



DON'T FORGET
These instructions can be found in color and expandable at QA1.net

Technical Support Line: (952) 985-5675 Email: sales@QA1.net

INSTALLATION INSTRUCTIONS

QA1 Hx01, Hx02, Hx03, 1979-2004 Mustang Struts
CC110, CC112, CC114, 1979-2014 Caster-Camber Plates

TOOLS AND SUPPLIES REQUIRED

- Floor Jack
- Torque Wrench
- T-15 Torx Bit
- Jack Stands
- Spring Compressor (Optional)
- 24mm or 15/16" Crows Foot Wrench
- Lug Wrench
- Basic Tool Set

PRE-INSTALLATION NOTE:

'79-'04 struts were designed for a 0"-2" lowered ride height. Caster-Camber plates were designed for additional negative Camber and increased positive Caster for better handling performance.

QA1 struts can be used as coil-over struts or just as struts with a factory type spring (except S197 vehicles-must use coil-overs), however, the use of QA1 lower control arms or QA1 k-member will require coil-overs as the QA1 control arms and QA1 k-member have no provision for a factory style spring.

QA1 struts were designed to work with QA1 caster-camber plates and will not work with the factory upper strut mount. The installation process for Fox Body and SN95 cars is slightly different. Find your specific year range in the following instructions.

YEAR RANGE	STRUTS	CASTER-CAMBER PLATES
1979-1989 (Fox Body)	HS01, HD01	CC110
1990-1993 (Fox Body)	HS02*, HD02*	CC112
1994-2004 (SN95)	HS03, HD03	CC114

*Kit item #'s start with Hx02 but do use Hx01 strut.

REMOVAL

1. Start your installation by inspecting your chassis. Look for worn/deteriorated bushings, ball joints, etc. If anything is worn, plan to replace during this installation.
2. Above the 24mm nut on the existing strut rod, there are two flat spots to enable the use of an adjustable wrench to keep the piston rod from turning. Loosen the 24m nuts on the upper end of the piston rods where they come through the caster/camber plates. **Do not remove the 24mm nuts at this time.**
3. Jack the car up and ensure the frame is set in place securely on jack stands. See your owner's manual for proper jacking techniques. Remove the wheels.
4. Removing the brake caliper from the knuckle assembly and hang the caliper by something other than the brake line. Damage to the brake line can occur if the caliper is hung by the brake line.
5. Position the floor jack under the ball joint cup. Jack the A-arm up just enough to take the load off of the strut and spindle, without raising the car off the jack stands. This will retain the factory spring in its location.

NOTE: The factory spring will need to be removed from the vehicle (only if '79-'04 cars and using coil-overs). To do this, first complete the strut removal process and slowly lower the control arm to take the pressure off of the spring.

CAUTION: THE SPRING CAN BE UNDER TREMENDOUS PRESSURE AND IT IS CRITICAL TO USE CAUTION WHEN REMOVING. A spring compressor is recommended.

- Loosen and remove the two nuts and bolts that attach the strut to the spindle knuckle. Remove the 24mm nut at the top of the strut and remove the strut assembly.

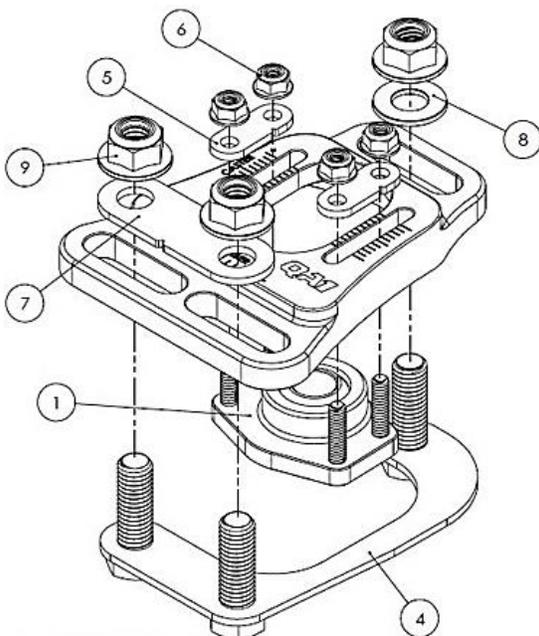
CASTER-CAMBER PLATE INSTALLATION:

NOTE: Reference the caster-camber plates for the year range of vehicle being worked on (below):

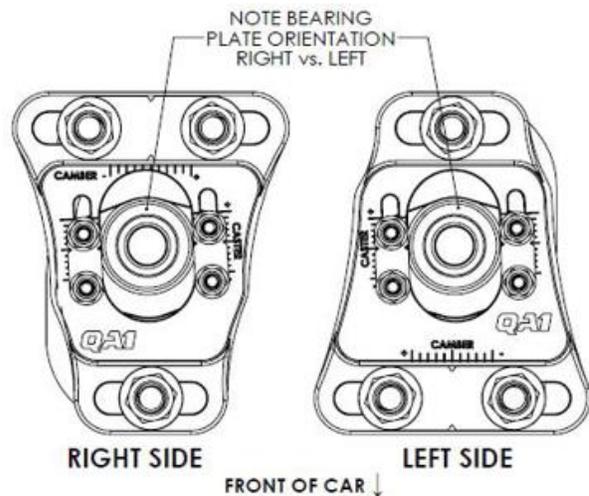
1979-1989 Fox Body (Caster-Camber p/n CC110)

- Identify the right (passenger)/left (driver) caster-camber plate and their orientation.
- Remove the three nuts holding the plates together (#9), noting the orientation of the individual washer and washer plate.
- Install each lower three-post plate (#4) on the underside of the strut tower with the posts coming up through the chassis.
- Install the upper plate with the washer plate (#7) and single washer (#8) before securing with 1/2" nyloc nuts (#9).
- With the lower plate centered in the chassis and the upper plate centered on the camber measurement, torque the three 1/2" nuts to 65 lb. ft.
- Center the bearing plate to the center mark on the caster-camber plate and torque the four 1/4" nuts (#6) to 10 lb. ft.
- Continue to the strut installation beginning on page 5.

BALLOON #	ITEM #	DESCRIPTION	QTY.
1		BEARING PLATE ASM. 16MM W/STUDS	2
2	7730-117	PLATE, BILLET UPPER CC, LH	1
3	7730-118	PLATE, BILLET UPPER CC, RH	1
4	9039-342	MOUNT PLATE, CC LOWER	2
5	9005-303	PLATE, WASHER 2X 1/4" X .56" X .125"	4
6	9014-544	NUT, HEX FLANGE NYLOCK 1/4-20	8
7	9005-304	PLATE, WASHER, 2X .1/2" ID X 2.05"C2C	2
8	9005-306	WASHER, FLAT 1/2" SAE HARDENED	2
9	9014-539	NUT, HEX FLANGE NYLOCK 1/2-13	6



