



## XJ Front 3 Link Installation Instructions

Thank you for purchasing our XJ Front 3 Link!

### Installation Notes:

- This product is designed to fit Jeep Cherokees 2 door or 4 doors 1984-2001 with an AW4 automatic transmission.
- The transfer case skid is designed to fit a NP231.
- This kit requires welding, automotive mechanical knowledge, and general fabrication skills, it should only be installed by qualified individuals.
- This kit requires a minimum of 4" of lift with 3" of bump stop extensions.
- If a front axle has been swapped using our swap kit the left upper control arm mount will need to be drilled out to accept a 9/16" bolt.
- The factory lower frame control arm mounts and the left side frame front upper control arm mount will need to be removed.
- The components of this kit will need to be painted or powder coated during installation.
- This kit includes stainless steel hardware on some components. We recommend using a quality anti-seize compound on any stainless hardware during installation.

### Tools required:

- Drill
- 17/32" Drill Bit **\*if you do not have frame stiffeners installed**
- 8.5mm Drill Bit
- 21/64" (.3281") Drill Bit **\*only if you have frame stiffeners installed**
- M10x1.5 Tap
- Various Hand Tools
- Jack
- Jack Stands
- Welding machine with the capability to weld at least ¼" thick steel
- Cutting torch, plasma cutter, or other appropriate cutting tool

## Possible Kit Combinations

Use the charts below to determine which combination of boxes you will receive for your make and model of Jeep. Each box should have a barcode with the kit part number listed on it.

Qty	Kit Part Number	Kit Description
1	B4WK12787	XJ Front 3 Link Bracket Kit
1	B4WK12788	XJ Front 3 Link Lower Pre-Pack Hiems
1	B4WK12789	XJ Front 3 Link Upper Pre-Pack Hiems
1	B4WK12790	XJ Front 3 Link Kit Transfer Case Skid Pre-Pack
1	B4WK12788E	XJ Front 3 Link Lower Pre-Pack Enduros
1	B4WK12789E	XJ Front 3 Link Upper Pre-Pack Enduros

## Contents of each box

Bill Of Materials for B4WK12787			
QTY	Part Number	Etch Number	Description
1	B4W188980	980 B	XJ Front 3 Link Driver Gusset
1	B4W250958	958 B	XJ Front 3 Link Crossmember Frame Bracket Driver
1	B4W250961	961 B	XJ Front 3 Link Kit Upper Bracket
1	B4W250960	960 B	XJ Front 3 Link Lower Bracket Driver
1	B4W250956	956 B	XJ Front 3 Link Crossmember Main
1	B4W250959	959 B	XJ Front 3 Link Crossmember Frame Bracket Passenger
1	B4W188981	981 B	XJ Front 3 Link Passenger Gusset
1	B4W250971	971 B	XJ Front 3 Link Lower Bracket Passenger
1	B4WK12786	957	XJ Front 3 Link Crossmember Bottom Assembly
6	37C125HC8Y	NA	3/8"-16X1-1/4" Hex Bolt Grade 8 Yellow
6	37NWSAFY	NA	3/8 SAE Washer Yellow Zinc
6	FPCALFST616150	NA	3/8-16 Rivet Nut Insert .027-.150
6	43CNNE0Y/GC	NA	7/16-14 NYLOCK
6	43C125HCS8Y	NA	7/16-14 x 1.25
12	43NWSAFY	NA	7/16 SAE Washer Yellow
6	.100C350BHF0Y/6921	NA	M10-1.5 x 35mm Hex Flange Bolt Yellow Zinc
1	43CNFH8Y	NA	7/16-14 Nut
6	94077A105	NA	3/8"-16 x 1-1/2" Hex Washer Thread Forming Screw

<b>Bill Of Materials for B4WK12788</b>			
<b>QTY</b>	<b>Part Number</b>	<b>Etch Number</b>	<b>Description</b>
2	56C400HCS8Y	NA	9/16-12x4 GRADE 8 BOLT
2	56CNNEOY/GC	NA	9/16-12 NYLOCK
2	DOM201536	NA	DOM 2"X1.5"X36"
2	JN125012LH	NA	LH 1-1/4"-12 Jam Nut
2	JN125012RH	NA	RH 1-1/4"-12 Jam Nut
2	125HWRH	NA	Heavy Wall Tube Insert (1 1/4"-12) For 1 1/2" I.D. Tubing
2	125HWLH	NA	Heavy Wall Tube Insert (1 1/4"-12) For 1 1/2" I.D. Tubing
4	HMS169ZP	NA	Hi Mis-Alignment Spacer Pair
2	XM16-CR	NA	Heat Treated Chromoly 1 1/4-12 X 1 RH Long Shank
2	XM16-CL	NA	Heat Treated Chromoly 1 1/4-12 X 1 LH Long Shank

