

Steering Gaiter Replacement (LH side)

Citroen XM Series 2, 2.0 Turbo Manual RHD RP6785

BACKGROUND

Changing a steering gaiter sounds easy doesn't it. Don't you believe it!
Now's the time to try gluing it back together.

ATTEMPT ONE – DON'T BOTHER WITH THIS

The left hand gaiter is on the wrong side of the arm that attaches to the ram so it's not a case of removing the track rod end and sliding a new one on. I bought a nice stretchy rubber one from Motorquip hoping to pull it over the ram arm. I got a rubber wine bottle cork, just the right length, drilled a 1/2 " hole in it and pushed it over the threaded ram arm. Lubricating the cork and the gaiter with P80 (free sample from <http://www.ipcol.com>) I managed to pull the gaiter into place. Fitting it onto the rack was even more difficult because you can't get your hand in. Eventually it was all on and cabled tied into place..... Until I put right lock on then it pulled off. After a day playing around with jubilee clips, glue and circlips I gave up and ordered another pair from the local Citroen specialist (3 time the price but bound to be better). They turned out to be identical down to the mould number so I didn't bother trying.



Aftermarket rubber gaiter (left) is too stiff and too short to stay on and also won't close up short enough. Genuine Citroen gaiter (right) is plastic, and has slightly offset convolutions to allow it to close up short. It doesn't need any clips to hold it in place but can't be stretched over the arm.

REMOVING THE RACK

If you've got to change this gaiter then there is only one option, remove the rack assembly, take off the RH tie rod and the pinion and pull the rack through the housing. Before you do this though buy the bits from Citroen and check them carefully. There are two versions of tie rods, type A and B. Type A is 18mm and B is 22mm. Citroen have no idea which is fitted to your car and don't even know what the dimension refers to. With hindsight it's clearly the tie rod diameter because I got the wrong ones. Fortunately the LH gaiter is the same and that's the only one I really needed.



LH boot old (left) and new (right) I'm really not sure that one is diameter 22mm and the other 18mm but since the old one was undamaged and the car was in bits I put the old one back.

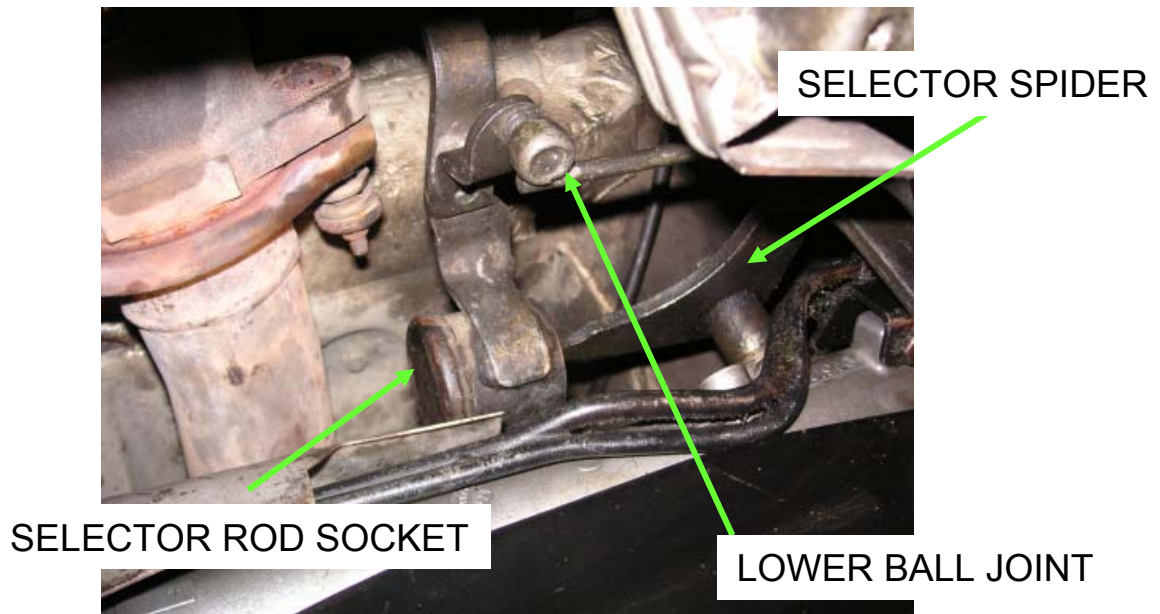


Same goes for the RH gaiter fortunately both of these can be replaced without removing the rack assembly.