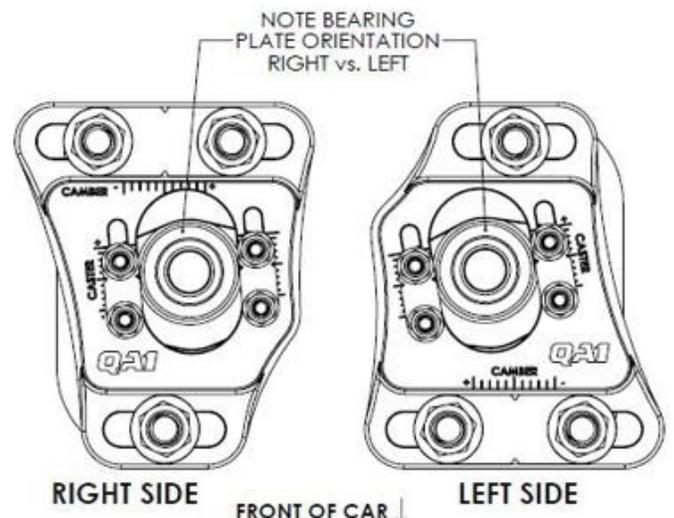
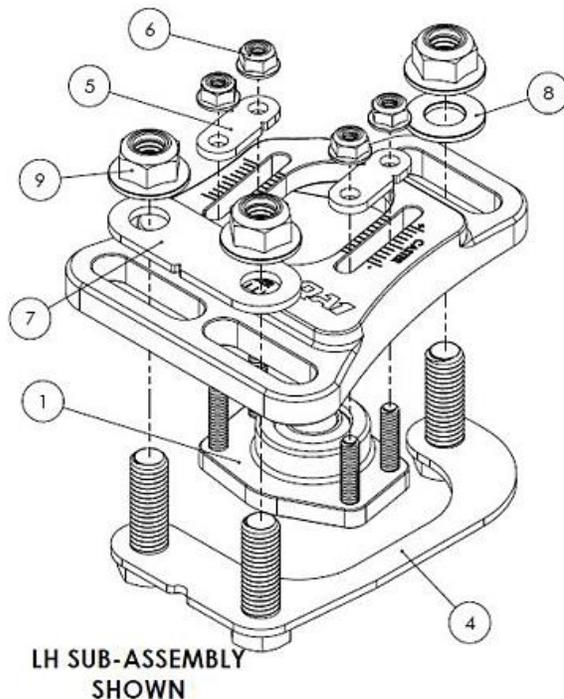
LH SUB-ASSEMBLY SHOWN



1990-1993 Fox Body (Caster-Camber p/n CC112)

1. Identify the right (passenger)/left (driver) caster-camber plate and their orientation.
2. Remove the three nuts holding the plates together (#9), noting the orientation of the individual washer and washer plate.
3. Install each lower three-post plate (#4) on the underside of the strut tower with the posts coming up through the chassis.
4. Install the upper plate with the washer plate (#7) and single washer (#8) before securing with 1/2" nyloc nuts.
5. With the lower plate centered in the chassis and the upper plate centered on the camber measurement, torque the three 1/2" nuts to 65 lb. ft.
6. Center the bearing plate to the zero mark on the caster-camber plate and torque the four 1/4" nuts (#6) to 10 lb. ft.
7. Continue to the strut installation beginning on page 5.

BALLOON #	ITEM #	DESCRIPTION	QTY.
1		BEARING PLATE ASM. 16MM W/STUDS	2
2	7730-119	PLATE, BILLET UPPER CC, LH	1
3	7730-120	PLATE, BILLET UPPER CC, RH	1
4	9039-343	MOUNT PLATE, CC LOWER	2
5	9005-303	PLATE, WASHER 2X 1/4" X .56" X .125"	4
6	9014-544	NUT, HEX FLANGE NYLOCK 1/4-20	8
7	9005-304	PLATE, WASHER, 2X .1/2" ID X 2.05" C2C	2
8	9005-306	WASHER, FLAT 1/2" SAE HARDENED	2
9	9014-539	NUT, HEX FLANGE NYLOCK 1/2-13	6



1994-2004 SN95 (Caster-Camber p/n CC114)

1. Identify the right (passenger)/left (driver) caster-camber plate and their orientation.
2. Remove the three nuts holding the plates together (#9), noting the location of each plate on the vehicle.
3. Using the correct right or left lower plate, insert the plate studs down into the top of the existing three factory holes, center the studs in the slots and mark the fourth (threaded) hole onto the chassis. (Figure 1, 2, 3)
4. Drill the marked hole to 3/8".