<b>Bill Of Materials for B4WK12789</b>			
<b>QTY</b>	<b>Part Number</b>	<b>Etch Number</b>	<b>Description</b>
1	56C400HCS8Y	NA	9/16-12x4 GRADE 8 BOLT
2	56CNNEOY/GC	NA	9/16-12 NYLOCK
1	56C325HCS8Y	NA	9/16-12 X 3 1/4" Grade 8 Bolt
1	B4WXJLAFUL	NA	XJ Front Long Arm Upper Link
1	TJFAUCAB9	NA	TJ Front Axle UCA Bushing 9/16"
1	B4W188660	660 B	TJ Suspension Kit Front Upper Link Axle Bracket
1	JN125012RH	NA	RH 1-1/4"-12 Jam Nut
1	HMS169ZP	NA	Hi Mis-Alignment Spacer Pair
1	XM16-CR	NA	Heat Treated Chromoly 1 1/4-12 X 1 RH Long Shank
1	1251215175RHMS	NA	Tube Insert 1.25-12RH 1.5ID 1.75OD

<b>Bill Of Materials for B4WK12790</b>			
<b>QTY</b>	<b>Part Number</b>	<b>Etch Number</b>	<b>Description</b>
1	B4W250963	963 B	XJ 3 Link Tcase Skid Bracket
1	B4W250962	962 CB	XJ 3 Link Tcase Skid
4	37C100KFCS	NA	3/8-16 x 1 Counter sunk SS bolt
3	37C125HCS8Y	NA	3/8"-16X1-1/4" Hex Bolt Grade 8 Yellow
1	FPCALFST616150	NA	3/8-16 Rivet Nut Insert .027-.150
5	37NWSAFY	NA	3/8 SAE Washer Yellow Zinc
2	37CNNEOY/GC	NA	3/8-16 Nylock Yellow

<b>Bill Of Materials for B4WK12788E</b>			
<b>QTY</b>	<b>Part Number</b>	<b>Etch Number</b>	<b>Description</b>
2	56C400HCS8Y	NA	9/16-12x4 GRADE 8 BOLT
2	56CNNE0Y/GC	NA	9/16-12 NYLOCK
2	DOM201536	NA	DOM 2"X1.5"X36"
2	JN125012LH	NA	LH 1-1/4"-12 Jam Nut
2	JN125012RH	NA	RH 1-1/4"-12 Jam Nut
2	125HWRH	NA	Heavy Wall Tube Insert (1 1/4"-12) For 1 1/2" I.D. Tubing
2	125HWLH	NA	Heavy Wall Tube Insert (1 1/4"-12) For 1 1/2" I.D. Tubing
2	B4WEJR16-9	NA	1.25 RH Enduro 9/16
2	B4WEJL16-9	NA	1.25 LH Enduro 9/16

