



These instructions can be found in color and expandable at QA1.net

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### INSTALLATION INSTRUCTIONS

QA1 Hx05 2005-2014 S197 Mustang Coil-over Struts  
CC115, 2005-2014 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

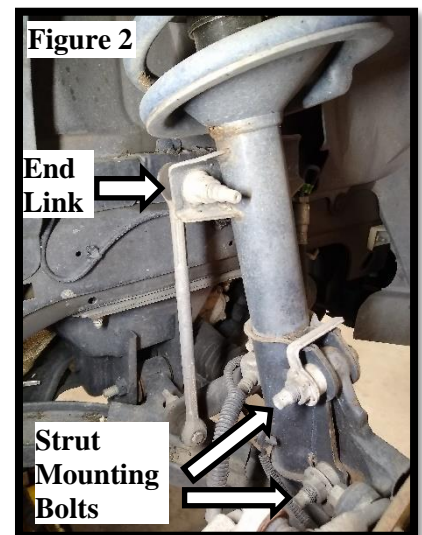
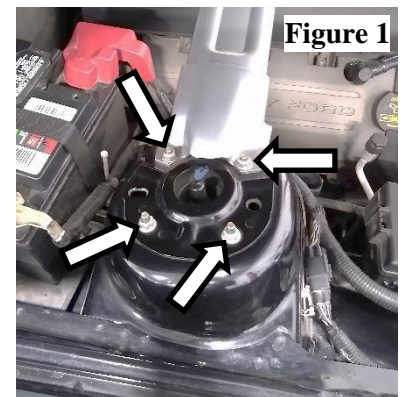
#### PRE-INSTALLATION NOTE:

QA1 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 were designed to work with QA1 caster-camber plates and will not work with the factory upper strut mount.

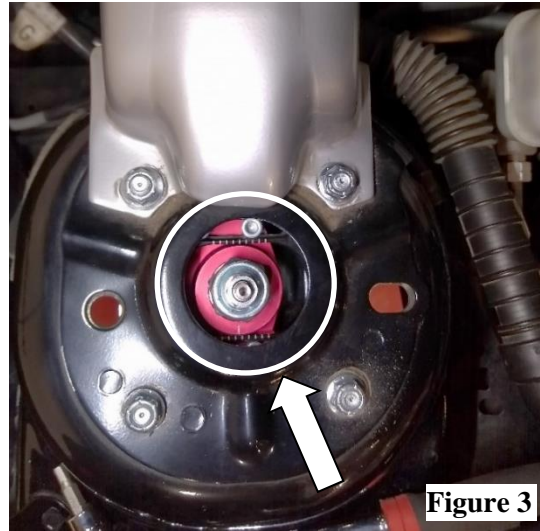
#### REMOVAL

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. Loosen the four nuts holding the factory upper strut mount to the chassis. **(Figure 1)** Leave the nuts loosely in place 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. Position the floor jack under the ball joint cup only to support the control arm.
5. Remove the brake line, ABS wire and end-links from the existing strut body and sway bar. **(Figure 2)** A new end link is provided with the QA1 strut, so the factory end link can be discarded.
6. Loosen and remove the two nuts and bolts that attach the strut to the spindle knuckle. **(Figure 2)**
7. Remove the four nuts on the top side of the chassis holding the strut assembly. Hold/support the strut assembly during this step so as to not have the strut fall out of the car.



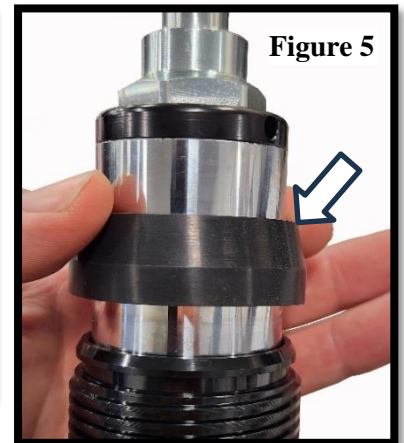
**PRE-INSTALLATION NOTE:**

Using a suitable cutting tool, trim the circle on the strut tower to allow for easier access to the caster/camber adjustments. This step isn't necessary to complete, but will give more access for camber adjustments. **(Figure 3)**

