

FORD BRONCO ADJUSTABLE CAMBER/CASTER UPPER ARMS

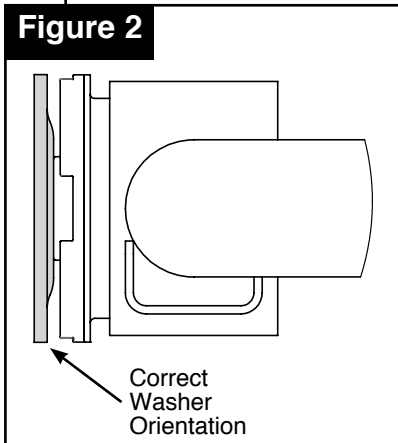
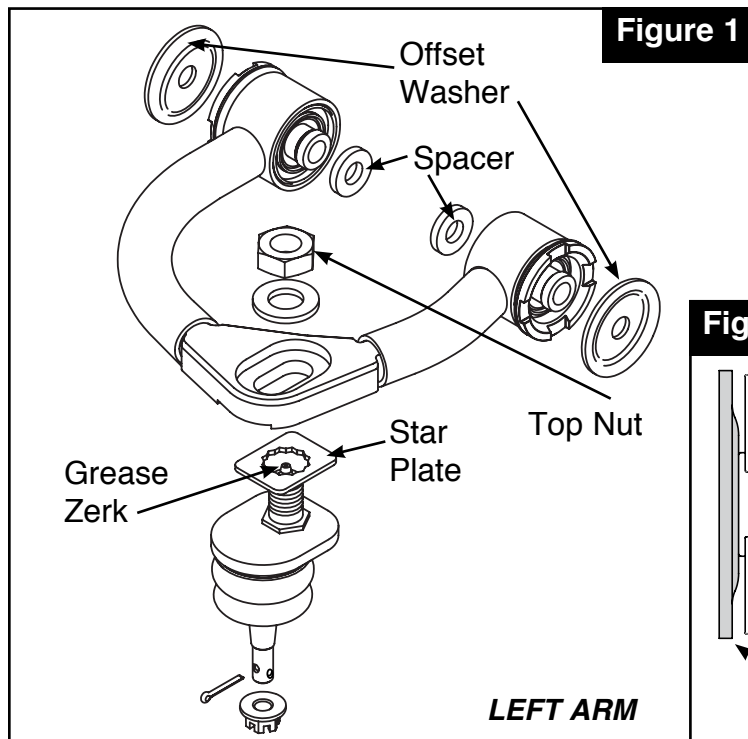
PATENT NO. US 7,513,514 B1

This part should only be installed by personnel who have the necessary skill, training and tools to do the job correctly and safely. Incorrect installation can result in personal injury, vehicle damage and / or loss of vehicle control.

Plan Ahead - Read All Instructions BEFORE installing part.

Check for loose or worn parts, proper tire pressure, and odd tire wear patterns before beginning alignment.

