Toyota Estima Lucida 2.2TD 2wd
Inner Track Rod Change

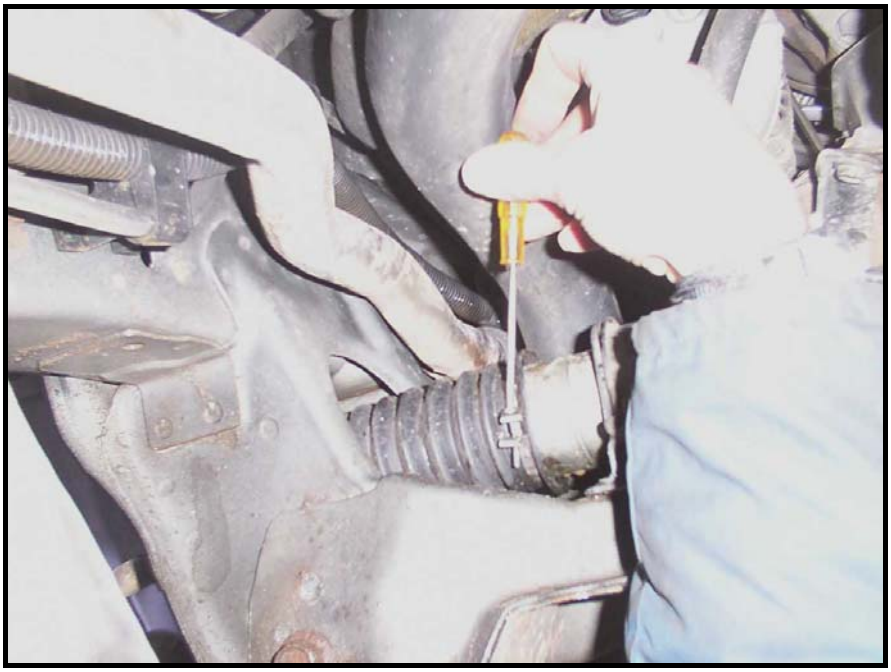
Disclaimer

This tutorial is a basic account of how I changed my track rod end. It is no way the definitive guide and unless you are confident in your abilities, should not be undertaken unless by a qualified mechanic. I accept no responsibility for damage or death resulting in the use of this guide.

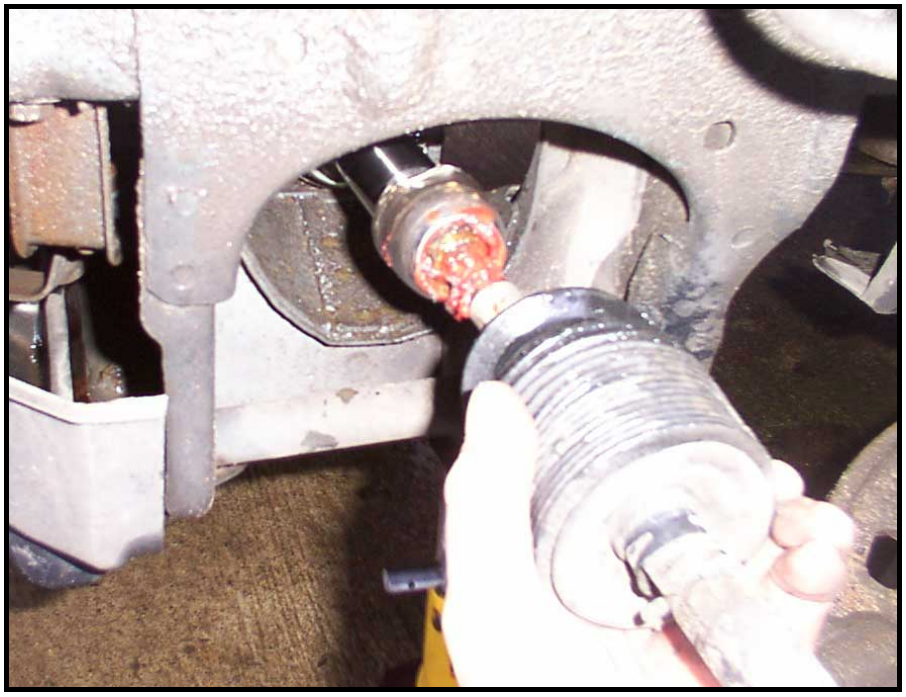
The Tutorial

Loosen the front wheel bolts and jack the car up, supporting it on suitable axle stands.

