PART NO. 35690 **Instruction Sheet**

PATENT NO. US 7,513,514 B1

FORD BRONCO ADJUSTABLE CAMBER/CASTER UPPER ARMS

SPC PERFORMANCE®

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. Take initial alignment readings and determine caster change needed.
2. Raise front of vehicle by frame and securely support.
3. Remove front tire and wheel assembly.
4. Set lower control arm cam bolts to center, neutral position and lightly tighten.
5. Remove nut holding OE ball joint to knuckle and discard. Break taper between OE ball joint stud and knuckle.

   NOTE: Support knuckle so no strain is applied to ABS wiring or brake lines.
6. If equipped, remove bolt holding OE heat shield covering arm-to-frame bolt. Pivot heat shield out of the way.
7. Remove OE nut and washer from arm-to-frame bolt and remove OE bolt and arm from vehicle per manufacturer's procedure, discard all components. (This will require the disconnection of steering shaft U-joint on driver's side of the vehicle. Ensure orientation of U-Joint is notated/ marked to aid in re-assembly.)
8. Using provided arm-to-frame bolt, place one supplied offset washer onto head of bolt. When installed, offset washer flange should be away from bushing flange, **see Figure 2.**
9. Install SPC control arm onto frame tower using provided arm-to-frame bolt with supplied spacers between xAxis™ and frame tower (2 spacers per arm) as shown in **Figure 1.**

   TECH TIP: Apply a small dab of grease to spacers to help retain them during install.
10. Place second supplied offset washer over protruding end of bolt. Again, ensure that the offset washer flanges are installed away from bushing flanges, **see Figure 2.** Install provided lock nut and torque arm-to-frame bolt to **120 ft-lb [163 Nm].**

    NOTE: Unlike OE rubber bushings, xAxis™ bushings pivot freely and may be fully torqued without placing weight on suspension.
11. Ensure steering shaft U-Joint is reattached into the same orientation found before disassembly.
12. If equipment, pivot OE heat shield previously moved back into position and re-install bolt.
13. Install star plate over hex on SPC ball joint per chart below to achieve desired caster change determined in Step 1.

    NOTE: For most trucks with 2"-3" of lift, setting "D" should return caster to manufacturer's specifications but it may be necessary to use different positions on each side to achieve desired cross caster settings.
14. Insert SPC ball joint up through bottom of SPC control arm, indexing star plate in machined slot and then install supplied top washer and nut. Position ball joint in middle of slot and snugly tighten nut.
15. Insert SPC ball joint stud into knuckle, install supplied castle nut and torque nut to **45 ft-lb [61 Nm].** Tighten further, but only until cotter pin can be installed. Install supplied cotter pin.
16. Re-install tire and wheel assembly. Lower vehicle.
17. Take alignment readings. If additional caster adjustment is necessary, loosen ball joint top nut and reposition star plate to rotate ball joint relative to arm. Adjust camber by loosening top nut and sliding ball joint in control arm slot.

    NOTE: It will be necessary to raise vehicle to make camber/caster adjustments with SPC arm.
18. With vehicle weight on suspension, fine-tune alignment using OE lower control arm cam bolts.

    NOTE: Camber and caster can be set with SPC upper control arm, as well as lower control arm cam bolts. In most cases, it is recommended that lower cam bolts be set to their neutral position. This way they can be used to fine-tune caster setting. Alternatively, if caster is set to max position with lower cam bolts, and final alignment is achieved with SPC upper ball joint settings, more tire clearance may be obtained at rear of wheel opening. To do this, push rear lower adjuster outward, towards tire, and pull front lower adjuster inward, towards center of vehicle. The lower control arm adjusters are far more efficient at creating clearance. This typically requires using ball joint position "E".
19. When final camber/caster settings are achieved, torque top ball joint nut to **200 ft-lb [271 Nm].** Torque lower cams to manufacturer's specifications.
20. Adjust toe and road test vehicle.

