INSTALLATION INSTRUCTIONS: #5358
T-REX Evolution Radius Arms, 1966-79 Bronco, 67-79 F-150 4WD

James Duff Inc.
The Bronco Experts since 1967

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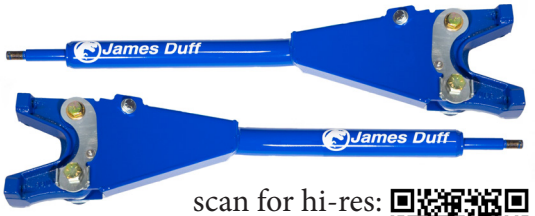
2	7/16” x 1.25” NC GR 5 Bolts		



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Before Installing: Lay out and verify all parts you may need are accounted for before you tear down your Bronco. See product listing at dufftuff.com, to layout the hardware to ensure nothing is missing. This is especially important if you have a rented space or if a mechanic/shop is doing the install. We recommend a caster reading of 3.5 to 4.5°+. Too much or too little will result in caster shimmy, wandering and front driveshaft pinion bind (pinion bind should be checked with the suspension fully extended or drooped). 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.

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 take them off.

2. 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. (You may have to remove the front bumper if you don't have room behind it for the frame stands.) Support the axle with a floor jack so that you can manipulate its height during installation. 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.**

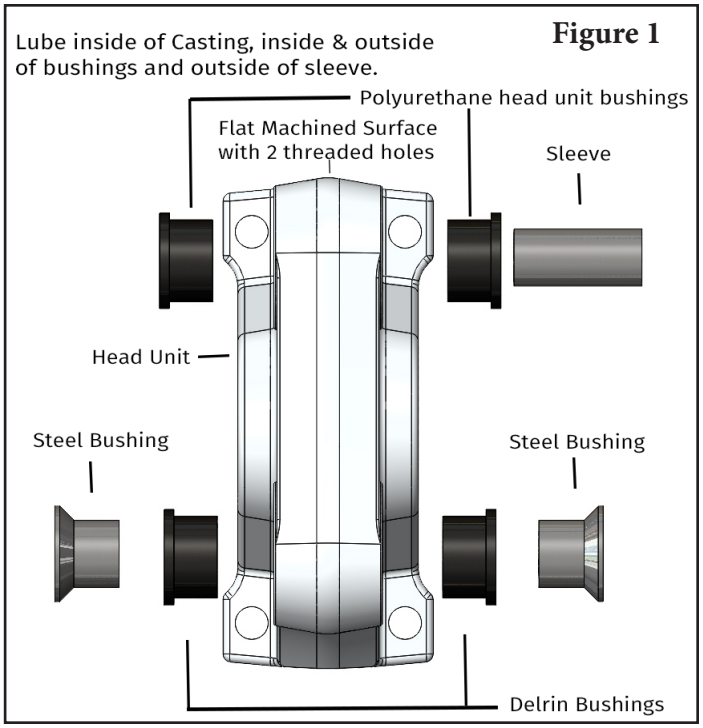
3. With the front axle still supported by the floor jack, remove the hardware that holds the upper spring retainer and the spring retainer from the coil bucket if using Duff lower coil retainers rotate the coil and remove it from the vehicle and then remove the lower coil retainer from the radius arm. If using factory lower coal retainers, remove the lower coil retainer from the radius arm and remove the coil and retainer together. **Note: Sometimes this is the easiest with the long extension in ratchet from the top of the coil.**

4. Remove the track 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.

5. 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.

6. 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 (con't next page)

Figure 1



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. Repeat this step for the other side.

7. 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.

8. 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 silicone based grease is best, but lithium will work. The silicone grease will outlast lithium and prevent squeaking, as well as improve articulation. Insert the bushings into the head unit, then press the 2" sleeve into the bushing. **NOTE: The tolerance of the holes in the head unit are very tight to prevent bushings wear. Be patient and firm using a light tap of a hammer to start the bushings in the holes.**

Using **Figure 1** as a guide install the polyurethane head unit bushings in the upper holes between the arm and head unit. The lower mount holes will use the Derlin bushings and matching steel bushings. These bushings will have a 45 degree face that will fit together when installed in the lower hole. Installing the steel bushing into the Derlin spacer/bushing first before installing them into the head unit.