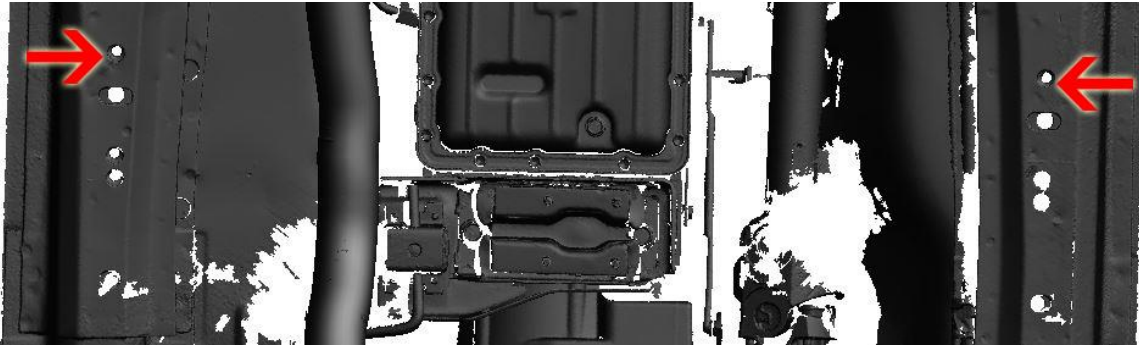
<b>Bill Of Materials for B4WK12789E</b>			
<b>QTY</b>	<b>Part Number</b>	<b>Etch Number</b>	<b>Description</b>
1	56C400HCS8Y	NA	9/16-12x4 GRADE 8 BOLT
2	56CNNE0Y/GC	NA	9/16-12 NYLOCK
1	56C325HCS8Y	NA	9/16-12 X 3 1/4" Grade 8 Bolt
1	B4WXJLAFUL	NA	XJ Front Long Arm Upper Link
1	TJFAUCAB9	NA	TJ Front Axle UCA Bushing 9/16"
1	B4W188660	660 B	TJ Suspension Kit Front Upper Link Axle Bracket
1	JN125012RH	NA	RH 1-1/4"-12 Jam Nut
1	B4WEJR16-9	NA	1.25 RH Enduro 9/16
1	1251215175RHMS	NA	Tube Insert 1.25-12RH 1.5ID 1.75OD

### Step 1:

Park vehicle on a level surface. Support the transmission and remove the factory crossmember.

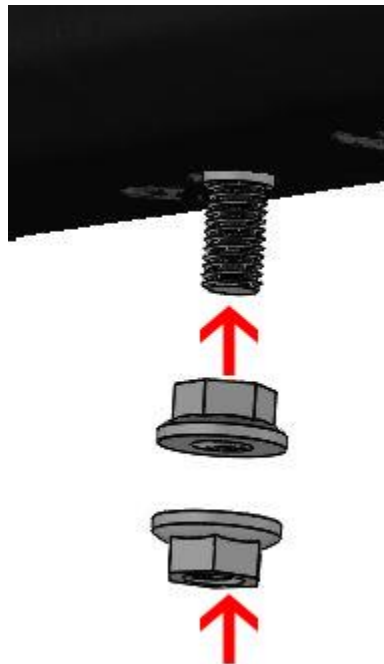
### Step 2:

Drill out the forward most hole in the unibody with an 8.5mm drill bit and tap to a M10X1.5 thread.



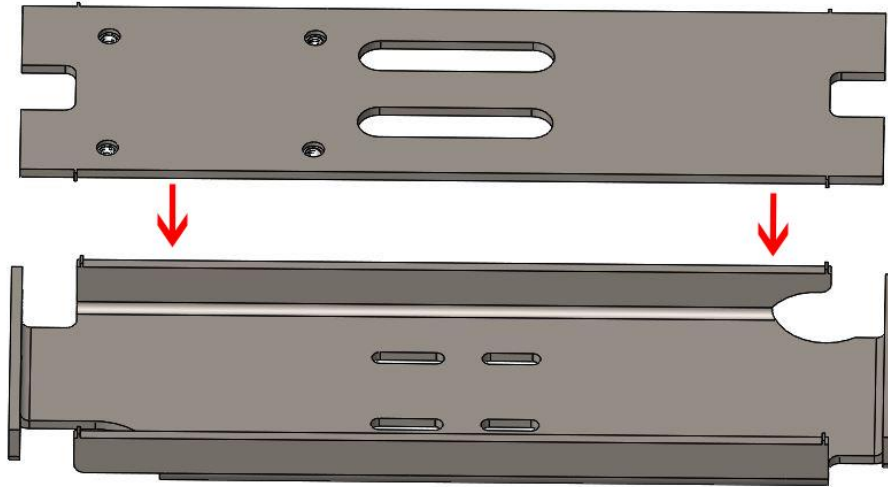
### Step 3:

Remove crossmember studs from the unibody threading two nuts together onto the stud. Tighten the nuts together and turn the top nut to remove the stud.



