PFADT
RACE ENGINEERING

FeatherLight Double Adjustable Corvette Coilovers

Tools Needed:

3/8" drive ratchet
24" long 3/8" extension
torque wrench
10mm deep socket
13mm socket
13mm deep socket
15mm socket
18mm deep socket
22mm socket
lug nut socket (stock 19mm)
15mm flex head ratchet wrench
6mm open end wrench
13mm combination wrench
22mm combination wrench
vice grips
1/2" drive breaker bar
1/2" drive torque wrench
floor jack
jack stands

This procedure is best performed on a vehicle lift, however it is possible to install these mounts using a floor jack and jack stands.

For questions please see the DOCS area on our website http://www.pfadtracing.com or call 888-972-2464

Front Coilovers

Using proper jacking points, lift and support the front of the car on jack stands. Open the hood and remove any components in the way of the upper front shock mounts.

C5 Note: The windshield washer bottle and the coolant reservoir must be moved. Neither component need be disconnected completely, just moved out of the way to facilitate the removal of the upper shock nut.

C6 Note: The coolant reservoir must be moved on the drivers side of the engine bay, it is held in with 2 10mm flange nuts. It does not need to be disconnected from the hoses, just moved out of the way to facilitate the removal of the upper shock nut.

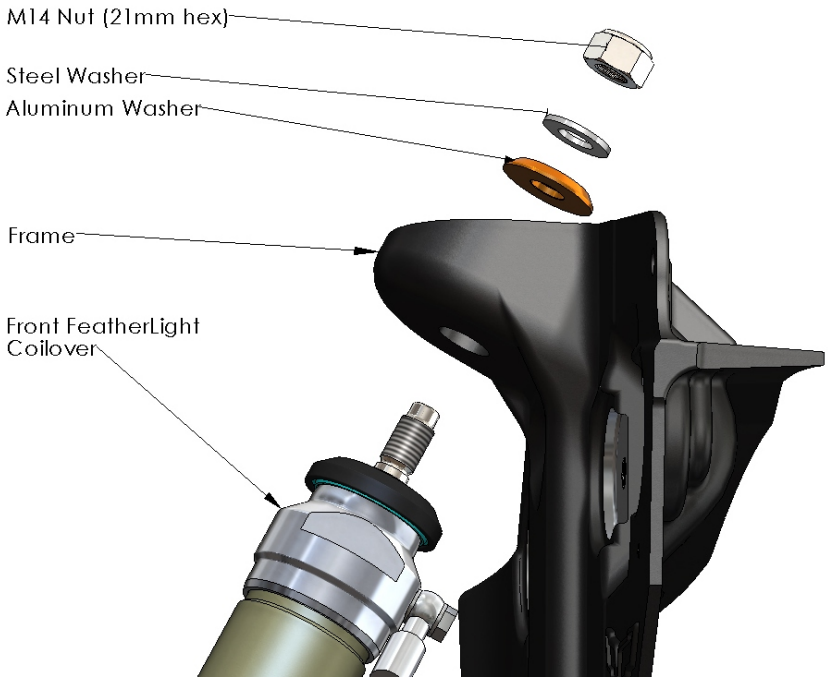
The upper shock nut is 15mm. Remove the nut from both shocks by holding the flats on the end of the shaft with a 6mm wrench. Vice grips can be used as an alternative if the nut is difficult.

Remove the front wheels.

Leaf Spring Removal: Remove the 4 bolts that hold the leaf spring to the front subframe.
Remove the two bolts holding the lower shock mount to the lower control arm. Support the lower ball joint with a floor jack. Remove the 4 bolts the hold the upper control arm to the frame.

Caution*:* Note the position of any washers between the upper control arm mounts and the frame for use in re-assembly

Pivot upper control arm out of the way. Lower the floor jack and remove the shock. Repeat the above process on the other side. Both shocks should be removed and upper control arms free. Remove the sway bar endlink from the control arm on one side. Pivot the upright and lower control arm assembly down to free the leaf spring. The spring will move toward the lowered upright until the opposite end slips free from the opposite control arm. The spring can then be removed.