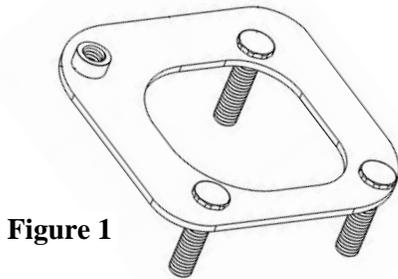


Figure 1



Figure 2

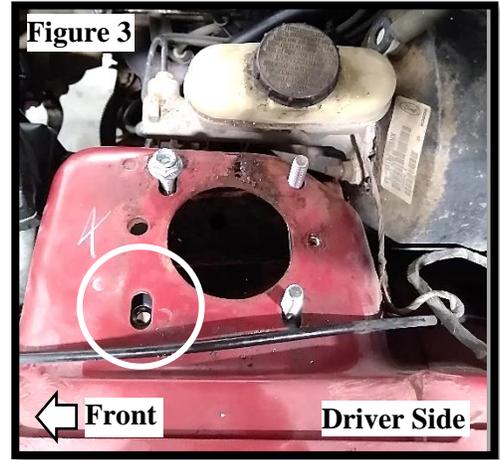
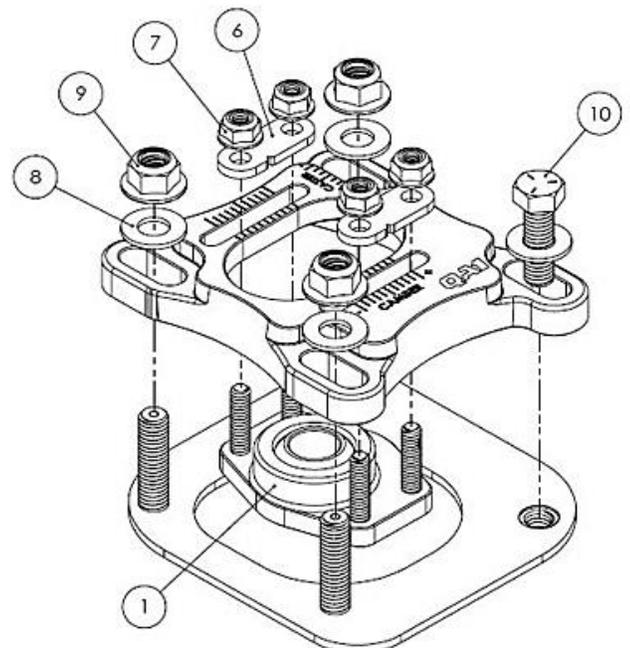
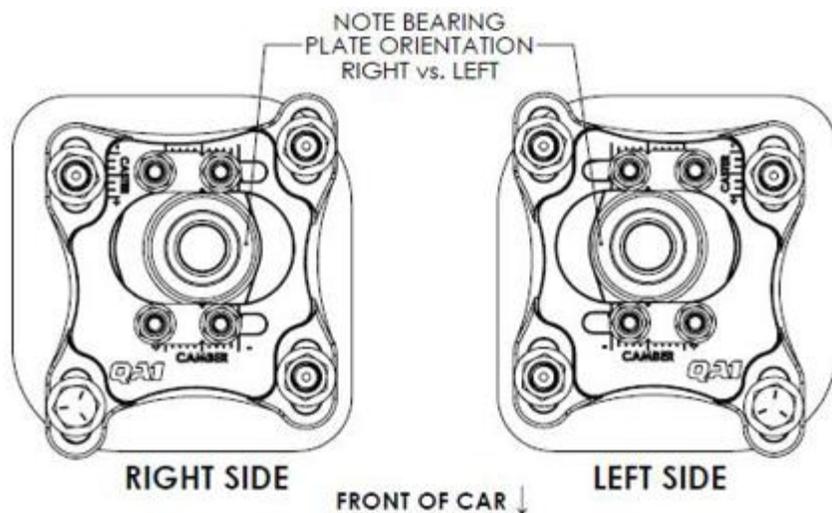


Figure 3

5. Install each lower three-post plate from the underside of the strut tower with the posts coming up through the chassis. The threaded hole of the lower plate will be at the forward & outboard chassis hole when installed correctly. (Figure 3)
6. Install the upper plate with a single washer (#8) on each connection before securing with three 3/8" nyloc nuts (#7) and one 3/8" bolt (#10). Torque all to 30 lb. ft.
7. Center the bearing plate set to the zero mark and torque the four 1/4" nuts (#7) to 10 lb. ft.
8. Continue to the strut installation beginning on page 6.

