PART NO. 25680 **Instruction Sheet**

PATENT NO. US 7,513,514 B1

FORD F150 ADJUSTABLE UPPER ARMS

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 changes 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 OE front upper control arm per manufacturer's procedure.

   NOTE: Support knuckle so no strain is applied to ABS wiring or brake lines.
6. Install SPC control arm into frame pockets using OE mounting hardware. Torque to manufacturer's specifications.

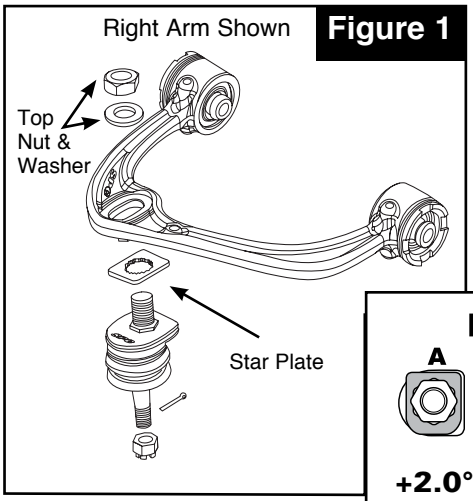
   NOTE: Unlike OE rubber bushings, xAxis™ bushings pivot freely and may be full torqued without placing weight on suspension.
7. Install star plate over hex on SPC ball joint per chart below to achieve desired caster change determined in Step 1.
8. Insert SPC ball joint up through bottom of SPC control 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.
9. Insert SPC ball joint stud into knuckle, install supplied castle nut and torque nut to **45 ft-lb [61Nm]**. Tighten further, but only until cotter pin can be installed. Install supplied cotter pin.
10. Re-install tire and wheel assembly. Lower vehicle.
11. 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.
12. With vehicle weight on suspension, fine tune alignment using OE lower control arm bolts.

    NOTE: Camber and caster can be set with SPC upper control arm, as well as lower control arm 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 the rear of wheel opening. To do this, push rear lower adjusters outward, towards tire, and pull front lower adjust 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".
13. When final camber/caster settings are achieved, torque top ball joint nut to **200 ft-lb [271Nm]**. Torque lower cams to manufacturer's specifications.
14. Adjust toe and road test vehicle.

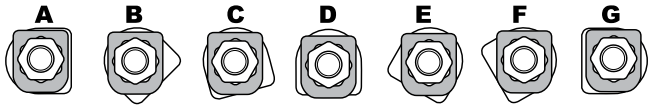
Always check for proper clearance between suspension components and other components of the vehicle.

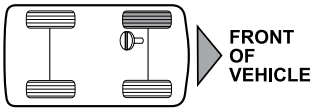
Right Arm Shown **Figure 1**



Note: With flat face of ball joint facing away from the tire (Position D) this arm will give +.5° additional caster. Using the star plate, caster change can be adjusted from -1.0° to +2.0°.

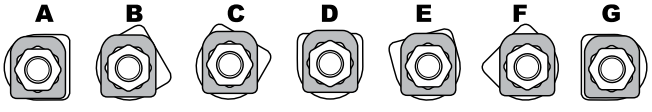
LEFT FRONT CASTER CHANGE

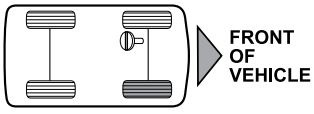




+2.0°	+1.8°	+1.25°	+.50°	-.25°	-.80°	-1.0°	Total Arm + Ball Joint Caster Change

RIGHT FRONT CASTER CHANGE





+2.0°	+1.8°	+1.25°	+.50°	-.25°	-.80°	-1.0°	Total Arm + Ball Joint Caster Change

Maintenance:

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

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