Removing the rack assembly is not well documented so here not what I did but what I recommend:-

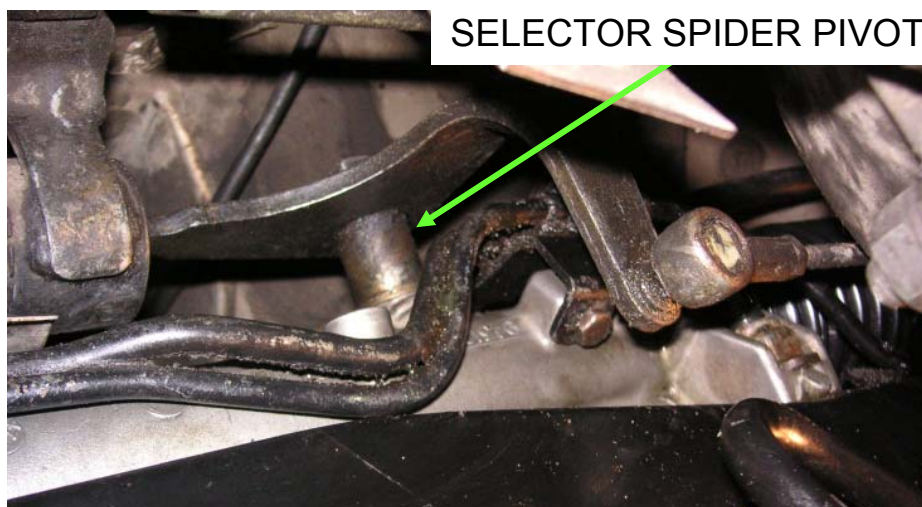
Don't do anything in the footwell.

Under the car remove the lower ball joint from the gear selector rod by twisting it with pliers.

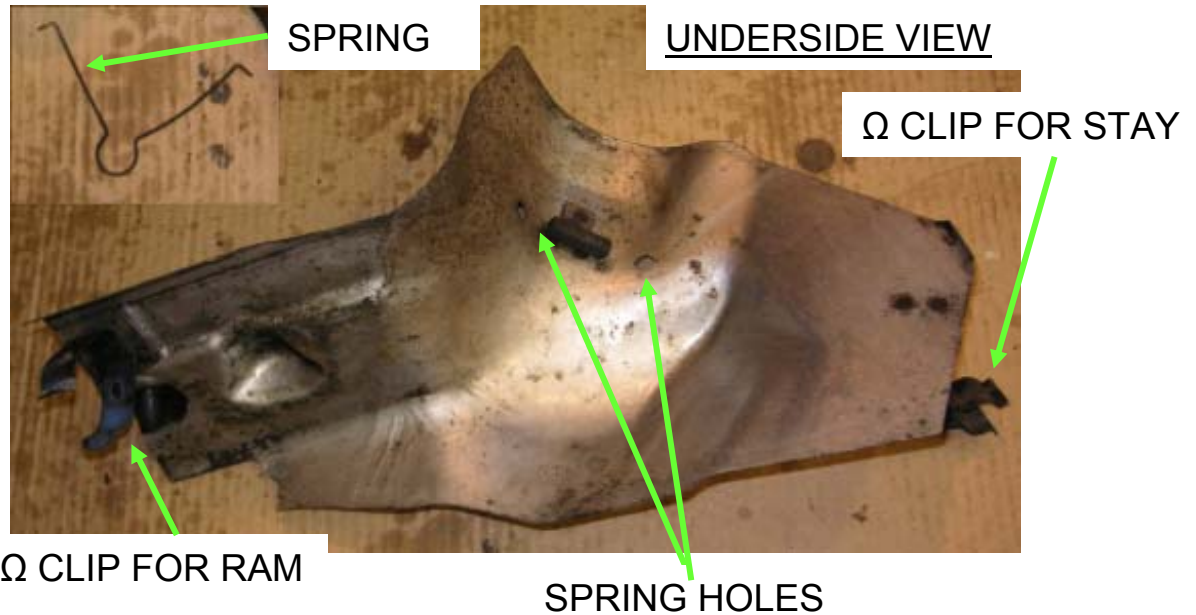


This allows the selector rod socket to be moved off the rubber ball of the spider.

