



How To Install QA1's C5/C6 Corvette Coil-Over Systems

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

### INSTALLATION INSTRUCTIONS

QA1 P/N RCK52470, RCK52471

'97-'13 C5/C6 Corvette Rear Coil-overs

### TOOLS AND SUPPLIES REQUIRED

- Floor Jack
- Jack Stands
- Wrench Set (SAE and Metric)
- Spanner Wrench (QA1 p/n T115W)
- Socket Set (SAE and Metric)
- Safety Glasses
- Permatex® Anti-Seize Lubricant

### PRE-INSTALLATION NOTE:

Vehicles equipped with magnetic ride control will need to install shock simulators. These are available through many retailers including p/n 25-241303-1 from Ecklers Corvette.

### DISASSEMBLY

1. Measure and record the vehicle ride height from the ground to the fender at the center of the wheel. Determine whether 1" or 2" of lowering is desired before moving forward.
2. Raise and support the vehicle with jack stands on a stable surface. Refer to the owners manual for proper jacking points.
3. Remove the rear wheels from the car.
4. Support the leaf spring near the lower control arms to contain any remaining spring energy. **(Figure 1)**
5. Remove the upper shock hardware using a 13mm socket and the lower shock hardware using a 24mm socket and wrench.
6. Remove the shocks from the car.
7. **C5 corvettes-** Remove the leaf spring to control arm mounting bolt using a 21mm wrench on the top nut and an 18mm socket on the bolt head.
8. **C6 corvettes-** Mark the cam eccentrics of the lower control arm pivot points on one side of the car and remove the control arm. Remove the control arm to allow the spring to be under the control arm. Reinstall the control arm hardware/eccentrics to their original position when complete.
9. Remove the frame mounted leaf spring brackets using a 13mm socket and remove the leaf spring. **(Figure 2) The factory leaf spring is NOT USED in conjunction with coil-overs and can be discarded.**

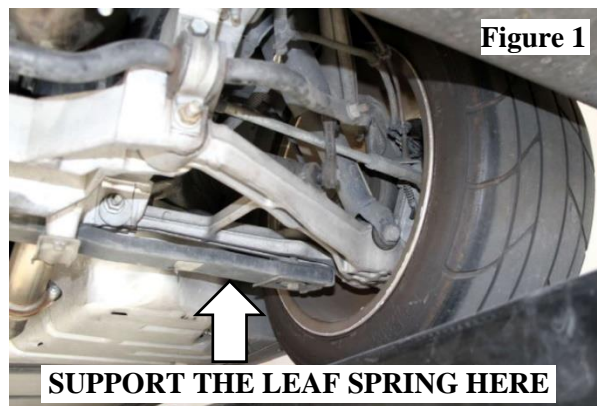


Figure 1

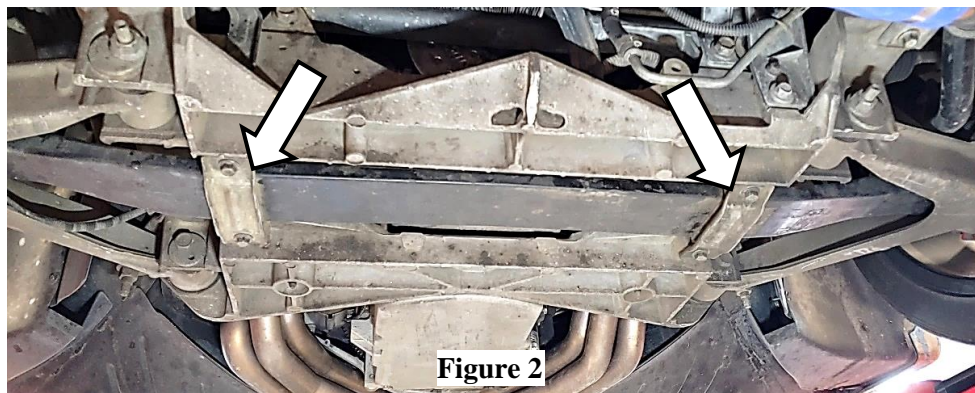
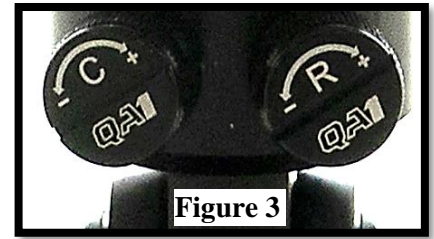


