



*DUAL ADJUSTABLE
SHOCK*

3031

By: FLAMING RIVER INDUSTRIES

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WARRANTY DISCLAIMER:

Flaming River's Limited Warranty

Flaming River warrants its products to be free from defects in material and workmanship for a period of one (1) year after the date of purchase, except that: All steering columns are warranted for a period of three (3) years from the date of purchase. The Big Switch (part number FR1005) is warranted for a period of three (3) years from the date of purchase, provided that it is not mounted with a steel bracket and provided further that it is adequately protected from environmental conditions. All electrical products other than the Big Switch are warranted for a period of ninety (90) days from the date of purchase. Flaming River's warranty liability is limited to the replacement of defective products. Flaming River is not liable for any labor costs associated with any warranty claim, or for any incidental or consequential damages. Improper installation, abuse, racing, and/or modification of the products voids this warranty. No warranty of merchantability or fitness for a particular purpose is made by Flaming River with respect to any of its products.

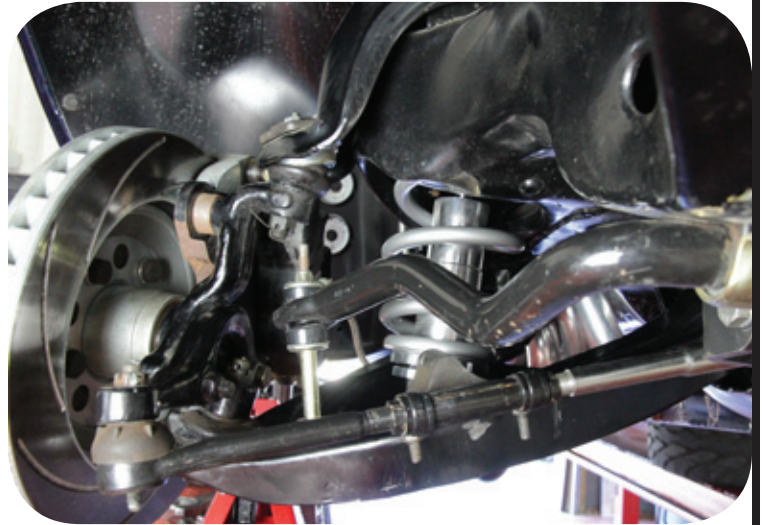
Warnings and Recommendations

It is the customer's responsibility to determine the suitability of a given Flaming River product for the customer's uses. Likewise, it is the customer's responsibility to install a Flaming River product. Contact the vehicle manufacturer whenever installing a switch to confirm the appropriateness of using such a switch and the recommended placement of the switch on the vehicle. Use qualified chassis specialists for the installation of all steering related components. Be aware that the installation of certain Flaming River products may adversely impact a manufacturer's warranty with respect to certain vehicles and other manufactured goods. Flaming River will repair or replace any product found to be defective in material or workmanship. Improper installation, abuse, racing and/or modification VOID WARRANTY. Flaming River is not responsible for any labor costs associated with any warranty.

Note: The information contained in this catalog is correct to the best of our knowledge and belief, having been compiled from reliable and official sources of information. However, Flaming River Industries, Inc. cannot assume responsibility for possible error.

GM Front Coil Over Installation

1. **Verify that your shocks are the correct lengths and mount style before beginning installation. Contact your chassis builder, supplier or Flaming River if you have any questions.**
2. **Measure your vehicle's ride height by measuring from the center point of the fender lip down to the ground. Mark the spot you measured to for later reference.**
3. **Reference your vehicle's owner's manual to determine the proper jacking locations, and the instructions for removing the shocks and springs. FAILURE TO FOLLOW THE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.**
4. **Jack your vehicle up until the tires do not touch the ground and the suspension hangs freely and remove the wheels. Remove the shocks and sway bar mounts, if applicable, and retain all mounting hardware.**
5. **Important: Ensure that factory or replacement compression bumpers are in place and in good condition prior to installing the shocks. Also check other components on the chassis such as bushings, ball joints, etc. and replace if needed.**
6. **Use a floor jack to support the lower control arm and remove the cotter pin and ball joint nut from the lower ball joint. Loosen the ball joint stud from the spindle using a tie rod / ball joint separator. Carefully and slowly release the lower control arm assembly by lowering the floor jack until the spring can be safely removed**



