

# AMC

## INSTRUCTIONS

### AMX 4-LINK REAR SUSPENSION WITH PANHARD BAR

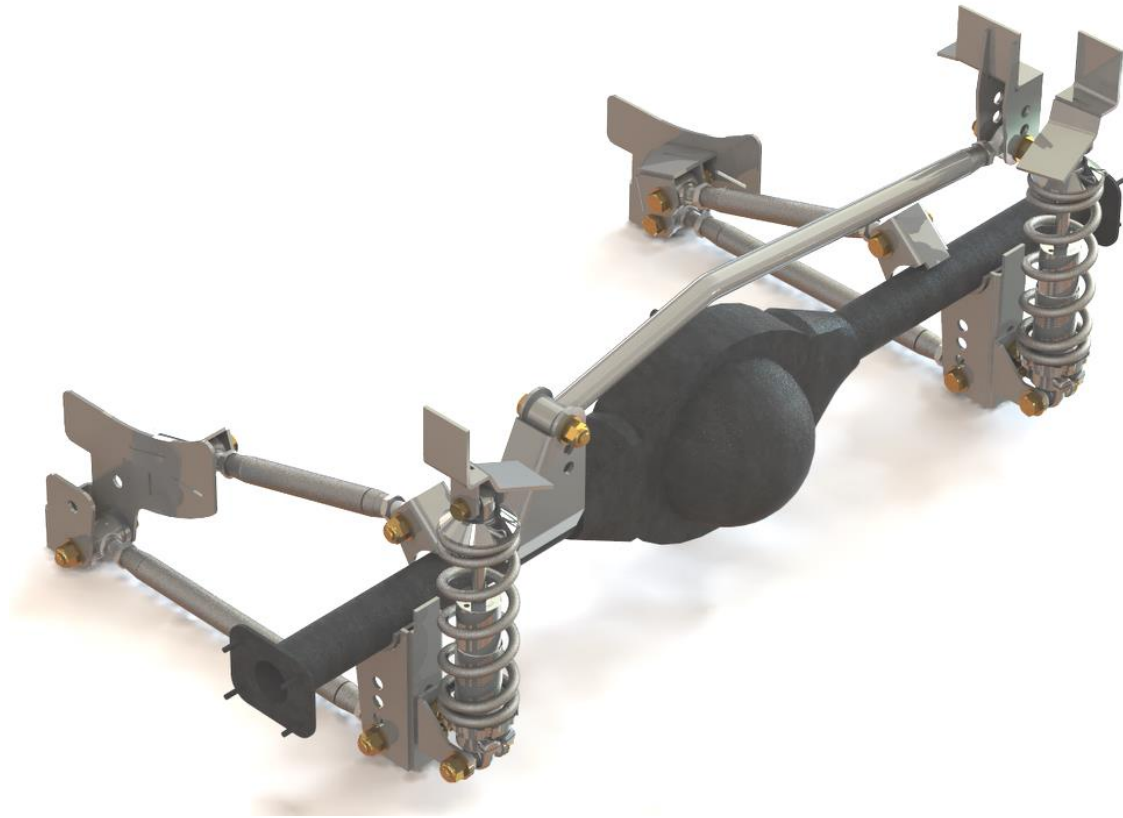
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**FOR AMC MUSCLE CARS:**

