

# MOPAR

## A-BODY 4-LINK PARALLEL COIL OVER SYSTEM

*control freak*  

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*suspensions™*

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# INSTRUCTIONS

**4-Link Parallel With Adjustable  
Panhard Bar  
Rear Suspension System**

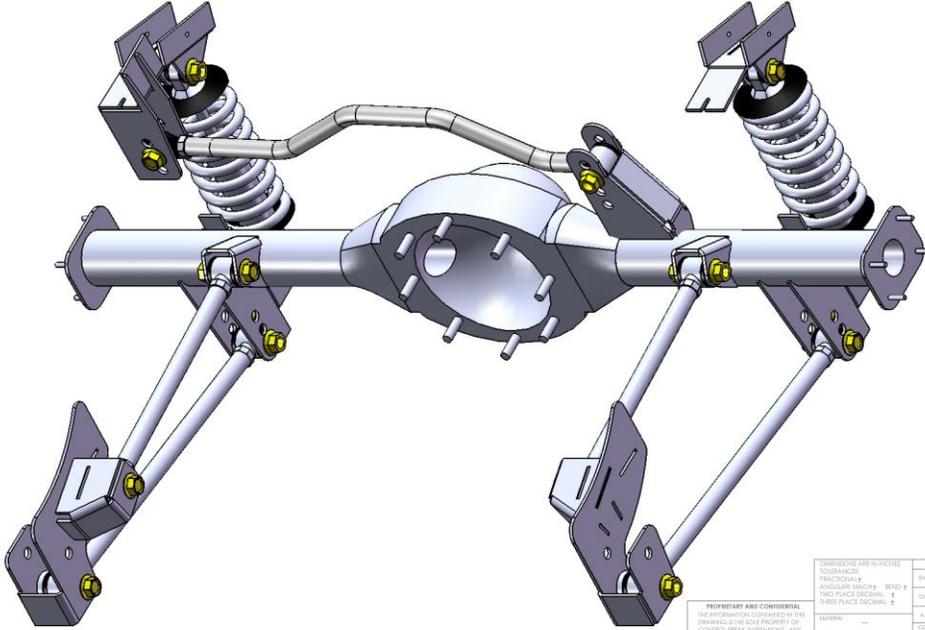
**FOR MOPAR MUSCLE CARS:  
1967-1976 A-BODY (RS-5435)**

Revised: 6-1-2011



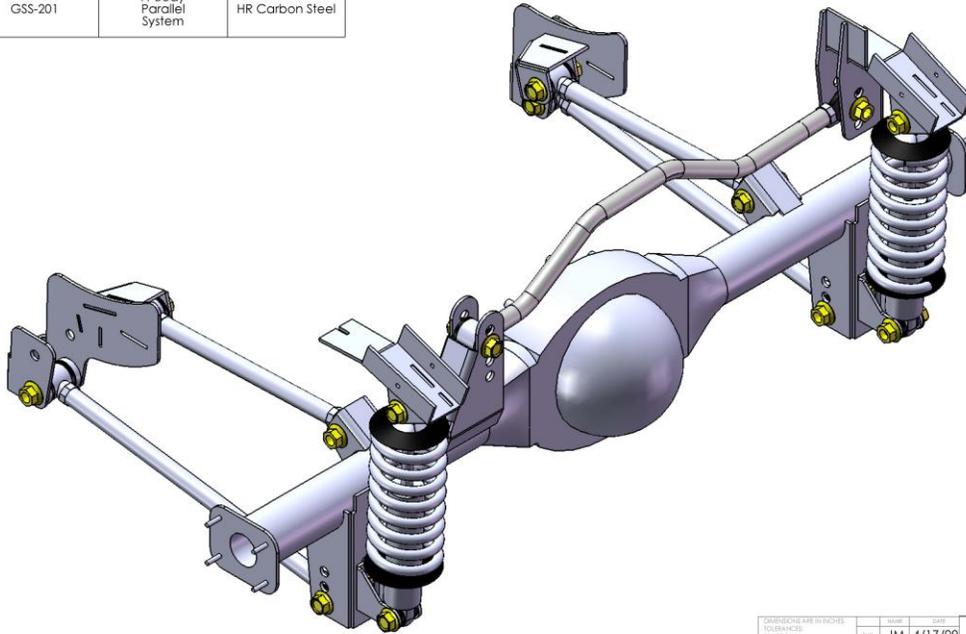


ITEM #	PART #	DESCRIPTION	MATERIAL
1	GSS-201	A-Body Parallel System	HR Carbon Steel



DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONALS ANGULAR MEASURE - MINES ± TWO PLACE DECIMAL, ° THREE PLACE DECIMAL, ′		DATE	4/17/09	<b>control freak</b> suspensions™
DESIGNER	JM	DATE		
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## **Installation Instructions**

Parallel 4-Link Panhard Bar Rear Suspension System – Part # RS-5435  
1967-1976 Mopar A-Body Vehicles

### **System Contents**

- Forward Trailing Link Brackets (1 Left and 1 Right)
- Lower Rear Trailing Arm Differential Brackets (2)
- Upper Rear Trailing Arm Differential Mount (2)
- Lower Trailing Arm Set w/Adjustable Rod Ends
- Upper Trailing Arm Set w/Adjustable Rod Ends
- Upper Coil Over Mount Brackets (1 Left and 1 Right)
- Lower Coil Over Mount Brackets With Hardware (2)
- Coil Over Shocks w/ Springs (2 Each)
- Grade 8 Mounting Hardware
- Panhard Bar with Brackets & Adjustable Rod Ends (2)

Thank you for purchasing this Parallel 4-Link Rear Suspension System for Mopar A-Body Vehicles. This system is manufactured by Control Freak Suspensions™ in Winter Springs, Florida. We believe this system is the best available at any price. As with most aftermarket performance suspension products, the end user is solely responsible for determining the suitability of any and all such products, regardless of manufacturer.

This system, and others like it, are typically subjected to uses that could exceed its mechanical limits, so there is no warranty, expressed or implied. Blue Moon Services LLC d/b/a Control Freak Suspensions™ cannot control how this product is installed or used. By purchasing this product you are assuming all risks associated with its installation and use and agree to having appropriate skills for its installation and use. Blue Moon Services LLC d/b/a Control Freak Suspensions™, our vendors and suppliers will not be held responsible, liable or accountable for any injury, damage, loss, penalties or fines that occur, directly or indirectly, from the installation and use of this product.

Please note that this system includes components that must be welded accurately into place. While installation is relatively easy for those with appropriate skills and experience, novices, or those who question their abilities, should employ a professional for installation. Fit is guaranteed on vehicles that are unmolested...that is cars that have not suffered any chassis or unitized body damage. Such damage can bend or alter the unitized chassis, making installation more difficult and may require chassis adjustment and/or straightening by professionals before installation.

**Read all of the instructions before starting installation.**

### **IMPORTANT NOTES:**

1. All brackets in this kit must be welded into place.
2. Be certain to remove carpeting, insulation or other flammables from the area being welded or subjected to welding heat.
3. Installation of this rear suspension system is straightforward, but ease of installation is based upon your level of experience and ability.
4. By following these instructions and measuring accurately, we strongly recommend that all welded parts are **tack welded** into place **prior to final welding**. This allows you to fit the entire system **before** final welding is done.
5. Some parts of this system may have been accurately threaded by our CNC machine shop to receive the supplied adjustable rod and/or bushing ends. Be careful not to cross thread the rod ends into these machined parts. Use anti-seize compound on all rod ends. We are not responsible for any cross threaded parts.
6. All rod ends that are threaded into tubes must use the supplied jam nuts for safety.
7. Use extra caution in jacking and stabilizing the vehicle for this installation. The differential will need to be removed and reinstalled, so **we strongly recommend the use of a professional lift to make the job easier and safer**.
8. An assistant is recommended during parts of this installation.

### **What Else Do I Need?**

Everything you need is included in the purchase price. Installation requires welding. Disconnect your battery BEFORE welding. If you don't, you run the risk of ruining electronic ignition and entertainment components in the car.

### **• IMPORTANT NOTES:**

#### **Unpacking the System**

Your rear suspension system arrives boxed but only partially assembled. Since this system requires all brackets to be welded into place we are unable to pre-assemble much of the product. While some parts may arrive assembled, please note that the assembled parts may not be appropriately installed or tightened for actual use. You are responsible for making certain all fasteners are installed correctly and appropriately tightened. If you ordered brakes with your system, the brake kit is boxed separately and has its own set of instructions provided by brake manufacturer.

Carefully open all boxes and remove all components. Lay out all of the components and familiarize yourself with them using the CAD drawings on page 3 as your guide. This

will make installation quicker and easier. Read through the entire instruction book and familiarize yourself with the steps before beginning installation.

Once you have read through the instructions and identified all of the parts, prepare your tools for installation. You are now ready to begin installation.