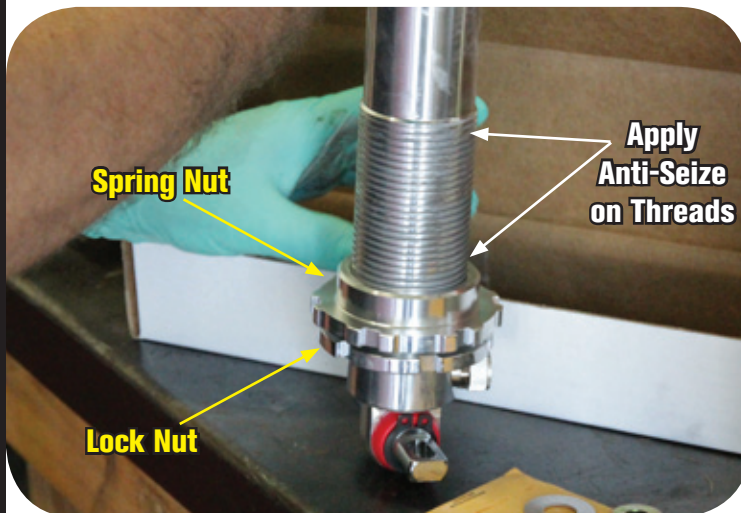
GM Front Coil Over Installation



7. Remove the hardware that retained the stock shock in the lower control arm. Clean the mounting bolt holes thoroughly. You may need to slightly open them using a file or 3/8" drill bit.

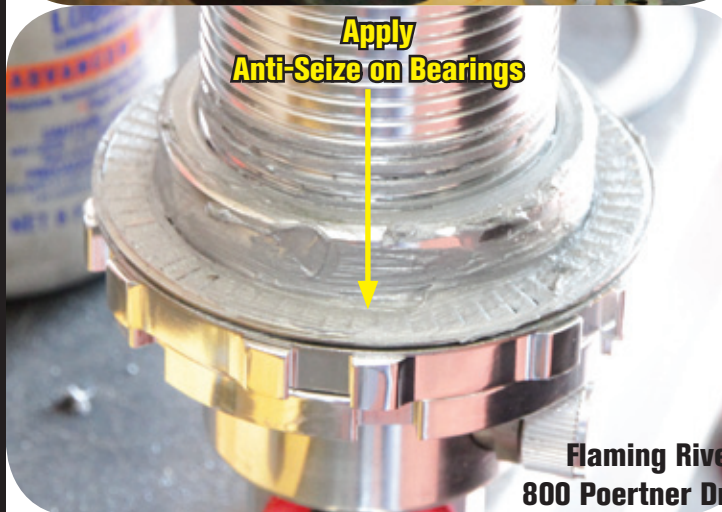
8. Install one stud washer and one bushing (half of the shock stud bushing pack) onto the stud.

9. Fully extend the piston rod.



10. Screw the lock nut (shoulder up) and the spring nut (shoulder up) down to the last thread only.

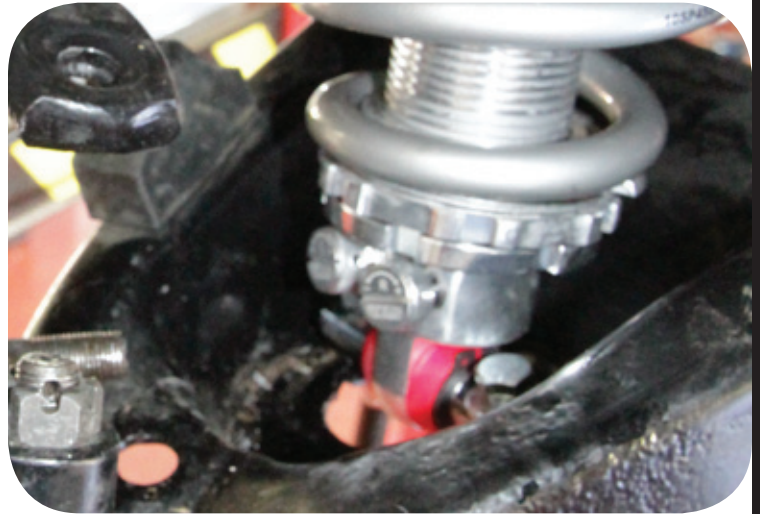
11. Apply anti-seize to the threads on the nuts and the shock. If the Flaming River thrust bearing kit is used (*recommended*), coat both washers with anti-seize. Install the spring seat washer, then the bearing, then the second washer. If you do not use the thrust bearing kit, then coat one side of the washer supplied with the shock with anti-seize and place it coated side down on the spring nut. **THE WARRANTY IS VOID AND DOES NOT COVER DAMAGE TO THE SHOCK RESULTING FROM THE FAILURE TO APPLY ANTI-SEIZE PRIOR TO MAKING RIDE HEIGHT ADJUSTMENTS.**



GM Front Coil Over Installation

12. Install the spring onto the shock, putting the small end of the spring over the shock body and down onto the spring seat.