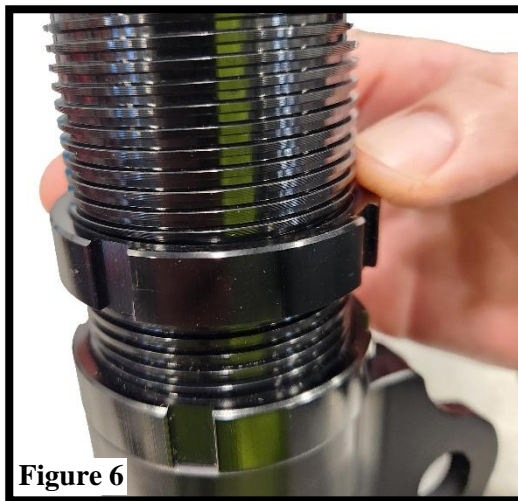


**INSTALLATION:**

1. In preparation for assembling the strut, remove the strut adjustment knob using a Torx T-15 tool. **(Figure 4)**
2. Remove the wiper boot from the top of the black threaded area of the strut. **(Figure 5)**
3. Thread the sway bar locking collar all the way down the strut body. **(Figure 6)**



4. Thread the sway bar end link mount down the body of the strut so that the larger opening is facing towards the spindle mount. This sway bar end link mount should be 1/2" from the strut base locking collar. This sway bar end link mount has two set screw holes that are NOT used for this installation. **(Figure 7)**





5. Thread the thin black spring seat locking collar (#7) down the strut body with the shouldered end UP. (Figure 8)

6. Thread the red spring seat collar (#1) down the body of the strut with the shouldered end UP. This collar has a threaded hole that is NOT used for this installation. (Figure 9)

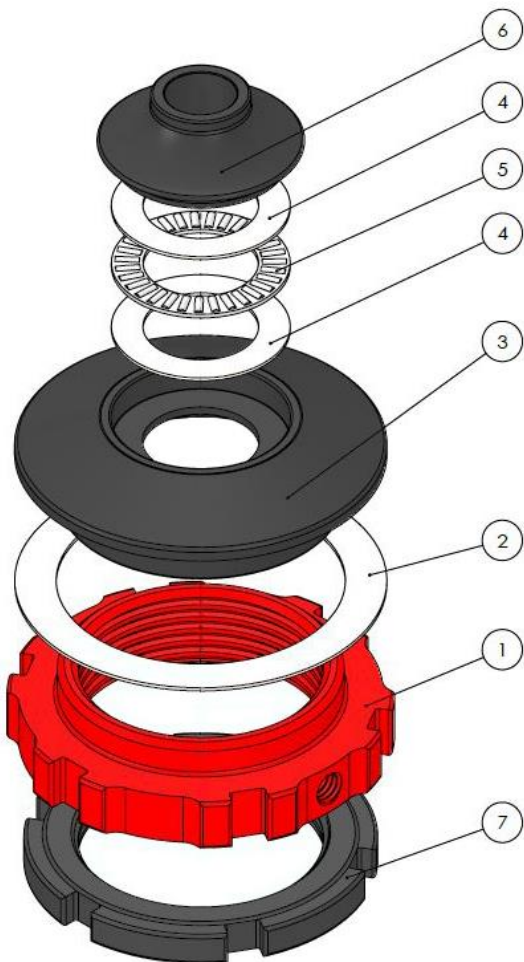
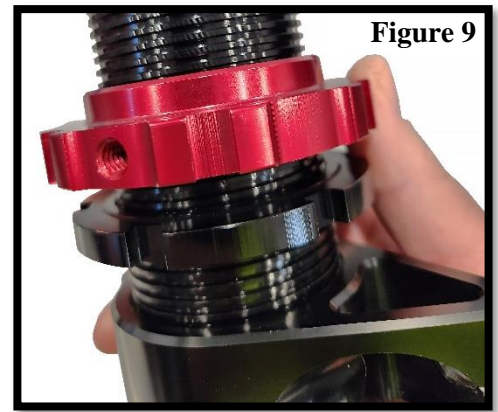
7. Install one stainless spring seat washer (#2) onto the spring seat. (#1)