**1968-1970 AMX**

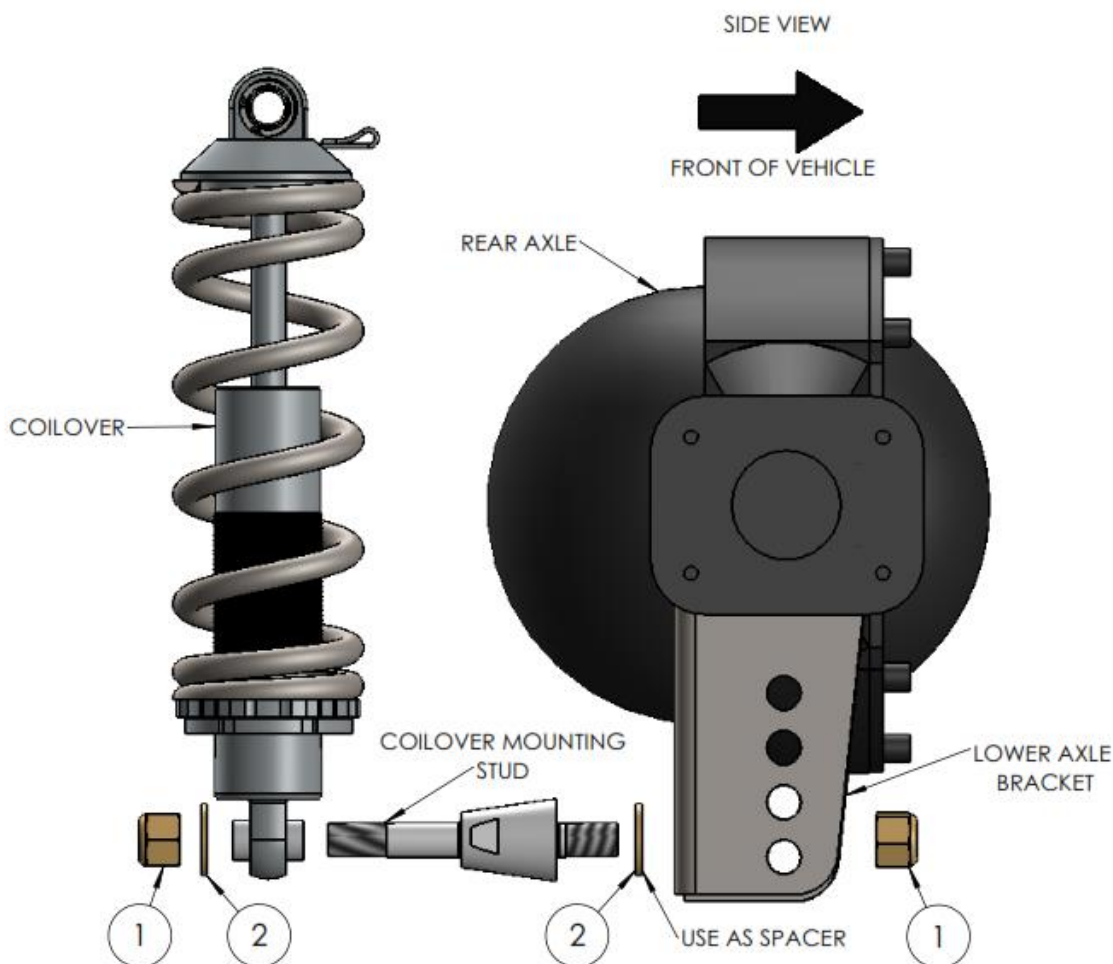




**IMPORTANT CHANGE NOTICE**

We have modified the lower coil over mount to a simpler system as pictured below. Instead of the bracket (as shown later in the instructions) we now use a machined stud that holds the lower coil over shock to the lower trailing arm bracket. This method is lighter and stronger than the previous brackets used.

PART #	DESCRIPTION	QUANTITY
	Coil Over Mounting Stud	2
1	5/8-18 Nuts	4
2	5/8" SAE Washers	4



## **Installation Instructions**

Parallel 4-Link Panhard Bar Rear Suspension System – Part # RS-1400P  
Parallel 4-Link Track Bar Rear Suspension System – Part # RS-1400T  
1968-1970 AMC AMX 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 & Bushing Ends
- Upper Trailing Arm Set w/Adjustable Rod & Bushing Ends
- Upper Coil Over Mount Brackets (1 Left and 1 Right)
- Machined Lower Coil Over Mount Studs With Hardware (2)
- Coil Over Shocks w/ Springs (2 Each)
- Grade 8 Mounting Hardware
- Panhard Bar with Brackets & Adjustable Rod Ends

Thank you for purchasing this Parallel 4-Link Rear Suspension System for AMC AMX Vehicles. 1968-1970. 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 have 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 kit. Installation requires welding multiple brackets to the frame and differential. 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 and disassembled. 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 information on the following pages as your