### **Preparing for Installation**

1. Measure the ride height of the vehicle by taking measurements from the rocker panel to the ground. Take a front and rear measurement on each side and note it in a notebook. We recommend using masking tape at all four measuring points and writing the measurement so it can always be seen. This is your baseline stock ride height.
2. Support the differential with jacks. If you are using a lift, support with tall jacks. With the differential safely supported, remove the sway bar and the end brackets holding it in place against the frame.
3. Remove any exhaust components that may interfere with removing the rear differential.
4. Disconnect the driveshaft from the differential.
5. Remove the shocks from both sides of the differential.
6. Making certain the differential is supported by jacks, with a helper remove the front and rear leaf spring bolts, keeping the differential from turning while doing so. You will remove the entire differential assembly.
7. Once the differential has been removed, take this opportunity to clean it up. After the upper and lower trailing arm brackets have been welded into place, and the original spring perches removed (if you choose to do so), you can paint the rear before reinstalling with the new suspension system.
8. Examine the rails on the car. Over the years, the vehicle may have been incorrectly jacked up in some areas which can slightly “mushroom” or otherwise move the rails slightly out of line. This is an opportunity to straighten or adjust the rails prior to putting the rear suspension brackets in place.
9. Prior to installing the brackets, the area around each bracket must be sanded to raw metal and cleaned. We use an air die grinder with a 3” RoLok sanding disc. 80 grit works fine. Clean at least 1/2” beyond the bracket, leaving ample clean metal for a good weld.

## Installation of the Rear Suspension Brackets



*The pictures to the left show the forward frame bracket on the inside and outside of the rail, firmly against the sheet metal lip.*

*You will note that on SOME A-Body vehicles, you can bolt the bracket into place through an existing chassis hole. As noted, the hole is found only on some vehicles. Do this on both sides, then measure the distance of each bracket from the transmission cross member, just inboard of the torsion bar holder. Do this on each side of the vehicle.*



*The measurement to the lower trailing arm hole center should be 55.5". Make fine adjustments to ensure both brackets are positioned at equal distances and square. You can now tack weld these brackets into position.*

**NOTE:** *Australian A-Body vehicles may not measure to 55.5". Locate the bracket based on the pictures, not the measurement.*



1. Place the forward frame brackets into place. There is a right and left bracket. Correct placement is shown from the inside and outside of the rail in the photos. Make certain the area around the perimeter is cleaned to bare metal allowing a good welding surface. The forward edge of the brackets should be perpendicular to the chassis.

2. Remove the differential bump stops that are located in the upper arch of the frame rail, as shown. Once removed there will be two screw holes. Hold on to the screws because you will use them to locate the upper coil over mounting bar brackets. **Please note that the brackets in these pictures have small tabs which are not on your brackets. They do, however, locate the same way. Also, ignore the long bracket hanging down in the photo.** The upper coil over mount bar brackets differ from side to side. The right side (passenger) has an extra side plate attached to it. Place both upper coil over mount brackets into position as shown below.



4. Get both upper and lower trailing arms and screw the rod ends in until about three threads are showing between the jam nut and the body of the rod end. Only hand tighten the jam nut. The length of both upper trailing arms should match each other as should the lower trailing arms.
5. Attach the upper and lower trailing arms to the forward frame brackets. Hand tighten the bolts.
6. Attach the rear lower trailing arm brackets to the lower trailing arms. Only hand tighten the bolts. Attach the upper trailing arm to the smaller upper trailing arm brackets. Hand tighten the bolts. This provides ease for the initial tack weld position for the upper and lower trailing arm brackets on the differential.
7. Move the differential into position making certain that it is centered between the rails. Now adjust the height of the rear axle to your desired ride height, which is typically 12-13" between the upper and lower shock mounts. Ride height is entirely up to you and the look / stance you want the car to have. You also must consider tire size.
8. At this time, you should set a rough pinion angle before locating the upper & lower mounts. If you can get to it, hold an angle finder on the crank pulley and note the angle. If you can't get into the crank pulley area with an angle finder, use the angle of the transmission tailshaft. Now place the angle finder on the front of the rear axle pinion and rotate the axle to duplicate the same angle. Placing the differential on two (2) jack stands and using a floor jack to adjust the angle is the simplest way to make

even fine adjustments. Set the pinion angle from zero degrees to minus one-half degree. You will be able to make adjustments once the system is installed. This setting is a median setting for most applications.