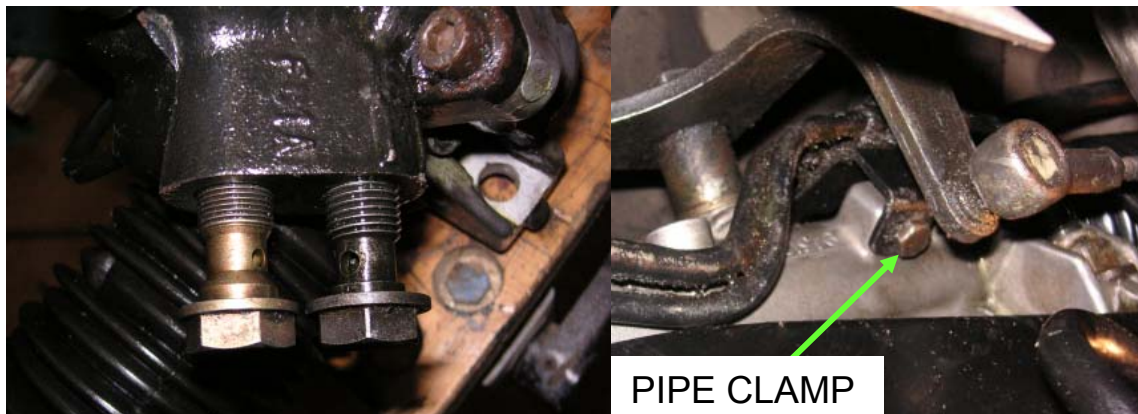
Remove the selector spider which is bolted into the top of the steering rack assembly. It has a long M10 setscrew and a mushroom washer on top, a loose bush through the middle and a thrust washer underneath before bolting into the rack casting.



Now that's out of the way the steering rack shield can be removed. This sits on the rack and is held on with two spring omega clips and a separate spring round the the pinion housing. The spring round the pinion housing just has the ends of its legs poking through 6mm holes in the cover. Push one in with a screwdriver and the spring will flick off to be found later.



Now remove the two banjo bolts that hold the hydraulic pipes into the pinion housing. They are different and not interchangeable so don't be concerned as you remove them. You did depressurise the system didn't you? If not get out from under the car first!



Also remove the M6 bolt that holds the pipe clamp.

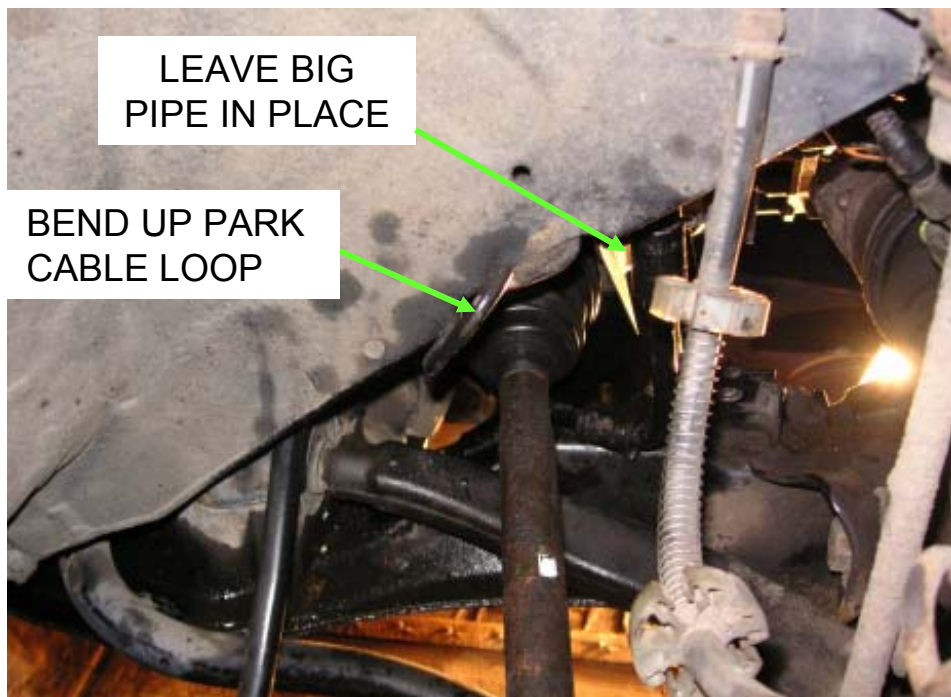
Next you need to remove the steering column flex joint.