1. Raise vehicle and support by frame so suspension hangs free.
2. Remove front tire and wheel assembly.
3. Set OE lower cams to center, neutral position and lightly tighten.  
**TECH TIP: Use magnetic adjustable camber gauge (SPC P/N 81139) or similar, for measurements without having tire and wheel assembly installed.**
4. Remove nut holding OE upper control arm ball joint to steering knuckle. Break taper between ball joint stud and knuckle using SPC 8370 or equivalent. Support steering knuckle so no strain is applied to ABS wires or brake lines.
5. Loosen bolt retaining heat shield covering OE control arm bolt so that heat shield can be pivoted out of the way.
6. Remove OE nut and washer from long arm-to-frame mounting bolt and remove bolt from arm per manufacturer's procedure. (This will require removal of steering shaft U-joint on driver's side of the vehicle).
7. Remove OE washer from head of long arm-to-frame mounting bolt by bracing washer and tapping end of bolt with soft blow mallet. Discard washer and OE nut/washer combo, replace with a supplied offset washer. When installed, offset washer flange should be away from bushing flange. **See Figure 2.**
8. Install SPC control arm onto frame tower with supplied spacers on inner side of xAxis™ joints (2 per arm) as shown in **Figure #1**, using OE long arm-to-frame bolt with SPC washer. Place second supplied offset washer over protruding end of bolt. Again, be sure that offset washer flanges are installed away from bushing flange. Install supplied nut.
9. Torque long arm-to-frame bolt to 140 lb-ft [190 Nm].  
**NOTE: Unlike OE rubber bushings, xAxis™ bushings pivot freely and may be fully torqued without placing any weight on suspension.**
10. Pivot heat shield covering control arm bushing back to position and tighten bolt to manufacturer's specification.
11. Install star plate over hex on ball joint per chart below to achieve desired caster change relative to OE control arm. **See Figure #1.**  
**NOTE: For most trucks with 2"-3" of lift setting "D" should return caster to OE specifications, but it may be necessary to use different positions on each side to achieve desired cross caster settings.**
12. Insert ball joint up through bottom of arm, indexing star plate in machined slot, then install top washer and nut. Slide ball joint to midpoint of travel in arm slot and tighten nut snug for initial alignment readings.
13. Insert ball joint stud into steering knuckle, install supplied castle nut, and torque to 45 lb-ft [61Nm]. Tighten nut further only until supplied cotter pin can be installed.
14. Grease ball joint with **NLG1 #2, Grade LB with 3%-5% Molybdenum Disulfide grease**. 5 to 10 pumps of grease are sufficient at each lubrication.  
**! WARNING: FAILURE TO GREASE AND MAINTAIN THIS BALL JOINT MAY RESULT IN PREMATURE FAILURE.**
15. Reinstall tire and wheel assembly and lower vehicle. Take initial alignment readings.
16. Adjust camber with SPC arm by loosening top nut and sliding ball joint in control arm slot. Adjust caster with SPC arm by loosening top nut and repositioning star plate to rotate ball joint relative to arm. (It will be necessary to raise vehicle to make camber/ caster adjustments with SPC arm). Alignment and wheel position can be fine-tuned with vehicle weight on suspension using OE lower control arm cams.  
**NOTE: Camber and caster can be set with the SPC upper control arm, as well as the lower control arm cam bolts. In most cases, it is recommended that the lower cam bolts be set to their neutral position. This way they can be used to fine-tune camber and caster.**  
**TECH TIP: If caster is set at maximum positive with the OE lower cam bolts, and final alignment achieved with the SPC upper ball joint setting, more tire clearance may be obtained at the rear of the wheel opening.**



17. When final camber/caster settings are achieved, torque top ball joint nut to 150lb-ft [203 Nm]. Torque OE fasteners to manufacturer's specification.
18. Complete alignment and road test vehicle.  
**Always check for proper clearance between suspension components and other components of the vehicle.**

**Maintenance:**  
Lubrication Interval - SPC recommends adding 5 to 10 pumps of grease to ball joint at each oil change, or after operating vehicle in wet or dusty conditions.

**Note: With SPC logo facing away from the tire (Position D) this arm will give +1° additional caster. Using the star plate, caster change can be adjusted from -1.0° to +3.0°.**

LEFT FRONT CASTER CHANGE							FRONT OF VEHICLE
A	B	C	D	E	F	G	
+2.0°	+1.8°	+1.25°	+.50°	-.25°	-.80°	-1.0°	<b>Total Arm + Ball Joint Caster Change</b>

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RIGHT FRONT CASTER CHANGE							FRONT OF VEHICLE
A	B	C	D	E	F	G	
+2.0°	+1.8°	+1.25°	+.50°	-.25°	-.80°	-1.0°	<b>Total Arm + Ball Joint Caster Change</b>



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