

**INSTALLATION INSTRUCTIONS:  
Stage 3 Radius Arms, 1966-77 Bronco**



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**PART #5350**

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2	1" x 5 1/2" NC GR 5 Bolts	10	1/2" Nyloc Nuts	
2	1" Nyloc Nuts	26	1/2" Flat washers	
4	1" Flat Washers	2	7/16" x 1.25" NC GR 5 Bolts	
4	1" I.D. Rod End Spacers	2	7/16" Split Lock washer	
4	5/8" x 4" GR 8 Bolts	8	9/16" x 2 1/4" NC GR 5 Bolts	
4	5/8" Nyloc Nuts	8	9/16" Lock Washers	

**NOTES: This kit will not work on vehicles with less than 3 1/2" of suspension lift. Check all clearances before installing. We know of clearance problems at the frame mount with the older versions of our #3100-2 headers. We have corrected the issue on our current headers #3100-2A. We highly recommend using thread-locking compound on all fasteners.**

**Please read all instructions before beginning.**

1. Block the rear tires. Raise the front of the vehicle and place jack stands under the frame so the front axle will hang by the coil springs. Support the axle with a floor jack so you can manipulate its height during installation. CAUTION: Make sure your frame to axle brake line has sufficient length to accommodate the increased distance.
2. Remove the tires and wheels.
3. Remove the front coil spring and its lower retaining cup. As well as the front shocks.
4. Remove the bolts holding the stock radius arms to the "C" cap on the front of the radius arm.
5. Remove the cotter pin and castle nut from the rear of the stock arm. Slide it forward and out of the frame-mounting bracket.

NOTE: In order to gain access to the following locations it will be necessary to temporarily remove the side gas tank if vehicle is so equipped. Please follow appropriate steps, set out in a repair manual to do so.

6. It will be necessary to remove the stock frame bracket. Grind the welds off around the bracket and then remove the mounting bolt. Remove the bracket. Note: Due to inconsistent welding practices from the factory it may be necessary to torch off the bracket or do excessive grinding. Retain this bracket for possible future reinstallation if you would like to return it to stock at a later date or we have brackets to return to stock radius arms.
7. With the stock bracket removed measure back horizontally 10.25" from the center of the stock bracket-mounting hole. (The threaded 1/2" bolt hole on the outside of the frame.) This marks the position of the center of the 1" hole in the new bracket.
8. Based off of the measurement in step 7 slide the frame-mounting bracket into place. Mark the three mounting holes for drilling. Remove the bracket and drill the three mounting holes in the frame. It is best to start with a 1/4" pilot drill and then progress up to the 1/2" size. Drill these holes all the way through the frame. CAUTION: Watch for brake lines, fuel lines and other possible items that may be on the other side of the frame.
9. Position frame bracket over the holes. Place a 1/2" flat washer over each 1/2 x 5" NC GR 5 bolt and insert through bracket and frame, in the previously drilled holes. Secure with 1/2" flat washers and Nyloc nuts.

10. Tighten the three bolts securely. Approximately 75 ft-lbs. We recommend tack welding this bracket to the frame in several locations on both sides of the frame. Do not weld on bolt heads or nuts!

11. Repeat steps 3 through 10 on the other side.

12. Insert the bushings provided into the large hole locations on the new head units. We highly recommend using a Lithium based grease on the bushings to prevent squeaking and to improve articulation through lessening of friction. Lubricate and insert the 5/8" I.D. sleeves provided into the bushings.

13. Position the radius arm around the head unit so that the bent portion is to the inboard side of the Bronco and so that the shock mounts are at the top outside of the arm. Align the upper and lower holes in the head unit with the upper and lower bushings in the radius arms. Secure these positions with the 5/8" NC GR 8 bolts, flat washers and Nyloc nuts provided. Torque to approximately 150 ft-lbs. Do not overtighten as this will lessen the effectiveness of the bushings as well as shorten their life-span.

14. Position the "C" bushings into the new head unit and the stock "C" cap. Note the proper orientation printed on each bushing. Make sure to lubricate these bushings with Lithium based grease. Note: Because these radius arms have 4.25° of caster built into them, you will be able to run a lesser degreed bushing and achieve the same caster rating. Normally, a 2° or 4° bushing can be used with a 3.5" lift and these arms.