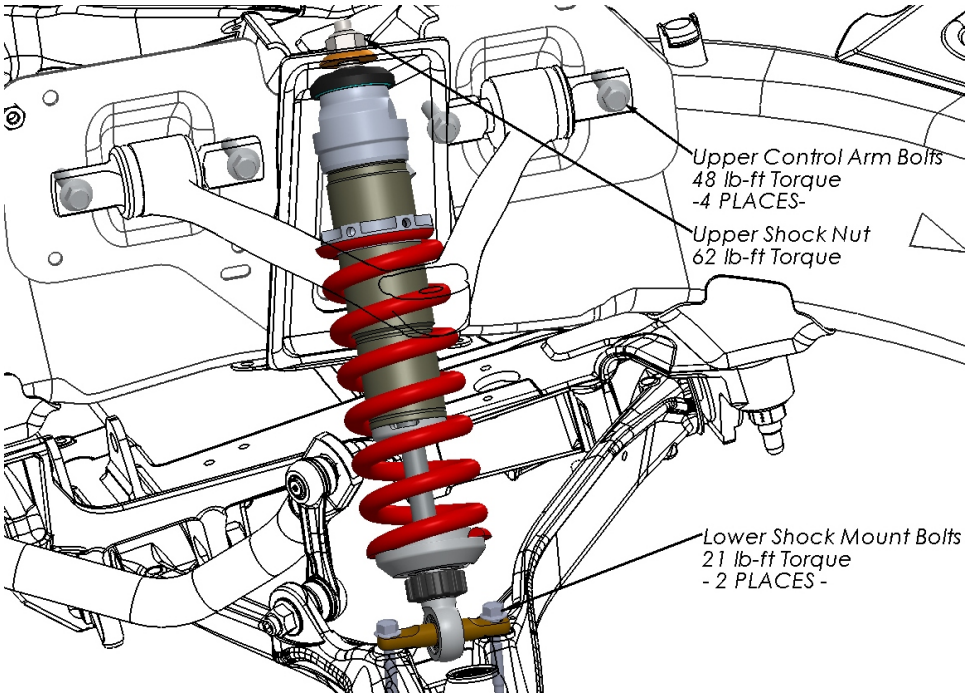


Front Coilover Assembly Order

Install the coilover in place. Place the bolts in the lower mount to locate the coilover correctly. With the floor jack, raise the lower control arm until the upper mount seats against the frame. Install the two upper washers and M14 nut in the engine compartment. See Diagram for proper assembly order.

Pivot the upper control arm back in place and replace the washers and bolts. Torque the upper control arm mounting bolts to 48 lb-ft torque.

Install the nuts on the lower coilover mounting bolts and torque to 21 lb-ft.



Front Coilover Install Diagram

Torque upper nut on coilover to 62 lb-ft. It may be necessary to keep the stud from turning with a 8mm open end wrench.

Repeat install procedure for other side. Replace the swaybar endlink assembly and torque fasteners appropriately. GM production endlinks require 53 lb-ft torque. Replace components in engine compartment and re-install wheels. Lower the car to the ground.

Item	***Torque***
Coilover Upper Mount Nut	62 lb-ft
Lower Shock Mounting Nuts	21 lb-ft
Swaybar Endlink Hardware (GM)	53 lb-ft
Front Upper Control Arm Bolts	48 lb-ft

Rear Shocks

Using Proper jacking points, lift and support the rear of the car on jack stands.

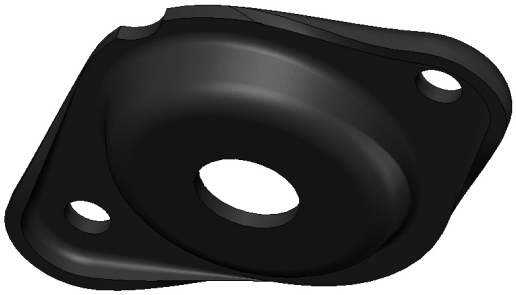
Remove the rear wheels. Supporting the lower ball joint with a floor jack, remove the two bolts holding the upper shock mount plate to the frame. Remove the large bolt that holds the lower shock mount to the control arm.

Remove the fasteners that hold the upper control arm to the frame. On aluminum frame cars there may be washers between the control arm mounts and the frame. Note their position for re-assembly.

Caution*:* Note the position of any washers between the upper control arm mounts and pivot upper control arm out of the way. Lower the floor jack and remove the shock. Repeat and remove shock from other side.

