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MNR 46/73 Negative Roll Installation Instruction
1964 1/2-1966 & 1967-1973 Ford Mustang
(And similar applications)

Kit Contains:

1- Template
2 -Assembled control arms
2- Four bolt ball joints
4 -3/8 x 2 1/2" fine bolts
4- 3/8" fine stove lock nuts
8- 5/16" fine stove lock nuts
1 -Set of instructions
compressor
measure & marking scribe

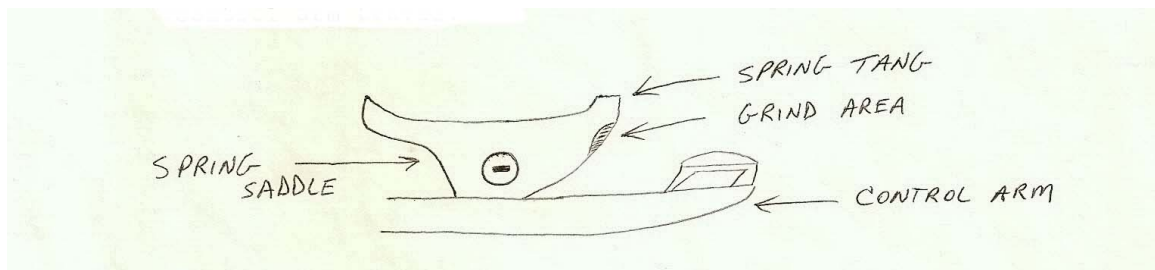
Tools Required:

Electric drill
Standard drill bit assortment
9/16" drill bit
Wrench set
Socket set
Small bench vise
Coil spring
Tape

1. Always measure the ride height before you begin installing your Negative Roll kit (NR Kit). Make sure that the vehicle is on a **level** surface. Measure your ride height from the bottom of the rocker panel, just behind the front tires and again just in front of the rear tires. **Do not** measure ride height from the tops of the fender wells. Accurate measurements now will greatly assist you in setting up the correct ride height after your Negative Roll system is installed.
2. To install your NR kit, you must first remove your stock front shocks, coil springs and upper control arms. Follow the procedures outlined in a Chilton, Mitchell or other manual specific to your car. A spring compressor is necessary to remove or install the front coils. **Note: A compressed coil spring is dangerous, use extreme care when removing, handling or installing these springs.**
3. At this point you should have already removed the front shocks, springs and upper arms. It should be mentioned that the procedures outlined in this instruction sheet assume that the spindles are going to be left attached to the lower control arms. Swing the spindle and lower arm out of the way to proceed. In your kit you will find template which has two 1/2" holes drilled at the **top** and two 3/16" drilled at the **bottom**. From the wheel well side of the car, using the 1/2" holes in your template, bolt it onto 1 1/2" holes in the car where you removed the upper control

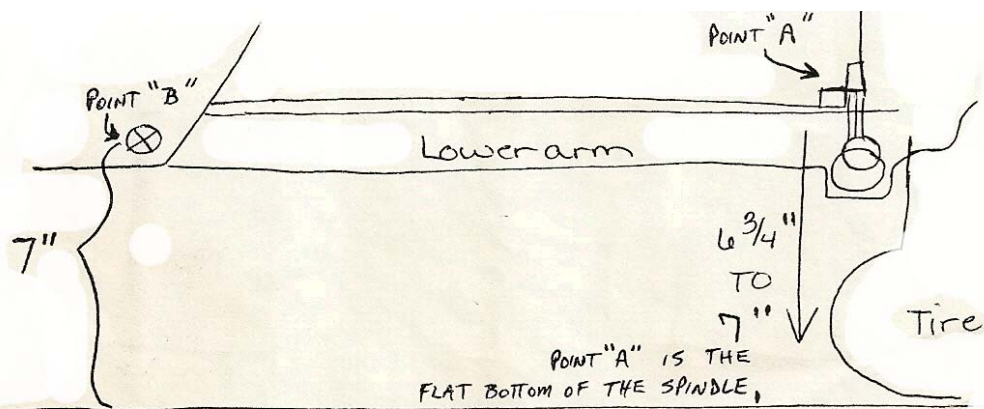
arms. At this point you will note that the two 3/16" holes with your scribe, remove the template, re-install in the other wheel well and repeat the marking proceed with your scribe. **(No matter how tempting, do not drill your 3/16" holes through the template!)** **Special note for Shelby owners:** If your vehicle has already been modified by lowering the upper arms 1" and you don't want to fill and re-drill the holes, you can run our NR kit in the Shelby modification holes. However, to gain the full benefits of our system, we strongly recommend that you do use the template we provide for control arm location.