9. As shown in **Figure 2**, Install the cam bolt side plates to either side of the radius arms by lining up each of the holes and securing with the SS button head 1/4" screws with 1/4" SS flat washers. Align the arm to the head unit, so the bent portion is to the inbound side of the Bronco and the shock mount is facing up. Align the upper and lower holes in the head unit with the upper and lower holes in the arm. As shown in **Figure 3**, Use the 5/8" x 4" bolt, two 5/8 washers and a 5/8" Nyloc nut to secure the upper positions. Install the caster bolt with a caster cam washer on either side of the arm and a 3/4-16 top-lock nut. Use an impact to tighten the upper bolts until the are snug but still a little bushing squish and the arm can move side to side. Tighten the lower cam bolts down until they are almost tight (being loose enough to still rotate the bolt to adjust the caster of the head unit). **VERY IMPORTANT: Adjust the cam bolts until the large exposed washers are straight forward (towards the head unit)** as seen in **Figure 6** and snug the nut until the bolt doesn't rotate allowing cam movement. You will tighten upper hardware completely in step 20.

10. Using generous amounts of lube, coat the inside and outside of the c-bushings. **Note: 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. We highly recommend chasing all threaded holes in the headunit before installing the hardware in them. There are four 9/16" x 12 & two 7/16"x14 holes.

11. Slide the C bushing into the head unit. **NOTE: Make sure the two 7/16" threaded holes are at the top of head unit.** These 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 also is 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, these are starter bolts 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. **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 on the shoulder of the 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 step 10. **Do not tighten these down yet, doing so can cause Bronco Lean!**

12. Now that the arms are installed. 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. (con't next page)

Figure 2

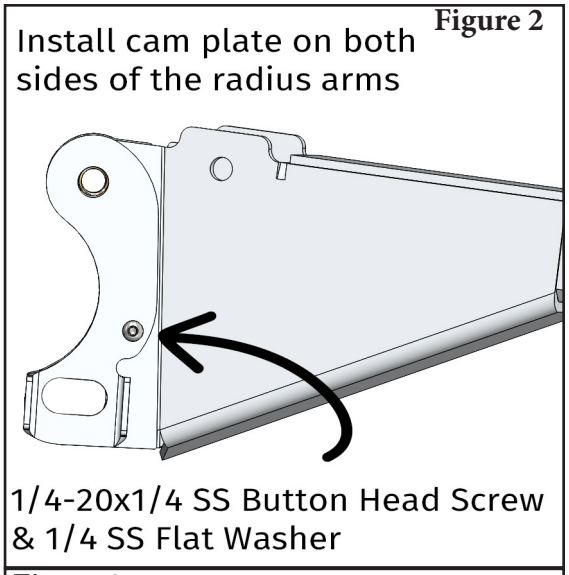
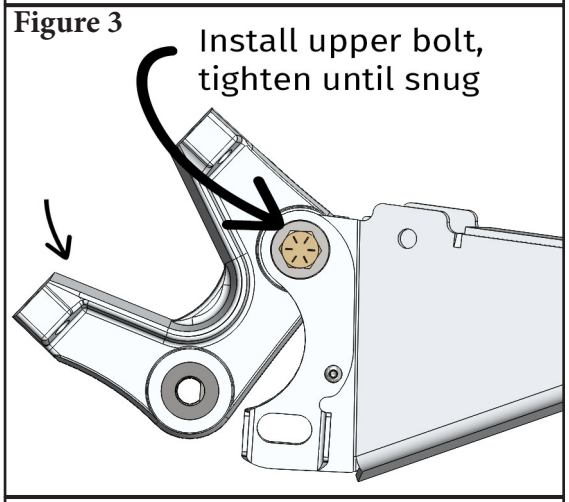


