

Gearbox trouble with the Factory MGBGT V8 box



External view of the welded crack in the gearbox casing

Mike Clemas posted a query on the V8BB saying “just been under my Factory V8 as it’s had a very slight oil leak from the gearbox for a while. Turns out it’s got a hairline crack in the casing not far from the drain plug. Has anyone had any success welding cracks, or is the end of the gearbox in sight? I know the LT77 is a better option (and I have one sat under the bench) but I really like the 4speed gearbox with overdrive, just a little more interesting to drive in my opinion.”

Nick Gray responded saying “I have a gearbox casing that has been welded in what sounds like the same position. I understand this is a common crack caused by shock loading the reverse gear (putting the car in reverse before it has lost all forward momentum) causing the reverse gear shaft support to fracture at the base. I bought the gearbox for breaking which needed a lay shaft, but understand from the previous owner it been working well. The downside is that unless the welded repair is spot on you suffer a noisy reverse gear due to slight shaft misalignment. So yes, welding is possible but it is a tricky job to get exactly right - notwithstanding that welding castings is tricky in itself as thermal stresses can crack the weld as it cools.”

Graeme Don mentioned the topic had been raised in the popular series of MGBGT V8 rebuild reports from Barrie Jones in 2010/2011 published on the V8 website. See Report 15 at:
www.v8register.net/subpages/damask0450rebuildproject.htm

With this feedback, Mike Clemas felt “it looks like it might be worth removing and stripping my gearbox and then getting the crack repaired. Maybe I will look into adding a bit of strength to the support inside with some gussets to spread the load a bit. Hopefully I have spotted the crack just in time before major damage? Will drop the oil next and take the side panel off to have an inspection inside - hopefully no missing teeth!”



Internal view of the casing - the repair to the reverse shaft bracket is clearly visible as are weld fillets on the left hand side reattaching the bracket to the casing

Nick Gray offered to provide some photos which would help illustrate the welded repair and the reverse gear shaft support and several weeks later he sent in a set of photos saying “apologies for the late reply, I haven’t had much time to get out to the workshop this month and since it is not heated I have also lacked motivation to do so! So with a brighter and warmer day today, I have taken the following pictures of the remains of the gearbox casing which clearly show the weld repairing the reverse shaft support from the outside of the box.

I have also taken a few photos showing the **interior of the gearbox** and you can see the rather messy weld on the left hand side of the support where the bracket has been reattached to the case. You can also make out a bit of the weld repairing the crack in the casing the reverse gear support caused when it broke. I think this was a fairly poor repair - the bracket is a few degrees off the perpendicular to the case and reverse shaft that ran through it which probably explains why the chap

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who sold it to me had opted to switch to a five speed conversion whilst happy to warrant that the gearbox "worked". However the box did have a perfect layshaft, first gear and internals which, when combined with the perfect casing of another broken gearbox I found, has given me a very good spare which is in my V8 at the moment. The second box had damage to the first gear and layshaft - a typical failure of these boxes I understand. I have added some photos of the smashed lay gear and first gear from that box which may be of interest for another article - although the damage was much more extensive due to the box digesting the broken gear teeth.

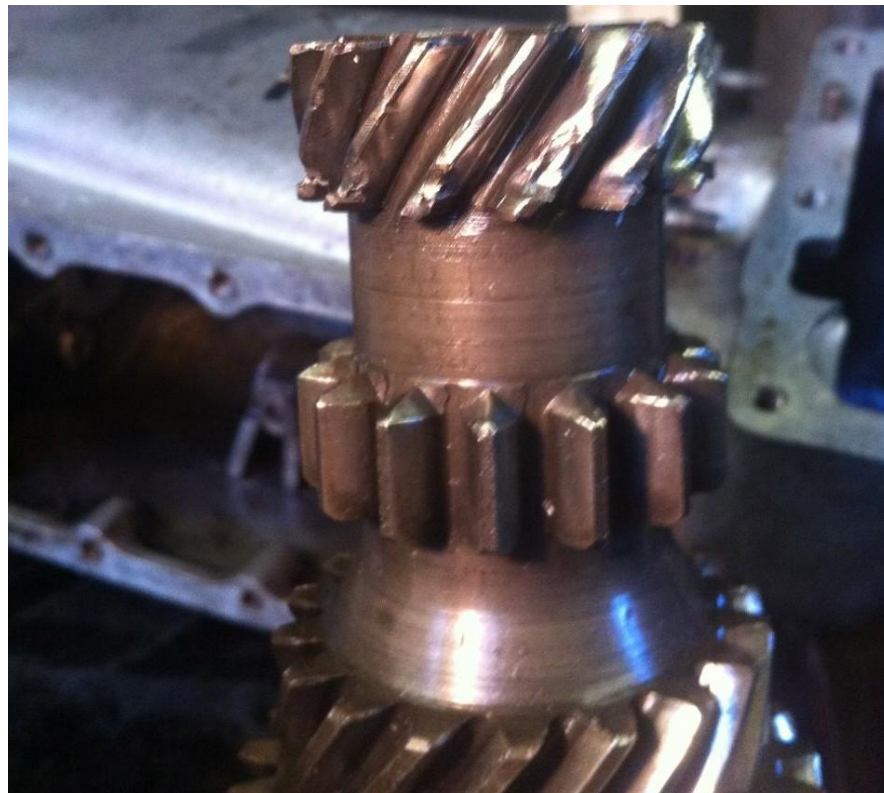


A few teeth missing from first gear - the probable result of V8 torque and too many wheels spins from stationary

The gearbox I have had rebuilt from the remains is a delight to drive - my only disappointment is a slight whine, the cause of which I have had great difficulty tracking down - the rebuilt box had all bearings, synchro rings and other parts replaced with new parts. Having now spoken with a few people I understand that the gears in any box 'get used to one another' and the meshing faces of the gears and loaded parts of the shafts undergo a bit of work hardening. Such is the tolerance of gearboxes of this era, that when parts from two different boxes are combined it takes a while for the meshing faces of the gears to get 'used to one another'. I was initially very sceptical of this explanation but after 2,000 miles with the new box the whine is slowly fading - or perhaps I am becoming used to it! I have felt confident to give the rebuilt box a fairly harsh time and it has proved itself

- the most noticeable improvement is the accuracy and feel of the gear shift which is much tighter.

My next task is to refurbish the original gearbox removed from the car which had a very noisy layshaft and I expect to find worn bearings when I get around to stripping it in the spring. It has covered 80,000 odd miles from the history I have of the car, so has probably had a good innings for a V8 box? I will then keep it as a spare - especially given the time and expense it took to find suitable bits to knock together the 'new' gearbox!



Inevitably the lay shaft in the second gearbox had also been damaged beyond repair - a pity as these are becoming next to impossible to replace