Leaf Spring Removal: Remove the 4 bolts that hold the leaf spring to the rear subframe. Remove the swaybar endling from one end of the swaybar, freeing the lower control arm to pivot down. Pivot that upright and lower control arm assembly down to free the leaf spring. The spring will move toward the lowered upright until the opposite end slips free from the opposite control arm. The spring can then be removed.

Remove the upper mount plates from the original shock absorbers.

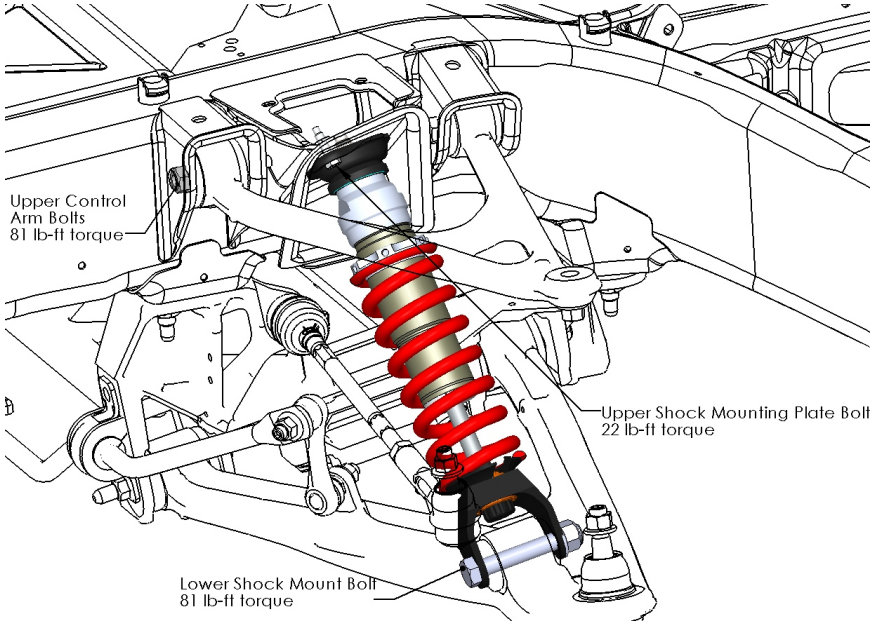


Rear Upper Mount Plate

Install the Upper Mount Plates on the coilovers as shown in the diagram. Torque the M14 nut to 62lb-ft torque.

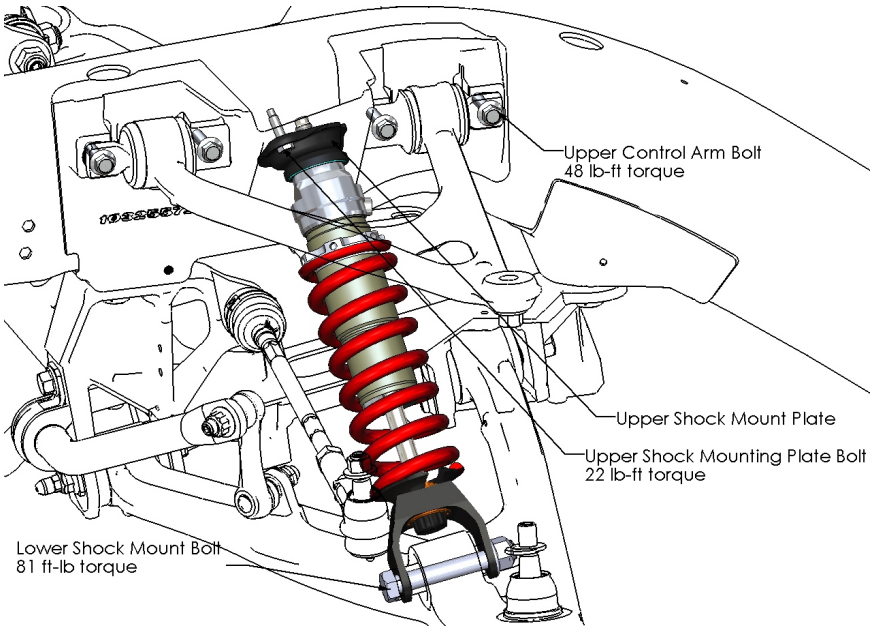
Rear Upper Assembly

Install the coilover in place. Place the bolt in the lower mount to locate the coilover correctly. With the floor jack, raise the lower control arm until the shock is in the correct position. ***The upper plate mounts with the white dot facing the front of the car.*** Install the upper mount bolts and torque to 22 lb-ft.