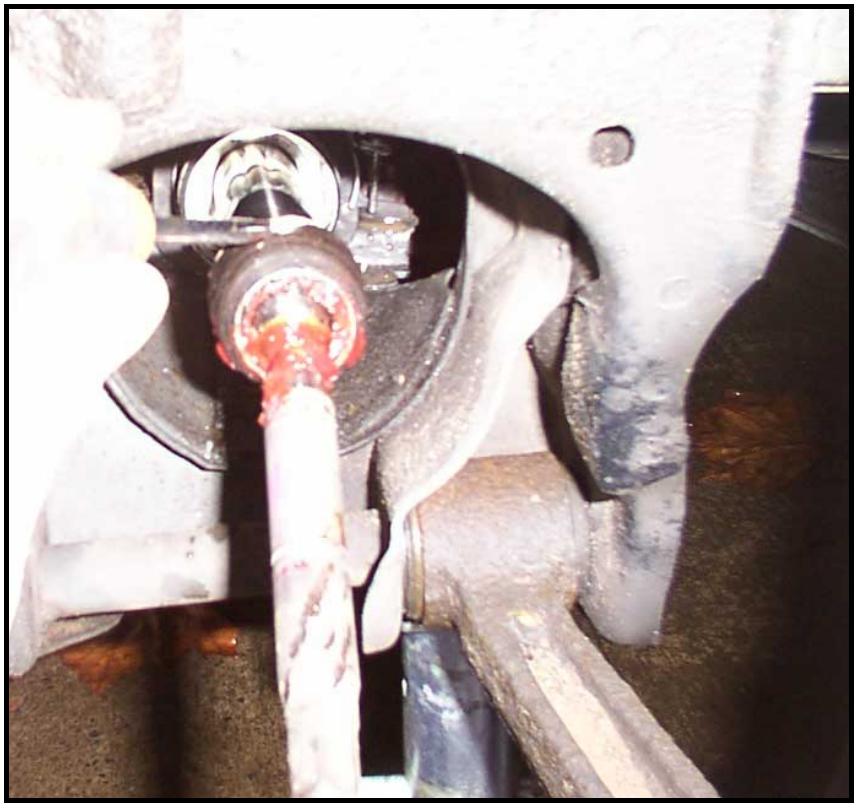
With the wheel removed, locate the steering rack, outer track rod (with ball joint attaching to hub) and the inner track rod end (disappearing inside the steering gaiter). Turn the steering wheel full lock to the right. This will alleviate tension on the steering gaiter inner p-clip. Using a suitable screwdriver, loosen and remove this p-clip.



With the inner P-Clip removed, turn the steering wheel fully to the left to gain access to the outer gaiter clip. In my case it was a spring clip that is pinched together and moved out of the way. Once the two clips are released, the gaiter can be pulled away revealing the inner track rod end ball joint. It is this part that wears.



A good inspection of the area should show the tabs bent over the flats on the track rod. These will need bending out of the way. I used a flat bladed screwdriver and plastic mallet.



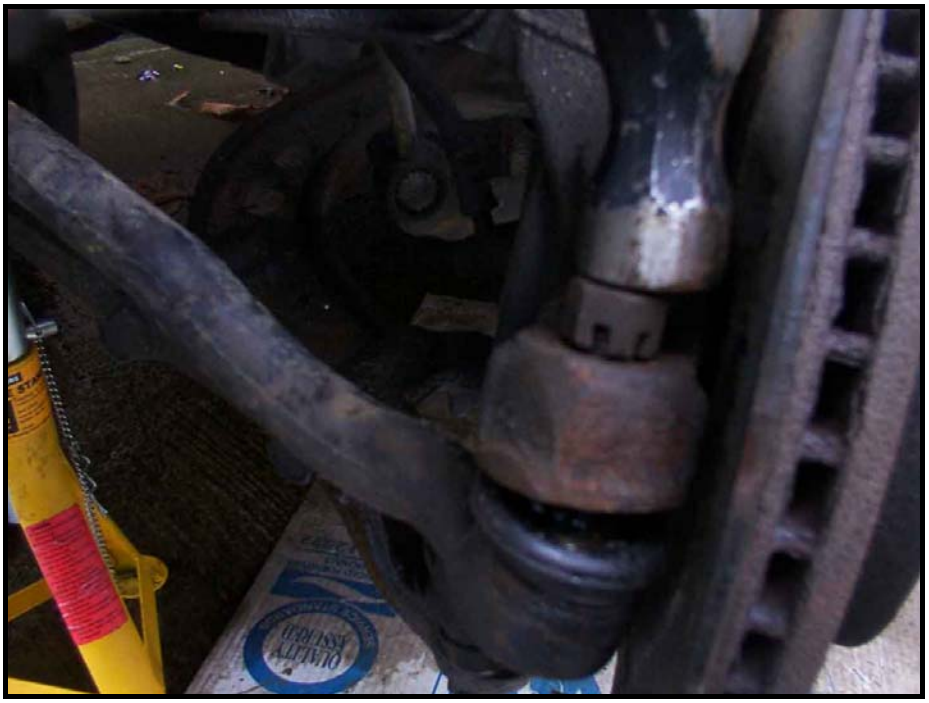
Before anything else is done, the lock nut must be loosened from the outer track rod end. This needs to be done before removing the ball joint from the hub to provide some leverage. You can brace the inner track rod end with a 14mm open jaw spanner and then try to loosen the 19mm lock nut, but I find this way a lot easier.