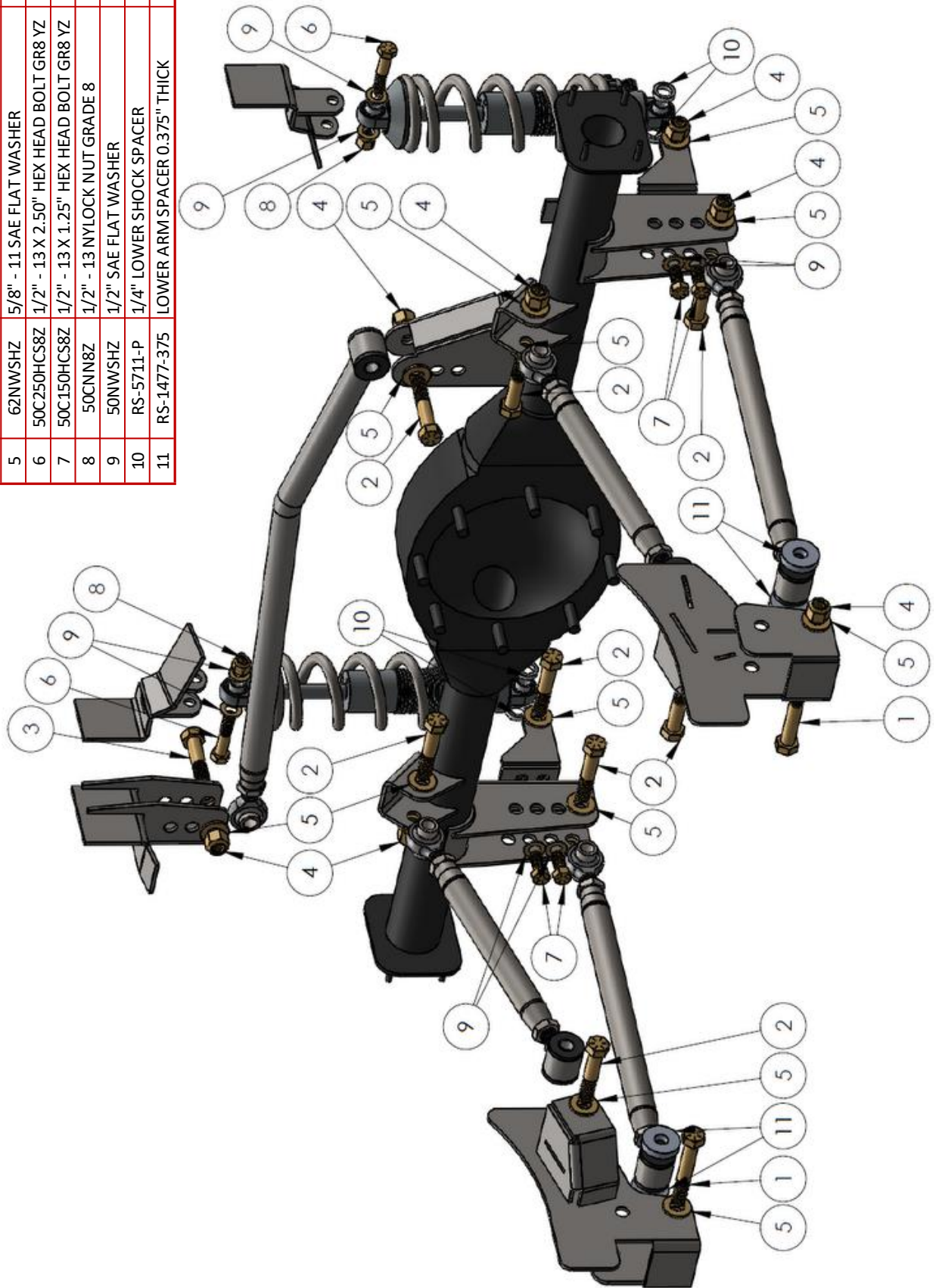
guide. This will make installation quicker and easier. Read through the entire instruction book and familiarize yourself with the steps before beginning installation.

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.

