Miscellaneous

Last updated 02-Jan-2018

If you find the information here useful, you may like to make a small contribution to help offset the costs of providing it. Thank you.

Full-length Ramps MOT Preparation Nut Screws Washers and Bolts Speedos Terminology Workshop Tools What Year?
Links: General Body Brakes Clutch Cooling Electrics Engine Fuel Gearbox Heater Ignition Propshaft Rear Axle Steering and Suspension Wheels
The sectioned MGB at the British Motor Museum, Gaydon

Full-length Ramps

Servicing Bee and Vee was a right pain in the new house this year as I'm not allowed to use ramps, axle stands or jacks on this drive. So all the raising had to be done either half in and half out of the garage, the short ramps slide on the smooth painted garage floor so can only be used on the rougher section near the entrance, but that's narrower, and I had to keep moving the cars to get first one end up then the other.

A pal of a pal was getting rid of a nearly new pair of full-length ramps (as he now has a four-post lift!) and they were offered to me for £500. As they were around £1700 new that was something of a bargain. However as they were over a 200 miles round trip away in Hertford it wasn't really feasible to go down just to have a look at the size and try and work out if they would fit in my garage, so pal took loads of pictures and measurements. I pondered long and hard over those, decided they would fit, so the next question was how to get them here. Son-in-law has a van but they were just too long to fit in that, so it meant hiring one. However we were planning on moving some furniture down to my son near St Neots, so a 'two birds with one stone' trip was planned. All went well until we got down to Hertford and I saw just how big all the bits were - gulp! Too late to go back now though, so we loaded them up.

Once home I could take more detailed measurements, and realised that to assemble the two ramps and their lifting tube I either needed more width than I'd bargained for, or several beefy blokes to assemble them outside, then carry them in at an angle to get them through the door! However being American they were built for their monster vehicles, and the ramps were intended to be positioned further apart on the lifting tube than I needed for the MGBs. Even positioned as close together as they would go the centre of the ramps is still wider then the centre of the tyres. However it allowed me to chop a few inches off each end of the lifting tube, and I could assemble them in the garage. Each ramp is in two sections so the length can be adjusted as well, but even one of the sections was a struggle to move on my own, and I couldn't imagine being able to move all four of them plus assemble them. So a few days later son-in-law came round and we got them in and put them together.

The lifting tube has to be able to pivot up to allow the jack under, and down to allow the vehicle to clear them as it is driven on and off. But unless the ramps were very precisely positioned in all three orientations the tube could be very stiff to turn. But R-ing TFM I discovered the tube should have been greased where it passes through the larger tubes under the ramps! So this time single-handedly I wiggle the one ramp off the tube by dragging each end sideways a bit at a time, then I can pull the tube out of the other ramp. Grease that end, reinsert, grease the other end, then wiggle the first ramp back onto the tube again. Now the tube pivots really easily and is much less dependant on precise orientation.

The ramps are lowered both ends when not in use so I can park one of the cars on them, and that 'raises' (ho ho) a couple more issues. Because the entry end is now about 4" off the ground the manual describes how to make a pair of pre-ramps - easy enough. What's a bit more of an issue is lifting the 'blunt' end of each double-length ramp while you position the support tower underneath it - no easy task. I can get a jack under the end (sides won't work as they are too close to the ground) and raise it far enough to get blocks under, then move the jack round to the side away from where the tower fits while I raise it the rest of the way, but that is a bit of a faff. So various Wallace and Gromit devices are being discussed, one of the maddest being a rope tied to the back of the car positioned just in front of the ramps, run over a pulley on a beam, and down to a hook at the end of the ramp - drive car forward, lift ramp, slide tower under. Split the rope and do both ramps at the same time :o) But in the end I settle for a block and tackle attached to a cross-beam conveniently near that end of the ramps.

Another slight inconvenience is that my relatively compact jack (I tour with it in the boot of either car) won't raise the lifting tube far enough in one go to lower the swinging legs and lock them in position. I have to jack it part way, then put axle stands under the tube, then slide a block made out of timbers with a sheet steel top under to stand the jack on while I raise it the rest of the way. I've looked at alternative jacks but to get one capable of lifting all the way in one go, but low enough profile to fit under the tube when lowered, is way too expensive for the very occasional use it would get.

High enough to get under and work with ease, but not so high I can't reach things when lying on my back.

I can only envy Herb Adler his space and 2-post lift ... I think! While Vee was at the paintshop I was able to use a 2-post lift to fit the cross-member and exhaust, amongst other things, and it was really hard work on the neck with my head bent back all the time, and on the arms. I know I'm also reaching up with my lower ramps, but at least I'm lying down and can have a proper rest every now and again, instead of having to stand there all the time.

MOT Preparation (applicable in the UK, other countries have their own tests, standards and limits)

January 2018: This months Enjoying MG contains a copy of a letter from the Department of Transport to the Beach Buggy Club who were querying historic status as applied to their heavily modified cars. The reply includes: "I should say that we are no longer proposing to use the DVLA's 8 point rule for determining whether a vehicle should be designated as 'substantially changed'. We are working on an alternative version in discusion with the Federation of British Historic Vehicle Clubs and other stakeholders. We hope to issue final guidance soon. Any VHI (vehicle of historic interest) that is substantially changed will merely be required to have an MOT test". So on the face of it vehicles 40 or more years old will not require re-registration or Q-plates no matter how extensively modified. Also further indication that VHIs are not automatically MOT-exempt as some have said.