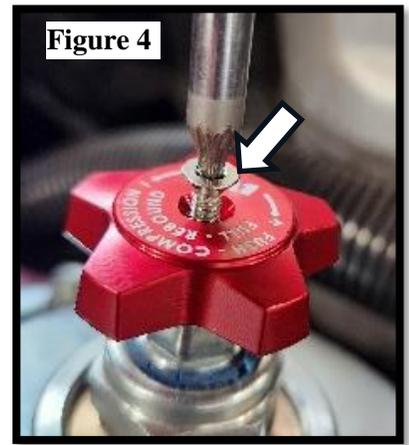
BALLOON #	ITEM #	DESCRIPTION	QTY.
1		BEARING PLATE ASM. 16MM W/STUDS	2
2	7730-121	PLATE, BILLET UPPER CC. LH	1
3	7730-122	PLATE, BILLET UPPER CC. RH	1
4	9039-344	MOUNT PLATE, CC LOWER, LH	1
5	9039-345	MOUNT PLATE, CC LOWER, RH	1
6	9005-303	PLATE, WASHER 2X 1/4" X .56" X .125"	4
7	9014-544	NUT, HEX FLANGE NYLOCK 1/4-20	8
8	9005-302	WASHER, FLAT 3/8" SAE HARDENED	8
9	9014-545	NUT, HEX FLANGE NYLOCK 3/8-16	6
10	9012-179	BOLT, HEX 3/8-16 X 1.25"	2



LH SUB-ASSEMBLY SHOWN

STRUT INSTALLATION-

1. In preparation of installing the strut, remove the strut adjustment knob using a Torx T-15 tool. **(Figure 4)**



NOTE:

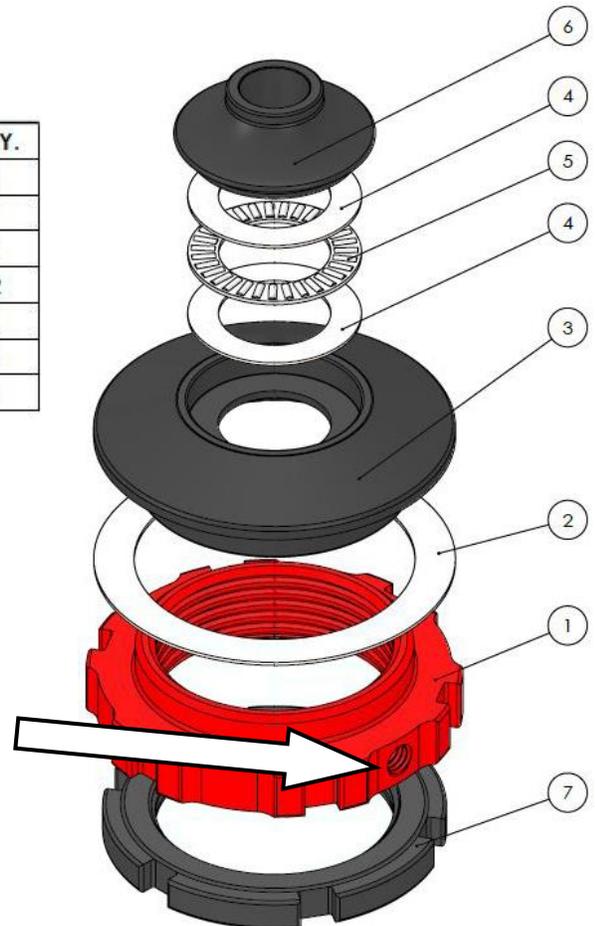
For 1979-2004 cars using a factory style spring and running the QA1 strut as a non coil-over strut, install the shown spacer and continue to install step 10.