13. For GM Kits: Install the shock with the T-bar on top of the lower control arm with the adjustment knobs facing out toward the spindle utilizing the 3/8" bolts and nylock nuts. Before tightening, ensure that the shock is centered in the lower control arm.



14. For Mustang II Kits: If necessary, drill out the lower control arm bolt holes to the appropriate size depending on the shock style selected. If applicable, insert the bearing in a twisting motion. It may be necessary to press the bearings into the shock. If so, do not press on the ball; press only on the race surrounding the ball. Install snap rings on both sides of each bearing and ensure they are fully seated in the loops.



15. Jack the control arm up very slowly until the shock stud extends through the factory mount while vertically rotating the assembly and making sure that the shock is not binding. You may need to also rotate the spring until it is properly located in the factory recesses.

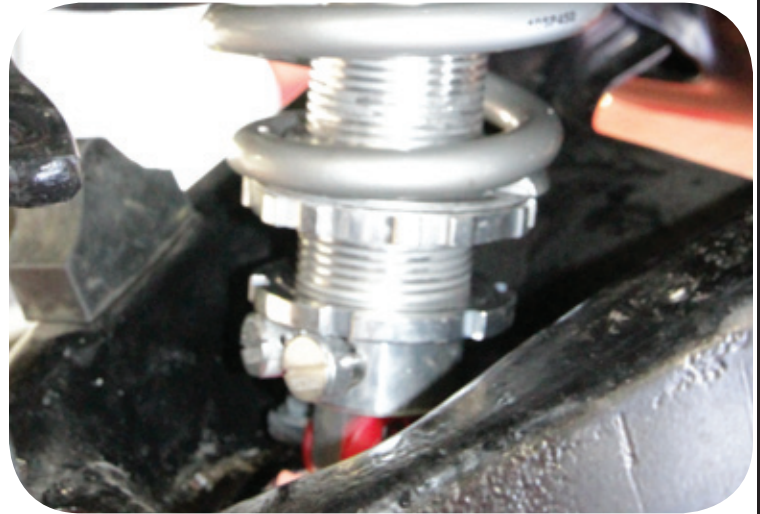
16. Install the upper stud bushing, washer and nut.

17. Reassemble the lower a-arm and the spindle. Torque the spindle nut to factory specifications and insert the cotter pin.



GM Front Coil Over Installation

18. Adjust the spring nut up about 1/3 of the way from the bottom of the threads on the shock.



19. Reattach the wheels and torque everything to the specifications defined by the vehicle's manufacturer.
20. Verify that there is clearance around the coil-over shock and that the suspension does not bind at all, even when wheels are turned to full lock position.
21. Carefully place the car on the ground to check clearances again. Lightly bounce the vehicle at each corner to verify that there are not any clearance issues.
22. Measure the ride height as you did prior to installation and ensure that there is sufficient travel in both directions. Ideally, 60% of the shock stroke is available for compression. Adjust the ride height only with the weight of the vehicle fully off of the tires. ***THE WARRANTY IS VOID AND DOES NOT COVER DAMAGE TO THE SHOCK DUE TO INCORRECT RIDE HEIGHT OR BY MAKING RIDE HEIGHT ADJUSTMENTS WITHOUT THE TIRES RAISED OFF THE GROUND.*** Raise or lower the ride height by adjusting the spring nut to achieve the desired ride height. If it is at the extreme top or bottom of the threads, then you may need a softer or heavier spring.
23. Once ride height is correct, spin the lock nut up to the bottom of the spring nut and lock them together using the two spanner wrenches.
24. It is important to note that your shocks should never be used as a travel limiter. Straps or cables made for travel limitation should be used prevent topping out. Vehicles used in a manner where they could bottom out the shocks (such as drag racing) should use a higher rate spring and a bump stop to help prevent shock damage. Any shock can be damaged from wheel stands despite bump stops.
25. Have your front end realigned upon completion of installation.

