

## INSTALLATION INSTRUCTIONS:

### Long Travel Extended Radius Arms, 1966-77 Bronco



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6609 Bronco Lane  
Knoxville, TN 37921

## PART #5350

### CONTENTS:

1	Drivers side Radius Arm	4	Bushing Sleeves
1	Passenger Side Radius Arm	8	Bushings
2	Radius Arm Cast Head Units	6	1/2" x 4.5" NC GR 5 Bolts
2	Radius Arm to Frame Brackets	2	1/2" x 6" NC GR 5 Bolts
2	1 1/4" thread x 1" bore Rod Ends	2	1/2" x 3.5" NC GR 5 Bolts
2	1 1/4" Jam Nuts	10	1/2" Nyloc Nuts
2	1" x 5 1/2" NC GR 5 Bolts	20	1/2" Big Flat washers
2	1" Nyloc Nuts	6	1/2" Small 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	2	7/16" SAE washers
4	5/8" Nyloc Nuts	8	9/16" x 2 1/4" NC GR 5 Bolts
2	Shock Mount Spacer	2	9/16" SAE GR 8 washers
8	5/8" Flat washers	8	9/16" Lock washers

1/4 7/22



**NOTES:** This kit will not work on vehicles with less than 2 1/2" of suspension lift. If you plan to jump your Bronco you will need at least 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. Lay out and verify all parts you may need are accounted for before you tear down your Bronco. This is especially important if you have a rented space or if a mechanic/shop is doing the install. We recommend that you have a caster reading taken at a front end alignment shop before installation to assure you have the proper degree bushing, so you won't be held up waiting for them or have to tear it back down and reinstall. We recommend a reading of 3.5 to 4.5°+. Too much or too little will result in caster shimmy or wandering. Take into consideration when calculating for the proper bushings, there is 4.25°+ built into these arms. Also, give your track bar a quick shake and inspection to check the condition of the bushings. It will be disconnected and they'll be easy to replace.

**Please read all instructions before beginning. Now is a good time to spray all existing hardware with penetrating oil.**