You can't get the rack out if you leave any of it in place so just undo the splined clamp pinch bolt and leave the rubber bit intact on the column. Try and mark it if you like but my attempt failed due to access and visibility and I had to move the steering wheel afterwards anyway!

Now's the time to remove the tie rod end ball joints. Easy if you've got a tool.

All that's left to do is undo the two big bolts that hold the rack housing to the subframe and remove the rack, if only.....

I've seen it suggested that removing the exhaust will help but I can't see it myself, the turbo would help but didn't seem practical. I removed the RH park brake cable and bent up the metal loop that guides it under the wheel arch. You also have to remove the RH wheel arch stay that the rack shield and ABS plug are mounted on. Removing the hydraulic pipe clamp doesn't help.



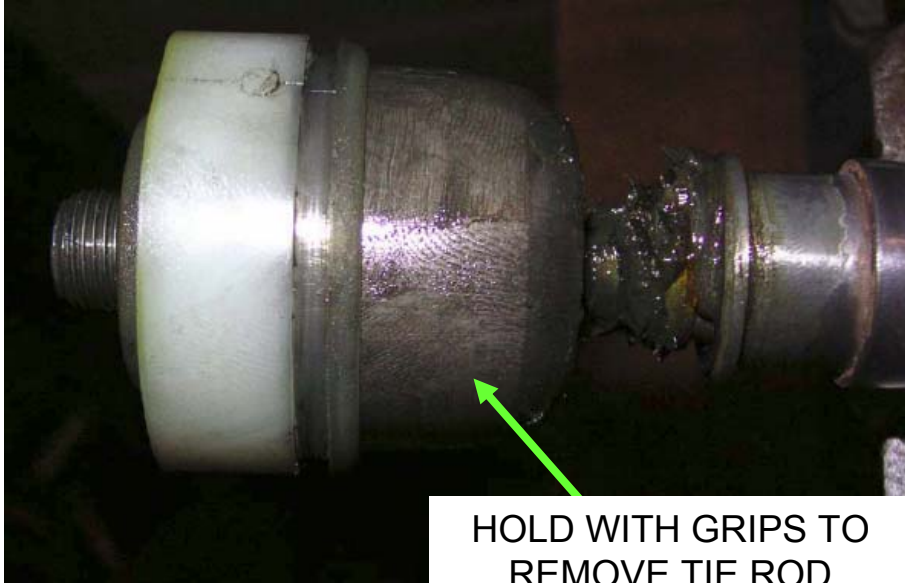
After much cursing and a lot of help the rack assembly complete with tie rods and ram attached can be manipulated out from the RH side of the car. It can honestly.....

Don't forget to collect up the penny washers shims with strange markings that the rack sits on and the rectangular washers and square nut that bolt it down. Oh and the spring from the tin cover if you haven't already got it.