(This spacer is not used if the strut is used as a coil-over)



BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9019-180	NUT, SPRING SEAT 2.5", 2.205" X 8 TPI	1
2	9005-109	WASHER, SPRING SEAT 2.5" ID	1
3	9018-144	SPRING SEAT, STRUT, C/O 2.5" SPRING	1
4	9006-101	THRUST WASHER, 1.00" ID	2
5	9010-101	BEARING, THRUST 1" ID	1
6	9018-145	BEARING RETAINER, STRUT COIL-OVER	1
7	9014-317	NUT, COIL-OVER LOCK, 2.205" X 8TPI	1

2. Remove the wiper boot from the top of the black threaded area of the strut. **(Figure 5)**
3. Thread the coil-over lock nut **(#7)** down the body of the strut with the shouldered end UP.
4. Thread the spring seat nut **(#1)** down the body of the strut with the shouldered end up. This spring seat may have a threaded hole but is NOT used with this installation.
5. Coat one side of the stainless steel spring seat washer **(#2)** (included with each strut) with **Permatex® Anti-Seize Lubricant**.



6. Reinstall the wiper boot ensuring the boot is seated in the groove of the threaded portion of the strut.
7. Install the spring onto the strut, followed by the upper spring seat (#3).
8. Install the 1" I.D. thrust bearing kit onto the top of the upper spring seat to create a "bearing sandwich". (#4, #5, #4)
9. Install the bearing retainer (#6) onto the strut.
10. Place the strut rod through the caster camber plate and install one SG104 spacer with the narrow end facing down, followed by the strut retaining nut. (Figure 6)

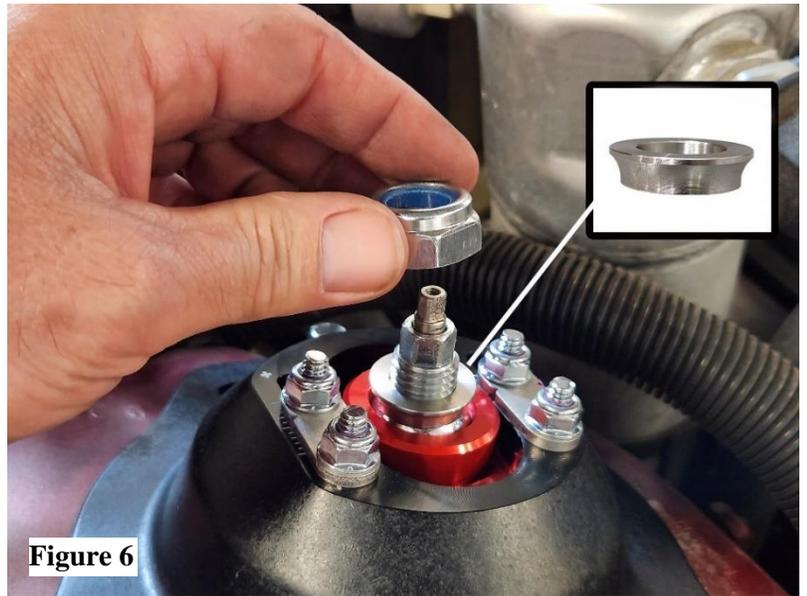


Figure 6

11. Reinstall the adjustment knob onto the strut rod. Torque to 10 inch lbs.



12. Position the spindle knuckle into the bracket on the strut. '79-'93 Fox body spindles have two different width spindles. QA1 strut mounts are wide to fit the early and 4 cyl. spindles. If installing on the narrow V8 or SN95 spindles, use the included spacers on each side of the spindle to fill the gap. (Figure 7)