Steel Frame Diagram

Pivot the upper control arm back in place and replace the bolts (and washers on aluminum frame cars). Torque the upper control arm mounting bolts. 48 lb-ft torque on C6 Z06 and ZR1 aluminum frame cars, 81lb-ft on all C5 and steel frame cars. See Diagrams for proper frame identification.



Aluminum Frame Diagram

Torque the lower shock mounting bolt to 81 lb-ft.
Reinstall swaybar endlink and torque. GM production endlinks require 53 lb-ft torque
Repeat shock R&R procedure for other side. Re-install wheels and lower the car to the ground.

Item	***Torque***
Upper Shock Mounting Plate Bolts	22 lb-ft
Lower Shock Mounting Bolt	81 lb-ft
Swaybar Endlink Hardware (GM)	53 lb-ft
Upper Control Arm Bolts (steel frame)	81 lb-ft
Upper Control Arm Bolts (Z06/ZR1 2006+)	48 lb-ft

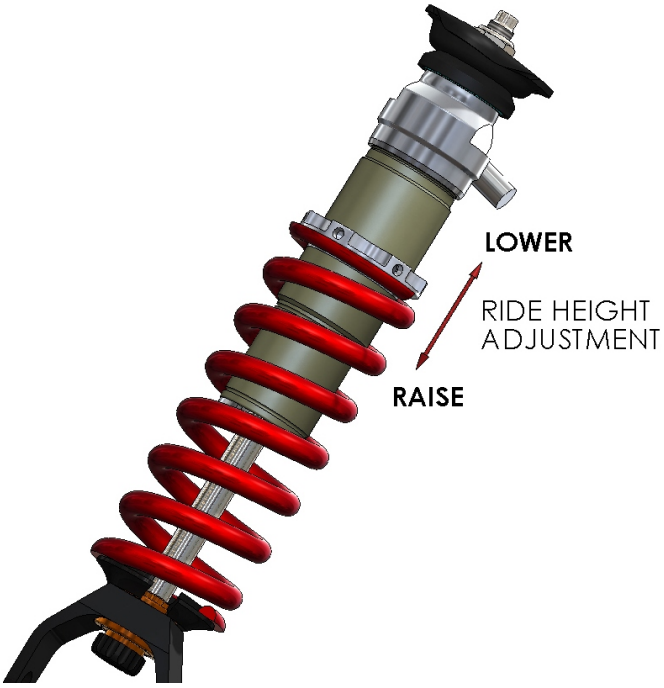
Setup Guide

Ride Height:

The Pfadt FeatherLight Coilovers have a simple ride height adjustment system. Your dampers are pre-set with a nominal ride height that is similar to the production ride height of a Z06 Corvette. The initial setup is intended as a starting point only. Each vehicle is different and must be adjusted.

After installing the coilovers and applying proper torque to all fasteners, lower the car to the ground and roll the vehicle back and forth to settle the suspension. If the ride height is close to the desired ride height, it is recommended to drive the car a short distance prior to doing a final ride height setting. Caution, the alignment settings may have changed during installation.

With the vehicle on a perfectly flat plane, measure the ride height of the vehicle. Calculate how much the ride height must change to meet your desired ride height. Using the guide below calculate how many turns on the spring perches are required. Raise the vehicle, support is safely and remove the wheels. Using the supplied spanner wrench, adjust the spring perches an appropriate number of turns. Each spring perch contains a single set screw with a 3mm hex that can be loosened to make the perch move easier.



