) (2) horizontal crush sleeve assemblies
- 7.) (4) 3/8-16x3.5" Gr8 Hex Head Cap Screws
- 8.) (8) 3/8" Heat Treated Flat Washers
- 9.) (4) 3/8-16 Grade 8 Nylock Nuts
- 10.) (1) Frame Chop Cut Template

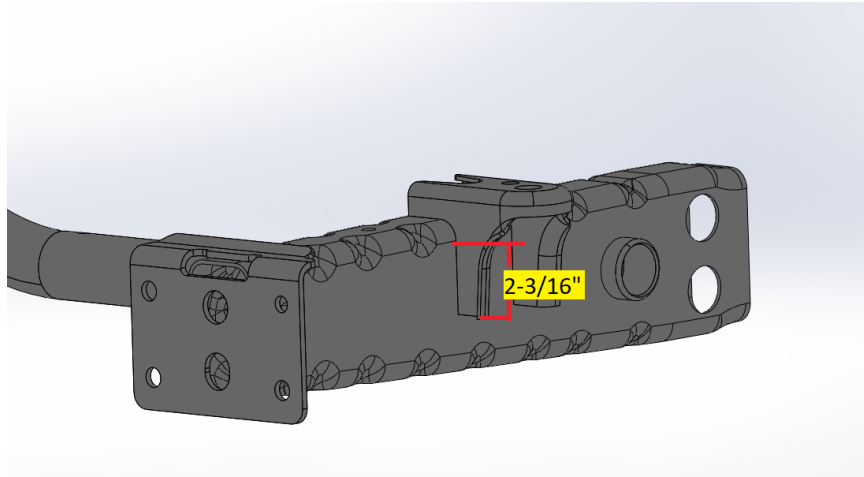
### **Tools Needed:**

- Safety Glasses
- 3/4" socket and open ended box wrench
- 9/16" Socket and open ended box wrench
- Matching Ratchet
- Drill
- 3/8" Drill Bit
- 1/2" Drill Bit
- 3/4" Drill bit or uni/step bit
- sharpie/center punch/ marking device
- Cutoff wheel/reciprocating saw to remove frame horn, edge of body mounts, and vacuum pump mount (2012-2018 JKs only)

After verifying all parts, tools, and skills are accounted for and reading these instructions, you are ready to start the installation.

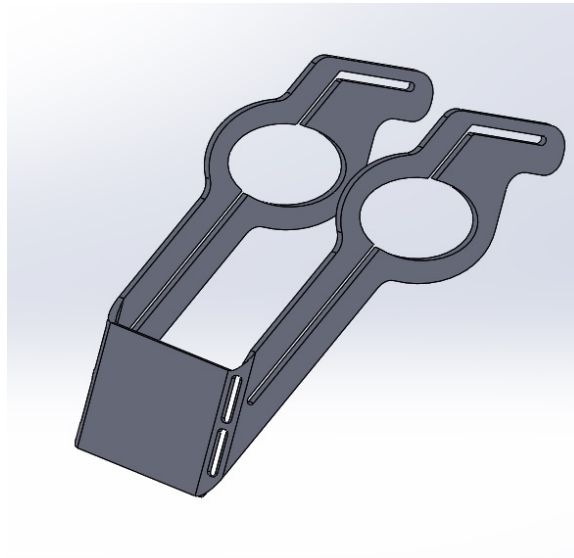
### **Installation Procedure:**

- 1) Begin by parking your vehicle on a level surface and setting the parking brake.
- 2.) Installation instructions assume factory bumper has already been removed.
- 3.) If your jeep is 2012-2018 year model, you will need to relocate the vacuum pump before installing the bumper. If your vacuum pump has not been relocated see the installation instructions for the "Vacuum Pump Relocation Kit"
- 4.) Using a cutoff wheel or reciprocating saw, remove the front cross member/crash bar and mounting tabs for the vacuum pump bracket if applicable. Using a flap wheel remove any remaining portion of the cross member and vacuum pump until the frame is smooth.
- 5.) Next you will need to remove a portion of the front leg of the body mount. To do so, measure up 2.1875" (2-3/16") from the bottom and make a horizontal line as shown below. Optional tip, we like to drill a small hole at the intersection of the vertical and horizontal cut so there is a smooth radius for the transition.