8. Reinstall the wiper boot ensuring the boot is seated in the groove of the threaded portion of the strut. (Figure 5)

9. Install the spring onto the strut, followed by the upper spring seat (#3).

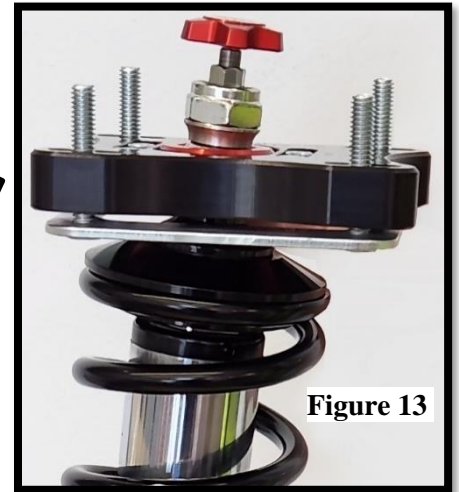
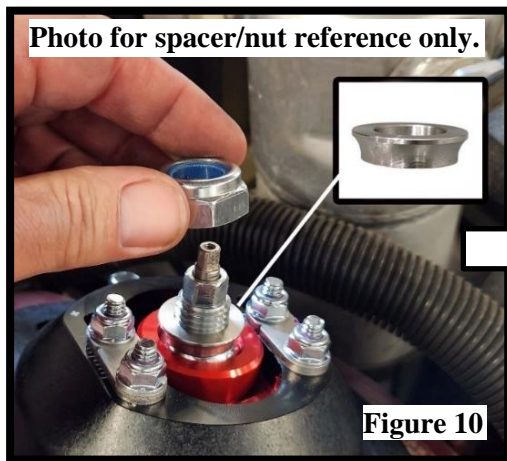
10. Lightly coat the thrust bearing (#5) with bearing grease and install the 1" I.D. thrust bearing kit onto the top of the upper spring seat to create a "bearing sandwich". (#4, #5, #4)

11. Install the bearing retainer (#6) onto the strut.



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

- 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 10)** These caster-camber plates are not right left specific, so either one can be mounted on either side as long as the QA1 logo is mounted towards the outboard side of the car. **(Figure 11)**
- Install the large strut nut. **(Figure 10)** Holding the small hex at the top of the strut rod, torque the 24mm strut nut to 45 lb. ft.
- Reinstall the adjustment knob onto the strut rod. Torque to 10 inch lbs. **(Figure 12)**



- Remove the four nuts holding the plates together (#5), but DO NOT separate the two plates. **(Figure 13)**
- Install the complete driver and passenger strut with caster-camber plates from the underside of the strut tower with the posts coming up through the chassis. The QA1 logo on the caster-camber plates should be mounted to the outboard side of the vehicle. (Logo away from the engine)
- Secure the plates to the strut tower using 5/16" nyloc nuts (#5). Torque to 18 lb. ft.

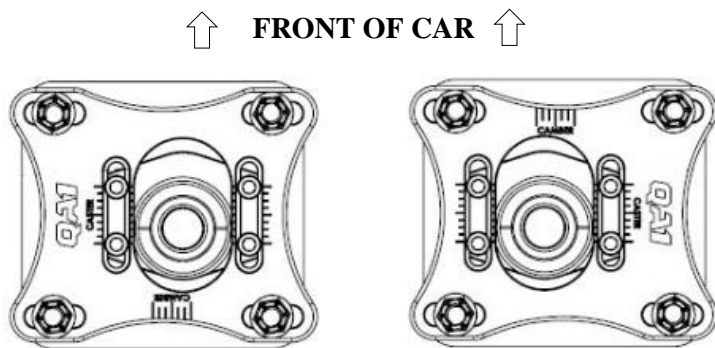
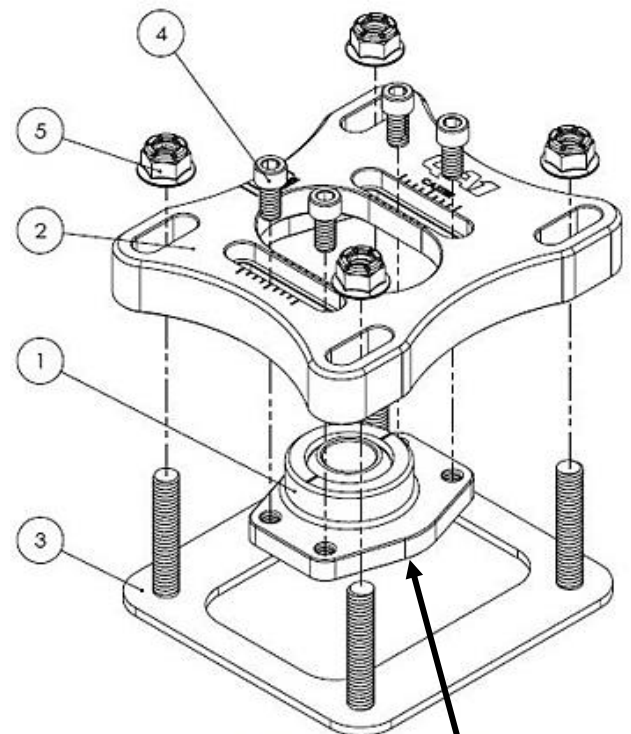