December 2017: The document on Vehicles of Historical Interest (VHI): Substantial Change Guidance has been amended, but surprisingly it contains no date or issue information. The second half of page 1 is headed **The criteria for substantial change** and contains the following:

> A vehicle will be considered substantially changed if the technical characteristics of the main components have changed in the previous 30 years, unless the changes fall into specific categories. These main components for vehicles, other than motorcycles2, are:
>
> - **Chassis** (replacements of the same pattern as the original are not considered a substantial change) **or Monocoque bodyshell** including any sub-frames (replacements of the same pattern as the original are not considered a substantial change);
> - **Axles and running gear** - alteration of the type and or method of suspension or steering constitutes a substantial change;
> - **Engine** - alternative cubic capacities of the same basic engine and alternative original equipment engines are not considered a substantial change. If the number of cylinders in an engine is different from the original, it is likely to be, but not necessarily, the case that the current engine is not alternative original equipment.

Bodies look to be OK, as even changes from GT to roadster (and reverse?) will still be using the originally available types.

Axles and particularly suspension will catch many out.

But V8 conversions look likely to be the biggest problem, and possibly even over-bores as neither of these were 'alternative original equipment'.

See also the latest information from the FBHVC.

October 2017: Outcomes regarding the proposal to extend the MOT exemption for historic vehicles to be the same as for road tax i.e. a rolling 40 years were published in September, to be implemented from 20th May 2018. This is despite a majority of respondents to the Government's survey being against it. Legislation is still being drafted but the consultation process states that 'substantially altered' (their words) vehicles will still need annual testing. Guidance on what constitutes 'substantially altered' is expected in November 2017. The existing guidance document (updated in December, see above) confusingly contains information on "The process for vehicle keepers declaring an old vehicle is exempt from testing.", most of which relates to when a vehicle first becomes exempt from road tax, not where it already is exempt and will now become exempt from testing. However there is a section on online renewal, which only applies to vehicles that are already in the Historic Vehicle tax-free class, as follows:

> "Where the vehicle keeper is re-licensing their vehicle on-line it is intended that an additional question be asked whether the vehicle has a current MOT and the vehicle keeper will be required to declare that their vehicle has not been substantially changed since 1988. Appropriate safeguards will be in place that will prevent a vehicle keeper from declaring the vehicle is over 40 years of age and progressing to the next stage of the licensing process before first declaring or not as to whether their vehicle has been substantially changed."

I can see the point about making a declaration that the vehicle has been substantially altered, as then it will ensure that an MOT is already in place before renewing the road tax. But I can't see the point in asking if the vehicle has a current MOT. It doesn't currently, it simply checks its own database before it will proceed. If you declare it HASN'T been substantially altered, then all it needs to do is NOT check to see if there is an MOT in place.

The Government Response to the consultation Para 13 Page 8 states:

> The option for owners to submit their vehicles to a voluntary MOT test will remain and they will still, like all vehicle owners, need to ensure that they meet the legal requirement of keeping their vehicle in a roadworthy condition at all time (sic). Currently around 6% of the owners of pre-1960 vehicles submit their vehicles to voluntary testing and we would anticipate that many vehicle owners will service their vehicles regularly.

For the sake of around £40 per year most of us would have to be mad not to continue with voluntary testing, for peace of mind as well as in the event of any 'discussions' with Police or Insurance company. It's a £2500 fine and 3 penalty points for using a vehicle in a dangerous condition. It's true that an MOT only shows that the vehicle met the requirements at the time of the test, i.e. not one day let alone 11 months later, but it is still better to be able to show one has made the effort to seek qualified opinion.

September 2015: I've only just become aware of a proposal to extend the current exemption from needed an MOT for cars built before 1960, to cars built 40 or even 30 years ago following an EU rule-change. What is surprising is that the government website for discussion of these proposals **closed** nearly a year ago. The results of formal consultation are to be published in 'the second half of 2015', to be available for comment (*February 2016:* No sign of them yet).

> Classic Cars For Sale article
> FBHVC statement
> DFT statement
> DFT background statement

Brake pipe corrosion is probably the biggest single risk given that most potentially exempt British classics only have single circuit brakes. I was aware of one of the V8 pipes corroding and had been keeping an eye on it, when I got an advisory. That spurred me into changing it, and while carefully removing it trying to keep the shape as near as possible to use as a former for the replacement, it fractured at the point of corrosion.

It's one thing if we kill ourselves through inadequate maintenance, quite another if we kill a child while emergency braking/steering trying to avoid it. If we aren't prepared to spend £35 per year on what is actually a not very stringent safety check we shouldn't have the cars. The statistics may be on our side, but that's no comfort to the family of an innocent victim. Witness calls for airshows to be banned following Shoreham, despite the very stringent checks and controls on aircraft, particularly historic and display aircraft.

The proposals are said to be in part connected with an expected significant revamp of the MOT to cover electronic safety systems in much more detail. But surely the very fact our cars don't have those means that those tests simply wouldn't be applied. And whilst visible corrosion is very rarely seen on cars built in the last 20 years, surely structural corrosion, brake pipe damage, steering and suspension component wear, leaks from brake and fuel systems, seat-belts, wipers, lights, horn and tyres and still going to be checked on modern cars

Updated March 2012 by Michael Beswick: April 1st sees the introduction of the recent MOT changes. Up to then these items are advisories. This is not exhaustive but covers those things likely to concern classic MG owners or perhaps owners of classic MGs:

- Hazards - not obligatory prior to 1/4/80, but if fitted will be tested and must work
- Steering lock is only applicable post 1/9/2001
- Dust covers - apart from existing steering rack, those ones on the bottom of the kingpin. They need to prevent the ingress of water and muck not prevent the egress of grease.....but could be contentious
- Coil springs - slight change - they fail if they do not locate properly when the vehicle suspension is put back under load, of if their function is impaired
- Engine mounts
- Drivers seat must move and lock, though not in every position!
- Reg plate - same as before - silver and black is prior to 1/1/73 (although some claim it has been amended to include any vehicle in the 'historic' taxation class, although I have

not been able to find any official statement to that effect), but if shown as a "new" bit of the test it may remind testers of the requirement. (Keep a spare set of modern ones...)
- Tow bar security (as now) but + electrics
- Electric wiring generally
- Battery security
- Fuel pipes - damaged or chafed

September 2010: Michael Beswick found and has sent me this [my comments]:

"I was asked by a friend's son what he should check before sending his car for MOT, to avoid it failing on something minor. The list is not exhaustive, and assumes no mechanical knowledge or tools. Just newspaper to kneel on and maybe a pair of rubber gloves! It is also SIMPLIFIED, and makes no attempt to cover items that require equipment to test them or requires knowledge of the testers' manual. Probably takes 15 minutes.

"MOTs are a test - the tester may not adjust anything other than Headlamp aim during the test [if you suspect headlamp aim is off then drive to the test centre having removed the headlamp rings yourself, I suggest!]. Certain minor items - such as blown bulbs - can be replaced at the end of the test before the car is passed. Garages may well charge for fitting an item, especially if it is discounting the test [**VERY** silly to go for a test with blown bulbs ...]. (Currently £54 max but available for £39.95 etc) So it pays to avoid this if possible. Certain failure items must be retested for no fee. Partial re-tests may or may not incur a fee. Details are shown on a poster that MOT stations must display and on the VT30 fail certificate.

"All the usual caveats apply. Your investment can go down as well as up. Your home is at risk etc etc. This information is not governed by the Financial Services Authority.....

"Hazard lights, (if fitted) must work , ignition on, ignition off

"Horn must work. Fuel cap must seal [visible rubber seal, not loose and rattling about, actually sealing is not checked]. Door mirrors to be secure. You must have a driver's door mirror and either a rear view or passenger side one [only **one** of interior, external offside, or external nearside mirror is required on passenger vehicles according to MOTUK]

"Wipers must work, with blades that clear the screen and are intact [clear an arc to give an 'adequate' view, not specified]. Washers +fluid. (push type washer is fine). Windscreen - chips bigger than 10mm in the area in front of the steering wheel will fail: as will bigger than 40mm in the rest of the area swept by the wiper blades.

"Indicators left & right. 60-120 flashes per minute is required.

"Side lights - front and back, dip beam, main beam, rear number plate lights. If fitted, rear fog light + tell-tale [if two are fitted the off-side lamp **must** work. If neither work but they are accessories added by an owner then you **may** get away with it!]. Brake lights. Indicate left then right and check stop/tail lights don't flash in time. (Reverse lights don't matter [not tested, although at one time if they were operated from a manual switch by the driver they must also have a tell-tale])

"Then put hazards on and all the above, (except indicators) to check that other lights are not "disco-ing" in time with the hazards.

"Seat belts must recoil (often slowly!), unless static type, and lock in place in the buckle. Belts must not be unduly frayed.

"Check the tyre tread depth - it needs to be 2mm (1.6mm is the legal min). Check the side walls for bulges or damage. You can't do much about the inside face without lying under the car!

"Handbrake - does the lever poke you in the eye when you pull it up? Turn the steering wheel - if it moves more than from 12 o'clock to 1 o'clock without turning the road wheels it will probably fail (depends on steering wheel diameter)

"Exhaust must be "supported" - waggle the tail pipe a bit (when cold...) - it shouldn't. Noise is subjective, as it is difficult to determine a "standard" car!

"Number plates - lots of regulations. Stick on ones on the bonnet should pass but don't always. 1/1/73 was the change year from metal black & silver to modern yellow/white. Take the V5C to prove date of first registration and/or ask first!

"Bits must not be obviously falling off!

"Play in bearings, suspension, or steering is beyond the scope of this. If you think headlamp aim may be wrong, remove the chrome bezel before the test to make adjustment easier. If you can see the front brake pads they must be a minimum 1.5mm thick (the thickness of a 5 pence piece).

"Corrosion within 300mm of a suspension mounting or seat belt anchorage or major structural item will fail

"Local classic car clubs/users can best advise on "sympathetic" MOT stations who understand older cars. High throughput / low price ones probably do not fall onto this category! If you are not sure about a particular thing , take the car in and ask BEFORE the test is due!

"If the car has no MOT you may legally drive it to a pre-booked MOT test - nowhere else. Insurance for this trip is a slightly murky area. [You can get insurance without having tax or an MOT. I'm pretty sure it is an offence to drive to an MOT station **without** insurance, regardless of whether it is a pre-booked test or not. It's not something you should ever put to the test, I suggest, or you may be **personally** liable for any damage or injury caused to third-parties as well as being prosecuted. Note that someone else may be able to drive **your** car on **their** insurance, which may be Third-party cover only.]

"Should the car fail, you can drive it home or to a garage to have it fixed [The MOT station may encourage you **not** to drive the car away on safety grounds, i.e. have it fixed there and then or arrange for it to be towed/trailered somewhere else, but they cannot legally prevent you driving it away].