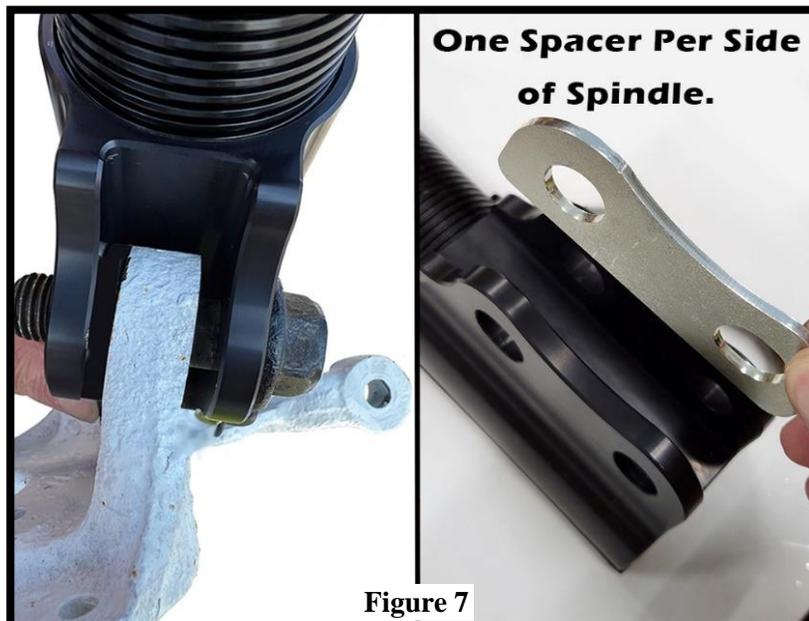


Figure 7

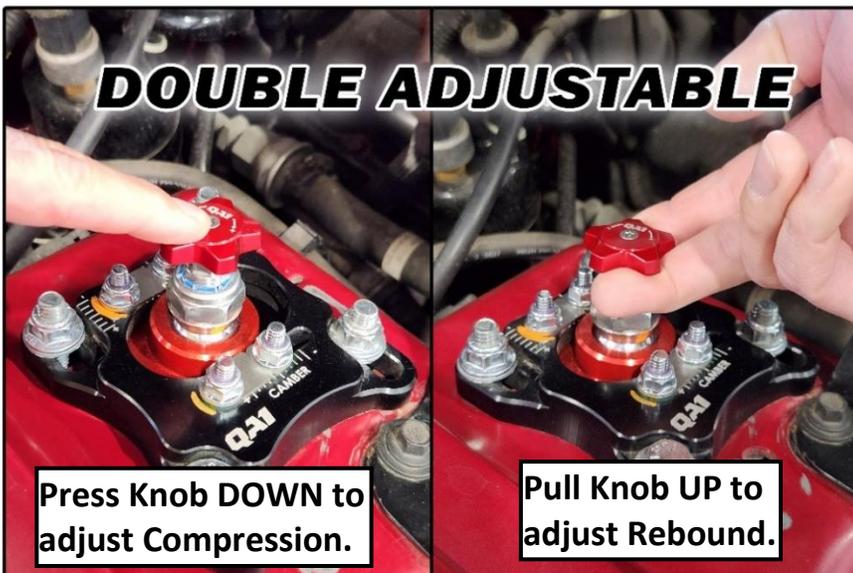
13. Install the two spindle mounting bolts and nuts. Torque to 148 lb. ft.
14. Re-install the ABS wire (if equipped) with zip tie to the brake line and sway bar end-links to the strut housing if removed. SN95 uses the spindle bolts to re-mount these items.
15. Reinstall the brake caliper and wheel. Torque all nuts and bolts to factory specification.
16. Torque the upper strut mount nut using a 24mm crows foot wrench to 45 lb. ft.
17. Repeat the entire removal and installation procedures for the other side of the vehicle.
18. Take the car to a reputable alignment shop and have the car aligned.

Front Strut Valving Adjustments

QA1 struts have 18 damping settings adjusted at the knob on top of the strut. The knob set fully counter-clockwise is the softest setting -start your adjustments from this point. **Do not force the knob past the 18th click or it could cause damage to the valving.** Single adjustable struts soften or firm the rebound valving while having a fixed compression. Double adjustable struts have independent compression and rebound adjustments. The function of the adjustment knob on Single Adjustable and Double Adjustable struts is as follows:



SINGLE ADJUSTABLE- Turn the adjustment knob counter-clockwise until the knob stops- This is the softest setting. Turn the knob clock-wise to firm the rebound.