Place a 19mm open jaw spanner on the lock nut. As you look at it, it needs to be turned clockwise (normal thread) to undo it. I placed a suitable spanner on the nut, turned it so that the nut would turn no more i.e. braced against the hub, and then struck the end of the spanner with a mallet.

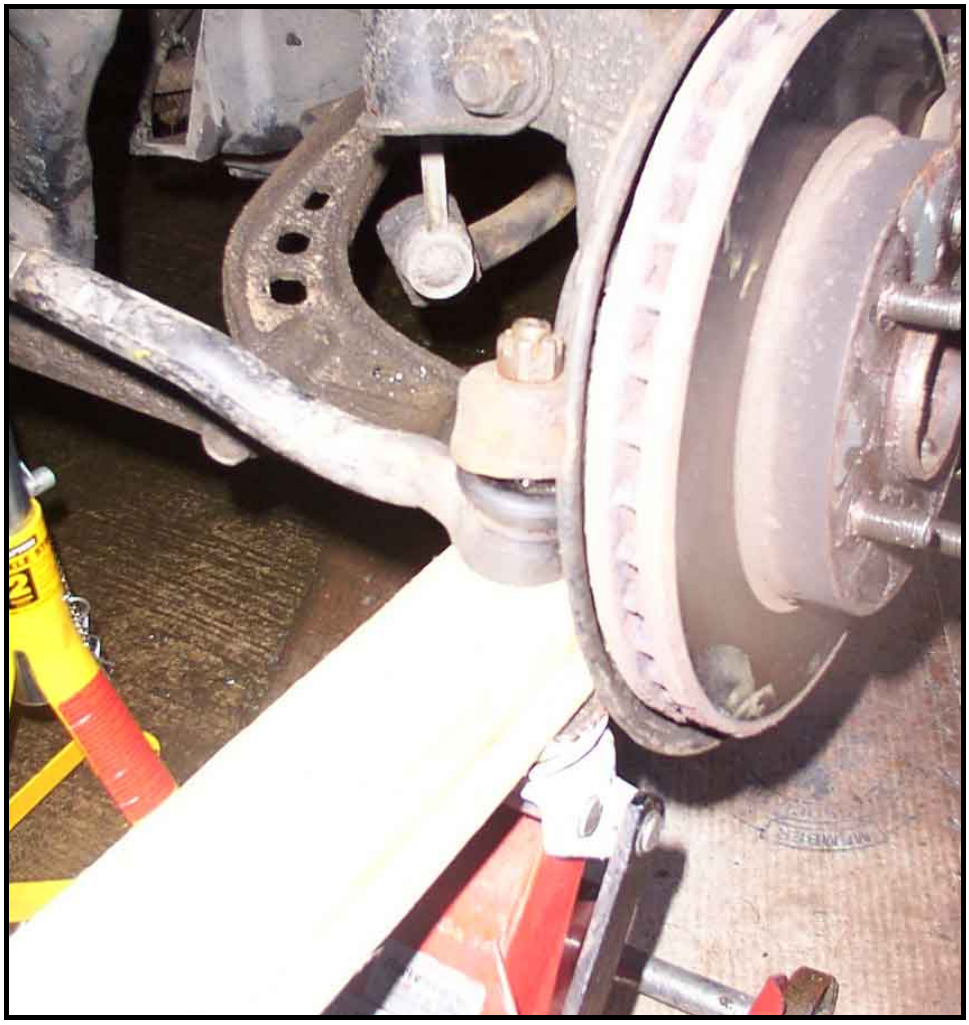
As soon as the nut is cracked loose. Do not turn it any more; you might be adjusting the overall length of the track rod assembly. Now it's time to remove the ball joint from the wheel hub. Firstly remove the split pin from the castellated nut and use a 17mm socket to remove the nut completely. I then turned the nut upside down and screwed it back onto the threads until the top of the threaded portion is flush with the nut.