Front Smooth Body Installation

Please read these instructions carefully prior to installing your new Flaming River shocks.

Notes:

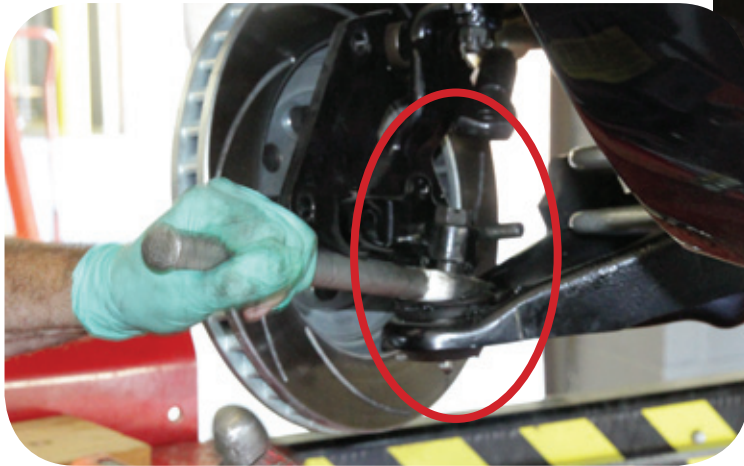
1. Verify that your shocks are the correct lengths and mount style before beginning installation. Contact your chassis builder, supplier or Flaming River if you have any questions.
2. Measure your vehicle's ride height by measuring from the center point of the fender lip down to the ground. Mark the spot you measured to for later reference.
3. Reference your vehicle's owner's manual to determine the proper jacking locations, and the instructions for removing the shocks and springs. **FAILURE TO FOLLOW THE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.**
4. Jack your vehicle up until the tires do not touch the ground and the suspension hangs freely. Removing the wheels is not required in all cases, but it does allow for easier access. Remove the shocks and sway bar mounts, if applicable, and retain all mounting hardware.
5. Important: Ensure that factory or replacement compression bumpers are in place and in good condition prior to installing the shocks. ***IF THE FACTORY BUMPERS OR EQUIVALENT ARE DAMAGED OR ARE NOT PRESENT, DAMAGE TO THE SHOCK MAY OCCUR THAT IS NOT COVERED UNDER WARRANTY.***
6. It is important to note that your shocks are never to be used as a travel limiter. Severe damage will result that will not be covered under the warranty. Straps or cables made for travel limitation should be used prevent topping out. Vehicles used in a manner where they could bottom out the shocks (such as drag racing) should use a higher rate spring and a bump stop to help prevent shock damage. Any shock can be damaged from wheel stands despite bump stops.

1. If applicable, install one stud washer and one bushing (half of the shock stud bushing pack) onto the stud on the upper mount.
2. Confirm that the shocks will fit through the lower control arms without modifications. If no, continue to step (3). If yes, put the shock through the lower control arm and slide the upper shock mount into place, tighten all nuts and bolts to factory specifications, and proceed to step (8).



Front Smooth Body Installation

3. Use a floor jack to support the lower control arm, remove the cotter pin from the lower ball joint and loosen the ball joint nut. Remove the ball joint stud from the spindle using a tie rod / ball joint separator. Carefully and slowly release the lower control arm assembly by lowering the floor jack until the spring can be safely removed.



4. Fully extend the shock and put the T-bar through the lower control arm and insert the bolts but do not tighten them completely at this time. The knobs on the shock should be facing out toward the spindle.

5. Slide the coil spring over the shock and align it in the lower control arm. Align the upper shock mount and the factory spring in the spring bucket. Jack the lower control arm up very slowly, making sure that the shock is not binding as the spring is compressed.