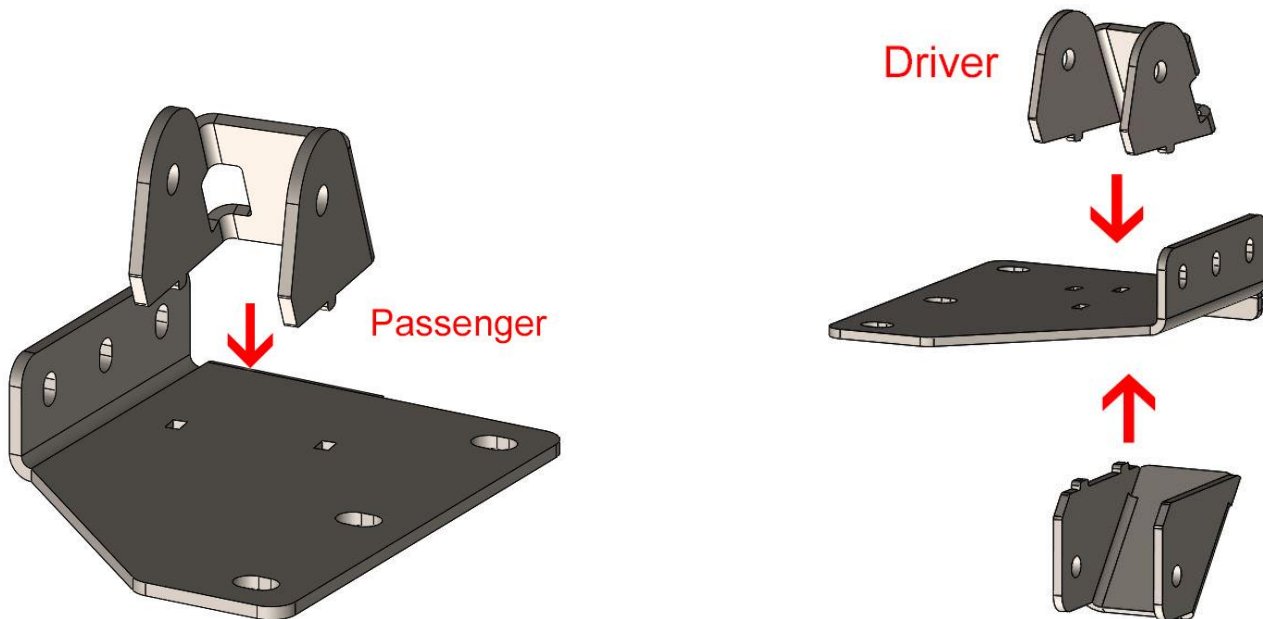
### Step 4:

Assemble the crossmember as shown below making sure it is assembled in the correct orientation. Weld the bottom to the main crossmember.



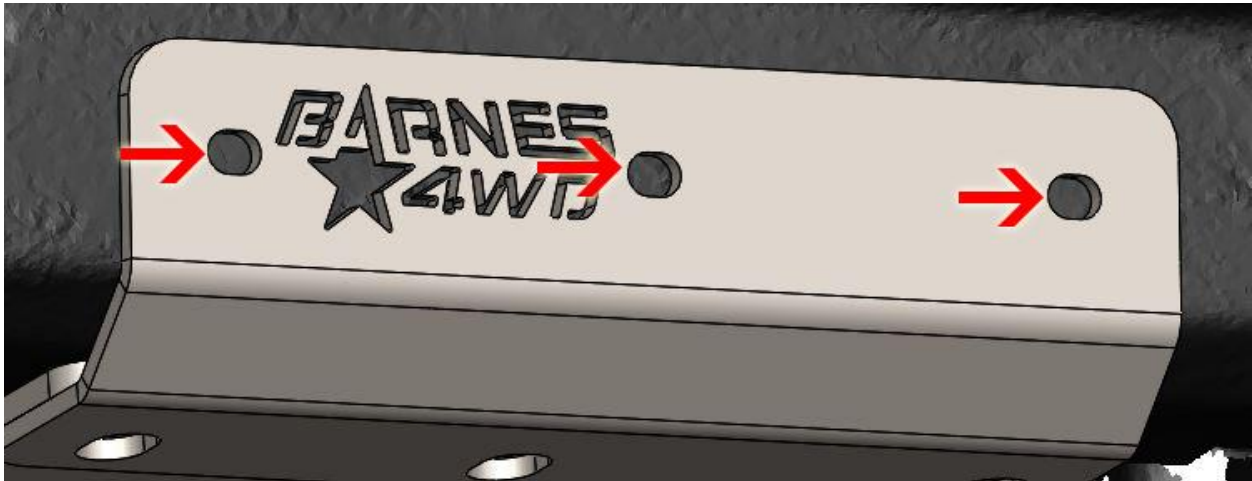
### Step 5:

Assemble the driver and passenger side control arm brackets as shown below. Once assembled in the correct orientation weld the assembly together.



