03.23.21

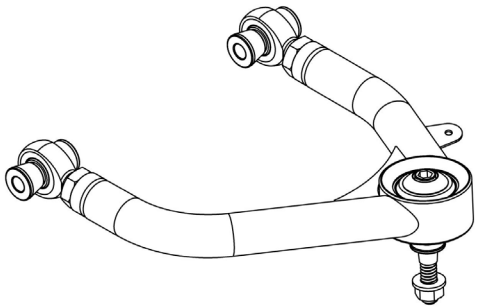
1.50 Performance Upper Arm Instructions

Ford Raptor '10-14

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 Jam Nuts	3
2	9/16-18 x 4.5" SHCS bolts	4
2	9/16" upper domed uniball spacers	5
2	9/16" tapered uniball spindle adaptors	6
2	9/16" SAE grade 8 round 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 a-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 to be used with stock unmodified spindles or Camburg performance spindles in conjunction with a 1-3" lift coilover/strut. They are not to be used with other suspension kits or spacer type kits. 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.

Tools & Supplies Required

Eye protection | Jack | Jack Stands | Deburring Tool
2-3 lb. mini sledge hammer | Rubber Mallet
21mm socket & wrench | 7/16" allen driver | 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 bracket from the backside of the upper arm. Be careful not to damage as the bracket will be re-used. Using a 21mm socket, loosen the nut 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 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. These will be re-used during installation, so keep track of their orientation and position. Remove the stock upper arm.

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. Even though they're labeled, 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. Now re-install the existing or new coilover/strut

Prior to installing the tapered uniball adaptor spacer into the spindle, make sure the spindle taper is clean and free of debris. Apply anti-seize to the uniball spacers and 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. Wipe off excess anti-seize and install the 9/16" SHCS 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 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 and/or snap ring. Install the 9/16" washer and stover lock nut with a small amount of red Loctite onto clean threads. Using a 7/16" allen driver and 7/8" socket, torque to 120-125 ft/lbs. Do not 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/maxout 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.

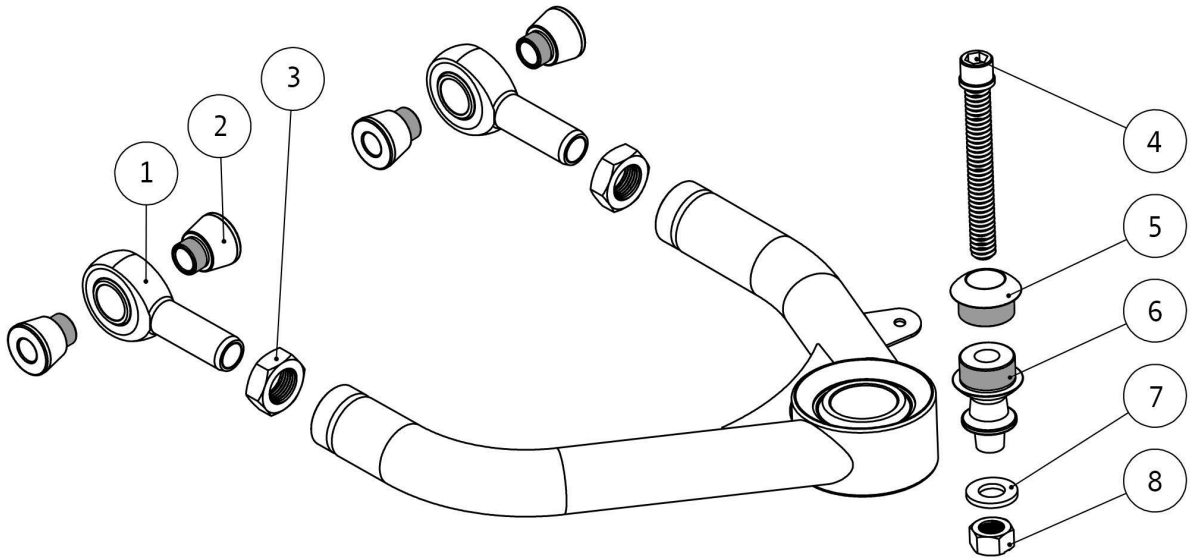
6.0 Maintenance & Care

Uniballs and heims are precision parts with tight tolerances which can lead to occasional noise when they become dirty. Occasionally wipe off the top 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 "Tri-Flow" 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 PTFE liner. Neglecting care and upkeep will wear parts out faster.

Inspect and re-torque all hardware and components after 500 miles and whenever using the truck off-road.

Notes

Recommended tire size: 35-37"
Recommended wheel size: 17" X 8-9"
Maximum & recommended wheel backspacing = 4.75"



TORQUE TO 120-125 FT/LBS. W/ RED LOCTITE