Figure 3



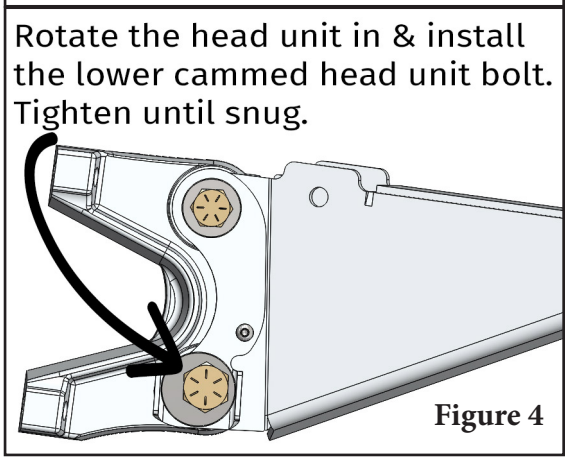


Figure 4

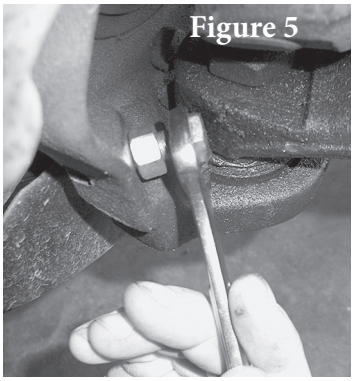


Figure 5

13. Grab your 13/16” socket, 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.

14. With the arms properly bolted to the axle, attach the arms to the frame brackets, see **Figure 8**, on page 4. Using a new set of radius arm strut bushings (#6100) first place a 7/8” USS washer on the threaded end of the arm, then slide a bushing with the flat side facing the washer. We recommend using silicone or lithium grease on the bushing where it will make contact with the arm and the frame. Repeat this step for the other side.

15. **Note: This step may take 2 people in order to not damage the threads at the end of the arms.**

Grab the arm and raise it up to the frame bracket. You may have to move the axle forward and side to side a bit until you can get the arm to slide through the hole. A helper can guide the other side in at the same time. It may take a few strong pushes of the axle rearward once the arm ends are through the frame bracket. Once most of the end of the arm is sticking through the other side of the bracket, slide the other arm bushing on with the small end facing forward. If enough threads are exposed to start the 3/4” flanged nut, you can use the nut to cinch the arm into the frame bracket more to make room for the 7/8” USS washer. Remove the nut, install the strut arm bushing, install the washer, then repeat for the other side. If you can’t get the nut started a come along strap works well to get the front axle back far enough so the arm seats into the frame bracket and you can install the washer and nut. See **Figure 8**.

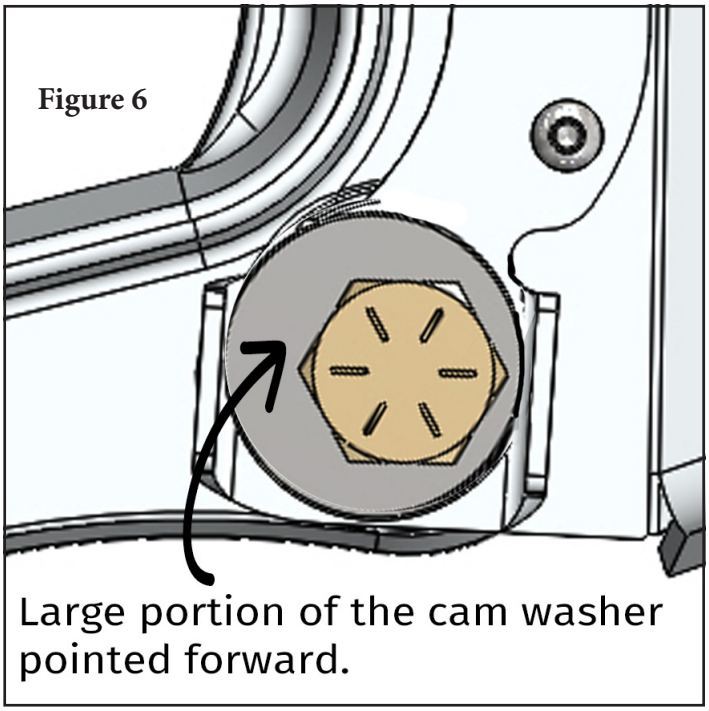


Figure 6

16. Using an impact, tighten the 3/4” flanged nuts until you see the bushings start to compress. Use your torque wrench to tighten them the rest of the way. Start at 80 ft. lbs. and up to a max of 120 ft. lbs. This extra torque may be required in order to install the supplied cotter pin. Once the hole is exposed, slip the cotter pin into the hole that is cross drilled through the end of the arm then bend the end of the cotter pin that slips through to 90°.