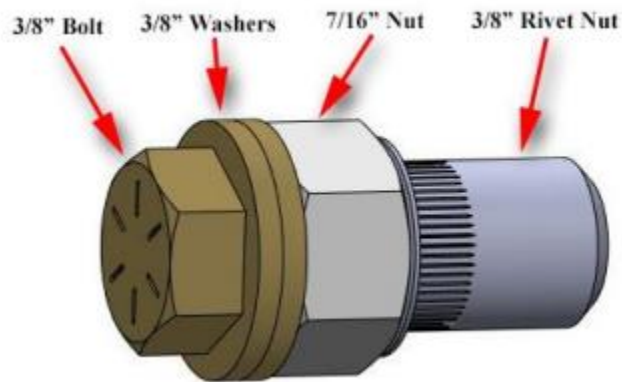
## Step 6:

Install the driver and passenger side bracket assembly, and gusset onto the vehicle as shown below. Mark the 3 holes in the gussets on each side of the unibody. Remove the bracket assembly. Drill a 17/32" hole if you do not have frame stiffeners and move to step 7. If you do have frame stiffeners drill a 21/64" size hole and move to step 8.



## Step 7:

Using one of the 3/8" bolts, two 3/8" washers, and the provided 7/16" nut, as shown below, install the six rivet nuts. Push the rivet nut into drilled in step 6. With a 11/16" wrench, hold the 7/16" nut and using a 9/16" wrench or socket, tighten the bolt until the rivet nut is fully installed. The bolt will become very tight and there should be no wiggle or twist to the rivet nut.

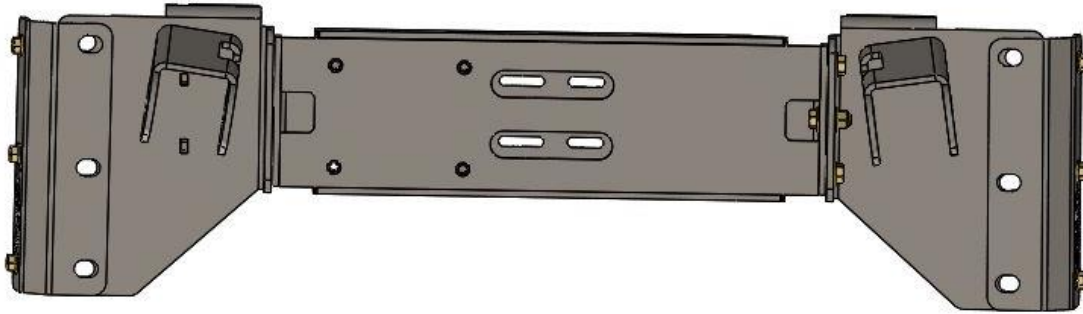


### Step 8:

Reinstall the driver and passenger side bracket assembly and gusset to the unibody. Using 3/8" thread forming screws for frame stiffener installation and standard 3/8" hardware for non-stiffener installation. Leave hardware loose until crossmember has been installed.

### Step 9:

Install the crossmember as shown below and tighten all the hardware.



### Step 10:

With the Jeep sitting at ride height measure the bolt hole center distances from each bracket on the crossmember to the accompanying bracket on the axle and record these measurements in the table below. The measurements taken here will be used to build the new control arms.