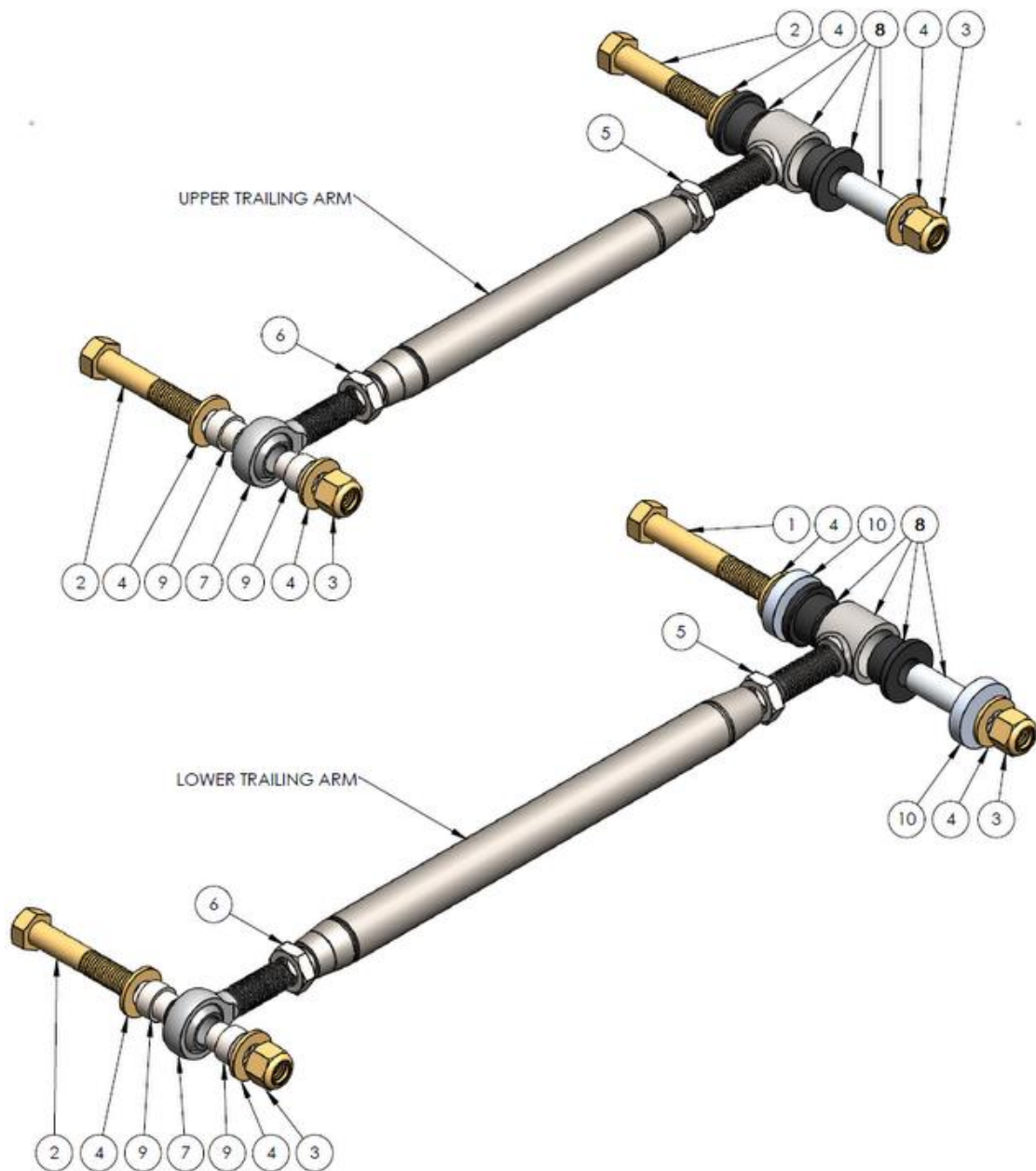
### **Preparing for Installation**

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. Disconnect the parking brake cables.
6. Remove the shocks from both sides of the differential.
7. 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.
8. Once the differential has been removed, cut off the spring perch brackets and take this opportunity to clean up the differential assembly. Once the upper and lower trailing arm brackets have been welded into place per these instructions, and the original spring perches removed, you can paint the rear before reinstalling with the new suspension system.
9. Examine the chassis 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.
10. 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.
11. Examine the drawings on the following pages so you understand what bolts belong where and how the system components ultimately go together. You can always come back to these drawings for reference later on.

RS-1400P 68-70 AMC AMX PARALLEL SYSTEM BOLT KIT			
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	62C400HCS8Z	5/8" - 11 X 4.00" HEX HEAD BOLT GR8 YZ	2
2	62C325HCS8Z	5/8" - 11 X 3.25" HEX HEAD BOLT GR8 YZ	9
3	62C300HCS8Z	5/8" - 11 X 3.00" HEX HEAD BOLT GR8 YZ	1
4	62CNN8Z	5/8" - 11 NYLOCK NUT GR8 YZ	12
5	62NWSHZ	5/8" - 11 SAE FLAT WASHER	24
6	50C250HCS8Z	1/2" - 13 X 2.50" HEX HEAD BOLT GR8 YZ	2
7	50C150HCS8Z	1/2" - 13 X 1.25" HEX HEAD BOLT GR8 YZ	4
8	50CNN8Z	1/2" - 13 NYLOCK NUT GRADE 8	6
9	50NWSHZ	1/2" SAE FLAT WASHER	12
10	RS-5711-P	1/4" LOWER SHOCK SPACER	4
11	RS-1477-375	LOWER ARM SPACER 0.375" THICK	4

