

## 1.50 Uniball Performance Upper Arm Instructions

Ford Raptor 2010-2014

Always inspect your suspension after off-roading and at your routine service intervals. Use of products sold by Camburg Engineering is at the consumer's own risk. Proper installation and proper use of all products must be followed for optimal safety and performance. Installing most suspension products will raise the center of gravity of the vehicle and can increase the susceptibility to a rollover and alter the handling characteristics. Camburg Engineering products may void aspects of the vehicles warranty. Camburg Engineering reserves the right to change the design, material or specifications of any product without assuming any obligation to modify any product previously manufactured and without prior notice. Every effort has been made to avoid printing errors and specifications. By purchasing, installing and/or using these products you are accepting these stated conditions and accept all liability and responsibility.



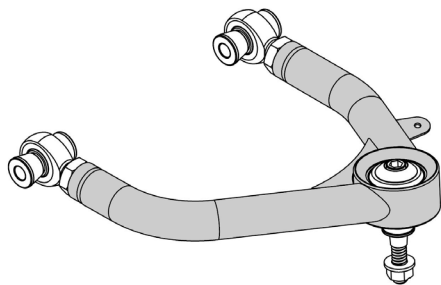
Warranty Information

Scan or Click QR Code

### Parts Supplied

QTY	Description	ID
4	FK 7/8" X 7/8" RHT Heim Joints	1
8	Frame Pivot Heim Spacers	2
4	7/8-14 RHT Steel Jam Nuts	3
2	9/16-18 x 4.5" 12pt Bolts	4
2	9/16" Upper Domed Uniball Spacers	5
2	9/16" Tapered Uniball Spindle Adaptors	6
2	9/16" SAE Grade 8 Washers	7
2	9/16-18 Stover Lock Nuts	8
4	Camburg 8.5" Stickers	

\* REFER TO EXPLODED CAD DRAWING ON \*  
\* OTHER SIDE FOR PARTS REFERENCE NUMBERS \*



Thanks for purchasing a set of our Camburg 1.50 uniball performance upper arms for your vehicle. Please follow all instructions. If you are not installing these yourself have a qualified shop do so. These arms are designed for 1-3" of lift from coilovers and to be used with stock OEM spindles or Camburg performance spindles. These are NOT designed to be used with cheap spacer type lifts. Make sure to check the parts list to make sure you have every component prior to starting. Camburg Engineering has made every attempt to insure you receive the highest quality components in the most complete manner. This is a guide to help you through the process with recommended torque specs. It's your responsibility to ensure parts are being installed correctly using the correct tools and procedures. We recommend reviewing a service manual for more details and torque specs.

### Tools & Supplies Required

Eye Protection | Jack | Jack Stands | Deburring Tool  
2-3 lb. Mini Sledge Hammer | Rubber Mallet  
21mm Socket & Wrench | 9/16" 12pt Socket | 7/8" Socket  
1-1/4" Open-end Wrench | Torque Wrench | Needle Nose Pliers  
Brake Cleaner | Anti-seize | Red Loctite

### 1.0 Setup

Park the vehicle on level ground and set the parking brake and chock both rear wheels. Jack up the front end from the chassis until the front tires are off the ground. Place jack stands under the front frame rails and set down. Make sure the vehicle is supported correctly and the front tires are still off the ground. Place the jack under the driver side lower arm and raise the tire 1/2", then remove the wheel while keeping jack under lower a-arm to support the suspension. Read these instructions start to finish before moving forward and review diagrams.

### 2.0 Removal

With needle nose pliers, remove the ABS speed sensor wire plastic retainer from the backside of the upper arm. Be careful not to damage as it will be re-used. Using a 21mm socket, loosen the nut from on the upper ball-joint where it connects to the spindle but do not fully remove. With a mini sledge hammer strike the top of the spindle numerous times to release the ball-joint tapered stud. This can be a little difficult since it's a press fit, heating up the spindle to get it to expand will help if need be. Once the ball joint releases from the spindle, then remove the nut. This will allow you to position the upper arm and spindle out of the way so you can remove the coilover/strut to access the upper arm bolts at the frame. Refer to your coilover instructions or service manual for details. Make sure to position & support the spindle so that it doesn't pull on the brake line and that it doesn't pull out the inner CV or strain the CV boots and axles. Once the coilover is removed use a 21mm socket & wrench to loosen and remove the OEM upper a-arm bolts. Then remove the stock upper arm. You will re-use the factory hardware.

### 3.0 Pre-Installation

Thread the 7/8" jam nuts onto the heims then apply anti-seize compound on the exposed threads. Thread the heims into the upper arm so the heim is vertical and the jam nut makes contact with the arm and you have 3 threads exposed past the nut. Use a 1-1/4" open-end wrench to fully tighten the jam nut using another wrench to hold the heim vertical (perpendicular to the arm) so it doesn't rotate.

Now install the heim pivot spacers. We recommend coating the surface that slips into the heim with a little anti-seize. See diagram for reference.

Using a countersink bit or deburring scraper tool, slightly chamfer the top-hole edge of the ball-joint taper in the spindle. This will allow the spacer to fully seat when tightened and eliminate possible stress risers. Then inspect and clean the tapered hole. See diagram for reference.