DOUBLE ADJUSTABLE- Pressing the adjustment knob DOWN will adjust the Compression valving of the strut. Pulling the adjustment knob UP will adjust the Rebound valving. Out of box, the strut should be at zero compression and rebound setting, or both adjustments turned counter-clockwise to stop. From the zero setting with the knob in the Compression position (pushed down), adjust clockwise to the desired setting. The Rebound setting will remain in the zero position. To adjust Rebound, pull the knob up to the Rebound adjust position and adjust clockwise to the desired setting. Either setting can now be adjusted up or down from the initial setting. When in doubt, turn the Compression to zero and then Rebound to zero and readjust.

Press Knob DOWN to adjust Compression.

Pull Knob UP to adjust Rebound.

Recommended base settings to begin testing with are as follows:

Single (Rebound) Adjust Struts:

Applications:

2-8 clicks for nice ride and handling
8-12 clicks for firm ride and improved handling
13+ clicks for more aggressive handling

Double Adjust Struts:

Drag Racing:

12-16 clicks Compression, 0-6 clicks Rebound

Drag Racing Tie-Down

2-6 clicks Compression, 12-18 clicks Rebound

Other Applications:

2-6 clicks Compression, 2-8 Rebound for nice ride and handling

8-12 clicks Compression, 8-12 Rebound firm ride & improved handling

12-16 clicks Compression, 13+ clicks Rebound more aggressive handling

A PROFESSIONAL WHEEL ALIGNMENT IS RECOMMENDED BEFORE DRIVING THE VEHICLE.

Fox bodies with narrow K-members: Camber $+0.1^{\circ} \pm 0.5^{\circ}$
Caster $+3.5^{\circ}, \pm .75^{\circ}$
Total toe: $0.2^{\circ} \pm 0.05$

Fox V8 (Wide) K-member: Camber $-1^{\circ} \pm 0.5^{\circ}$
Caster $+3.5^{\circ}, \pm .75^{\circ}$
Total toe: $0.2^{\circ} \pm 0.05$

SN95: Camber $-1^{\circ} \pm 0.5^{\circ}$
Caster $+3.5^{\circ}, \pm .75^{\circ}$
Total toe: $0.2^{\circ} \pm 0.05$

S197: Camber $-1^{\circ} \pm 0.75$
Caster $+7.1^{\circ} \pm 0.75$
Total toe: $0.2^{\circ} \pm 0.05$



READ ALL INSTRUCTIONS CAREFULLY AND THOROUGHLY PRIOR TO STARTING INSTALLATION. PRODUCTS THAT HAVE BEEN INSTALLED ARE NOT ELIGIBLE FOR RETURN. USE THE PROPER JACKING LOCATIONS. DEATH OR SERIOUS INJURY CAN RESULT IF INSTRUCTIONS ARE NOT CORRECTLY FOLLOWED. A GOOD CHASSIS MANUAL, AVAILABLE AT YOUR LOCAL PARTS STORE, MAY ALSO AID IN YOUR INSTALLATION.

• **DISCLAIMER / WARRANTY** •

QA1 WARRANTS THAT THE PRODUCTS WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF SALE TO THE ORIGINAL PURCHASER. QA1 MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. QA1 SHALL HAVE NO OBLIGATION UNDER THE FOREGOING WARRANTY WHERE THE DEFECT IS THE RESULT OF IMPROPER OR ABNORMAL USE, YOUR NEGLIGENCE, VEHICLE ACCIDENT, IMPROPER OR INCORRECT INSTALLATION OR MAINTENANCE, NOR WHEN THE PRODUCT HAS BEEN REPAIRED OR ALTERED IN ANY WAY. QA1'S LIABILITY IN THE CASE OF DEFECTIVE PRODUCTS SUBJECT TO THE FOREGOING WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT, AT QA1'S OPTION, OF THE DEFECTIVE PRODUCTS.

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