9. Place the brackets that are attached to the lower trailing arms onto the differential. When you are satisfied that the brackets are in the appropriate location and perpendicular to the differential axle tubes, place a tack weld in the corners of the brackets just to hold them into position. If you need to make an adjustment later you will only have to cut through a few tack welds.



10. Place the upper trailing arm differential brackets into position on the top of the differential tubes. You can see the position by viewing the CAD drawing on page 3. Just like on the lower brackets, tack the upper brackets into position ensuring they are parallel with the lower trailing arms and perpendicular to the differential axle tubes. Place a few tack welds into the corners of the brackets.



11. Mount the lower coil over machined studs into place, using the lowest hole on the lower trailing arm bracket on the differential tube. Place the upper coil over mounting bar between the two upper brackets already tack welded into position in Step 2. You may need to trim the bar to fit, but make it fit snugly into position. The brackets should be perpendicular to the lower mounting bracket when viewed from the side. Attach both coil over shocks to the upper and lower mounts. Again, make certain the coil overs are straight up and down when viewed from the side. If viewed from the rear they are angled inboard. When you are satisfied that the bar is in the correct position, tack weld it into place.
12. After checking all of the tack welds, and being sure that everything is evenly installed, you can remove the trailing arms.
13. Carefully, and with the aid of a helper, remove the differential from under the vehicle and prepare it for final welding of the brackets.

**NOTE: Before final welding of the under-vehicle parts, remove carpeting and anything flammable from the interior of the vehicle.**

14. Before welding brackets to the differential, loosen the axles so heat does not build up and melt the axle seals. Weld a little at a time and alternate from side to side. We prefer to turn the differential upside down, making it easier to get a good, clean weld.
15. Weld all of the tack welded brackets and parts under the vehicle into place.

16. Once welded and cooled, take the opportunity to prime and paint the welded brackets and the areas around the welds.
17. You can now reinstall the trailing arms and differential, making certain to tighten all bolts.
18. Prepare the coil over shocks for assembly. Paint some silver anti-seize compound onto the bottom half of the threads on the coil over body. This will ensure that when the coil over is assembled and under load that the nut will still turn without galling. Thread the lower nut onto the body, install the spring and attach the hat to hold the spring.
19. Install the coil over shocks. We recommend adjusting the coil over shocks with about  $\frac{1}{2}$ " to  $\frac{3}{4}$ " of threads showing under the nut on the coil over body as a starting point. Coil overs will settle about  $\frac{3}{4}$ " after ten or fifteen miles of driving. So set the height of your vehicle about  $\frac{3}{4}$ " higher than you want it. It will settle.
20. You can now put the vehicle on the ground.
21. That's it. You are done. Drive carefully.

**We strongly recommend that all fasteners are re-torqued at between 25-50 miles of driving.**

## **Disclaimer of Warranty**

### **THE PURCHASER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF ANY AND ALL PRODUCTS MANUFACTURED BY CONTROL FREAK SUSPENSIONS**

Purchaser understands and recognizes that racing parts equipment and services provided by, manufactured and/or sold by Blue Moon Services LLC d/b/a Control Freak Suspensions under the Control Freak Suspensions label, are subject to varied conditions due to the manner in which they are installed and used. Purchaser further recognizes and agrees that suitability of any part sold or manufactured by Blue Moon Services LLC d/b/a Control Freak Suspensions under the Control Freak Suspensions label for a particular application is the purchasers decision and that the purchaser is not relying on the skill or judgment of Blue Moon Services LLC d/b/a Control Freak Suspensions under the Control Freak Suspensions label regarding suitability of any product or service. Blue Moon Services LLC d/b/a Control Freak Suspensions under the Control Freak Suspensions label, makes no warranties whatsoever, expressed or implied, oral or written to purchasers. There is no warranty of merchantability made to purchasers with regard to off road, racing and racing equipment.

Liability is limited to repair or replacement of defective parts to original purchaser. Blue Moon Services LLC d/b/a Control Freak Suspensions is not liable for any consequential damages, expenses or injury arising from the use, misuse, or improper installation of any product manufactured or sold by Blue Moon Services LLC d/b/a Control Freak Suspensions under the Control Freak Suspensions label. Blue Moon Services LLC d/b/a Control Freak Suspensions reserves the right to make changes in design or add to or improve its product without incurring any obligation to install the same on any products previously manufactured. This warranty shall not apply to any product which has been repaired or altered in any way so as in our judgment to affect its performance; nor which has been subject to misuse, abuse, negligence or any other occurrence beyond the control of Blue Moon Services LLC d/b/a Control Freak Suspensions.

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