Figure 1

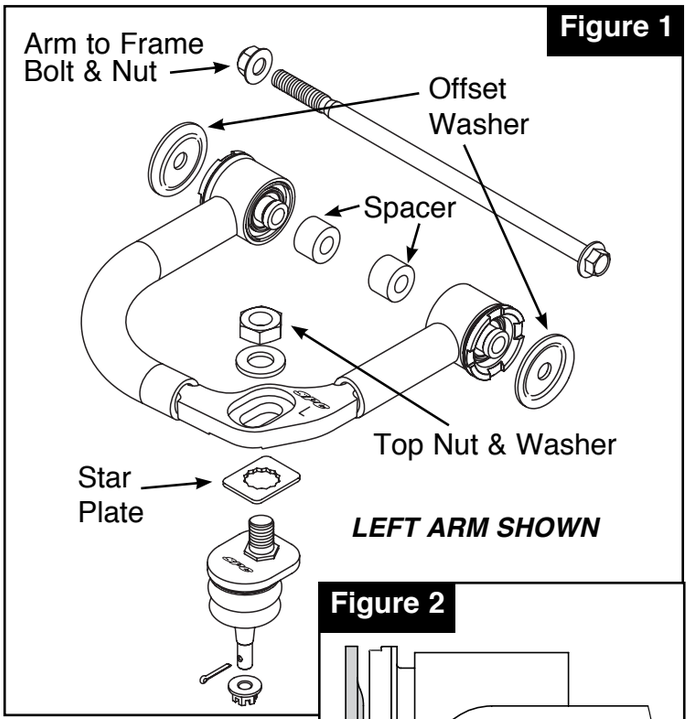
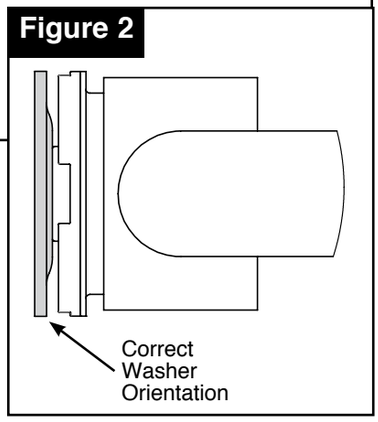


Figure 2



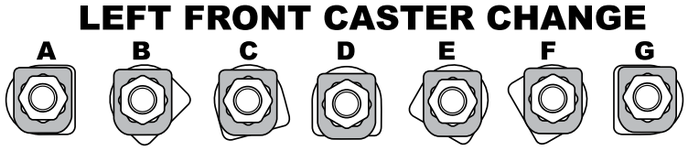
Always check for proper clearance between suspension components and other components of the vehicle.

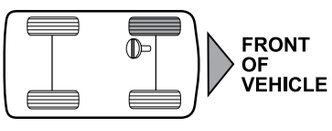
Maintenance:

This ball joint is fully sealed and features a lifetime grease. No maintenance is required after installation.

Note: With flat face of ball joint facing away from the tire (Position "D") this arm will give +1° additional caster. Using star plate, caster change can be adjusted from -1.2° to +3.2°.

LEFT FRONT CASTER CHANGE

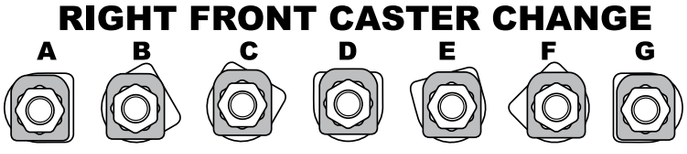


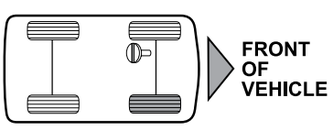


+3.2°	+2.9°	+2.1°	+1.0°	-.10°	-.90°	-1.2°

Total Arm + Ball Joint Caster Change

RIGHT FRONT CASTER CHANGE





+3.2°	+2.9°	+2.1°	+1.0°	-.10°	-.90°	-1.2°

Total Arm + Ball Joint Caster Change

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Toll Free Technical Hot Line: 1-800-525-6505 **• For warranty information go to: www.spcalignment.com/warranties**