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Bump Steer kit for Mustang #ADJ-43

- (2) high misalignment rod ends
- (2) 5/8 x 18 with jam nuts – for setup
- (2) adjusting sleeves
- (2) 5/8 X 18 stove lock nuts
- (2) left hand 11/16 x 18 jam nuts
- (2) 5/8 x 18 x 3-1/2 bolts
- (2) 5/8 x 18 x 4 bolts
- (6) flat washers 5/8
- (6) spacers (2=.250 /// 2=.187 /// 2=.500) 5/8 hole
- (1) 5/8 drill bit
- (2) convex 5/8 flat washers

When a car has correct steering geometry, the suspension and the steering angles move in a similar arc. When they do not match, the steering will have bumpsteer. Unfortunately, production cars all have some form of bumpsteer. It is generally very little and the tire absorbs the change. The driver never feels it. In a racing environment, zero bump is desired. Bumpsteer can be corrected by changing the height of the outer tie rod, height of the inner tie rod, lengths of the tie rod assemble, and/or positioning the steering assembly fore or aft. For most of the production cars adjusting the outer tie rod height will fix bumpsteer problems.

Installation requires drilling out the spindle to except a 5/8-diameter bolt. A drill bit is supplied in the kit. You can the hole with the spindle on the car.

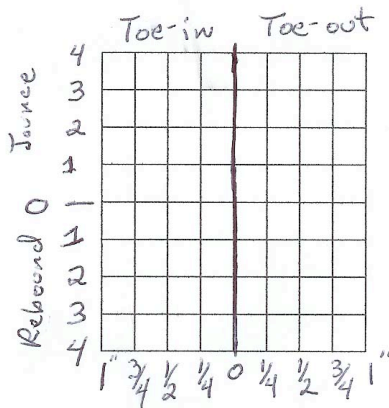
- Disconnect the outer tie rod ends.
- Use a 1/2-drill motor and drill out the tapered hole to 5/8-diameter.
- Remove the tie rod-adjusting sleeve. (New sleeves are furnished in the kit).
- Install the left hand jam nut on the inner tie rod first.
- Install the tubular tie rod-adjusting sleeve next.
- Install the right hand jam nut on the outer spherical rod-end supplied in the kit.
- Install the rod end into the adjusting sleeve. Note: As you thread the tie rod and spherical rod end into the adjusting sleeve make sure you get equal amounts of threads in the sleeve (inner to outer).
- Take the long 5/8-bolt supplied in the kit and slide a tapered washer with the flat side of the washer towards the head of the bolt.
- Slide the bolt and washer through the rod end.
- Install (3) 5/8 flat washers on the bolt next to the rod end.
- Slide the bolt assembly up through the steering knuckle arm from the bottom.
- Place a 5/8-jam nut on top of the spindle and tighten down slightly.
- After both sides are installed set the toe to zero toe in.

The procedure for checking bumpsteer is as follows: Note- for best results the car should be on an alignment rack with air jacks.

- First determine or set the vehicles ride height. Ride height must be set before measurements can be taken. Pick a point on the frame you can use as a common measuring point and measure from that point to ground.

- Set the alignment, Make sure camber/caster are set.
- On the alignment rack remove the front shocks and springs. (Support the car by the frame with air jacks).
- Use the air jacks and reset the ride height using the measurement you have made previously.
- Set toe to zero toe and lock the steering wheel in position.
- Raise the car up 1 inch at a time and write down your toe change. You are going to measure toe, 4 inches up and 4 inches down from ride height. The goal is to have the least amount (zero) toe change over the entire range. Production cars will still have a little change at the extreme. Do not be concerned if there is a slight toe change, the car will rarely operate in the extreme. In a racing environment due to spring rates 2 inches up and 2 inches down is generally more than enough.
- Create a chart similar to one below.

The left side of the chart is inches off movement. The bottom of the chart is the amount of toe change in $\frac{1}{4}$ of an inch increment.



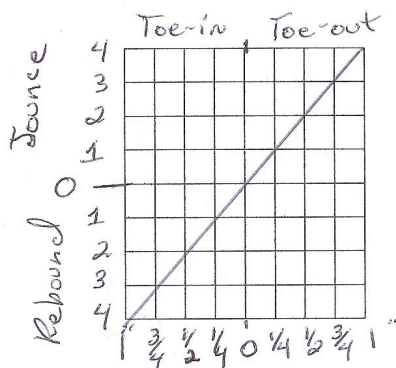
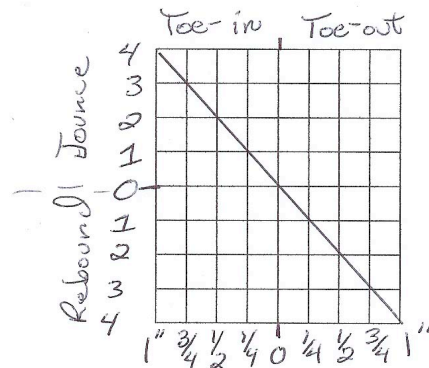
Note: Jounce is when the tire goes up into the fender. Rebound is when the tire drops out of the fender.

The dark centerline would equal zero toe change. This would indicate the height of the tie rods and lengths would be matched with the arc of the control arms.

•The two charts following will give you an idea of what to do. The charts are simulating a rear steer application. If the toe moves in as the wheel moves up into the fender and out as the wheel moves out of

the fender, the height of the outer tie rod is too low. Note: Prior you installed 3 washers between the steering knuckle arm and the spherical rod end, remove one or two washers depending on the toe change. Continue checking and remove or add washers till you get the least amount of toe change. Note: You can have different amount of washers / spacers from left too right. This is common.

The next chart shows the outer tie rod being too high and adding washers would fix the problem. **Remember to reset the toe to zero after every washer change and always start over at ride height when checking bumpsteer.**



In the kit you

have two extra bolts and several washers plus thick spacers. After you have determined the correct spacing, use the thick spacers and reduce the amount of setup washers. During final assembly use the self-locking nuts provided in the kit. The jam nuts are only used for setup. Torque the bolts to 90 foot-pounds. After bumpsteer correction is complete reinstall the shocks and springs and adjust toe-in or out for your application. Note: We strongly recommend toe-in over toe-out unless you are racing on a tight low speed course.