<b>Right Lower</b>	
<b>Left Lower</b>	
<b>Upper</b>	

### Step 11:

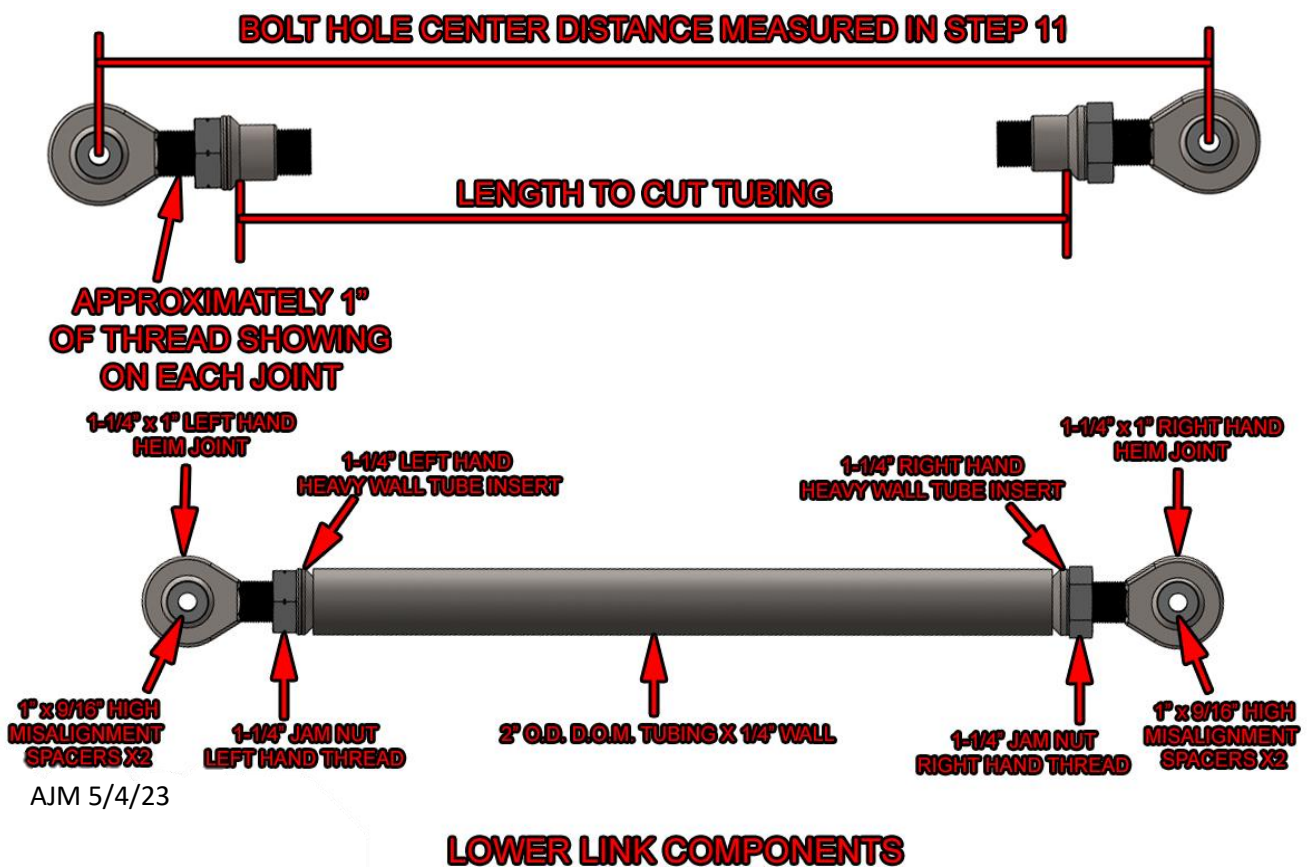
The provided front axle right side control arm bushing now needs to be installed in the front axle. Remove the front left upper control arm from the Jeep. Take a measurement from the side of the casting to the end of the bushing and record this measurement. The old bushing now needs to be removed. This can be accomplished with multiple methods, however using a pneumatic air hammer to drive the old bushing out is the most effective method. The new bushing will now need to be installed to the same dimension as recorded above. A ball joint press or other appropriate tool can be used to press the new bushing in.





