

PATENT NO. US 7,513,514 B1

TOYOTA/LEXUS ADJUSTABLE CAMBER/CASTER UPPER ARMS

Tacoma/Tacoma PreRunner, 4-Runner, FJ, GX

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.



Check out how to install this part at: <http://www.spc-tv.com>

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 by frame and support with jack stands. Remove front tire and wheel assemblies.
2. Loosen nut on upper arm-to-frame mounting bolt and remove bolt holding ABS wiring from upper arm.
3. Remove cotter pin and nut holding OEM ball joint to spindle. Break taper between ball joint stud and spindle and remove ball joint from spindle. Support spindle so no strain is applied to ABS wiring or brake lines.
4. Remove nut and washer from the long arm-to-frame mounting bolt and remove the bolt and arm.

NOTE: To provide clearance, additional components in the engine compartment may need to be removed.

5. Install the SPC control arm to frame using OEM hardware. Use factory flange washers in original positions. Be sure to install washers so outer flange is spaced away from bushing bumpers, not tight against them. (Figure 1).
6. Torque mounting bolt to manufacturer's specification.

NOTE: Unlike OE rubber bushings, xAxis™ bushings pivot freely, and may be fully torqued without placing any weight on the suspension.

7. Install star plate over hex on the ball joint per chart below to achieve desired caster change relative to stock arm. (For most trucks with 2-3" of lift, setting "D" should return caster to factory specifications, but it may be necessary to use different positions on each side to achieve desired cross-caster setting.) Insert the ball joint up through the bottom of arm, indexing star plate in machined slot, and then install top washer and nut. Position in middle of the slot and tighten nut for initial alignment readings.
8. Insert ball joint stud into spindle, install supplied castle nut and torque to 45 ft-lb [61Nm]. Tighten further until supplied cotter can be installed.
9. Re-attach ABS wiring bracket to SPC arm using factory bolt.
10. Grease ball joint with an **NLGi #2, Grade LB with 3%-5% Molybdenum Disulfide grease**. 5 to 10 pumps of grease is sufficient at each lubrication.
WARNING: FAILURE TO GREASE AND MAINTAIN THIS BALL JOINT MAY RESULT IN PREMATURE FAILURE.
11. Re-install tire and wheel assembly. Lower vehicle and take alignment readings. Adjust camber by loosening top nut and sliding ball joint in the control arm slot. Adjust caster by loosening top nut and repositioning star plate to rotate ball joint relative to arm. (It will be necessary to raise vehicle to make these adjustments.)
12. When final caster/camber settings are achieved, torque top balljoint nut to 150 ft-lb [203Nm]. Adjust toe, road test vehicle.

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

Camber and caster can be set with the SPC upper control arm, as well as the OEM lower control arm eccentric bolts. In most cases, it is recommended that the lower eccentrics be set to their neutral position. This way they can be used to fine-tune caster. Alternately, if caster is set for max positive by the OEM lower cams, and final alignment achieved with via the SPC upper balljoint setting, more tire clearance may be obtained at the rear of the wheel opening.

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.

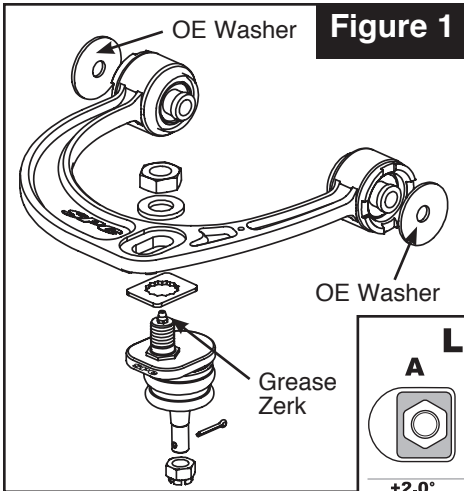


Figure 1

Note: With SPC logo facing the tire (Position D) this arm will give +2° additional caster. Using the star plate, caster change can be adjusted from +0.0° to +4.0°.

LEFT FRONT CASTER CHANGE							FRONT OF VEHICLE
A	B	C	D	E	F	G	
							 Ball Joint Setting
+2.0°	+1.75°	+1.0°	0°	-1.0°	-1.75°	-2.0°	
+4.0° +3.75° +3.0° +2.0° +1.0° +.25° 0.0°							Total Arm + Ball Joint Caster Change
RIGHT FRONT CASTER CHANGE							FRONT OF VEHICLE
A	B	C	D	E	F	G	
							 Ball Joint Setting
+2.0°	+1.75°	+1.0°	0°	-1.0°	-1.75°	-2.0°	
+4.0° +3.75° +3.0° +2.0° +1.0° +.25° 0.0°							Total Arm + Ball Joint Caster Change



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