15. Lubricate the 9/16" x 2 1/4" NC GR 5 bolts and use with the 9/16" lock washers to secure the original "C" cap to the new head unit. Start by hand and tighten in a X-pattern. Torque these bolts to the stock specifications (90-110 ft-lbs). Note: Due to inconsistent Ford "C" cap drill patterns it may be necessary to slightly enlarge or elongate one or more of the holes to fit the cast head unit. Torque evenly, failure to do so may cause the vehicle to have a slight lean to one side.

16. Repeat steps 12 through 15 on the other side.

17. Thread one jam nut fully onto each of the rod ends.

18. Thread the rod ends into the rearward end of the radius arms. Thread them in until they bottom out in the threads then back off slightly (1/4") until the rod end is vertical (through hole is side ways). Note: It is very important that the distance from the center of the rod end to the upper forward, mounting-hole, from the arm to the "C" cap, be the same for each side. Securely tighten the jam nuts against the radius arms.

19. Slide the radius arms up into the frame brackets installed in steps 3-10. In this order slide the 1" bolt provided through a flat washer, the bracket, a 1" I.D. spacer, the rod end, a 1" I.D. spacer, and then through the bracket. Secure this with a flat washer and Nyloc nut provided. Note: the bolt head should be to the outside of the vehicle and the nut on the inside. This is to provide clearance for the side gas tank to be reinstalled.

20. Reinstall the front coils and coil spring retaining cup. A 7/16 x 1.25" NC GR 5 bolt and split lock washer are provided for securing the rear hole in the coil spring retaining cup. Torque these bolts to approximately 30 ft-lbs.

21. The shock mounts are designed for two shock mounting positions behind the coil (such as our #5212 shock mounts). When only using one shock behind the coil place the shock on the front side of the mount using a 1/2" flat washer on either side of the bushing and mount. Use a 1/2 x 4" NC GR 5 bolt and Nyloc nut to secure. For two shocks behind the coil use the 1/2 x 6" NC GR 5 bolt with 1/2" flat washers on either sides of the shock bushings. Starting with the upper end of the shock, position the shocks with one on either side of the sleeved mount.

22. Repeat step 21 for the remaining shock locations.

23. Reinstall side gas tank if previously removed.

24. Reinstall the front tires and wheels.



25. Due to variations in tire size and wheel offset, check clearances around shocks, shock mounts and radius arms. Also check that the front axle u-joint is not binding at full steering lock. Adjust the steering stops located on the backside of each knuckle to correct any interference. We highly recommend that an alignment be performed on the vehicle as soon as possible. After the alignment has been performed turn the steering wheel lock to lock to verify the steering stops are properly adjusted. Failure to do so could result in damage to tires, wheels or shocks.



26. Check all fasteners after 50 miles and after every off road excursion.

**Many people have issues with Bronco Lean after disassembly of the front end. To help troubleshoot we have included this writeup.**

#### **CURING THE INFAMOUS BRONCO LEAN**

Drivers side lean or less common, passenger side lean in the front of your Early Bronco distracts from it's appearance.. This condition is commonly caused when replacing stock or older "stiffer" style front coil springs with the newer soft riding more flexible coil springs. It can also be caused by replacing your c bushings alone and not replacing the springs. Read on:

If you have the dreaded "Bronco Lean", chances are you have recently replaced the coils with newer soft coils or you have replaced your "C" bushings. This lean can be measured at the bottom edge of the front fenders, bottom edge of front reflectors or any other handy place, making sure that any body damage or bad body bushings won't affect the numbers. . Quite commonly the lean is 2" or more in the front of the Bronco. The cure to this problem follows:

You must disconnect the entire front axle assembly from the Bronco. Disconnect and remove the front coil springs, disconnect the frame to axle brake line, disconnect the front housing breather line, remove the radius arm nuts from the rear mounts. Remove the rear original rubber bushings or aftermarket poly bushings that are on the end of the radius arms. With a set of jack stands supporting the axle (under the front hub assembly on either side works good) lower the threaded end of the radius arms down so they touch the LEVEL concrete floor. It's important that the floor surface is a level, flat surface. With a floor jack under the "pumpkin" or gear housing of the Dana 44 or Dana 30 differential, this makes this step very easy. Look very carefully at the ends of the radius arms. Do they BOTH touch the floor at the SAME time? If one radius arm is touching the floor and the other is not, then this is the most common cause of your Bronco leaning to one side or the other. You must have both radius arms parallel to each other. Are the C bushings installed correctly? Remove them and check the writing on the inside of the poly style bushings to verify correct installation. This step is critical. If the c bushings were installed wrong, then improper installation could be causing the lean.