17. Reinstall the front coil spring retainer cups and coil springs. 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 bolts to 30 ft.lbs.

18. The radius arm shock mounts are designed for one shock behind the coil. Use the supplied 1/2” x 13 NC GR 5 hex bolt, two 1/2” washers and Nyloc nut to secure the shock. Use the 2 aluminum spacers, 1 on either side of the shock mount on the radius

19. Inspect the track bar bushings, If they look good, reattach the track bar. **NOTE: You may need a come along strap to get the track bar frame bracket bolt back in.** If the bushings are in bad shape, give us a call or order them online at dufftuff.com #6108 for 66-75 and #6109 for 76-77. This is also a good time to consider upgrading your track bar end to our heavy duty version #5411 or our hassle free track bar #5417. Once the track bar is re-installed, Loosen the cam bolt nuts slightly. Rotate the cam bolts in unison until the cam is centered in the cam plate steps. Then tighten the cam bolt nuts down tight to 150 lbs. Jack the axle up until the frame stands can be removed. Lower the axle back down onto the jack stands so all the weight of the front end is on the coil springs. Don’t forget to reattach the brake line and breather bolt to the axle then reattach the driveshaft. Don’t over torque the drive shaft u-bolt nuts, it will ruin your u-joints and cause premature failure. Leave the drag link disconnected for now.

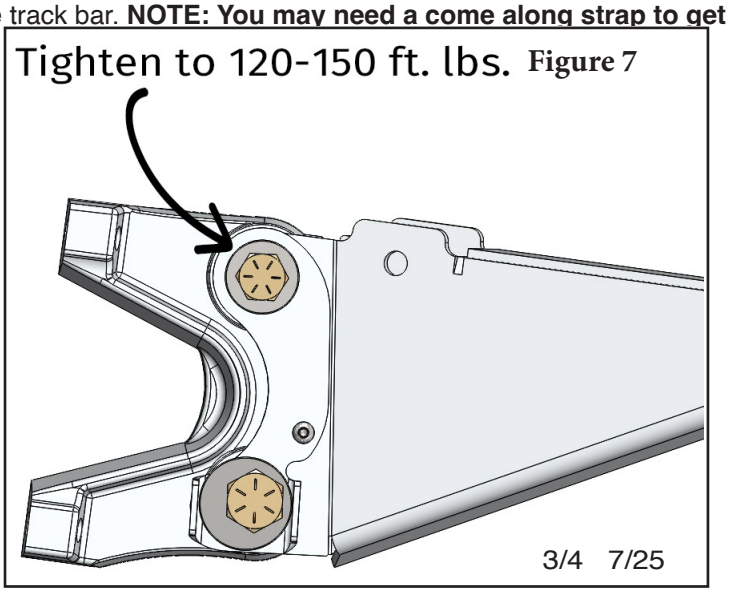


Figure 7

20. With an impact, tighten the 5/8” bolts that connect the arm to the head unit until you see the socket stop moving (about 120-150 ft. lbs.) Repeat for the other side. The 5/8” bolts are (con’t next page)

the upper bolts of the adjustable caster arms. See **Figure 7**.

21. Reinstall the tires. This may be fun for you because if your steering stops were moved out on the knuckles due to your tires making contact with your stock arms, it's time to loosen them up and move them back in! This may take a few tries but can be easily done with the drag link not attached. Move your tires from lock to lock until you're sure you are getting maximum turning radius without touching anything in front or behind the axle with the tire and wheel. Leave yourself at least 3/8" of clearance before making contact with anything and then tighten the jam nut.