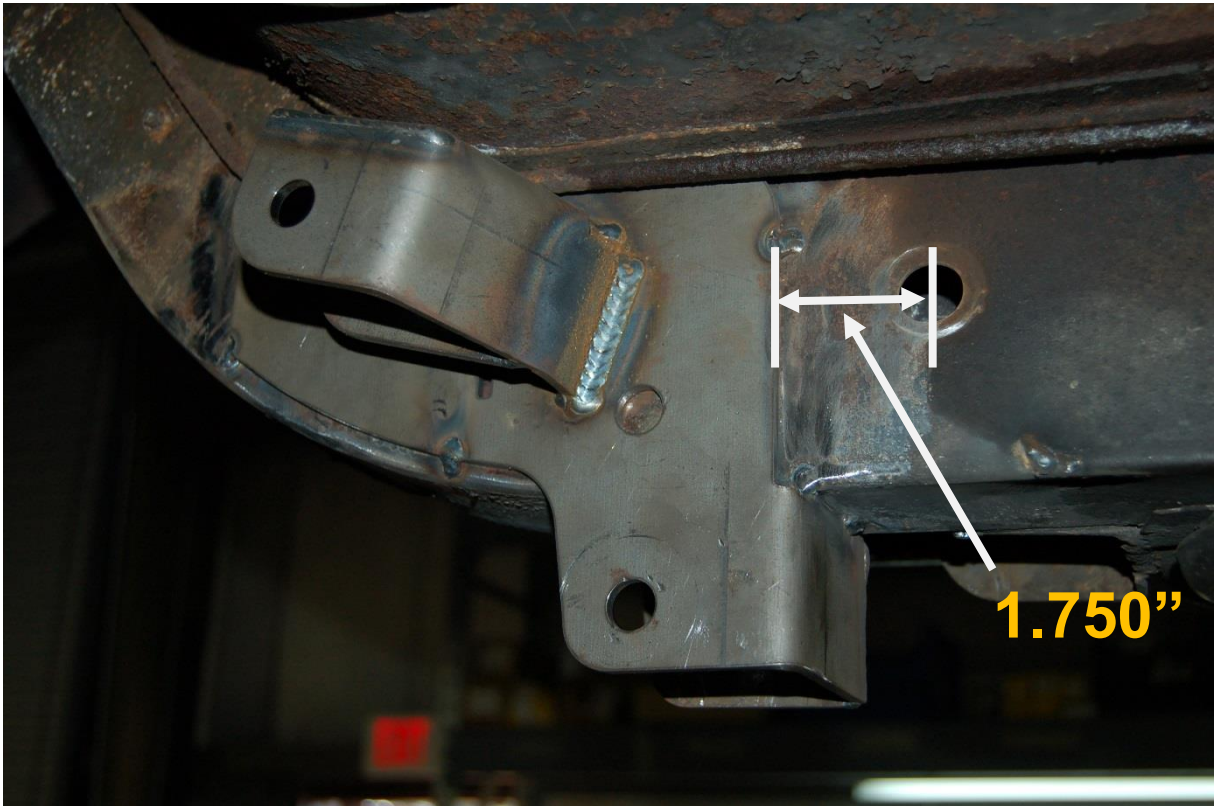


68-70 AMC AMX TRAILING ARM BOLT KIT			
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	62C400HCS8Z	5/8" - 11 X 4.00" HEX HEAD BOLT GR8 YZ	2
2	62C325HCS8Z	5/8" - 11 X 3.25" HEX HEAD BOLT GR8 YZ	6
3	62CNN8Z	5/8" - 11 NYLOCK NUT GRADE 8	8
4	62NWSHZ	5/8" SAE FLAT WASHER	16
5	75FNFJ8Z	3/4" - 16 JAM NUT RH THREADS	4
6	75FNFJL8Z	3/4" - 16 JAM NUT LH THREADS	4
7	XML-12	3/4" - 16 SPHERICAL ROD END LH THREADS	4
8	CF-1206	MICROFLEX 3/4" FORGED ROD END WITH PETE & JAKES BUSHING SET	4
9	RS-9001	ROD END INSERTS	8
10	RS-1477-375	LOWER TRAILING ARM SPACERS .375" THICK	4





## Installation of the Rear Suspension Brackets



*The picture above shows the forward frame bracket on the inside of the rail, firmly against the sheet metal lip and exactly 1.750" (1-3/4") from, the center of the leaf spring mounting hole.*

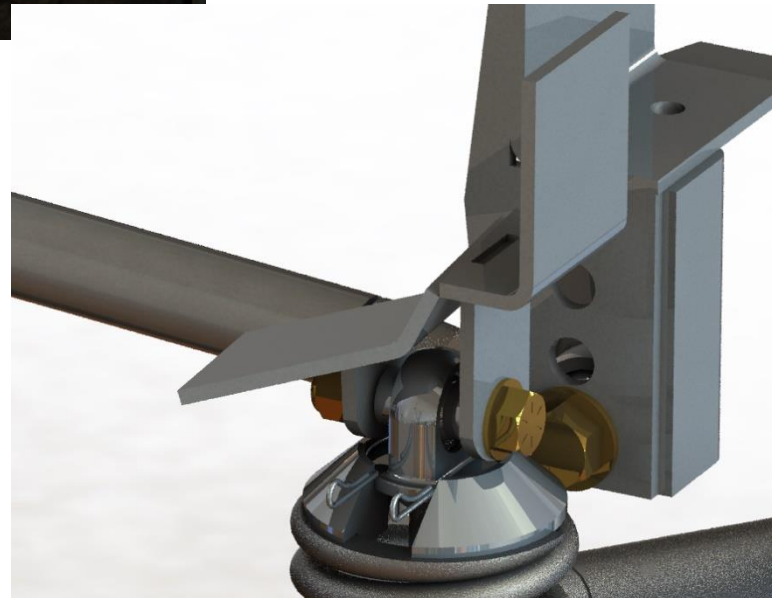
*Clamp the brackets into place, and make fine adjustments to ensure both brackets are positioned at equal distances and square. You can now tack weld these brackets into position.*