To correct the lean, you must loosen the 4 bolts that hold the radius arm caps on. Randomly choose one side to start with. By loosening the cap bolts on this side almost all the way out and then tightening them back diagonally or slightly quicker at the top or bottom (try different ways), the c bushing will seat differently You can vary the distance off the floor of the offending radius arm by 2" or more by proceeding this way. However, sometimes you cannot get the threaded end of the radius arm that you want closer to the floor (more parallel to the other arm), only farther off the floor!! If this is the case, then you must try to get the arm back as close as parallel to the offending arm and then tighten/torque the radius arm bolts. Proceed to loosen the cap bolts on the other radius arm and repeat the steps you've already tried on the first arm. It may take 5 or 6 times on either or both radius arm caps before you will get the arms parallel to each other. Keep trying. It is hit or miss.

The bushings are IMO, the main culprit for front end lean when new suspensions are installed and the lean is a new condition. Of course this method or example won't solve your problem if your springs are bad or you have other front end problems. However, many Early Bronco owners have emailed me saying that this has cured the "infamous front end lean" in their Broncos.

Submitted by Brian Cooke. Courtesy of BroncoFix.com

#### **LIMITED WARRANTY**

James Duff Inc. warrants our products to the original purchaser to be free from defects in materials and workmanship. Warranty periods begin at the date of purchase and varies by product. Shocks have a limited lifetime warranty. Headers, Radiators and Suspension Products, Power Brake Boosters and Master Cylinders have a three year warranty. Adapters and soft goods such as Canvas tops, upholstery, vinyl and rubber products have a 90 day warranty. All warranties are to the original purchaser with proof of purchase only. Such obligations under this warranty shall be limited to the repair or replacement, at JDI's discretion, of any assembly or part which upon examination by JDI proves to be defective. Any costs of removal, installation, reinstallation or freight charges are expressly excluded from this warranty. This warranty covers only manufacturers defects, and does not cover product finish or damage resulting from abuse, misuse, negligence, racing, alteration, accident or damage in transit.

All returns must be pre-authorized by JDEI and accompanied with a Return Goods Authorization Number (RGA) and a dated proof of purchase. Returns must be shipped prepaid within 90 days of purchase, packaged sufficiently to prevent damage in shipment and sent to JDI, 6609 Bronco Lane, Knoxville, TN 37921 Returns without an RGA# will be refused.

This warranty is expressly in lieu of all other warranties, expressed or implied, including the implied warranties of merchantability and fitness for use. This warranty gives you specific legal rights including other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion of limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you.

#### **SUSPENSION PRODUCT INFORMATION**

Modifying your vehicle with JDI products to improve off road performance may result in the vehicle handling differently than a factory equipped vehicle. Taller tires will cause the vehicle's speedometer to read slow, so recalibration is required. Use of oversize tires, suspension lifts, body lifts, and other modifications may raise your vehicle's center of gravity, resulting in an increased tendency for the vehicle to pitch and roll during sudden turns or abrupt maneuvering. Failure to drive with extreme care to prevent loss of control or vehicle roll over may result in injury or death. Drive at a reduced speed to ensure your ability to maintain control of the vehicle under all driving conditions. We recommend installing functional roll bars and cages as well as double shocking all vehicles for more safety and stability on or off road. Always wear seat belts when in a vehicle. Consult your owners manual for recommended tire sizes, safety instruction and warnings unique to your vehicle. It is your responsibility to check state and local laws restricting vehicle height to ensure that modifications to your vehicle are legal.

# LONG TRAVEL SUSPENSION COMPONENTS

**TO MAXIMIZE THE PERFORMANCE OF YOUR NEW RADIUS ARMS WE SUGGEST COMBINING THEM WITH OUR OTHER COMPONENTS DESIGNED SPECIFICALLY FOR HIGH ARTICULATION.**

## Stage 2 Long Travel Hoops

Add a Massive Increase in travel and performance with the addition of these shock hoops. Designed to incorporate our 15" travel, high articulation, shocks! Shocks can be mounted in any of three positions, one in front and two in back of the coil! Allows your suspension to really perform and not be limited by short shocks. Requires a 2" body lift. Bolt and weld-on design. **#5212 Stage 2 Long Travel Hoop Shock Mounts**