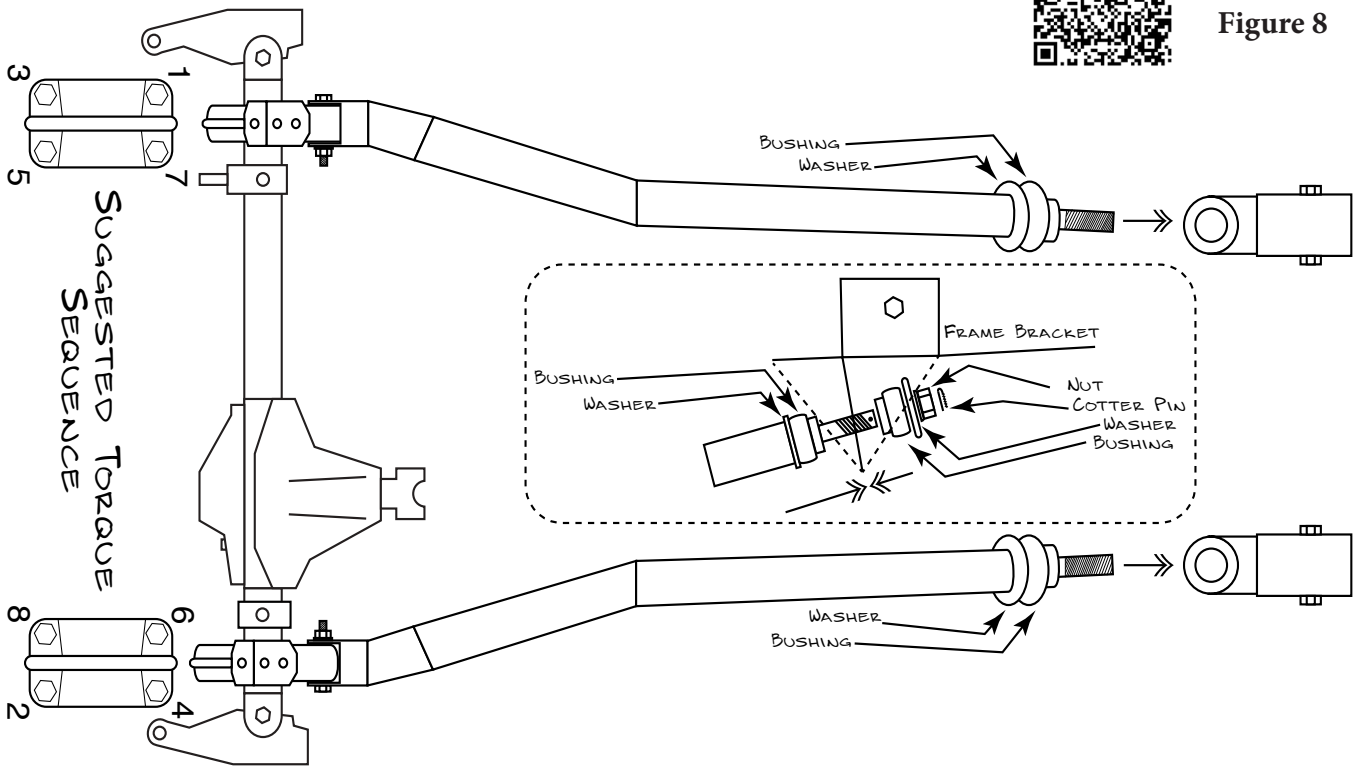
22. Reinstall the drag link and the safety cotter pin and drop the axle off the jack. Torque the lug nuts, look over your work and take the vehicle for a drive.

23. We highly recommend having an alignment to verify proper toe in and caster numbers. Make sure to check all fasteners after the first 50 miles after the install.

24. Have the vehicle aligned and explain to your alignment shop that your caster is adjustable with the lower cam bolt of your new radius arms. They can loosen the cam bolt nut and adjust the caster of the front axle up to 6.5 degrees to really dial in the handling and and return to center of your vehicle. - **Note: You must loosen both lower cam bolt nuts before changing caster. Be careful not to add too much caster. The front driveshaft will need to be checked with the axle at max suspension droop to verify the shaft will still free spin with no bind.**

Scan to view full color instructions and photos

Figure 8



CURING THE INFAMOUS BRONCO LEAN

If you have the dreaded "Bronco Lean", visit dufftuff.com/broncolean where you can dive in and get all the details on how to fix it properly.

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.

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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.