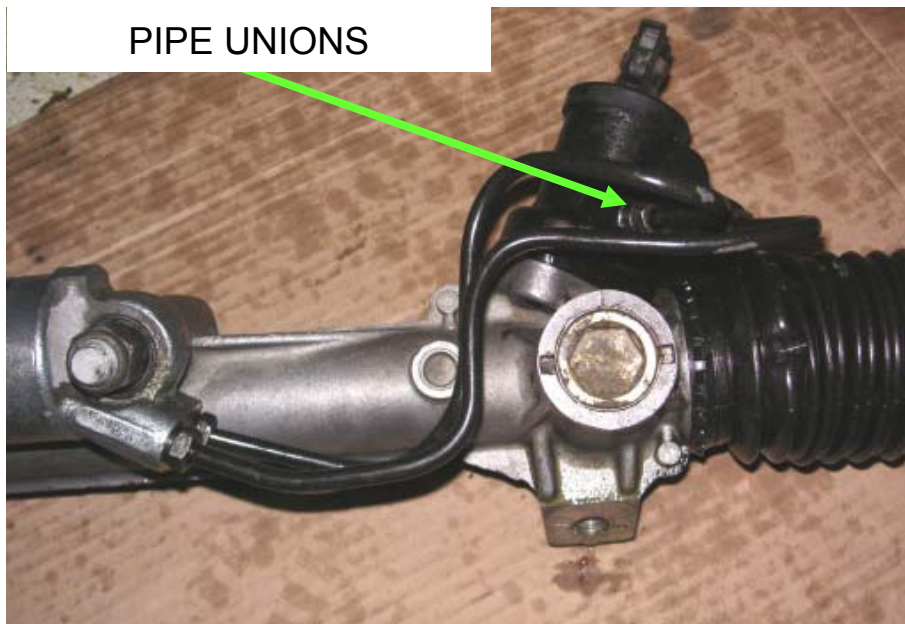
DISASSEMBLY

Now the rack assembly is on the bench give it a good clean prior to stripping.

Pull back the RH gaiter to get access to the tie rod inner ball joint. Put the rack assembly on full lock and clamp the rack in soft jaws. Mole grips on the ball joint will remove the tie rod (RH thread). It wasn't very tight.



Disconnect the two pipes from the pinion housing. They are standard flares and don't require any rubber seals.



Slacken and remove the two cap heads that hold the pinion housing in place. The two flats on the pinion spline don't reference the flexi joint so you don't need to mark it.

Remove the housing then pull the rack from the main housing. The rack is preloaded behind the pinion but there is no need to disturb it.



RACK PRELOAD IS
STAKED IN PLACE



THE RAM ARM THAT
CAUSES ALL THE GRIEF

Once the rack is out, clean and grease it and fit the new boot.

Push the rack back in the housing and refit the pinion housing. You might need a hand to prise the rack against the preload spring to enable the pinion to engage but it's not difficult.

The pinion housing wasn't sealed or gasketed but I put a smear of silicone on for luck.

The rest of the rebuild is simple. If you've got the correct boot and gaiter for the tie rods it's probably worth changing them now?



DESPITE APPEARANCES THE RH GAITER IS ONE PIECE.

RE-FITTING

To protect the LH gaiter wrap it in newspaper before putting the rack assembly back in the car. It will need to be ripped off from the end though so don't be generous with the tape.

Make sure the clamp bracket that holds the feed and return pipes doesn't rip into the boot, it's sharp. Maybe a small piece of cardboard will protect it?

Before bolting the rack back down the pinion spline needs engaging with the flex coupling, here's where you should aim to get the steering wheel aligned, I failed.

After getting the rack assembly refitted and the pipes reconnected run the engine and cycle the rack left to right to bleed it through. Holding it on full lock will apply full pressure and check for sealing of the banjos which don't have any copper washers on. When you're happy it's leak free refit the rack shield before you refit the gear selector spider.

The rest of the assembly is straightforward but for sure the park brake cable will have come off the equaliser so that will be the final job underneath.

Unless you've been very lucky or careful, the first time you drive the car the steering wheel will be out of alignment by one spline tooth. Moving it round is easy but it does mean removing the airbag. Airbag removal is documented elsewhere but basically this is what you do:

Open the drivers electric window and wind the seat back. (You want to be as far away from the airbag as possible and you can't move these with the battery disconnected).

Disconnect the battery then go and make a cup of tea. (10 minutes I read somewhere). On your return remove the two Torx bolts in the back of the airbag, pull it forward and remove the connector. Put it somewhere safe....

Undo the big nut in the centre of the wheel then **before** removing it disconnect the wires for the cable reel. I didn't do this, the wheel came off with a jerk and the reel exploded, it took a couple of hours to reassemble.

Move the wheel round and reassemble. Finally reconnect the battery then turn the ignition on through the open window and check the airbag light. I'm sure it will be fine but better be safe!

WARNING

This document, like most on the internet is unchecked. It could be complete rubbish and may be dangerous or illegal. Acting on it without any understanding of what you are doing would be foolish. Do it at you own risk.....