

Tech article, January, 2010

Well, welcome to the new year. The MG club has a new tech director this year but I will continue writing my articles. I will not guarantee that I will get one out every month but I will try my best. By now, most of our LBCs are resting quietly in a nice warm garage. Some are snuggled up under their covers; some may even be in Snugglies. As long as they do not sit out in the cold, wet weather we have been having, they will be fine.

Some of you may actually drive your cars during the winter months. That is like making the mule plow the field all year long; let them rest. Hopefully you put Sta-Bil in the gas and if not, do it now and then drive the car a few miles to get treated gas in the carbs. Also top up the gas tank while you are out.

The topic for this month shall be drive shafts and u-joints. On MGBs, the drive shaft is easy to remove; four bolts at either end and it will come out the bottom. On Midgets, up to the 1500s, you need only remove the rear four bolts and pull the shaft out of the trans. Just jack the rear end up as high as you can. This will keep the fluid from running out of the trans and onto you and the floor. If you have a TR4A thru TR6, you have to remove either the trans or differential.

Fortunately for the Triumph owners, the TRs have bigger joints than MGs and do not go out as often. MGs use a small u-joint and they are notorious for wearing them out. So, how do you know if yours are bad? Place the car on level ground and engage 1st gear. Let the clutch out rapidly then push it in and go for reverse. Let the clutch out rapidly again and listen for a very metallic clank. Only one. Go back and forth a few times listening for the clank. If it is there then so are worn u-joints.

There is no great secret or tricks to installing your own u-joints. You will need a vice, large hammer (I prefer a copper one), needle nose pliers, small tipped screw driver, heavy grease, a socket (six or 12 points), small socket or something to install the grease fitting when done. If I mention any other tools later, just add them to the list.

Before you can install a u-joint, you have to remove the old ones. I will assume here that you have new ones in hand. First, most drive shafts are two-piece units. There are two arrows, one on each part, that show how to realign the shaft after putting the joints in. If you cannot find the arrows on the sliding end, then just clean an area and make your own. It is important that the shaft go back together in the correct alignment. It can cause a bad vibration. Now, make the shaft into two pieces.

Start on either end. First, remove the circlips holding the u-joint cups in. There are four for each u-joint. Some have small holes for circlip removers and others have bigger holes that the pliers will fit. Small needle nose will fit just fine. Pinch

the holes together and slide the little screwdriver under the circlip. Work it all the way out but watch out for the spring or pop they can have. Now the cups will come out.

Place the end of the shaft in the vice, but not very tight, with the flange hanging over the edge. Have a cup in the flange pointing up. Knock the flange with your copper hammer until you see the cup rise out of the hole it sits in. Continue hitting it until the cup is all the way out. Turn the drive shaft over and remove the other cup from the flange.

Once both cups are out, loosen the vice and place the ends of the old u-joint across the vice jaws so that the rest of the drive shaft will go between the vice jaws. Now tap down on the drive shaft as close to the cups as you can. **DO NOT** hit the tubing of the shaft or it will dent.

If you want, support the other end of the shaft so that it lies level, and then use a socket big enough for the cup to fit into. Place it over the cup and beat this down. It will force the cup up and out of the drive shaft. It should come all the way out. Turn the shaft over and repeat. You should now have the u-joint out and the holes in the shaft and flange cleaned out. Open the new u-joint and carefully take the four cups off the cross shafts.

Take some of the heavy grease and fill the cups over 1/2 full with it. Smooth out the inside making very sure no needle bearings were moved while filling. If ones falls, just put it back. They should stand up inside the cup and the heavy grease keeps them there. Put one cup over a hole in the drive shaft and tap the cup in most of the way. Take the new cross shaft from the new joint and fit it inside the drive shaft. If it has a grease fitting, pay strict attention to the correct placement of the cross shaft. There should be a notch in the end of the drive shaft where the grease fitting will fit when screwed into the joint assembly.

If you have that figured out, then put the cross shaft into the drive shaft and slide it into the cup, all the way. Now take the smaller socket, one that fits the cup, and tap it down on top of the cup. Turn the drive shaft over and place the next cup onto the opposite side of the cross shaft. Gently tap it down also until it all fits together, after you tap in the first cup, you can install one of the new circlips in the drive shaft behind the cup. Drive the other cup down until it will not go further. Install another circlip there.

All you need to do now is to put the other two cups into the flange with the bolt holes in it. Once the cups are in, install the retainer circlips into each end of the flange. If you have four cups and four circlips installed and the drive shaft still has flex to it, you are done at that end. Get the other piece and repeat the steps for the other end. You have just successfully replaced your u-joints. By the time you are putting the last cup into the drive shaft; grease should be coming out the hole for the fitting. Put the grease fitting into the u-joint. The assembly should need no grease right now if you filled each cup beforehand.

Put the drive shaft back under the car and tighten the bolts as tight as you can. Now, test for the clunk again. If you still here a clunk, not a clank, then you have another problem. Wait for another tech article for the possible causes of it. That is all there is. Of course, you should use new nuts on the drive shaft bolts and maybe new grease instead of used grease. See yall on the road. Barry