The ball joint will be quite firmly wedged in the hub, as it should be. Do not be tempted to hit the top of the thread or upturned nut with a hammer yet. Firstly hit the sides of the hub where the ball joint is inserted.

Sometimes, the ball joint will pop out, but if not, now you can try to hit the top of the castellated nut.



A combination of side hitting and top hitting should eventually cause the ball joint to pop free without damage. Alternatively, a ball joint splitter can be used but I've found if incorrectly used, can cause damage to either rubber boot or threads. When the ball joint separates, the nut can be removed. Now this can sometime cause problems depending on how zealous you were with the hammer on the top of the nut. Turning it with the 17mm socket will cause the whole joint to spin. Should this happen, the ball joint needs to be pressed back into its hub to give friction. This method is used in the re-assembly. Look at the picture below but only jack it up as is necessary to hold the joint whilst the nut is slackened off.



The nut can now be fully removed and either using a soft mallet or a piece of wood for protection
At this point, I then chose to measure the track rod assembly for an approximate check post reassembly.

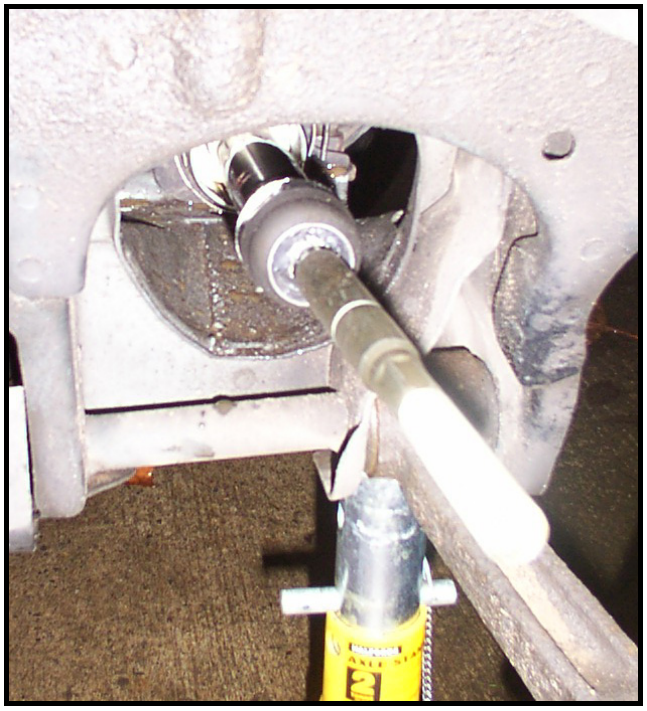
Holding the inner track rod firmly in your hand, undo the track rod end counting the number of complete turns before it finally comes free. Mine happened to be around 18 turns. This leaves the inner track rod ready for removal.
Now the track rod can be removed. This requires a spanner of around 34mm. However, getting anything in there of that size given the position of the flats, I opted to use a set of large mole grips.

Leaving the steering rack ready for the fitment of the new item.

Fitting the new track rod is a reversal of the above. I put some loctite on the threads prior to fitting, as I was unsure about access to the locking tab.

One thing I found when refitting the new rod, the supplied tab washer was way too small to be effective. I hade to re-use the old tab washer which isn't ideal but as it turned out, when the rod was assembled onto the rack, the flats lay in a new position and therefore fresh material on the tab washer was used.

I've overlaid the new washer on top of the original washer and you can see the difference in size. This made it impossible to bend anything sufficient over onto the flats of the new rod.