"Should you have some days "left" on your current MOT but the car fails the test, you still have an MOT, but you are driving an "un-roadworthy" vehicle. The current MOT Pass certificate shows the earliest date at which the vehicle can be presented for test - just under a month before the certificate expires [But see here]. By having the car tested near this date, there should be ample time to fix items that fail. If the car passes, the new certificate is automatically dated for 12 months from the date of the expiry of the current certificate. However if it does fail, be aware that although you still have an MOT, you are driving an "unroadworthy vehicle" which restricts legal use. The penalties are pretty similar to not having an MOT and whilst technically covered by your insurance in legal terms, you are unlikely to have a claim settled.

[My son when living in London had no facilities to work on his car and regularly had it MOT'd twice a year].

"I've probably missed something, but it's a start! Good Luck!"

For those that have to suffer it, the emissions limits and dates applicable are as follows:

CO:
- Registered before 1st August 1975 - no limits, just a visible smoke test
- Registered 1st August 1975 to 31st July 1986 - 4.5%
- Registered 1st August 1986 to 31st July 1992 - 3.5%
- From 1st August 1992 the limits are as per the appropriate manufacturers documentation

HC:
- Registered before 1st August 1975 - not tested
- Registered 1st August 1975 to 31st July 1992 - 1200ppm
- From 1st August 1992 the limits are as per the appropriate manufacturers documentation

For cars with a non-original engine MOTUK says "Test according to which is older, engine or vehicle."

You can also check the brakes to make sure the pedal doesn't sink under sustained pressure, and if you have a servo 'empty' it by repeated operations of the brake pedal with the engine off until it stops wheezing, then with the pedal firmly pressed start the engine. While emptying the servo the pedal should get higher and harder, then when starting the engine it should sink a little.

See also MOTUK. In addition I spend a few minutes each year under the car, at the annual service before the MOT, just looking around and waggling things, bending the brake hoses back looking for surface cracking etc.

November 2011:There are proposals to cease MOT testing of cars registered before 1st January 1960, as well as possibly make testing a bi-annual event for newer cars. One has to ask "Why?" One of the reasons seem to be that owners of 1960 and earlier cars are likely to be enthusiasts and so look after their cars better, but that doesn't follow at all. It's true that pre -1960 cars are 0.6% of the population, and contribute to 0.03" of road casualties and accidents, but that is down to the greater sense of self-preservation of people driving cars of this era. Many cars at the 'lower' end of the classic price scale are likely to be owned by younger and less well-off people, with other cars and families to support, who may well take short-cuts on their pride and joy if they are allowed to. They are equally liable to be owned by people who don't know as much about their cars as perhaps they ought to, as can be seen by some of the questions and comments in the various online communities. Another reason given is that many aspects of the current test are not relevant to older cars - which is true, but in that case they are not tested! It's difficult to see just what could be dropped from the MOT that **isn't** safety-related. I'm no lover of MOTs, it's taken me 20 years to lose the 'heart in the mouth' feeling on delivering my cars for their tests and getting the verdict. As a Michael Beswick has said, it will only take one child to be killed or seriously injured by a classic car that had a defect that should have been picked up on an MOT, and we might find ourselves under a much stricter regime or maybe even restricted to trailering them to private circuits etc. Nigel Case, owner of the Classic Car Club, is quoted as saying "It's nonsense. Older cars need more attention. You could buy a car which seems superficially fantastic, but it will be rotten underneath and a death trap."

Even less reason for reducing the frequency on cars less than 10 years old, with the first test being at four years. One of the biggest reasons for failure of modern cars is worn tyres, and you can see this in any supermarket car park. Manufacturers have progressively reduced the ownership experience to one of being completely passive, and most people only ever do things like servicing and replacements when someone tells them they have to. The failure rate is increasing - 35% in 2008, 37% in 2010, and 12% of tyres are illegal on replacement. In the current financial climate people are cutting down on servicing where things might get picked up, and the MOT will be the only time that they can be.

Despite the above, there are new advisories from 1st Jan 2012 which will be failures from 1st April 2012. That's the list of new and amended items, but before you groan about something like the steering lock on an MGB having to be working as I did (Vee's has never worked in my ownership) you might like to have a look at the full manual. This has new and amended paragraphs and sections denoted by a vertical bar to the left, and in the case of the steering lock it is only to be tested on cars first used from 1st January 2001. There are others, like the new main-beam tell-tale check is only on cars first used from 1st April 1986. One thing that applies to **all** vehicles is the battery condition and security check - all those who have fitted 'battery bins' or 12v batteries and not bothered to re-engineer the clamps take note!

Nut Screws Washers and Bolts

On this site:
Torque Values
Translate between part numbers and description for many MGB fasteners
Links:
'Fastener Decoder Booklet' A reproduction of the document produced by BMC in 1964, kindly sent to me by Marc.
MGB Bolt Sizes/Taps and Dies by Les Bengtson
MGB 18V Engine Bolt Sizes (threads) by Les Bengtson
MGB BSP threads and Whitworth spanner sizes by Dave Dubois
Whitworth sizes and numbers from Samstag Sales.
British Tools and Fasteners, which says it all really (the original link was to The British Tool Company which has been out of business a couple of years.
Rask Cycle on bolt head markings and torque figures.
Uni-Thread, for taps, dies, reamers and much more.
Tracy Tools ditto (funnily enough also in Devon).
Abbey Power Tools, which has Whitworth and BA spanners as well as much else.
Baconsdozen Imperial Tools, Conversion charts for Whitworth and BSF to mm, AF, BA socket and wrench size equivalents etc.
Spanner Jaw Sizes, a useful chart for comparing spanner (wrench) sizes and common nut/bolt use.
Conversions from fractional in 64ths to decimal and metric, also useful for comparing spanner sizes.