Figure 2

**SHOCK ASSEMBLY**

1. Unthread the upper shock eyelet and jam nut from the shock rod in preparation for bump stop spacer installation.

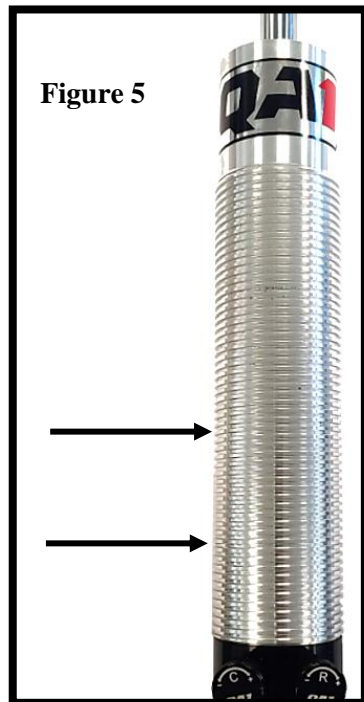
2. Pull on the shock rod to fully extend the shock then turn the compression (C) knob clock-wise until the knob stops. **(Figure 3)** This will aid in installing the bump stop and bump stop spacers without compressing the shock rod.



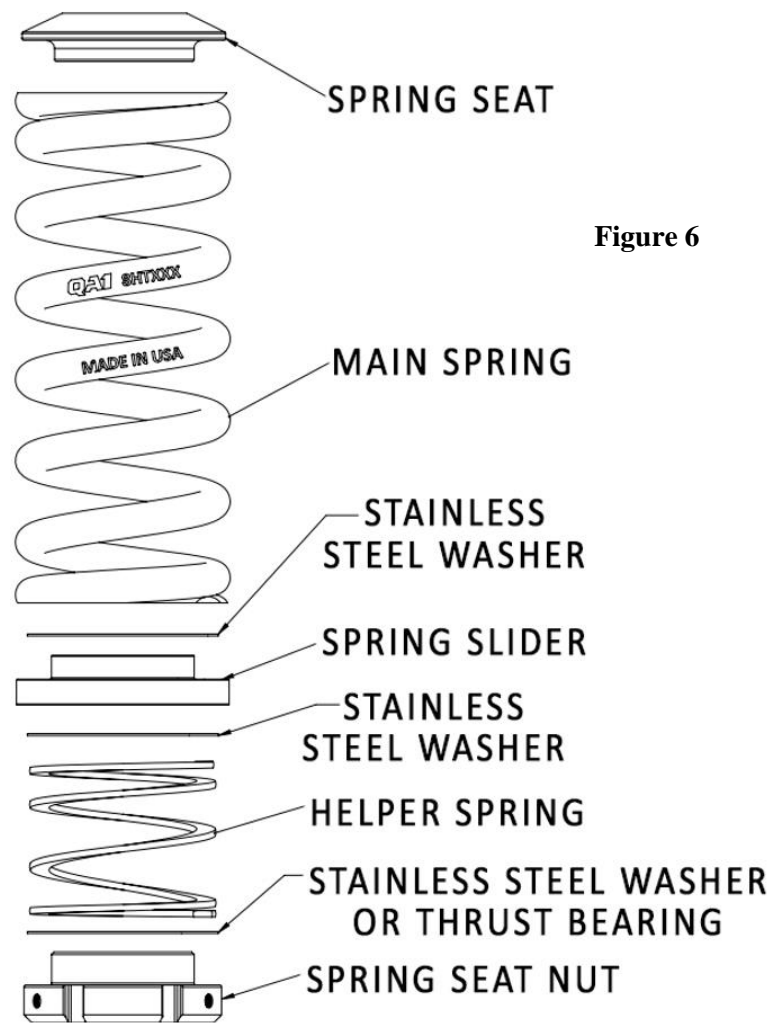
3. Reference the chart below to find your desired ride height change and install the appropriate amount of bump stop shims onto the shock rod. This system comes with one 1/2" shouldered base shim and (4) thinner .125" slotted shims per shock that can be added to achieve the necessary shim thickness of the chart. The thinner slotted shims can be added or removed from the shock rod with the shocks installed on the vehicle. **(Figure 4)**