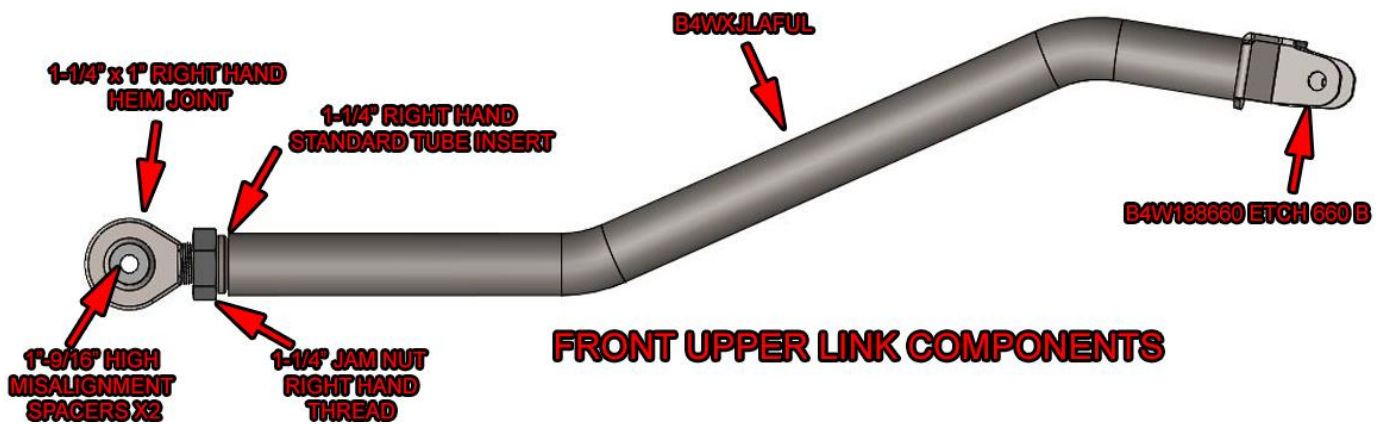
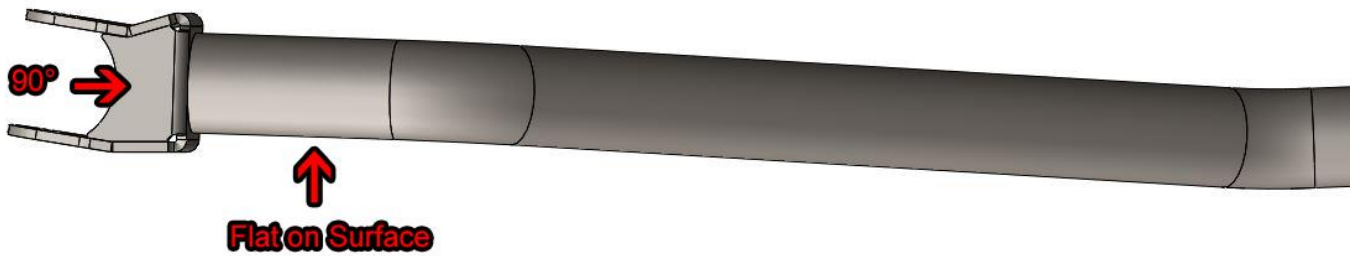
### Step 12:

Assemble the lowers, the provided tubing will need to be cut to length and the threaded inserts welded into each end. Referencing the images below for component placement, assemble each joint, tube insert and jam nut with 1" of thread showing between the end of the jam nut and the end of the threads on the joint. This will allow for some adjustment after installation if needed. Place the assembled components on a table or other flat surface and arrange them based on the bolt hole center measurements taken in step 10. Measure the distance between the tube inserts and cut the tubing to this length. Remove the joints from the threaded inserts, install the inserts in the tubing, and weld in place for each link.



### Step 13:

Assemble the upper link as follows. The provided tubing will not need to be cut for the upper. Install the threaded insert and weld in place. Lay the tube flat on a level surface across the short bend and center B4W188660 on the tube, the top should measure 90° from the level surface. Weld the bracket together and to the tubing.



## Step 14:

The unibody front left upper control arm mount and both the unibody lower control arm mounting brackets will need to be cut off from the unibody. This can be done all at the same time or one at a time. If only removing one link and unibody bracket at a time, the new link can be then installed in its place. This is a useful method if installing this kit without the use of a vehicle lift. Hardware has been provided for all the frame brackets and the uppers at the axle, the factory bolts for the lowers at the axle will be reused. The remaining upper control arm brackets on the unibody and axle brackets can be removed if desired or left in place. Tighten all 9/16" hardware to 110 Ft-lbs.

## **Congratulations! You have finished the installation of the Barnes4wd XJ Front 3 Link Kit.**

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