Front: 5.0 turns = 1/2" ride height
Rear: 4.5 turns = 1/2" ride height

Ride Height *all heights to be used as guide only	**Front** *(in)*1*	**Rear** *(in)*1*	**Front** *Z-Dim (mm)*2*	**Rear** *D-Dim (mm)*2*	**Front** *J-Dim (mm)*3*	**Rear** *K-Dim (mm)*4*
C5 - Stock Height	27.4	28.6	44	108	153	158
Pfadt Recommended Height C5	26.7	27.6	20	90	129	140
C6 Stock Height	26.9	28.1	45	121	154	171
C6 Z06 Stock Height	26.7	27.6	41	109	150	159
Pfadt Recommended Height C6	26.4	27.3	32	99	141	149

*1 with stock tires, measured to fender arch
*2 with stock tires, measured from LBJ lowest point to center of the front side of the LCA forward mounting bolt
*3 with stock tires, dimension from rocker panel to ground, measured 35" rearward of front wheel centerline
*4 with stock tires, dimension from rocker panel to ground, measured 31" forward of rear wheel centerline

Please note: Add 10mm to J/K dims for frame/chassis to ground measurements.

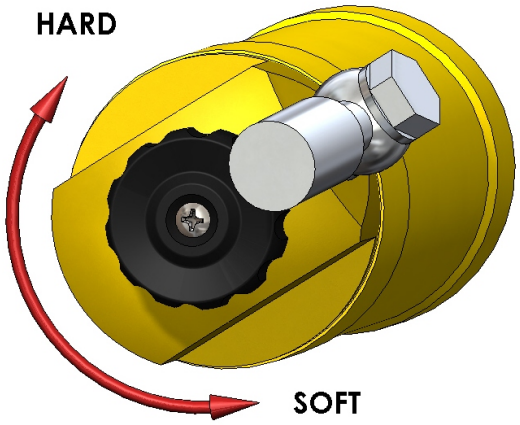
When the correct ride height is achieved, take the vehicle for a short drive and then double check the ride height. After the ride height is set, ***the vehicle must be aligned***. Ride height changes alter alignment specification. Get a proper alignment.

Damping:

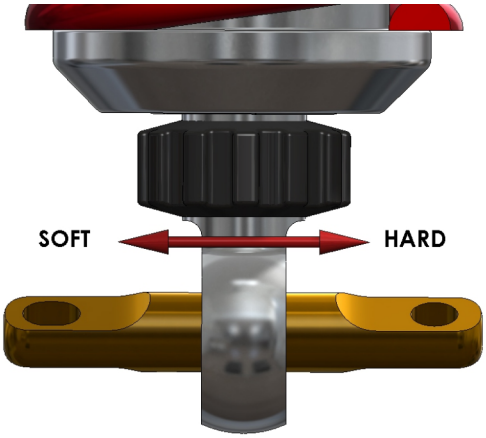
Pfadt FeatherLight DA dampers have independent compression and rebound adjustment. Damping adjustment can be accomplished on the vehicle without special tools and without removing any damper components.

Compression adjustment is adjusted through a knob located on the end of the remote canister. There are ***22 clicks*** of compression adjustment. It is best to start with the knob at full stiff (22) and count down to your desired setting. The adjustment is more accurate and there may be a couple of extra clicks on the soft end of the adjustment range that are not affecting damping.

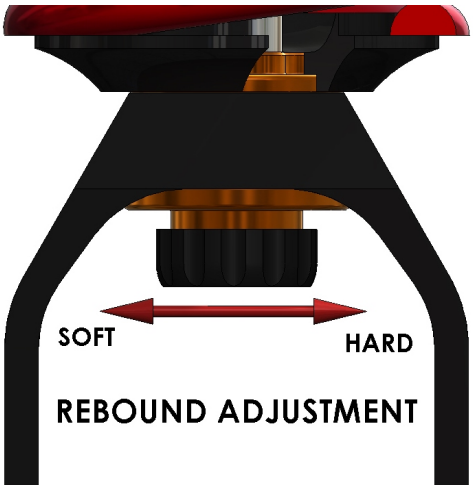
COMPRESSION ADJUSTMENT



Rebound adjustment is located on the end of each main damper shaft. The front shocks have 44 clicks of damping adjustment. It is best to start with the knob at full stiff (44) and count down to your desired setting. The adjustment is more accurate and there may be a couple of extra clicks on the soft end of the adjustment range that are not affecting damping.



REBOUND ADJUSTMENT



On the rear, there are 24 clicks of rebound adjustment. It is best to start with the knob at full stiff (24) and count down to your desired setting. The adjustment is more accurate and there may be a couple of extra clicks on the soft end of the adjustment range that are not affecting damping.

Starting Points

Compression : 12 Front, 12 Rear
Rebound: 24 Front, 10 Rear