<b>BUMP STOP SHIMS</b>		
<b>SPRING RATE</b>	<b>RIDE HEIGHT CHANGE</b>	<b>SHIMS NEEDED</b>
450	-1"	One .5" Shim + Three .125" Shims = .875" Total
	-2"	None
550	-1"	One .5" Shim + Three .125" Shims = .875" Total
	-2"	None
700	-1"	One .5" Shim + One .125" Shims = .625" Total
	-2"	None
900	-1"	One .5" Shim + Two .125" Shims = .750" Total
	-2"	None

4. Apply anti-seize to the range of coil-over threads as shown. **(Figure 5)** The threading of the spring seat in the following step will adequately spread any excess anti-seize. Failure to use anti-seize on the threads will void your shocks lifetime warranty.



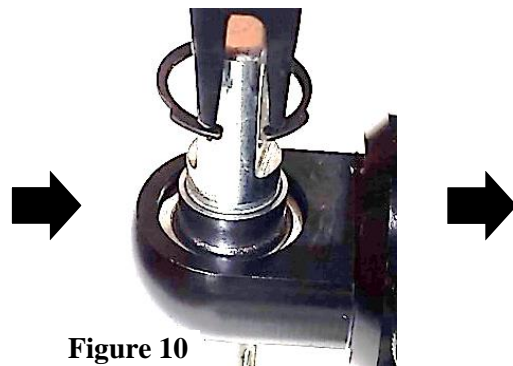
5. Thread the spring seat nut down the body of the coil-over to the lowest thread, followed by one stainless washer or thrust bearing kit (p/n 7888-180). **(Figure 6)**
6. Install the helper spring onto the shock followed by one stainless washer, then the spring slider, with one more stainless washer on top of the spring slider. **(Figure 7)**
7. Install the main coil spring onto the shock followed by the spring seat.
8. Re-thread the jam nut onto the shock rod followed by the upper shock eyelet. Tighten the jam into the eyelet to 31 lb. ft.



**Figure 6**



7. Using c-clip pliers and safety glasses, install one internal c-clip into one of the two grooves in the upper shock eyelet. **(Figure 8)** Double check that the c-clip is seated in the groove.
8. Remove the external c-clips on the t-bar so it can be fit through the shock eyelet. **(Figure 9)**
9. From the opposite end of the installed c-clip, insert the bearing mounted t-bar into the shock eyelet. **(Figure 9)**
10. Install another c-clip into the shock eyelet to secure the bearing into the eyelet. **(Figure 10)** Lightly push on the c-clip with a flathead screwdriver or similar to ensure the c-clip is seated in the groove.



11. Install one external c-clip onto each side of the t-bar shaft to complete the lower shock mount. **(Figure 11 is shown out of the shock eyelet for demonstration)**
12. The coil-over will be easiest to install in its shortest possible length. Turn the compression knob counter-clockwise until the knob stops (softest setting) and the Rebound knob clockwise until the knob stops (firmest setting). The shock can now be compressed against a hard surface (ground) to its shortest possible length. The rebound valving will help keep the shock compressed while it is installed in the car.
13. Insert the upper shock mount to the factory mounting point with the lower clevis over the lower control arm and the **adjustment knobs facing the rear of the car. (Figure 12 & 13)** Secure the upper mount using the included M8 x 30mm bolts with one M8 washer under the bolt head. Torque to 22 lb. ft.
14. Secure the lower clevis to the control arm re-using the factory hardware. Torque the lower mount to the factory spec of 162 lb. ft.
15. Turn all shock adjustment knobs counter-clockwise to the softest position as to prevent the valving from showing inaccurate ride height adjustments.
16. If the vehicle was equipped with magnetic ride control from the factory install shock simulators.
17. Re-install the wheels and torque to factory spec.