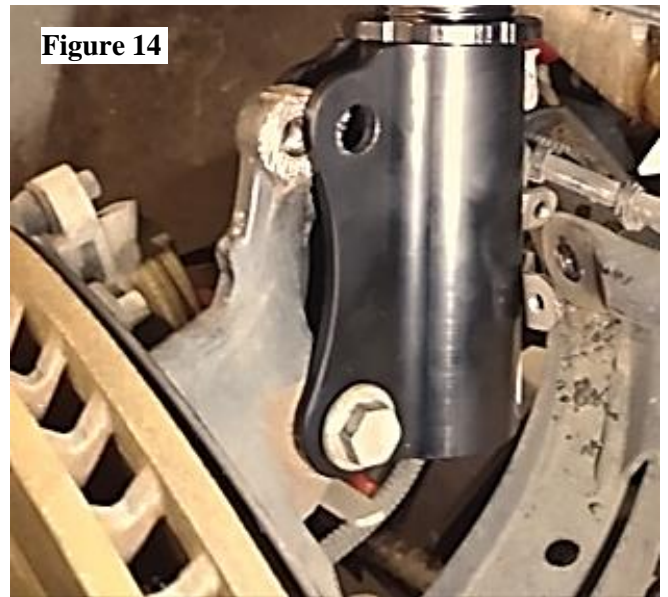
Figure 11

Bearing plate can be rotated 180° for further camber adjustment if needed.

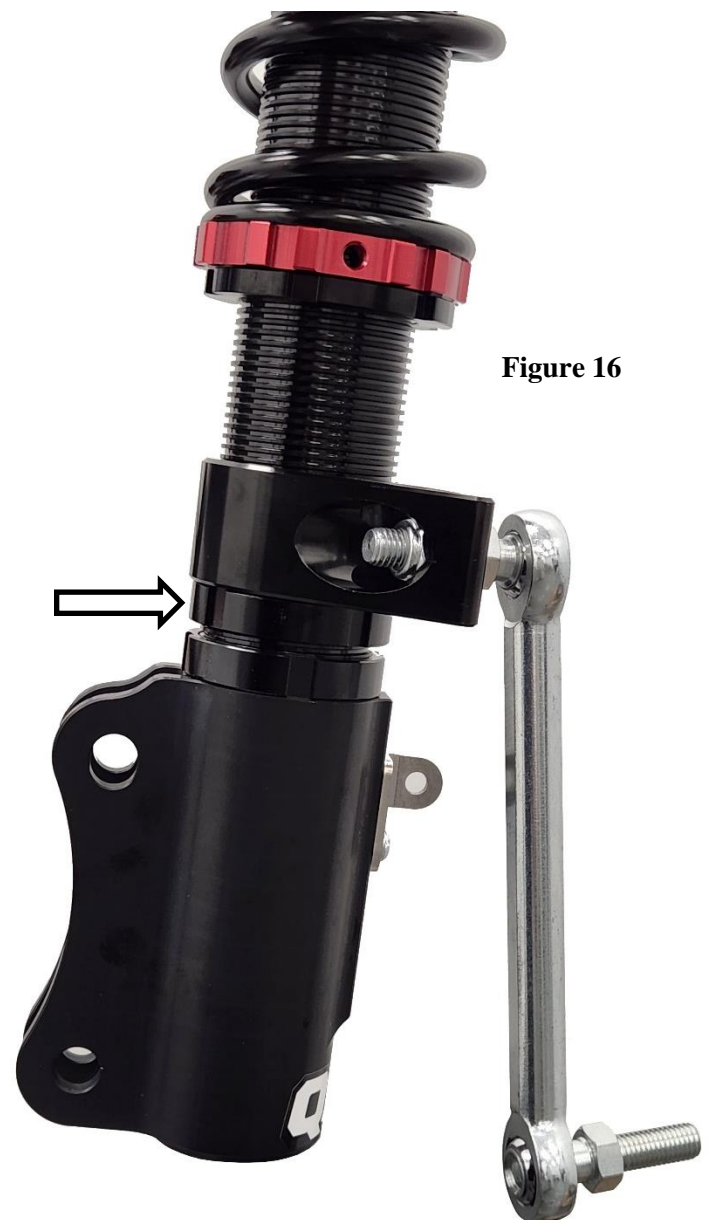
BALLOON #	ITEM #	DESCRIPTION	QTY.
1		BEARING PLATE ASM. 16MM W/THREADS	2
2	7730-123	PLATE, BILLET UPPER CC	2
3	9039-348	MOUNT PLATE, CC LOWER	2
4	9012-332	BOLT, SHCS 1/4-20 X .5"	8
5	9014-538	NUT, HEX FLANGE NYLOCK 5/16-18	8



