

Tie Rods - Feb 2015

I am writing this while sitting at home taking care of my convalescing wife. She had a hip replacement three days ago so I am staying home playing nursemaid. It is absolutely amazing that they can replace a part of your body in less than 1 ½ hours and send you home the next day. She spent less than 30 hours in the hospital. And the joint they inserted is very high tech.

It is made from ceramic, stainless steel and titanium. It looks a lot like a tie rod end we use on our cars. Actually, it is more like the size used on a Ford F650 pickup truck. It costs a lot more as does its installation, and it has no warranty! If something goes wrong, you get to pay again, or your insurance does.

So how many of you have ever bought one of those aftermarket warranties to cover your repair costs, on your car? Have you ever had it actually pay for anything? Most likely, they had at least two if not more reasons why your repair was not covered. At one time, we tried excepting the policies but after the first claim we made for a “covered” repair was denied because the policy holder had not met one of the hidden but required stipulations, we quit taking them. We had to get the customer to pay and he was not happy.

After that, we insisted the customer pay us before the car left, then we would file the claim and reimburse him with the check if it ever came. And they never did come. These extended warranty policies were and are still one of the biggest rip-offs in the repair industry. **DO NOT BUY ONE!**

Now, back to tie rod ends. I assume you know what they are and where they go on your car. They are what connect your steering wheel to your front suspension. They are very dependable and seldom give any problems. They can get so bad that they come apart; I have only seen two in forty years do this, and when they do, steering gets to be a lot of fun.

You can check yours in a few minutes by turning your wheels full lock either direction. Some steering is in front of the center of the wheel and some is behind the center. It makes no difference as you will be able to see the tie rod end either way. All you need to do is visually look at the boot covering the ball and socket and make sure it is not split. A split boot allows the grease to escape and dirt to enter. Dirt increases the wear rate.

Have someone gently wiggle the steering wheel while you watch the rod end. If it wiggles without wiggling the whole wheel assembly, then your tie rod end is loose and should be replaced. If the boot is split but the rod end is still tight, you may be able to replace just the boot. Most old British cars can get a boot replacement fairly easy.

If you need to replace the rod end, it ain't no big deal. Get the correct tie rod end for your car. Jack up the front end and I do recommend jack stands, and remove the wheel. This is not necessary but makes it easier. Loosen the lock nut on the shaft first; back it up a turn or two. Also loosen the clamp holding the rack boot to the arm. If it is a zip tie, cut it off. Then remove the nut holding the rod end to the steering arm, which is what we call the part the rod end is attached to.

Remove this nut. Assuming you do not have a pickle fork other than in your kitchen, get a nice medium sized hammer. Strike the steering arm where the rod end goes thru the arm. Strike smartly in line with the steering arm; it may take you one or three tries to get it to pop out. If you leave the nut on the rod end but very loose, it will not pop all the way out. If it pops out and you are not quick enough to catch the wheel from flopping around, it could stretch the flexible brake hose.

Once the joint is loose, remove the nut and then unscrew the rod end from the steering shaft, actually called the inner tie rod end but I do not want to get you confused so we will just call it the shaft. Count how many turns it takes to come off, count to the  $\frac{1}{4}$  turn. Now screw the new rod end on the exact number of turns. You can clean and lubricate the threads on the shaft first. Put the treaded end back into the steering arm and tighten the nut as tight as you can, at least 45 lb. ft. of torque. If the nut turns the threaded portion in the steering arm, pry down of the rod end pushing the tapers fitting tighter into the steering arm.

This should allow you to tighten the nut. Now do the other side the same way. After both sides are done, lower the car to the ground. Notice that I have not said to tighten the lock nut you loosened first. There is a reason for this. Roll the car back and forth several feet while bouncing on the fender. This settles the suspension. Set your steering wheel straight first. Tie a rope around it and lock the loose ends of the rope in the hinge side of the door. This immobilizes the steering wheel and keeps it straight. Or you can get a friend to sit in the car and hold it steady.

Now, you need a bungee cord and a long piece of strong string or light rope. Tie a loop in the string and put the bungee cord thru it. Attach both ends of the bungee cord to something in the back of you car, I like the muffler pipes, and pull the string around one side of the car. Place the string below the center of the rear wheel so it touches both the front and back of the rear wheel. Pull forward with the string stretching the bungee cord and just touch the rear portion of the front tire.

Slowly move the string sideways, back and forth lightly touching the rear of the front tire. Once you feel that you have the string just touching the tire, look at the gap between the front of the tire and the string. You want between  $\frac{1}{16}$ " and  $\frac{1}{8}$ " gap. This is the toe in for the normal old British car. If you are out of this distance, you will need to either screw in or out the arm that you screwed the rod end onto. As you twist the arm, you can watch the gap change. By loosening the rack boot and backing of that lock nut earlier makes this part easier doesn't it?

Keep adjusting the arm until you get the required gap. Once you are happy, do the same thing to the other side. Once it is done, recheck the first side to make sure it is still within specs. Then tighten the lock nuts as snug as you can and tighten the clamp or replace the zip tie on the rack boot. You are done! Congratulations, you just saved about 1  $\frac{1}{2}$  hours of shop labor payment. It sounds a lot harder than it is.

But, can you imagine if they had to go back and adjust Patty's hip joint? It would take about the same amount of shop time but would cost a whole lot more. See yall somewhere soon I hope.

Barry Rosenberg