18. Using the T115W spanner wrench set, adjust the spring seat to achieve the desired ride height. This kit was designed for the spring seat collar to be just above the CV boot at full droop. Adjust the spring seat high enough to allow for clearance between the nut and the CV boot at full droop. This will be the lowest recommended ride height.

**NOTE:**

Roll the vehicle 2-3 feet to un-scrub the tires before measuring each ride height adjustment. Un-scrubbing the tires will usually show an additional 3/8" of drop vs. without un-scrubbing the tires.

19. Once final ride height is achieved, install the nylon tipped, stainless set screw into the threaded hole of the spring seat collar to secure. The set screw should be no tighter than finger tight.



**A PROFESSIONAL FOUR-WHEEL ALIGNMENT IS REQUIRED BEFORE DRIVING THE VEHICLE.**

### Shock Valving Adjustments

QA1 shocks have 18 damping settings per knob. There are 6 clicks per revolution of each knob, and each knob has 3 complete revolutions. The knob set fully counter-clockwise is the softest setting - start your adjustments from that point. The following are recommended base settings to begin testing with. Do not be afraid to adjust the shocks to find the best settings for your vehicle/driving style.

<b><u>Front shocks</u></b>	<b>Compression</b>	<b>Rebound</b>
Drag Racing	13-18 Clicks	0-4 Clicks
Nice Ride & Handling	3-6 Clicks	8-12 Clicks
Improved Handling	8-12 Clicks	12-18 Clicks
Aggressive Handling	12-14 Clicks	14-18 Clicks

<b><u>Rear shocks</u></b>	<b>Compression</b>	<b>Rebound</b>
Drag Racing	10-16 Clicks	8-12 Clicks
Nice Ride and Handling	3-6 Clicks	8-12 Clicks
Improved Handling	8-12 Clicks	12-18 Clicks
Aggressive Handling	12-14 Clicks	14-18 Clicks

### **Drag Racing Tuning**

Excessive front-end rise	Stiffen front rebound
Too little front-end rise	Soften front rebound
Front-end bounce after launch	Soften front compression, stiffen front rebound
Rear of vehicle squats	Stiffen rear compression
Rear tires unload about 60 ft. mark	Stiffen front compression
Too much separation in rear	Stiffen rear rebound
Tires hook and unload at starting line	Stiffen rear compression
Tire shake	Stiffen rear rebound
Immediate loss of traction	Stiffen front rebound, soften rear compression and rebound

### **Street Tuning**

Excessive Body Roll	Stiffen front and rear rebound
Excessive Front-End Dive	Stiffen front compression
Excessive Rear-End Squat	Stiffen rear compression
Too Firm Front	Soften front compression and rebound equally
Too Firm Rear	Soften rear compression and rebound equally
Doesn't Weight Transfer under Acceleration	Soften front rebound and rear compression
Doesn't Weight Transfer under Braking	Soften rear rebound and front compression

## Handling Tuning

<b>Corner Entry</b>	
Oversteer	<ul style="list-style-type: none"><li>• Stiffen rear rebound</li><li>• Stiffen front compression</li></ul>
Understeer	<ul style="list-style-type: none"><li>• Soften front compression</li><li>• Soften rear rebound</li></ul>
<b>Mid-Corner</b>	
Oversteer	<ul style="list-style-type: none"><li>• Stiffen rear rebound if rear suspension is unstable or has excessive body roll</li><li>• Soften rear rebound if rear tires chatter and don't have enough lateral grip</li></ul>
Understeer	<ul style="list-style-type: none"><li>• Stiffen front rebound if front suspension is unstable or has excessive body roll</li></ul>
<b>Corner Exit</b>	
Oversteer	<ul style="list-style-type: none"><li>• Soften rear compression, stiffen rear rebound, and soften front rebound</li></ul>
Understeer	<ul style="list-style-type: none"><li>• Stiffen front rebound and rear compression</li></ul>



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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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