1. Disconnect the breather hose from the front axle. With a 9/16" wrench, loosen and remove the breather extension. It secures the brake junction block to the center section, let it dangle freely. Disconnect the front drive line at the front axle yoke, let it dangle as well. Break free the lug nuts on the front wheels, but don't loosen them.
2. Block the rear tires, raise the front of the vehicle and place jack stands under the frame so the front axle can hang freely by the coil springs. (You may have to remove the front bumper if you don't have room behind it for the frame stands.) Support the axle with 2 jack stands and keep a floor jack under the front pinion so that you can manipulate its height during removal and installation of parts. Remove the wheels. **CAUTION: Make sure your frame to axle brake line has sufficient length. Even with it disconnected you should keep an eye on it.**
3. Remove the trac bar at the frame and secure it to the axle. Remove the drag link at the pitman arm and secure it to the tie rod. Remove the upper and lower coil retainer tabs and mounts and pull the coil springs out of the coil buckets. You may have to lower the axle jack stand(s) to unbind the spring. Note: The coil spring hardware is typically very rusty, be sure to spray it good with penetrating oil.
4. Go to the radius arm frame mount and locate the large nut holding the arm into the mount. Use a pair of needle nose pliers and remove the cotter pin in the arm behind the nut. Use a 1 1/8" socket with an impact gun and remove the nut, the washer and the large rubber bushing. Repeat this step for the other side.
5. Remove the 4 bolts holding the stock arm to the C-cap using a 13/16" socket. Wiggle the arm and axle until the arm is free of the frame mount. Once the arms are disconnected, use a small jack stand or a 4x4 wood block and wedge it under the pinion snout. This will be a very helpful when you get to step 10.
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 re-installation 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. Note: Although we feel that this is an accurate way to mark the position of your long arm frame brackets, occasionally some Broncos coil buckets are not fitted properly from the factory. We suggest measuring the coil buckets and comparing side to side to be sure they are square with the frame. If your coil buckets are not square with the frame you have a few options. 1) This is a good time to inspect your coil buckets for rust and damage. Because your first option will be to remove them and square them to the frame. If you do not want to use your stock coil buckets we recommend upgrading to the James Duff HD coil buckets #5110. 2) We have placed a secondary 7/16" threaded hole in the head unit 1" back from the standard mounting position for the lower coil spring retainer. You can use this secondary hole to help equalize your unsquare coil bucket. Note: that secondary hole also allows you to extend your front wheel base forward 1" when using both sides at the same time. Caution: If you are running our long travel shock hoops the shocks will make contact with the coil buckets when utilizing the second hole.
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. Before installing bracket be sure to remove powdercoat for welding. We recommend a minimum 2 one inch welds on the inside and outside of the frame when using the mounting hardware. If no hardware is used fully weld the brackets to the frame. Do not weld on bolt heads or nuts!
9. Position frame bracket over the holes. Place a 1/2" big flat washer over each 1/2 x 4.5" NC GR 5 bolt and insert through bracket and frame. Secure with 1/2" big flat washers and Nyloc nuts. 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. We also recommend grade 5 hardware in the event of an accident the bolts will bend but not break like grade 8 will.
10. This is a good time to clean and repaint the axle and C-caps. You may find scale rust has built up under the c-bushings on the C-caps and axle. Scrape or chisel that away, prep for paint then use black chassis paint to prevent future rust.
11. With parts painted and ready for install, it's time to assemble the arms. Note: Although the bushings are self lubricating, we recommend lube for installation. A lithium based grease is best, but petroleum will work. The lithium grease will outlast petroleum and prevent squeaking, as well as improve articulation. Insert the bushings into the head unit, then press the 2" sleeves into the bushings. NOTE: The tolerance of the holes in the head unit are very tight to prevent bushing wear. Be patient and firm using a light tap of a hammer to start the bushings into the holes.
12. Using generous amounts of lube, coat the inside and outside of the c-bushings. Be sure to orientate them correctly by reading the inside edge of it. If you mount them upside down, your caster will be drastically off. NOTE: Because these radius arms have 4.25° of caster built into them, you will be able to run a lesser degreed C bushing and achieve the same caster reading. Normally a 4° C bushing can be used with a 2.5" lift and our arms.
13. Slide the C bushing into the head unit. NOTE: Make sure the 7/16" threaded holes are at the top of head unit. The holes have to face up because that is where your coil spring retainer attaches. Position the other C bushing into the C cap, again make sure it's facing the correct way, so there is a threaded hole at the top. We have supplied you with 2 9/16" x 3.5" Grade 5 bolts, and flat washers. This is your starter hardware that will pull the head unit and c cap together close enough so that you can use the 9/16" x 2.25" Grade 8 bolts and lock washers. **BE SURE TO USE ANTI SEIZE ON ALL OF THESE BOLTS AND DO NOT USE AN IMPACT GUN!** Start the longer bolts first diagonal from each other. Using a ratchet, thread them in a little at a time. If they don't thread in easily, back them back out and back in until the hole becomes easier to thread. Do not bottom out the long bolt, this will cause the bolt to seize when trying to remove it. **HEAD UNITS ARE VERY EXPENSIVE TO REPLACE, SO GO SLOW AND TAKE YOUR TIME TO PREVENT STRIPPING THE THREADS.** Now install the shorter bolts with 9/16" lock washers. Once the first two are in place and have relieved the tension off the starter bolts, remove them and install the last two short bolts with lock washers. Once you have the shorter bolts threaded in 3 or 4 turns, move on to the other side and repeat. Do not tighten these down yet, doing so causes Bronco Lean!
14. Align the arm to the head unit, so the bent portion is to the inboard side of the Bronco and the shock tabs are facing up. Align the upper and lower holes in the head unit with the upper and lower holes in the arm. Use the 5/8" x 4" bolt, two 5/8" washers and a 5/8" Nyloc nut to secure these positions. Use the impact to tighten the bolts until they are snug but still have a little bushing squish and the arm can move side to side. You will tighten these in step 16.
15. Now that the arms are installed and securely tightened to the Head units. It's time to finish tightening the C cap bolts. Grab the driver side arm and prevent it from rotating down. While doing this, remove the small jack stand or wood block under the pinion snout and slowly let the arms rotate down to the ground. Be mindful of the jack stands holding the axle up so the axle doesn't slip off of them. Also keep an eye on your axle to frame brake lines so they don't kink or over extend. Once the ends of the arms are resting on the ground, it is time to tighten the C-cap bolts the rest of the way.