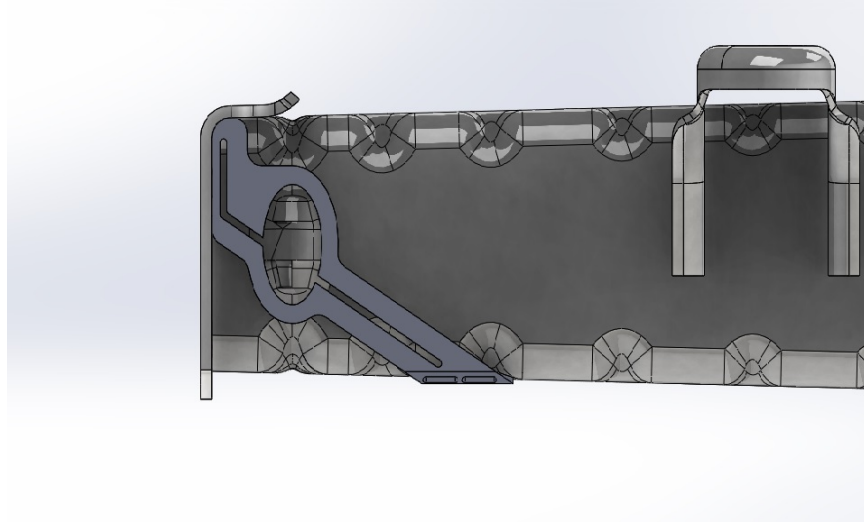




- 6.) Next, bend the included cut template at the (2) pre-cut bend areas to form the shape below. Both bends will be bent to 90 degrees. We have found it easiest to clamp the flat template to a table and make the bends with either a dead blow hammer or an adjustable wrench.



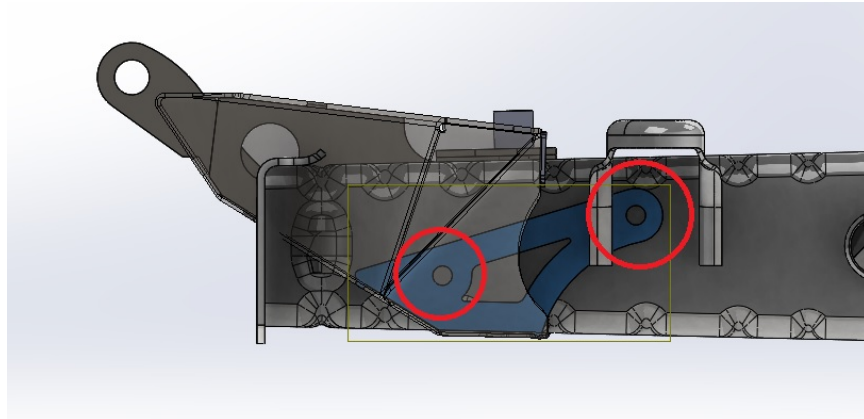
7.) Align the cut template with the front of the frame horn as shown below and use the slots to scribe/mark a line for cutoff. Note: this mark represents the absolute minimum amount needed to fit the bumper; cutting exactly enough off will make the bumper a nice tight fit but also MAY mean more adjustment is needed later. Although not 100% necessary, it will make installing the bumper much easier if you sand down the raised bump in the frame outlined by the cut template, especially on the insides of the frame. Lastly, if you didn't already completely remove the frame horns with the previous cut, do so now.



8.) After the necessary cut has been made, using either a 3/4" drill bit or a step/unibit, enlarge the hole in the top of the frame as shown below. This will allow the vertical crush sleeve to be installed.



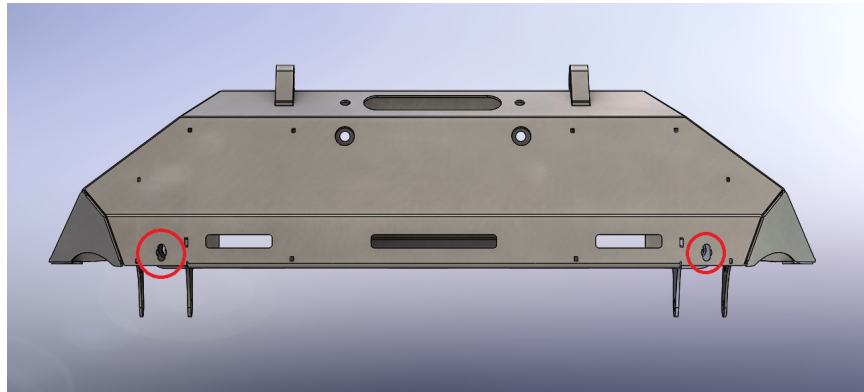
- 9.) Test fit the bumper. Ensure that the vertical crush sleeve will go into the enlarged hole; depending on your earlier cut it may be necessary to cut or sand down more of the front of the frame, or if using a step bit, enlarge the hole in the top of the frame slightly.
- 10.) After you have the bumper test fitted properly, with the vertical crush sleeve installed (this will act as an alignment pin for this step), check to make sure the two inner holes correspond with the factory holes on the inside of your frame by inserting the provided 3/8" hardware into the holes. If everything looks satisfactory, use the double shear mounting plate to mark the (2) 3/8 hole locations on the outside of the frame that correspond with inner holes on both sides. Remove the bumper and drill the marked holes to 3/8", shown below in red circles:



- 11.) Install the provided (2) horizontal crush sleeve assemblies into the frame as shown below: The crush sleeves are a mirrored part (a Left/Right), and the wider end of the crush sleeve will point towards the outside of the vehicle on both sides. Ensure the sleeves will align with the holes drilled in the previous step.



12.) Reinstall the bumper using the (4) 3/8"-16x3.5 Grade 8 Hex Head Cap Screws through the bumper and crush sleeves you just installed. The rear most bolts can be installed either direction, but the front bolts will need to be installed from the inside towards the outside (nut on the outside of the frame rail) and the front bolts will install the opposite direction. Install the Vertical crush sleeves. If you have a long enough 1/2" Drill bit (approximately 5-3/8" long), you can use the crush sleeve as a drill guide to drill from the top of the bumper through the bottom of the frame rail. If you do not have a long enough drill bit, use the slot on the bottom of the bumper (shown below in red) and mark the center of the slot. Remove the vertical crush sleeve and drill a 1/2" hole up through the bottom of the frame rail. (this hole can be slightly larger without affecting the strength of the bumper, if you would like some wiggle room for installing your bolt). This bolt can be installed from the top down, or the bottom up, it is user preference.



13.) Remove the bumper and touch up all holes/cuts on the frame to prevent corrosion

14.) Apply coating of choice, paint or powder coat, to the bumper and reinstall after it has dried.

15.) Congratulations, your installation is complete. Enjoy your new found ground clearance and be sure to tag us in any social media posts. We appreciate your business, please let us know if we can help you with anything else in the future.

**Hold Harmless Agreement:**

*In purchasing a Full Metal Fabworks LLC product I release, waive, discharge and covenant not to sue Full Metal Fabworks LLC officers, servants, agents, or employees (hereinafter referred to as Releasees) from any and all liability, claims, demands, actions and causes of action whatsoever arising out of or related to any loss, damage, or injury, including death, that may be sustained by me (or anyone else), any property belonging to me (or anyone else), whether caused by the negligence of the releasees or otherwise, while working on, using or any activity related to this product.*

*I am fully aware of risks and hazards connected with the use of a this product and I elect to voluntarily engage in such use of this product knowing that the use may be hazardous to me and my property. I voluntarily assume full responsibility for any risks of loss, property damage or*

*personal injury, including death, that may be sustained by me (or anyone else), or any loss or damage to property owned by me (or anyone else), as a result of using this product, whether caused by the negligence of releasees or otherwise.*

*I further agree to indemnify and hold harmless the releasees from any loss, liability, damage or costs, including court cost and attorney fees, that they may incur due to my use of a this product, whether caused by negligence of releasees or otherwise.*

*It is my express intent that this Release and Hold Harmless Agreement shall bind the members of my family and spouse, if I am alive, and my heirs assigns and personal representative, if I am deceased, and shall be deemed as a release, waiver, discharge, and covenant not to sue the above named releasees. I further agree that this Waiver of Liability and Hold Harmless Agreement shall be construed in accordance with the laws of the State of California.*

*By accepting this product, I acknowledge and represent that I have read the above Waiver and Liability and Hold Harmless Agreement, understand it and accept it voluntarily as my own free act and deed; no oral presentations, statements, or inducements, apart from the foregoing written agreement, have been made; I am at least eighteen (18) years of age and fully competent; and I execute this Release for full, adequate and complete consideration fully intending to be bound by same.*

*If you do not agree with the preceding Hold Harmless Agreement, you may return the product and receive a full refund. Please, contact a representative of Full Metal Fabworks LLC and they will issue a call tag for the product in question. Once the product has been received by Full Metal Fabworks LLC a full refund will be issued.*