6. Install the upper stud bushing, washer and nut and tighten the two control arm shock bolts to factory specifications.

Front Smooth Body Installation

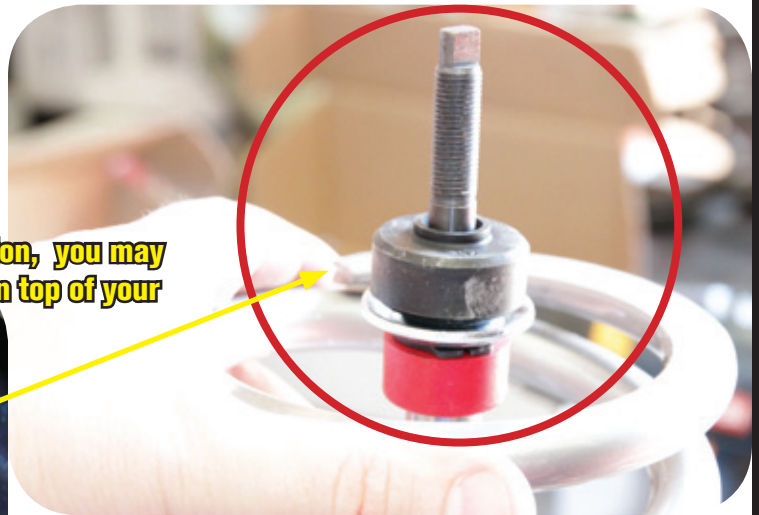
7. Reassemble the lower a-arm and the spindle. Torque the spindle nut to factory specifications and insert the cotter pin.
8. Reattach the wheels and verify everything has been torqued to the specifications defined by the vehicle's manufacturer.
9. Carefully place the car on the ground to check clearances again. Lightly bounce the vehicle at each corner to verify that there are not any clearance issues.
10. Measure the ride height as you did prior to installation and ensure that there is sufficient travel in both directions. Ideally, 60% of the shock stroke will be available for compression. **INCORRECT RIDE HEIGHT COULD RESULT IN DAMAGE TO THE SHOCK THAT IS NOT COVERED UNDER WARRANTY.**



Rear Smooth Body Installation

1. If applicable, install one stud washer and one bushing (half of the shock stud bushing pack) onto the stud on the upper mount.

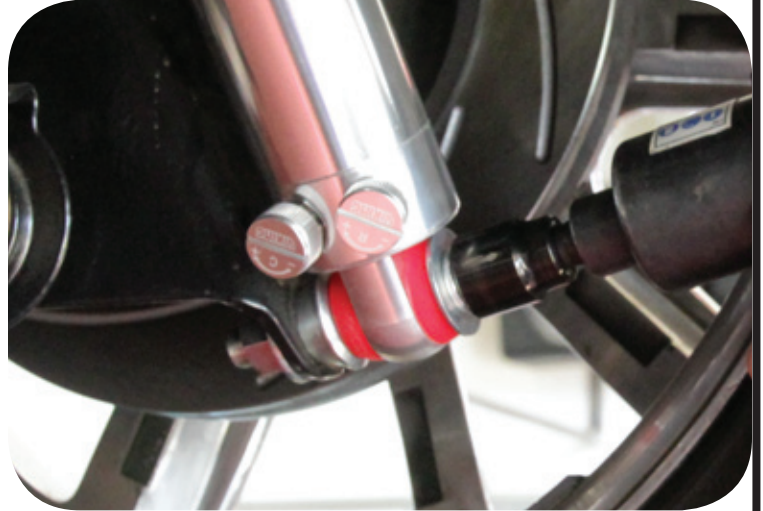
Depending on application, you may have a T-Bar or Stud on top of your shock.



2. Mount the upper portion of the shock.

Rear Smooth Body Installation

3. Mount the lower portion of the shock to the rear end housing. There should be little or no modifications necessary.
4. Make certain that everything is mounted securely then, if necessary jack the rear end housing into the chassis. If applicable, make sure that the springs are realigned.
5. Verify everything has been torqued to the specifications defined by the vehicle's manufacturer.
6. Carefully place the car on the ground to check clearances again. Lightly bounce the vehicle at each corner to verify that there are not any clearance issues.
7. Measure the ride height as you did prior to installation and ensure that there is sufficient travel in both directions. Ideally, 60% of the shock stroke will be available for compression. ***INCORRECT RIDE HEIGHT COULD RESULT IN DAMAGE TO THE SHOCK THAT IS NOT COVERED UNDER WARRANTY.***