Torque Values

Nuts and bolts can be assembled with dry, oiled or greased threads. From comparisons made with generic sources of information it seems that the figures in the MG Workshop Manual, at least, are probably for oiled threads. Greasing threads can make them liable to come loose. For example I read many years ago that wheel studs should be oiled, not greased.

Although there are a lot of figures here there are still a lot more where no torque figure is given. It is possible that those given here are 'non-standard' torque values and the rest should be tightened to the 'standard' values for the type, size and thread of the nut and bolt:

- Geno's Garage
- Leyton Fasteners
- Imperial Supplies

Also see this list of 'standard' values from the Rover V8 Engine Manual:

METRIC
- M5 . . . . . .4 Nm (3 ft-lb.)
- M6 . . . . . .6 Nm (4.5 ft-lb.)
- M8 . . . . . 18 Nm (13 ft-lb.)
- M10 . . . . . 35 Nm (26 ft-lb.)
- M12 . . . . . 65 Nm (48 ft-lb.)
- M14 . . . . . 80 Nm (59 ft-lb.)
- M16 . . . . . .130 Nm (96 ft-lb.)

UNC/UNF (thread size, not spanner/socket size)
- 1/4 . . . . . 8-10 Nm (6-7 ft-lb.)
- 5/16 . . . . . 25 Nm (18.5 ft-lb.)
- 3/8 . . . . . 40 Nm (29.5 ft-lb.)
- 7/16 . . . . . 75 Nm (55 ft-lb.)
- 1/2 . . . . . 90 Nm (66 ft-lb.)
- 5/8 . . . . . 135 Nm (100 ft-lb.)

By Monte Morris.
Additions by Peter Scott.
MBG GT V8 Workshop Manual Supplement and Rover V8 Engine Manual.
Additions from Haynes.

Application	Engine	Torque (ft-lb.)	Comments
ENGINE (4-cyl)			
Main bearing nuts	All models	70	
Flywheel set screws	18G/18GA	40	
Gudgeon pin clamp bolts	18G/18GA	25	early models(CBB)
Big-end bolts		+35 to 40	early models(CBB)
Big-end bolts		33	later models (RBB) oiled thread
Cylinder head nuts	18G/18GA	45 to 50	
Rocker bracket nuts	All models	25	
Oil pump to crankcase	All models	14	
Sump to crankcase	All models	6	
Cylinder side cover screws	18G/18GA	2	
Cylinder side cover screws deep cover	18G/18GA	5	
Timing cover 1/4 inch screws	18G/18GA	6	
Timing cover 5/16 inch screws	18G/18GA	14	
Rear plate 5/16 inch screws	All models	20	
Rear plate 3/8 inch screws	All models	30	
Water pump to crankcase		25	early models(CBB)

Water pump to crankcase		17	later models (RBB)
Water outlet elbow nuts	18G/18GA	8	
Rocker cover nuts	18G/18GA	4	
Manifold nuts	All models	15 to 16	
Oil filter centre bolt	18G/18GA	15	early models(CBB)
Clutch to flywheel	All models	25 to 30	
Carburetor stud nuts	18G/18GA	2	
Carburetor stud nuts	All models	15	
Distributor clamp bolt (nut trapped)	18G/18GA	4	
Distributor clamp bolt (bolt trapped)	18G/18GA	2 to 3	
Fan blade fixing screws	18G/18GA	7 to 9	
Crankshaft pulley nuts	All models	70	
Camshaft nut	All models	60 to 70	
Oil pipe banjo	All models	37 max	
Front plate 5/16 inch screws	All models	20	
Rear engine mounting bolt	All models	38 to 40	
Oil pressure relief valve domed nut	All models	43	Pre-1978
Oil pressure relief valve domed nut	All models	40	1978 on
Rocker bracket nuts	All models	25	
Air pump mounting screws		18	
Spark plugs	All models	18	
ENGINE (Factory V8)			
Main bearing cap bolts: Nos. 1 to 4		53	
Main bearing cap bolts: Rear		68	
Connecting rod cap nuts		33	
Cylinder head bolts		68	
Rocker shaft to cylinder head bolts		28	
Flywheel bolts		55	
Oil pump cover bolts		13	WARNING! I got mine up to about 10 and they didn't seem to want to go higher. Bearing in mind they are going into the alloy front cover I stopped. If you look at the 'Other V8' figures there are two - 9ftlb and for Suffix B 3ftlb. 3 seems a bit low for oil under pressure even with Loctite, but 9 is definitely safer than 13.

Oil pressure relief valve plug		33	
Timing chain cover bolts		23	
Crankshaft pulley bolt		150	
Distributor drive gear to camshaft bolt		43	
Exhaust manifold bolts		13	
Induction manifold bolts		28	
Induction manifold gasket clamp bolt		13	
Carburetor adapter nuts		18	
Water pump bolts: 1/4 U.N.C.		7	
Water pump bolts: 5/16 U.N.C.		17	
ENGINE (Other V8)			
Crankshaft pulley bolt	All models	199	
Timing cover to cylinder block bolts **	All models	16	
Camshaft gear bolt	All models	37	
Rocker cover bolts	All models	6	
Rocker shaft to cylinder head bolts	All models	28	
Cylinder head bolts *	Not suffix B		
Outer row	Not suffix B	51	
Centre row	Not suffix B	66	
Inner row	Not suffix B	66	
Cylinder head bolts *	Suffix B		
Stage 1	Suffix B	15	
Stage 2	Suffix B	Then 90°	
Stage 3	Suffix B	Further 90°	
Lifting eye to cylinder head bolts	All models	18	
Connecting rod bolts	All models	37	
Main bearing cap bolts ***	All models	52	
Rear main bearing cap bolts ***	All models	66	
Flywheel bolts	All models	59	
Drive plate and ring gear assembly bolts	All models	30	
Drive plate adapter bolts	All models	59	
Oil sump drain plug	All models	30	
Oil sump bolts	All models	17	
Oil pressure relief plug	All models	33	
Oil pump cover to timing cover	All models	9	
Oil pump cover plate screws ****	Suffix B	3	
Oil strainer bolts	All models	7	

