



Weakest point in the Factory V8 drive train?

A member mentioned he had always wanted to drive his MGBGTV8 a little harder but was aware the half shafts and the gearbox are known weaknesses so he had always resisted full bore starts in the past. In a V8 Bulletin Board posting he asked "what component in the gearbox is the most likely to fail and would the gearbox be able to take repeated full bore starts in first gear?" He felt the answer would be either to have the gearbox internals uprated or to just bin the Factory gearbox completely and fit an uprated gearbox instead. He sought fellow members' views.

Mike Breedon, who has a subtly upgraded Factory MGBGTV8, felt the "gearbox will suffer from hard use so fitting an uprated gearbox will be essential. That would be best done before ruining a good standard Factory gearbox - they are too valuable to break with brutal use with repeated full bore starts in first gear. If you want to drive an MGBGTV8 as hard as suggested then I think the Factory gearbox will sooner or later give out. Rather than damage a good Factory box, possibly even the casing, I feel it would be best to **think in terms of an uprated gearbox** by replacing the Factory box with something stronger and selling the Factory box to a fellow V8 enthusiast who is in need of a good original gearbox".

Victor Smith felt that if hard use is likely then it would be best to think in terms of an uprated gearbox by replacing the Factory box with something stronger. A good starting point for considering uprated gearboxes would be to read the first chapter of the late Roger Williams' excellent book "How to give your MGB V8 power". The chapter "What car, engine and gearbox?" takes you through what you should consider and options depending on your choice of engine power - moderate up to 220bhp, medium (200 to about 250bhp) and high over 250bhp. "What gearbox?" is on page 19 and Roger covers alternative choices and getting the box to fit.

One development since the last edition of the book was published has been the availability of a **replacement Mazda gearbox for the MGBGTV8 from a company called Vitesse**. They had invested in producing a bellhousing to fit the Mazda gearbox to the V8 engine together with extensive and tough testing of the replacement Mazda box on a 4.0 litre MGBGT. [Details](#) of the Vitesse Mazda gearbox were released on the V8 Website in 2017.

Mike Breedon, a longstanding V8 member who has been involved in racing MGBGTV8s for over 20 years, said "I quite agree that in general the V8 gearbox is the weakest link in the drive train

of a Factory MGBGTV8. I have my own experience of stripping a tooth from third gear simply by hitting a pot hole as I let the clutch out at the same time as I changed up from 2nd to third even with "only" the power from the standard Factory built V8 engine. Later I did modifications to my 1973 Factory MGBGTV8 to match the BCV8 Championship Standard Class V8 race regulations so I could race in that championship from 1984 to 1997. With a limited amount of work allowed on the engine by the championship regulations, I swapped the original Factory V8 for a Rover Vitesse 3.5 engine with a calmer cam and simply went to straight cut gears in the standard gearbox casing together with a rebuild of the overdrive unit with special settings and valves to suit racing conditions. In all races and road use, including 2,900 miles in 9 days on a MSA European Classic Rally, I never had a problem with the gearbox, overdrive or half shafts. That rally took in race circuits along the way that included Spa Francorchamps, the old Nurembergring, foreign hill climb circuits, Saltzburgring, banked ovals and various very quick runs across country lanes.

If however the engine is taken to a much more powerful tune then this does introduce more power than the original drive train was ever designed to withstand and people have had various problems along the way depending on the power output being targeted. However, even the Club's BCV8 Championship Class D full race cars are known to run with the **Cosworth T5 gearbox** which has proved both reliable and cost effective. Half shafts are occasionally a problem with many seeking a heavier "beefed up" version, but in general until you hit a kerb or downshift at the wrong time they are very reliable".

Mike Breedon later noted "the **T5 gearbox is now getting harder to find** and by all accounts so is access to some spares for it, so that could also be a problem for anyone choosing a T5 upgrade. Having continued to use my MGBGTV8 with the same Rover 3.5 litre engine tuned to BCV8 standard class spec but now purely as a road car, I initially retained the straight cut gears simply because they are stronger than standard V8 gears and the condition of the roads around my rural village are appalling! However, due to the miles covered it eventually became necessary to have the gearbox overhauled in 2016 when Malcolm Beer recommended fitting a set of MGB gears which were considerably cheaper than replacement straight cut gears and much more accessible "off the shelf" so far with no problems in use.

The downside for some is that the **straight cut gears are now getting harder to come by**, they are expensive and they are obviously noisier in operation than standard gears. I am not sure if the "new" Mazda gearbox put up as a replacement option for a V8 would stand the aggressive starts in first gear. I have never tried one nor heard any reports about its "in life" operation when fitted to an MGBGTV8.

Regarding the half shafts failing, in all that I have done with my MGBGTV8 since April 1984 to date, I have never had a half shaft let go, however I was always advised that you should run a V8 to get it warm before being "aggressive" with either gear changes or fast full power starts. Maybe I have been too "engineering minded" delicate" all these years to prevent any damage but I think I have still enjoyed flooring the throttle on a few occasions with no adverse effects!"

How to give your MGB V8 Power by Roger Williams, 221 pages and published by Veloce Publishing. See our review of this useful book. [Book review](#)

Replacement Mazda gearbox for the MGBGTV8, now available from Vitesse. See our news item. [News & Articles](#)