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 rear edge of the brackets should be perpendicular to +
2. On some vehicles there are small differential bump stops that are located in the upper arch of the frame rail. Remove them.
3. The upper coil over mount brackets differ from side to side. Each is marked "L" for left and "R" for right. They attach to the frame rail and the sheet metal brace at the leading edge of the trunk floor. Place both upper coil over mount brackets into position as shown in the pictures at the top of the next page.



4. Place the upper coil over mount brackets into position on each side of the vehicle. Tack weld into position. The pictures below show the left and right side details.

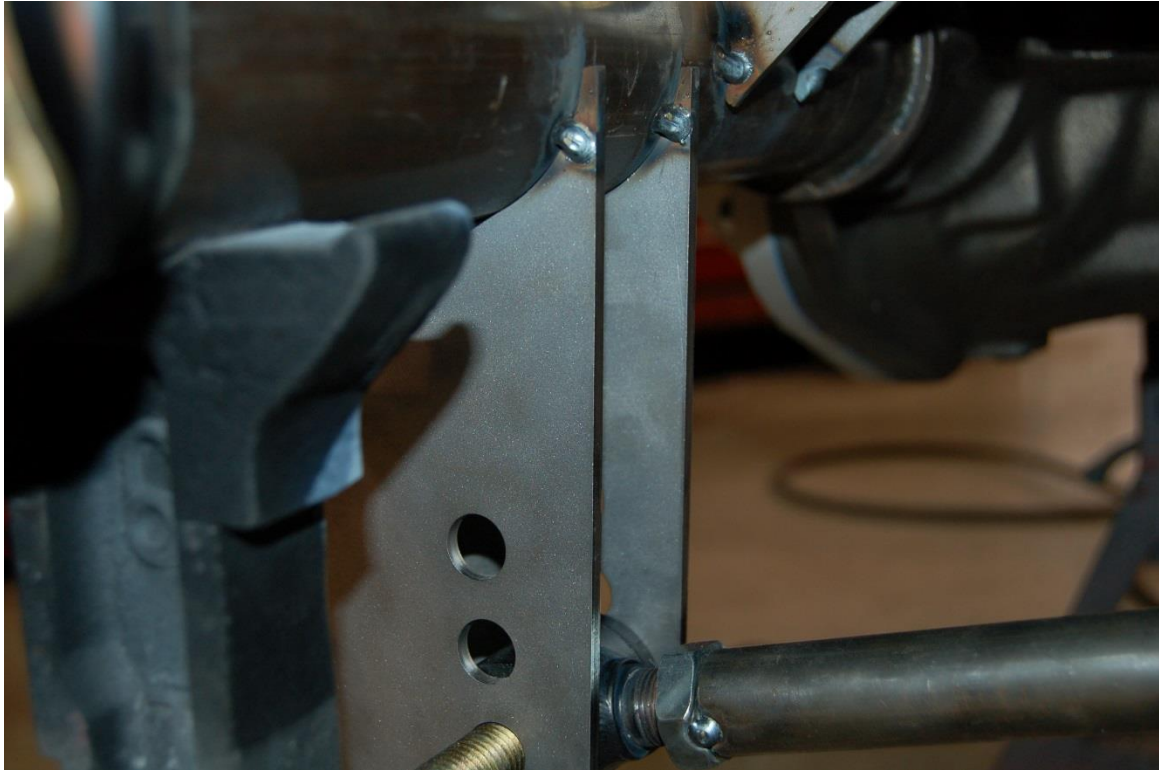
5. Get the upper and lower trailing arms ready for



assembly by rubbing anti-seize compound into each of the threaded ends on each trailing arm. Do the same for the panhard bar on one end. You can now carefully screw the left-hand thread rod ends into the machined end of the trailing arms that has a circle machined around the ends. The circle means left-hand threads. Screw the rod ends in until about three threads are showing between the jam nut and the body of the rod end. Leave the jam nut loose for now. You may refer to the drawings on page 8 for a view of the trailing arm assemblies.