Distributor clamp bolt	All models	15	
Spark plug	All models	11	
Coolant pump/timing cover to cylinder block	All models	16	
* Lightly oil threads prior to assembly. ** Coat first three threads with Loctite 242 prior to assembly. *** Coat threads with lubricant EXP16A (Marston Lubricants) prior to assembly. **** Coat threads with Loctite 222 prior to assembly.			
GEARBOX			
Mounting to gearbox case		15 to 20	manual transmission
Drive flange nut without overdrive		150	manual transmission
Drive flange nut overdrive Type D		100 to 130	manual transmission
Drive flange nut overdrive Type LH		55 to 60	manual transmission
Front brake band adj. screw locknut		15 to 20	automatic transmission
Rear brake band adj. screw locknut		25 to 30	automatic transmission
Filler tube to transmission case		20 to 30	automatic transmission
Filler tube to connector sleeve nut		17 to 18	automatic transmission
Drive flange nut		55 to 60	automatic transmission
Center support bolts		10 to 18	automatic transmission
Converter to drive plate bolts		25 to 30	automatic transmission
Transmission case to converter housing		8 to 13	automatic transmission
Extension housing to transmission case		8 to 13	automatic transmission
Oil pan to gearbox		8 to 13	automatic transmission
Front servo bolts		8 to 13	automatic transmission
Rear servo bolts		13 to 27	automatic transmission
Pump adaptor to housing screw		2 to 3	automatic transmission
Pump adaptor to housing bolts		17 to 32	automatic transmission
Pump adaptor to transmission case		8 to 18	automatic transmission
Manual shaft locknut		7 to 9	automatic transmission
Pressure adaptor plug		4 to 5	automatic transmission
Drain plug		8 to 10	automatic transmission
Upper valve body to lower valve body screw		20 to 30	automatic transmission
Lower valve body to upper valve body screw		20 to 30	automatic transmission
Oil tube and end plate to valve body		20 to 30	automatic transmission
Valve bodies to transmission case bolts		5 to 9	automatic transmission
Cam bracket screws		20 to 40	automatic transmission
Governor to counterweight screws		4 to 5	automatic transmission
Governor to cover plate screws		20 to 48	automatic transmission
Front servo adjusting screw locknut		15 to 20	automatic transmission

Rear servo adjusting screw locknut		25 to 30	automatic transmission
Starter inhibitor switch locknut		4 to 6	automatic transmission
Downshift cable adaptor bolts		8 to 9	automatic transmission
Filler tube connector to transmission		20 to 30	automatic transmission
Stone guard screws		17 to 19	automatic transmission
Driving flange nut		55 to 60	automatic transmission
PROP-SHAFT			
	All models	30 to 35	
REAR AXLE			
Differential bearing cap bolts	4-cyl	60 to 65	three-quarter floating (banjo) axle
Pinion bearing nut		135 to 140	three-quarter floating (banjo) axle
Crown wheel to differential carrier		55 to 60	three-quarter floating (banjo) axle
Bearing retaining nut		180	three-quarter floating (banjo) axle
Half-shaft nut		150	Semi-floating (tube/Salisbury) axle tighten to align to next hole
Differential bearing cap bolts		50 to 55	semi-floating (tube/Salisbury) axle
	Factory V8	53	
Crown wheel bolts	4-cyl	60 to 65	
	Factory V8	63	
Pinion nut new spacer only		180 to 220	
Pinion nut oil seal change		Adjust to preload	see section Ha Bentley and Leyland Workshop Manual
BRAKES			
Brake disc to hub	All models	40 to 45	
Brake caliper mounting	All models	40 to 45	
Brake caliper clamping bolts	All models	35.5 to 37	Spotted by Ed Woods in the main body of the manual: **"Only split the caliper if it is unavoidable, then replace the fluid channel seal, bolts and lock plates. Only bolts supplied by BMC Service Ltd. may be used"**
Hydraulic brake pipe connection 3/8 UNF		5 to 7	

Hydraulic brake pipe connect 7/16 UNF		7 to 10	
Master cylinder port adaptors		33	later models (RBB)
Master cylinder reservoir fixing bolts	All models	5	
Brake pressure failure switch (nylon)		15	
Brake pressure failure switch end plug	All models	200	
Brake caliper securing bolts	All models	40 to 45	
Brake front servo bolts	All models	8 to 13	
Brake rear servo bolts	All models	13 to 27	
Brake stone guard screws	All models	17 to 19	
Pressure differential switch end plug		17	later models (RBB)
REAR SUSPENSION			
Rear shock absorber bolts	4-Cyl	55 to 60	
Shock absorber to side-member nut	Factory V8	58	
FRONT SUSPENSION			
Front shock absorber bolts	All models	43 to 45	
Bearing retaining nut	All models	40	tighten to next split-pin hole
Cross member to body	4-cyl	54 to 56	
Cross member to side member nut: Top	Factory V8	55	
Cross member to side member nut: Bottom	Factory V8	45	
Shock absorber pinch bolt	All models	28	
Wishbone cross bolt	All models	28	
Bottom wishbone pivot to cross-member nut	Factory V8	45	
Anti roll bar link	All models	60	
Spring pan nuts and screws	All models	22	
Stiff nut to crossmember mounting bolt		44 to 46	GHN4 GHD4 GHD5 GHN5 models
King pin to wishbone - lower fulcrum		45	
King pin to damper - upper fulcrum		40	
King pin trunnion (nut on top of king pin)		60	then tighten to next split-pin hole
STEERING			
Steering arm bolts	All models	60 to 65	
Steering rack fixings		30	
Steering wheel nut	4-cyl	41 to 43	
Steering wheel nut 9/16 in. UNF	4-cyl	27 to 29	GHN4 GHD4 GHD5 GHN5 models
Steering wheel nut 11/16 in. UNF	4-cyl	41 to 43	GHN4 GHD4 GHD5 GHN5 models