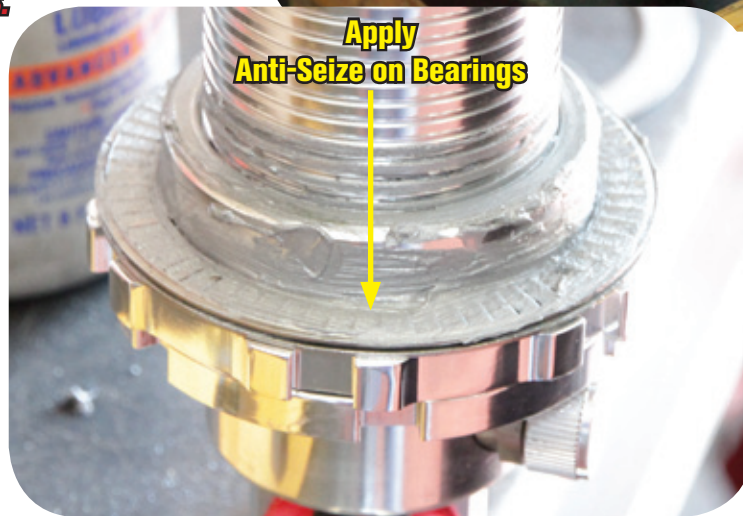
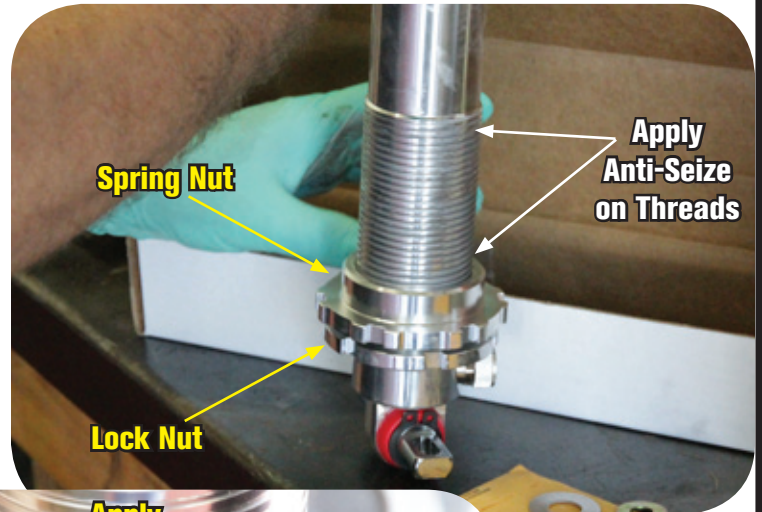
Custom Coil Over Installation

1. Verify that your shocks are the correct lengths and mount style before beginning installation.
2. Measure your vehicle's ride height by measuring from the center point of the fender lip down to the ground. Mark the spot you measured to for later reference.
3. Reference your vehicle's owner's manual to determine the proper jacking locations, and the instructions for removing the shocks and springs. **FAILURE TO FOLLOW THE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.**
4. Jack your vehicle up until the tires do not touch the ground and the suspension hangs freely and remove the wheels. Remove the shocks and springs and retain all mounting hardware.
5. Test fit your shocks into the chassis without mounting the springs. Move the suspension through the entire travel range to ensure that it does not bind at any point.
6. Fully extend the piston rod and ensure that the jam nut under the bearing housing is secure.

Custom Coil Over Installation

7. Screw the lock nut (shoulder up) and the spring nut (shoulder up) down to the last thread only.

8. Apply anti-seize to the threads on the nuts and the shock. If the Flaming River thrust bearing kit is used (recommended), coat both washers with anti-seize. Install the spring seat washer, then the bearing, then the second washer. If you do not use the thrust bearing kit, then coat one side of the washer supplied with the shock with anti-seize and place it coated side down on the spring nut. **THE WARRANTY IS VOID AND DOES NOT COVER DAMAGE TO THE SHOCK RESULTING FROM THE FAILURE TO APPLY ANTI-SEIZE PRIOR TO MAKING RIDE HEIGHT ADJUSTMENTS.**