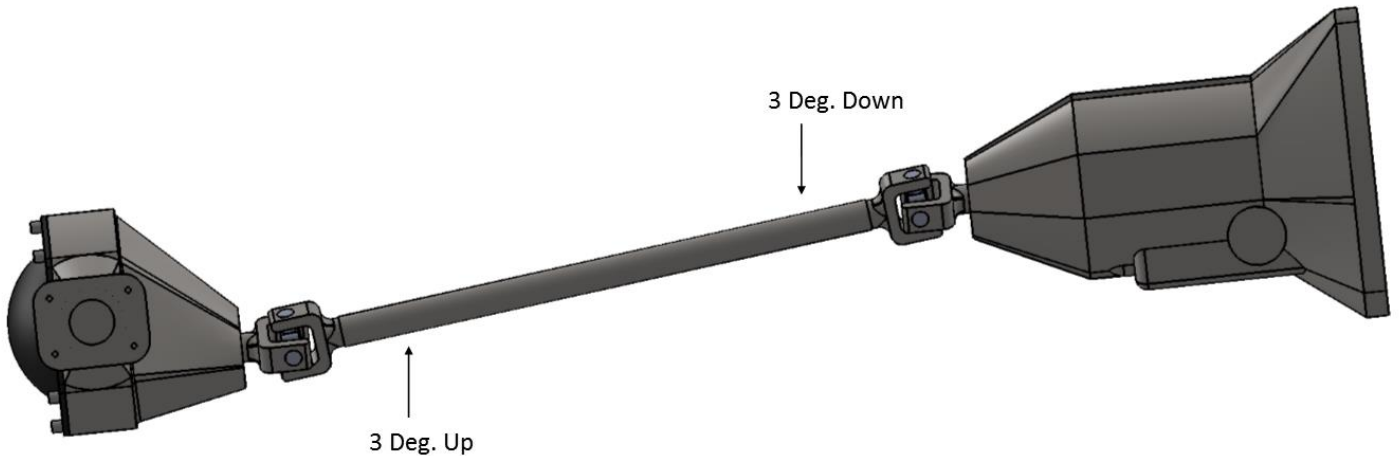
6. Now thread the right-hand thread bushing ends into the trailing arms leaving the same three threads showing beyond the jam nut. The length of both upper trailing arms should match each other as should the lower trailing arms.
7. Attach the upper and lower trailing arms to the forward frame brackets. Hand tighten the bolts.

8. 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.



9. 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 and ground clearance.
10. 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. The drawing on the next page will help you better understand setting the pinion angle:

Recommended: Equal & Opposite. For example, the transmission is three degrees down, so the pinion should be three degrees up.



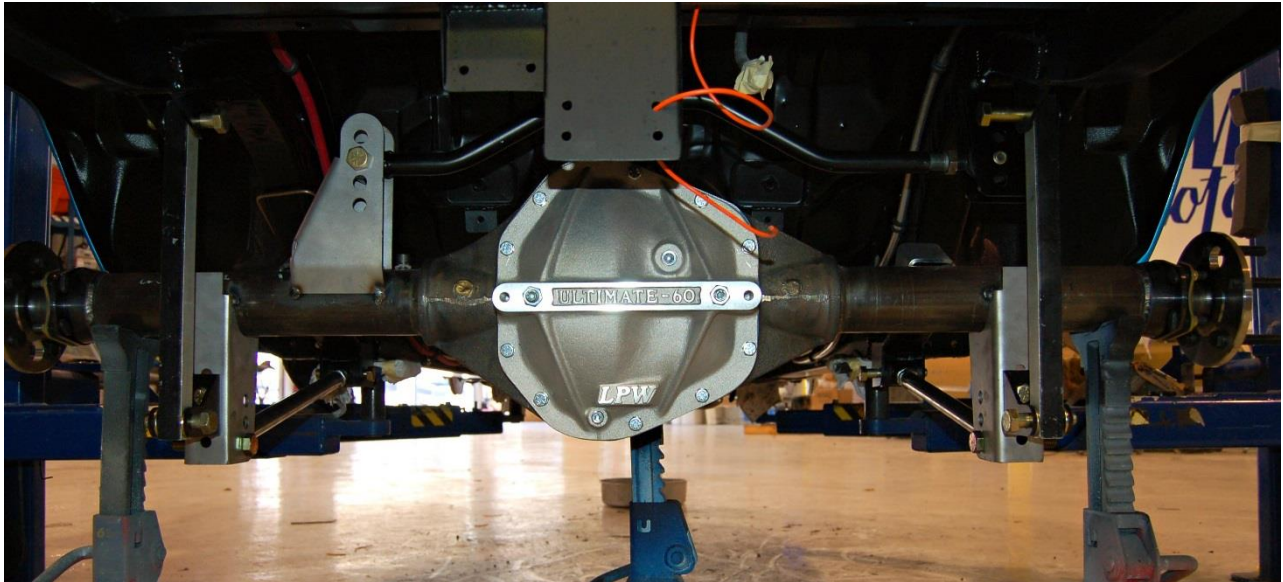
11. Place the brackets that are attached to the lower trailing arms onto the differential. When you are satisfied that the brackets are in the appropriate location and perpendicular to the differential axle tubes, place a tack weld in the corners of the brackets just to hold them into position. If you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

12. 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 2 or 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.