Steering wheel nut	4-cyl	36 to 38	GHN4 GHD4 GHD5 GHN5 some local models
Steering wheel nut	Factory V8	28	
Steering column universal joint bolts	All models	20 to 22	
Steering rack and pinion bearing nut	All models	40	
Steering tie-rod lock nut	All models	33 to 38	
Steering lever balljoint nut	All models	34 to 35	
Swivel pin nut	All models	60	tighten to align to next hole
Steering column top fixing bolts	All models	12 to 17	
Column clamp bolt	Factory V8	7	Note this is given in the manual as "85 lbf **inches**"
Road wheel nuts	4-cyl	60 to 65	
Road wheel nuts	Factory V8	60	
GENERAL			
Alternator shaft nut	All models	25 to 30	
Alternator mounting bolt	All models	20	
Alternator pulley nut	All models	25	
Starter motor mounting bolts	All models	30	
Gearbox remote control cover to tunnel	All models	44 to 46	
Interior mirror special screw	All models	5	

Speedos

Repair
Gearbox drive gears
Cables and routing
EGR valve service indicator
Right-angle drives

There were many different speedos used over the years (I have found 50 so far!) according to year, market and vehicle spec. As well as the obvious physical differences in size and markings the 'turns per mile' (TPM) varied over the years, that is the number of turns of the speedo cable to register a mile travelled. This has to be matched to the drive gearing in the gearbox output shaft, the rear axle ratio, the wheel size, and to some extent the tyre size. Get the TPM wrong and both speed and distance travelled indications will be incorrect. Speed is relatively easy to compensate for by making internal adjustments but to correct the odometer different gear sets are required. The table below has been developed largely from the Leyland Parts Catalogue and Clausager and examination of many speedos at autojumbles, with additional information from other sites such as NAMGBR, Autochart and Paul Tegler. However these other sites either don't include TPM figures, are limited in scope, or disagree to some extent with information from other sources.

I am indebted to Ian John of Caerbont Automotive Instruments for supplying me with a list of TPMs for these speedos.

Note that speedos **not** in the list with the exact reference number, even though they have the correct TPM figure, may have different speedo cable fitments, or night-time illumination/ignition warning lamp/main beam tell-tale or fitting arrangements, making fitting them in an MGB not straightforward.

Speedometer Reference Numbers

Market	Date	Chassis No. From - To	Gearbox	MPH/ KPH	Part No.	Serial No.	TPM/ TPK	Size	Comments
All markets except Germany	1962 - Oct67	101 - 138400	Standard	MPH	BHA4478	SN6125/04, SN6124/04A, SN6144/00	1060* 1040? 1040*	4"	Jaeger Note 1 Smiths Smiths
				KPH	BHA4479	SN6125/05, SN6125/05A, SN6144/01	660* 660! 660*	4"	Jaeger Smiths Smiths
			Overdrive	MPH	BHA4480	SN6125/06, SN6125/06A, SN6144/02	1040* 1020! 1020*	4"	Jaeger Note 1 Smiths Smiths
				KPH	BHA4481	SN6125/07, SN6125/07A, SN6144/03	640! 640! 640!	4"	Jaeger Smiths Smiths
Germany	1962 - Oct67	101 - 138400	Standard?	MPH	BHA4574	SN6144/05	1040!	4"	560 - 14 tyres
			Standard?	KPH	BHA4636	SN6144/15	660!	4"	560 - 14 tyres
			Standard?	KPH	BHA4637	SN6144/13	660!	4"	155 - 14 tyres
			OD?	KPH	BHA4638	SN6144/14	640!	4"	165 - 14 tyres
not Canada, USA, Sweden, Germany, or V8	Nov67 - Nov73	138401 - 332925 138401 - 332394	Standard	MPH	BHA4707	SN6144/20	1280*	4"	
				KPH	BHA4709	SN6144/21	800!	4"	use BHA5280
			Overdrive	MPH	BHA4812	SN6144/23A	1280*	4"	use BHA5281
				KPH	BHA4813	SN6144/24	800!	4"	
	Nov67 - Sep68	138401 - 158230	Automatic	MPH	BHA4707	SN6144/20	1280*	4"	
				KPH	BHA4709	SN6144/21	800!	4"	
	Nov68 - Aug73	158231 - 328800	Automatic	MPH	BHA4868	SN6144/28	1216!	4"	Note 11
				KPH	BHA4869	SN6144/29	760!	4"	Note 11
	Nov73 - Sep74	332926 - 360300 332395 - 36100	Standard	MPH	BHA5279	SN6144/20BS	1280!	4"	