16. Grab your 13/16" socket, 3 or 6" extension and 1/2" ratchet driver and get comfortable underneath the front end. The goal here is to manually tighten down your C-caps while keeping both arms frame ends touching the ground. Make sure to go in a criss cross pattern and jump from the driver side to passenger side frequently. They will lift and drop a little as you tighten the bolts but once you are done tightening all 8 bolts, the arms should be flat on the ground. This is how you prevent the dreaded Bronco Lean. Once you have all 8 bolts tightened down as hard as you can by hand, use your torque wrench and torque them to 90-110 foot pounds.
17. Thread one 1-1/4" jam nut fully onto each of the 1-1/4" rod ends. Thread the rod ends into the radius arms. Thread them in until they bottom out in the threads then back off 1/4" until the rod end is vertical and the bolt hole is side ways.
18. This step is best to do with a helper. With a jack or jack stand handy, slide and secure the radius arms up into the frame brackets. Be sure to protect the arm from the jack or jack stand. Have the 1" bolt with a 1" flat washer installed on it and ready to slide into the frame bracket, take a 1" rod end spacer slide it between the inside of the frame bracket and the rod end and then massage the bolt through rod end spacer and the rod end. Now on the other side of the rod end slide another 1" rod end spacer between it and the frame bracket and continue to push the bolt through to the other side. Secure the bolt with a 1" flat washer and 1" 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. Tip: Reverse this on the driver side if you have an Atlas transfer case & no aux tank. Securely tighten the 1" bolts in the frame brackets and jam nuts against the radius arms. We recommend using an impact and large wrench to tighten the 1" bolt and nut. With the impact on the nut run the impact until the nut stops moving. **Note: Use 3 drops of blue loctite when securing the jam nut.**
19. Reinstall the front coils and coil spring retaining cup. A 7/16 x 1.25" NC GR 5 bolt, flat washer 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.
20. This is a good time to inspect your trac bar bushings, trac bar bolt and tie rod ends on your steering. If they look worn or cracked you can replace these bushings with #6108 or #6109. You may also replace the entire trac bar assembly with #5403/5404 and our HD trac bar end #5411. Replace worn steering with our heim steer & check out the back page for more info on our BS eliminator systems. Be sure to reattach the frame side of the trac bar and the pitman side of the drag link. Torque to factory specs.
21. Our new double shear shock mount is designed to work with one shock or two. Use the supplied 1/2 x 3.5" hex bolt with 1/2" small washers when installing the shock. Very important **NOT TO USE 1/2" big washers** here or they could potentially damage your tires when turning. For 2 shock applications mount one shock in between the two shock tabs and the second shock rearward of the first shock. Use the supplied 5/8ths aluminum spacer between the rear mount and the rear shock. When mounting 2 shocks use the 1/2 x 6" hex bolt and 2 small washers. Insert lower mounting bolt from the back side of shocks. Some shocks will require a 1/2" small washer between the tab and the shock. We've supplied extra 1/2" small washers for this purpose. Reuse mounting hardware for the top end of your shock provided with the upper shock mount.
22. Reinstall side gas tank if previously removed and reinstall the wheels and torque to proper setting.
23. 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 droop. Adjust the steering stops located on the backside of each knuckle to correct any wheel to shock interference. We highly recommend that an alignment be performed after the install. After the alignment has been performed turn the steering wheel lock to lock to verify the steering stops are properly adjusted. Use an RTI ramp or forklift to check tire clearance for vehicles that go off-road Failure to do so could result in damage to tires, wheels or shocks.
24. After verifying all hardware is tightened to the proper torque sequence remove jack stands and test drive vehicle remaining in close proximity to your home or shop. Drive your vehicle in a series of turns left and right, over bumps and listen and feel for

#### 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 one year warranty. Adapters and soft goods such as 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 made within 90 days of purchase, packaged sufficiently to prevent damage in shipment and sent prepaid 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 limitation 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.**

## Long Travel Hoops or Towers

Add a Massive Increase in travel and performance with the addition of these shock hoops or towers. Designed to incorporate our 12 or 15" travel, high articulation, shocks! Shocks can be mounted as single or duals. Allows your suspension to really perform and not be limited by short shocks. Offered for 0"-2" Body Lift, Bolt and weld-on design. **#5201 #5212 #5230 #5232**

## 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 Duff Signature Blue or Black**

**#5109 5 1/2" Lift Progressive Rate Coils Duff Signature Blue or Black**

## 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**

## 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 these shock mounts 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 10-12" travel shocks, 12 to 15" of vertical travel is available! Offered for 0" to 2" body lift and minimal sheet metal trimming. Bolt and weld-on design. **#5214 or #5215 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**

## James Duff MS2020 Shocks

A shock developed by the industry leaders of Bronco suspension takes you beyond a simple hydraulic shock absorber. The new MS2020 delivers the high performance of a high-pressure monotube gas shock in an affordable package that work PERFECT with our long travel radius arms. No need for expensive remote reservoirs, the MS2020 provides a nice comfortable ride on the street & drastically reduces body roll while providing the extra dampening needed when the going gets TUFF.

**#8212-15 12" or 15" Travel MS2020**

## Bump Steer Eliminator Systems

Looking for a complete steering solution that is trail rated? Check out our line up of Heim Steer and Bump Steer Eliminator Systems. This is the heim steer combo kit you've always wanted for your Early Bronco. We've taken our years of Early Bronco experience and formulated the best steering setup for your Bronco. These kits are tailored for your lift height and will take your experience up a notch.

**#5640 Heim Joint Steering System Only**

**#5642 #5643 #5644 Bump Steer Eliminator Systems**

## E-Brake Cables

These 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**