## Progressive Rate Coil Spring

In our continuous drive to offer the best in Bronco suspension items we have redesigned our coils to offer more travel and an even better quality ride. The initial and mid range spring rate is soft, which allows them to offer good ride characteristics and suspension travel, without being so soft or firm that predictable handling and ride quality is affected. Some coils are so soft that at maximum extension they don't offer enough pressure down on the axle (and thereby to the tire) to provide traction. This is why some vehicles will do great on a ramp travel index (R.T.I.) but on an actual extreme trail their suspension will have a tendency to hop rather than provide enough down force to the axle-tire-wheel assembly for traction. The spring rate increases dramatically the last few inches before full compression, providing bottoming out prevention. Progressive rate coils are better than standard heavy duty coils because they offer the best of ride quality and suspension travel. NOTE: Due to the longer coil, a coil spring compressor may be needed in order to make installation easier on some vehicles.

**#5107 3 1/2" Lift Progressive Rate Coils**

**#5109 5 1/2" Lift Progressive Rate Coils**

## Progressive Rate 11 Leaf Spring Packs

These springs are designed to handle the extra weight that many people carry or when a hard top, tire carrier, and rear passengers are carried on a regular basis. With these springs ride and articulation is not hampered in order to handle the extra weight. Feature Teflon wear pads (for quiet operation and less friction), tapered ends and double wrap main eye mounting for superior strength. Work great for handling the extra weight of heavy bumpers combined with all the necessary tools and spare parts that go along with trail use.

**#5570-80 11 Leaf Springs**

## Stage 2 Dual Rear Shock Mounts

If you have a 66-77 Bronco you know the rear suspension is limited in travel due to the stock shock mounts. We developed this shock mount to be a simple effective way of releasing the full potential of the rear suspension. This design also helps eliminate the axle wrap that is so common to EB's. By utilizing angled shock mounting and 12" travel shocks, 15" of vertical travel is available! Requires a 2" body lift and minimal sheet metal trimming. Bolt and weld-on design. **#5214 Stage 2 Dual Rear Shock Mounts**

## Progressive Axle Bump Stops

Stock rear bump stops are too small and soft for the job and are frequently torn or missing. These are a progressive design which means the harder you come down on them, the more cushion comes into effect. For F150s or Broncos with 3" or more of lift use the heavy duty #6310 bump stops.

**#6310 Rear Broncos\*\*, 3"+ & F Series (all)**

**#6311 Mounting Plates, 66-77 Bronco, rear**

**#6312 Complete 2" Lifted Set: #6300, 6310 & 6311**

**#6315 Complete 3.5" Lifted Set: 2-#6310, 1 #6311**

*\*\*Broncos require #6311, mounting plates to match frame holes.*



## Stainless Steel Braided Brake Hoses

Lifted Broncos with lots of travel need longer brake lines to get the most from the suspension. These custom lines are stainless steel and DOT approved for street legality as well as being longer to accommodate suspension travel. These lines won't swell under pressure like rubber ones will. Smaller inside diameter increases pedal feel and brake response. Beware many replacement lines are not DOT approved! We have these specially made so you don't have to guess when it comes to the safety and soundness of your brakes. Fits stock to 6" lifted 66\*-77 Broncos. Note: \*66 & 67 may need adapted to fit front hose. **#3931 Stainless Braided Hoses, 66-77, pair**

## Drop Pitman Arm

A drop pitman arm is not required on all lifted vehicles. If you have already installed your suspension system and are experiencing excessive bump steer or excessive wear on the drag link is apparent then install a drop pitman arm to cure this.

**#5473 Drop Pitman Arm, 66-75**

**#5474 Drop Pitman Arm, 76-77**

## Lower Coil Retainers

You may notice that your coil springs "bow" after installation. This is the nature of a modern soft progressive rate coil spring. The amount of bow depends on the vehicle. If the problem is excessive in your vehicle, you can replace the lowers with our new lower retainers which will significantly reduce, if not eliminate the problem.

**#5120 Lower Coil Spring Retainers \$75/pr.**



## E-Brake Cables

This high quality, easy to install universal replacement cable can replace the 3 pieces necessary to run the length of your 66-75. It differs from the original only in the fact that it is longer and can be shortened to replace any of the three. This cable is a must if you've lifted your rig and your stock cables are tight.

**#3756 Universal Cable (1)**