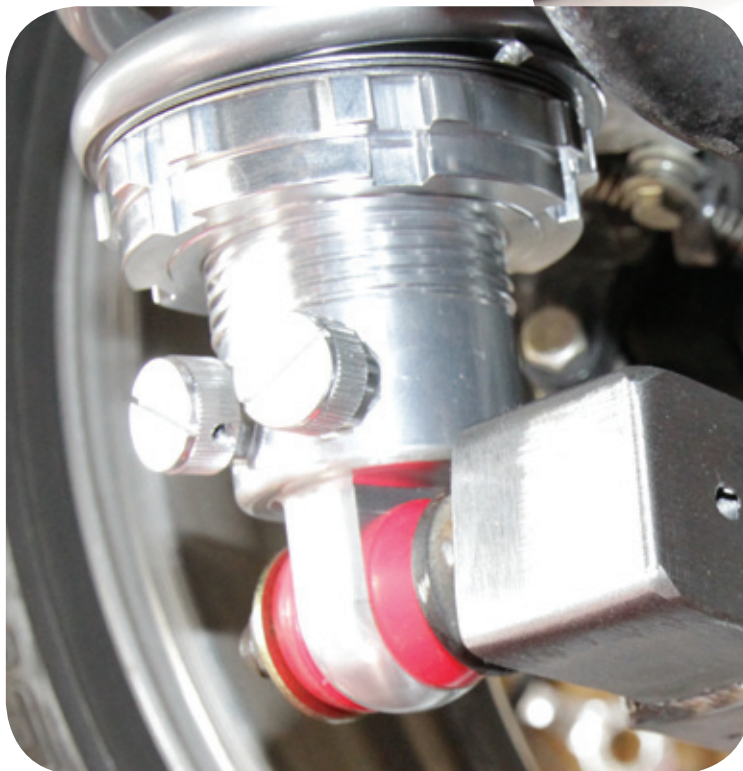


9. Slide the spring over the shock, put the spring cap into position (may require compressing the spring), and adjust the spring nut up until the spring is slightly compressed. Make certain that the spring is seated squarely in the cap and on the spring nut. All parts should be aligned.

Custom Coil Over Installation

10. Insert the proper poly sleeves or bearing mounts into the shock ends. For bearing mount shocks, insert the bearing in a twisting motion. It may be necessary to press the bearings into the shock. If so, do not press on the ball; press only on the race surrounding the ball. Install snap rings on both sides of each bearing and ensure they are fully seated in the loops.

11. Install the assembled coil-over on the vehicle and adjust the spring nut up about 1/3 of the way from the bottom of the threads on the shock.



Example shown was installed on the rear of a 1940 Ford with a GM Rear End and Suspension.



Custom Coil Over Installation

12. Reattach the wheels and torque everything to the specifications defined by the vehicle's manufacturer.
13. Verify that there is clearance around the coil-over shock and that the suspension does not bind at all, even when wheels are turned to full lock position.
14. Remove the jack stands and carefully place the car on the ground to check clearances again. Lightly bounce the vehicle at each corner to verify that there are not any clearance issues.
15. Measure the ride height as you did prior to installation and ensure that there is sufficient travel in both directions. Ideally, 60% of the shock stroke is available for compression. Adjust the ride height only with the weight of the vehicle fully off of the tires. **THE WARRANTY IS VOID AND DOES NOT COVER DAMAGE TO THE SHOCK DUE TO INCORRECT RIDE HEIGHT OR BY MAKING RIDE HEIGHT ADJUSTMENTS WITHOUT THE TIRES RAISED OFF THE GROUND.** Raise or lower the ride height by adjusting the spring nut to achieve the desired ride height. If it is at the extreme top or bottom of the threads, then you may need a softer or heavier spring.
16. Once ride height is correct, spin the lock nut up to the bottom of the spring nut and lock them together using the two spanner wrenches.
17. Have your front end realigned upon completion of installation.



TUNING AND ADJUSTMENT INSTRUCTIONS

Your Flaming River shocks have a total of 18 clicks plus a zero position of adjustment per knob, for a total of 361 different valving combinations. Compression and rebound are independently controlled on the Flaming River shocks. The “C” knob adjusts compression, while the “R” knob adjusts rebound. Every Flaming River shock is tested on a dynamometer prior to shipment to ensure that it is functioning properly. Manually moving a shock is not an accurate testing method for ensuring that shocks are functioning properly.

Position zero is the softest setting and is found by turning the knob counterclockwise until the positive stop is located. Position 18 is the stiffest setting. Only very light force is needed to adjust the knobs; do not ever force the knob past its intended stop as doing so will damage the shock.

Recommended baseline points for adjusting your Flaming River shocks are as follows:

Drag Racing:	Front: 12 - 18 compression; 0 - 4 rebound Rear: 0 - 4 compression; 12 - 18 rebound
Handling:	7 - 12 compression; 7 - 12 rebound; 13+ for aggressive handling
Ride Quality:	2 - 6 compression; 2 - 6 rebound