### 4.0 Installation

Install the driver side Camburg upper arm into the frame using the original hardware in the same orientation as it was removed. To insure you're installing the correct arm, the uniball snap-ring is below and the longer a-arm tube is towards the front of the vehicle. Our arms are built with higher precision and tighter tolerances than the factory arms, so it will be a tighter fit into the frame. You may need to pry the outer tabs out very slightly to make it easier to install. When the stock arms are tightened from the factory it bends the tabs slightly in. With the bolts pushed all the way through, clean the threads with brake cleaner and apply a little red loctite to the nut area. Use a 21mm wrench and 21mm socket and torque to 110 ft/lbs.

Cycle the arm up and down to make sure there are no clearance issues. Re-install coilover/strut.

Apply anti-seize to the uniball spacer surfaces shaded gray in the diagram. Insert the tapered lower uniball spacer into the uniball. Then install the upper spacer into the top of the uniball making sure both spacers are fully seated. If not damage will occur in the following steps. Install the 9/16" 12pt bolt through the spacers and uniball and attach the upper arm to the spindle by swinging it down to the spindle with some finesse. You may need to jack up the lower arm and move the uniball joint. The tapered spacer should sit almost flush with the top of the spindle/knuckle before tightening. Make sure the lower spacer did not pull out slightly from the uniball or damage will occur as the spacer can get caught on the bearing race. Install the 9/16" washer and stover lock nut with a small amount of red loctite onto clean threads. Using a 9/16" 12pt socket and 7/8" socket, torque to 120-125 ft/lbs. Don't over-tighten or use an impact gun. See diagram for reference.

Lastly, press the factory ABS speed sensor wire and bracket into the tab on the backside of the upper arm.

**Repeat steps 1 through 4 to install passenger side arm**

### 5.0 Alignment

You will need to have your vehicle aligned by a qualified shop. Additional caster is built into the Camburg arms to correct alignment issues that are inherent with lifting the vehicle. Have your alignment shop increase positive caster, then set camber and toe to factory OEM specifications. Having an increase in caster helps with straight line stability and cornering precision for performance driving on and off-road.

### 6.0 Maintenance & Care

Uniballs and heims are precision parts with tight tolerances which can lead to occasional noise when they become dirty. Occasionally wipe off the heims and underside of the uniball with a clean rag to remove road grime and dirt. Cleaning and lubricating them with WD-40 or a PTFE dry film lube like Super Lube can minimize any noise from stiction. Do not use harsh chemicals or grease/oils that attract dirt to clean & lube as it will damage and wear the internal teflon (PTFE) liner.

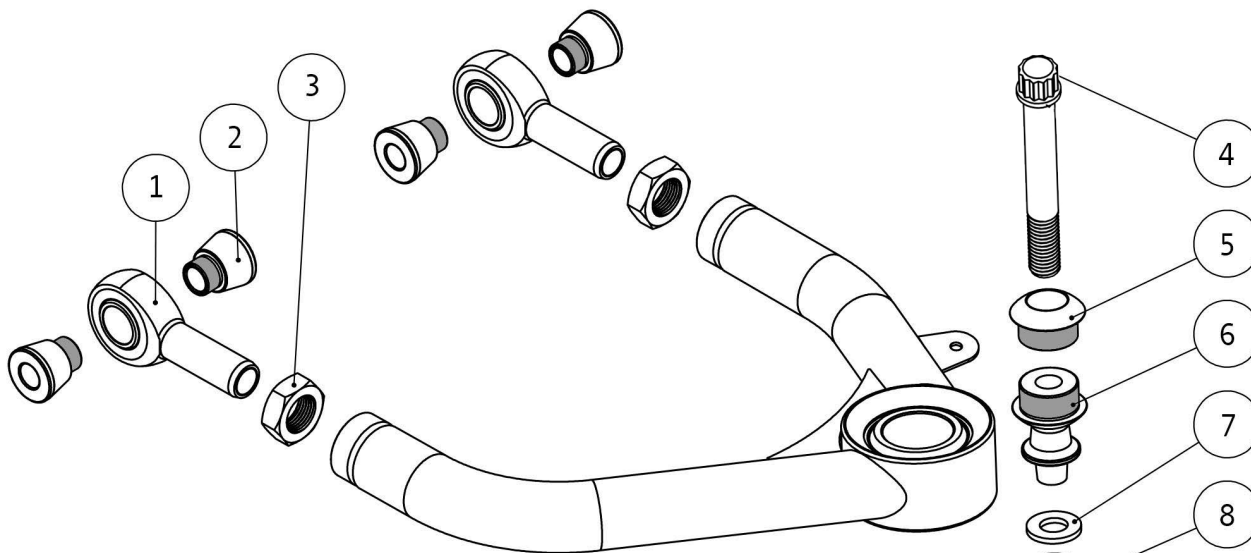
Neglecting care and upkeep will wear parts out faster.

Inspect and re-torque all hardware and components after the first 500 miles, inspect at your scheduled maintenance intervals and whenever using the vehicle off-road.

### Notes

Recommended tire size: 35-37 in.  
Recommended wheel size: 17-20 in.  
Recommended/Maximum wheel backspacing = 4.75 in.

Torque OEM nuts to 110 ft/lbs. w/ red loctite



[ DRIVER-SIDE ]

Torque 9/16" nut to 120-125 ft/lbs. w/ red loctite