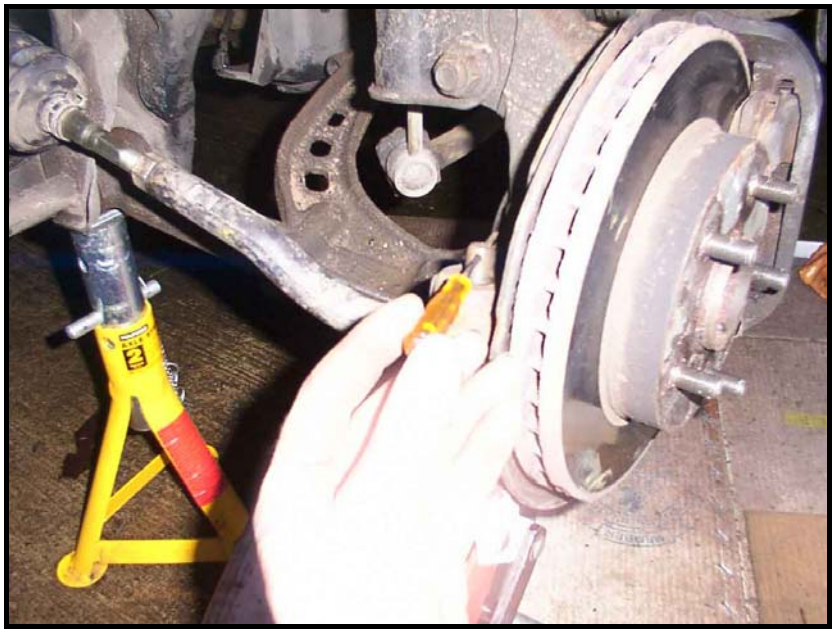


With the new rod fitted, you can just about make out the tabs ready to be bent over on the flats. Also, note how much stiffer the new ball joint is. The rod remains supported by the friction of the new bearing rather than flopping around as the old one did.

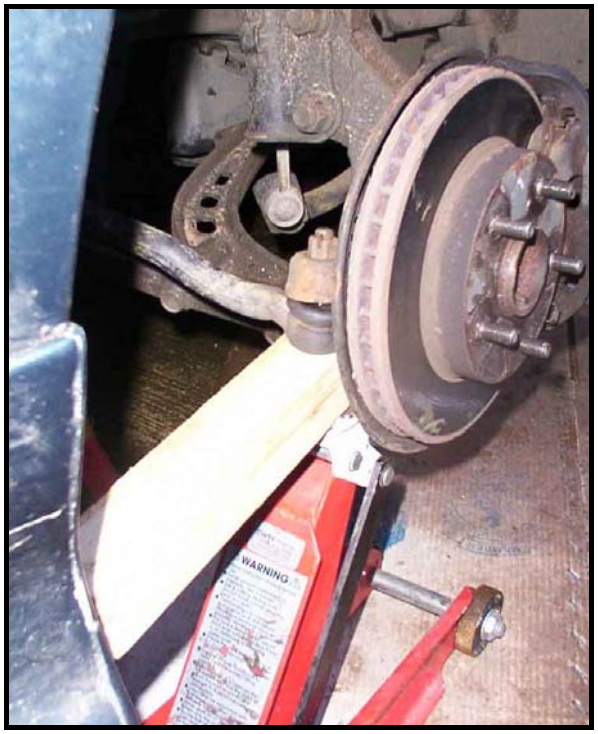
Bending over the tabs proved one of the more difficult jobs, as access was very restricted. Turning of the steering wheel, long screwdrivers etc were needed to get a satisfactory result. I'll leave that bit to your imagination. Ensure the lock nut is threaded onto the new rod.

Now thread on the outer ball joint rod, remembering the number of turns it took to remove. Once that's done, the ball joint can be refitted to the wheel hub. If preferred, this can be done prior to fitting the rubber gaiter. This way you can re-measure the overall length of the track rod assy and compare it to the figure you had before dismantling. In my case, I was going to get it professionally tracked at a garage not very far away and opted to leave it roughly set.

Align the track rod end into the wheel hub but take this opportunity to move the split pinhole to a position where it is accessible when fully re-assembled. I used a small screwdriver.



Now using the technique of the jack under the track rod end, tighten the 17mm nut to the correct torque and until the hole aligns with the castellated nut splines.



Finally, tighten the 19mm lock nut up against the track rod end. Check the whole area for loose tools, rag etc and go over what you've disturbed ensuring all is tightened back up correctly.

All this leaves is for the wheel to be refitted and a trip to a local garage that can carry out the correct tracking for you.