13. Attach the panhard bar to the right frame bracket and attach the differential panhard bracket to the panhard bar rod end. Now lower the panhard bracket into place on the differential, making certain it is perpendicular, as shown in the picture. Push the frame bracket on the right side of the car up against the frame rail, ensuring the panhard bar is now parallel with the differential. Tack weld the frame and differential brackets into place.



14. After checking all of the tack welds, and being sure that everything is evenly installed, you can remove the trailing arms.
15. Carefully, and with the aid of a helper, remove the differential from under the vehicle and prepare it for final welding of the brackets.
16. 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.
17. Weld all of the tack welded brackets and parts under the vehicle into place.  
**Before final welding of the under-vehicle parts, remove carpeting and anything flammable from the interior of the vehicle near the weld area.**
18. Once welded and cooled, take the opportunity to prime and paint the welded brackets and the areas around the welds.
19. You can now reinstall the trailing arms and differential, making certain to tighten all bolts and jam nuts.
20. Install the panhard bar, again making certain that all bolts are tight and that all rod ends have the jam nuts tightened for safety.

21. 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. Hand tighten the nut until the spring is snug.
- 22.** Install the coil over shocks. We recommend adjusting the coil over shocks with about ½” to ¾” of threads showing under the nut on the coil over body as a starting point. Coil overs will settle about ¾” after ten or fifteen miles of driving. So set the height of your vehicle about ¾” higher than you want it. It will settle.  
**Do not overtighten the spring. If you keep tightening and the car is not lifting, you have pre-loaded the spring beyond its capacity and the suspension will not work correctly.**
23. You can now put the vehicle on the ground.
24. That’s it. You are done. Drive carefully.

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

## IMPORTANT

**DISCLAIMER** In an effort to offer our customers the value and service, Blue Moon Services LLC d/b/a Control Freak Suspensions (herein referred to as Control Freak) reserves the

right to change suppliers, specifications, colors, prices, materials. Each of the previous items is subject to change without notice. Control Freak is not responsible for any typographical errors or misinterpretations. Quantities are limited on some items.

**WARRANTY DISCLAIMER** The purchaser understands and recognizes that racing parts, specialized high performance equipment, and all parts and services sold by Control Freak, are exposed to many and varied conditions due to the manner in which they are installed and used. Control Freak makes no warranties, either express or implied, including any warranty of merchantability or fitness for a particular purpose other than those contained in its current catalog with respect to the goods identified on the face of the invoice. There is no warranty expressed or implied as to whether the goods sold hereby will protect purchaser or ultimate user of such goods from injury or death. Control Freak assumes no liability after this period.

**DAMAGE CLAIMS** Always inspect your package upon delivery. Inspect all packages in the presence of the delivery driver. The driver must note any damage. Ask the driver the Carrier's procedures for handling damage claims. You must hold the original box, packing material and damaged merchandise for inspection or the carrier will not honor the claim. Notify Control Freak for instructions on returning damaged goods. Control Freak is not responsible if no notification is given within two (2) days of receipt.

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**REFUSALS** All refused COD customers will be billed a 15% restocking charge plus freight to and from the destination! If you have questions please contact Control Freak.

**WARRANTY CLAIMS** If an item has a manufacturer's warranty as being free from defects we will exchange that item. If the item has been used and you are requesting warranty work, this may take up to 30 days as warranty work is done in-house by Control Freak. If you have any questions please contact customer service.

**RETURNS** Control Freak wants you to be satisfied with your purchase. If within 30 days after you receive your shipment you are not satisfied, you may return the item for refund or exchange. All exchanged or returned merchandise must be in original factory condition with no modifications or alterations. Returned merchandise must include all packaging materials, warranty cards, manuals, and accessories. If the items being returned need to be repackaged there will be a re-packing charge. Re-pack the item in a sturdy box and include a copy of your invoice and complete the form on the back of the invoice. You must ship orders back **PRE-PAID. WE DO NOT ACCEPT COD SHIPMENTS.** All exchanges need to have reshipping charges included. Items that are returned after 30 days are subject to 15% restocking charges. Absolutely no returns on custom built suspension systems or other special order merchandise.

\*\*Some items may not be street legal in some countries. Such items may be legal for racing vehicles only which may never be used upon a highway

# AMC

## INSTRUCTIONS

### AMX 4-LINK REAR SUSPENSION WITH PANHARD BAR

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*suspensions*<sup>TM</sup>

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