4. After the pilot holes are scribed on both sides of the vehicle, remove the template and step drill the 3/16" holes up to 9/16", your final drill size.
5. Check the spring saddles on your original arms. The spring saddle is the part on which the base of the coil spring sits on the upper control arm. If the rubber on the spring saddle shaft is cracked and oozing out, you should replace them. They are available from your Ford dealer under part # D7DY-3388-A. If they are still in good condition, proceed as follows:
 - A. New or old spring saddles. Use a small bench vise and press out the two 3/8" bolts.
 - B. On some spring saddles you have to grind about 1/8" off the underside of the part to obtain adequate clearance. (See diagram below). This area may interfere with proper control arm travel.



6. Once clearance has been verified, bolt the spring saddle onto the tubular arm, using the 3/8x2 1/2" bolts supplied. Make sure that the spring tang on the saddle is located toward the **outside** of the car. (I.e.- exactly opposite the way it was on the stock control arm) Torque the fasteners down to 35 ft/lbs.
7. Next, making sure that the 3/8" plates are all the way against the cross shafts on the new tubular arms, bolt the control arms to the car, utilizing the 9/16" holes you drilled in step 4.
8. Install a 9/16" lock washer and stove lock nut on each control arm mounting bolt and run them up snug. Don't torque them down yet. If your working on a 1964 1/2-1966 early model that uses alignment shims, don't forget to slip those back into place. Two on each bolt is a good starting point. You may have to back

- the mounting bolt nuts off a bit to get enough clearance to insert the alignment shims. **Note:** The shims must be between the 3/8" plate and the control arm shaft.
9. Your NR kit includes two new upper ball joints. Install them now. Be sure to **only use the plated 5/16" fine stove lock nuts** that are supplied with your kit. Tighten the ball joint mounting hardware to 18 ft/lbs.
 10. For future reference, the upper ball joint replacement numbers are: Moor K8036 or TRW 10230.
 11. Slip the ball joint into the upper spindle end and torque the ball joint stud to 65 ft/lbs.
 12. Install the coil springs next. If it's a streetcar, you probably want to reinstall/replace any spring insulators that were originally present. If it's strictly a race setup, you can forget that part. Compress the coils with your spring compressor and install them so that the flat end is facing up and the open end is on the upper control arm saddle. Rotate the spring to achieve the correct indexing on the lower saddle- the end of the open coil should butt up against the tang on the lower saddle.
 13. Remove your car from the jack stands and allow it to sit on the ground. Before you can successfully measure the car's ride height, **roll the vehicle at least one car length to get the suspension to settle.** (This is a very important detail!) The correct ride height is determined by measurements taken from the lower control arm. **Basically we're looking for the lower control arm to be parallel with the ground, $\pm 1/4"$.** In order to measure this directly, we need to know the distance from point A (Bottom of the spindle) to the ground. We also need to know the distance from point B (Center of the lower control arm's bushing) to the ground. We will call point A the outboard measurement and point B the inboard measurement. (See the diagram below) If the inboard measurement is more than a 1/4" larger than the outboard dimension, you may need to trim the springs. **Note:** **Before you undertake cutting your springs, check the following details:**
 - A. Are spring saddles properly installed? On the NR system, the spring saddle is turned 180 from the stock position. If it is installed in the stock position, it can cause front-end ride height to be excessive.
 - B. Is the spring properly indexed on the saddle and in the top perch?
 - C. Measure your vehicle's ride height again like you did in step 1. (From the bottom of the rocker panel, just in front of the rear tires) Compare with the measurements from your "old" suspension.
 - D. Check your rear ride height. If your rear springs have sagged too far, this can cause the



front to ride high. Remember, the NR system is designed to lower ride height 1" from stock. Your ride height may very well be more than an inch lower from the stock height because of spring sag.

14. If you find that the car sits too tall and you need to cut a portion of a coil, do not use a torch. Trim the coil with a cut-off wheel or a cold saw. Try cutting a 1/4 of a coil and you'll usually be right on spec. Note: If you must cut, do so at the full wire end and not at the flat end! Before cutting more than a 1/4 coil, give us a call on our tech line.
15. Once you have obtained proper ride height, install your shock absorbers and have the car aligned. It is a good idea to have the car towed to an alignment shop, especially if you have just installed a set of expensive tires!
16. Once the car is properly aligned, **tighten the upper arms to 80 foot pounds.**

Alignment Specification

Street settings:

Race settings:

<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
Caster		Caster	
+1 deg.	+1 deg. 30 min.	+3 deg.	+3deg
Camber		Camber	
0 deg	0 deg	1-1/4 to 1 -1/2 neg	(Both sides)
Toe in		Toe in	
1/32 in	1/32 in	1/16 in	1/16 in

Note: Race alignment settings vary somewhat with the application.

Always check the clearance between the control arm and the back of the wheel/tire at full steering lock. If the tire or wheel hits, you will have to add material to the steering stops. This situation is fairly rare and occurs mainly with wide wheel widths on small diameter wheels with extreme offsets.

The optimum front wheel and tire combination for this system is a 17 x 8 " wheel with 4 -1/2" backspace using a 225 x 45 x 17 tire.