15. Position the spindle knuckle into the bracket on the strut. **(Figure 14)**
16. Install the two spindle mounting bolts and nuts. Torque to 148 lb. ft.
17. Reinstall the brake line to the bracket on the strut using the included 1/4" bolt and nut. **(Figure 15)** Torque to 9 lb. ft.
18. Re-install the ABS wire with the included zip tie to the brake line.
19. Install the included sway bar link to the sway bar **(Figure 16)** using the included M12 washers and nuts. Torque to 60 lb. ft.
20. Adjust the height of the sway bar strut mount by threading it up or down the strut body until the link has been lined up. The distance from the base locking nut to the lower edge of the sway bar mount should be approximately 1/2" installed. Secure the end link to the strut mount using M12 washers and nuts. Torque the end link nuts to 60 lb. ft.
21. Tighten the locking collar to 75 lb. ft. against the sway bar mount using the included spanner wrench. **(Figure 16)**
22. Reinstall the wheels. Torque all nuts and bolts to factory specification.
23. Repeat the entire removal and installation procedures for the other side of the vehicle.
24. Double check all work. It's a basic and overlooked practice that distinguishes the most effective builders from the rest.
25. Take the car to a reputable alignment shop and have the car aligned.



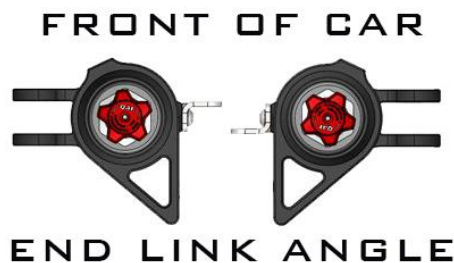
**Figure 14**



**Figure 16**



**Figure 15**

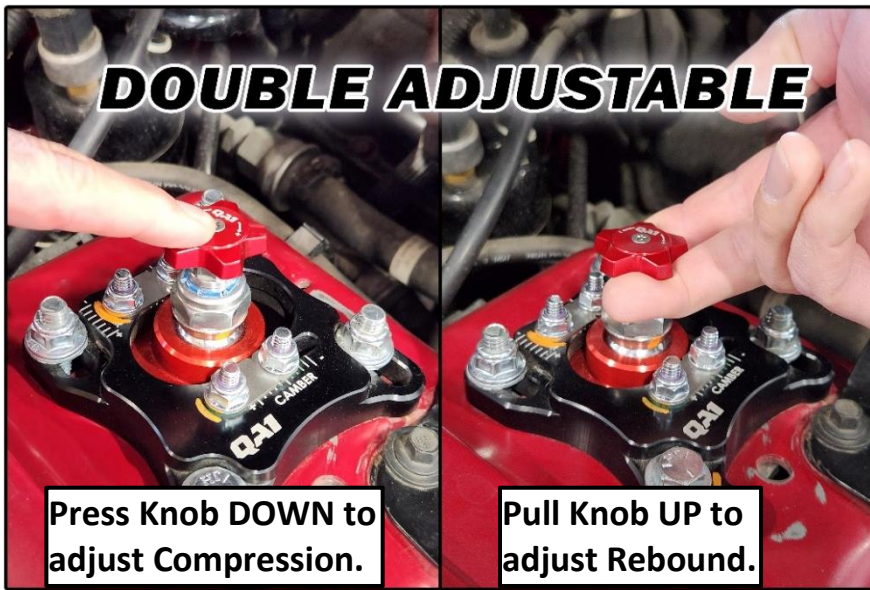


### Front Strut Valving Adjustments

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 18<sup>th</sup> 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.

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:

Drag Racing Tie-Down

Other Applications:

- 12-16 clicks Compression, 0-6 clicks Rebound
- 2-6 clicks Compression, 12-18 clicks Rebound
- 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.**

## Recommended Alignment Specs:

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.

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