				KPH	BHA5280	SN6144/21BS	800!	4"	
			Overdrive	MPH	BHA5281	SN6144/23BS	1280*	4"	
				KPH	BHA5282	SN6144/24BS	800!	4"	
	Sep74 - Jun76	360301 - 410350	Both	MPH	BHA5339	SN5230/13	1000*	80mm	
			Both	KPH	BHA5340	SN5230/14	620!	80mm	
Canada	Nov67 - Jul68	138401 - 153877	Standard	MPH	BHA4707	SN6144/20	1280*	4"	
				KPH	BHA4709	SN6144/21	800!	4"	use BHA5280
			Overdrive	MPH	BHA4812	SN6144/23A	1280*	4"	use BHA5281
				KPH	BHA4813	SN6144/24	800!	4"	
	Aug68 - Jul71	153878 - 258000	Standard	MPH	37H 3766	SN5226/03, SN5226/05, SN5227/07	1280! 1280! 1280!	80mm	
			Overdrive	MPH	37H 3768	SN5226/08, SN5227/12	1280! 1280!	80mm	
			Automatic	MPH	37H 4180	SN5227/16	1216!	80mm	
	Aug71 - Apr72	258001 - 282419	Standard	MPH	BHA5084	SN5231/00	1280!	80mm	
			Overdrive	MPH	BHA5086	SN5231/04	1280!	80mm	
	May72 - Sep74	282420 - 360300	Standard	MPH	BHA5161	SN5230/06S	1280!	80mm	
			Overdrive	MPH	BHA5163	SN5230/08S	1280!	80mm	
	Sep74 - Jun76	360301 - 410000	Both	MPH	BHA5339	SN5230/13	1000*	80mm	
	Jun76 - 1978	410001 - 447000	Both	MPH	AAU 3027	SN5373/00	1000!	4"	
Japan	Sep 77	443981 - 447000	all OD	KPH	?	?	620	4"	LHD to North American spec
Canada & Japan	1978 - 1979	447001 - 501000	Both	KPH	?	?	620	4"	Note 2
Canada & Japan	1980	501001 on	Both	KPH	?	?	620	4"	Note 2
USA, USA for Germany	Nov67 - Jul71	138401 - 258000	Standard	MPH	37H 3766	SN5226/03, SN5226/05, SN5227/07	1280! 1280! 1280!	80mm	
			Overdrive	MPH	37H 3768	SN5226/08, SN5227/12	1280! 1280!	80mm	
			Automatic	MPH	37H 4180	SN5227/16	1216!	80mm	
	Aug71 - Apr72	258001 - 282419	Standard	MPH	BHA5084	SN5231/00	1280!	80mm	Note 10
			Overdrive	MPH	BHA5086	SN5231/04	1280!	80mm	Note 10

	May72 - Sep74	282420 - 360300	Standard	MPH	BHA5161	SN5230/06S	1280!	80mm	
			Overdrive	MPH	BHA5163	SN5230/08S	1280!	80mm	
	Sep74 - Jun76	360301 - 410000	Both	MPH	BHA5339	SN5230/13	1000*	80mm	
All LHD	Jun76 - Jun79	410001 - 498440 (Cal) 410001 - 503250 (other)	Both	MPH	AAU 3027	SN5373/00	1000!	4"	Note 3
	Jun79 - Oct80	498441 (Cal) on 503521 (other) on	Both	MPH	?	SRM6006/00	1000!	4"	Note 4
Sweden, Germany	Sep69 - Jul71	187211 - 258000	Standard	KPH	BHA4924	SN5227/20	800!	80mm	Note 10
			Overdrive	KPH	BHA4925	SN5227/22	800!	80mm	Note 10
			Automatic	KPH	BHA4926	SN5227/24	740!	80mm	Note 10
	Aug71 - Apr72	258001 - 282419	Overdrive	KPH	BHA5087	SN5231/08	800!	80mm	Note 10
	May72 - Sep74	282420 - 360300	Overdrive	KPH	BHA5164	SN5230/09S	800!	80mm	Note 5
	Sep74 - Jun76	360301 - 410000	Both	KPH	?	?	620	80mm	Note 6
RHD (not Police)	Jun76 - Oct78	410001 - 480296 GT 410001 - 481115 Roadster	Overdrive	MPH	AAU 3035	SN5234/00	1000*	80mm	Note 7
RHD (not Police)	Oct78 - Oct80	480297 on GT 481116 on Roadster	Overdrive	MPH		SN5234/02	1000*	80mm	Note 8
RHD (Police)	Jun76 - Oct80	410001 on	Overdrive	MPH	AAU 3036	Z 65465	1040!	80mm	
V8 (not Police)	Dec72 - Jul76	101 - 2903	Overdrive	MPH	BHA5210	SN5230/11S	960*	80mm	140mph
V8 (Police)	Dec72 - Jul76	101 - 2903	Overdrive	MPH	BHA5317	Z 63973	980!	80mm	Note 9

Notes:	TPM/TPK	MPH speedos have a 'turns per mile' number on the dial, whereas KPH speedos have a 'turns per kilometre' number, and there are 1.60934 kilometres to the mile. Thus a Mk1 car with a 1020/1040/1060 MPH speedo uses the same gearbox components as a car with a 640/660 KPH speedo, a Mk2 chrome bumper with a 1280 MPH speedo has the same gearbox components as one with an 800 KPH speedo, and a rubber bumper car with a 1000 MPH speedo has the same gearbox components as one with a 620 KPH speedo. This

		means that cars can be converted between MPH and KPH simply by fitting the 'other' speedo.
	'*' and '!'	'*' after the TPM indicates that I have confirmed the figure on an actual example of the speedo **and** the number has been confirmed by a manufacturer and repairer of the instruments. '!' after the TPM indicates the number has been confirmed by a repairer of the instruments.
	1	The Parts Catalogue shows these serial numbers as having the same part number but actual instruments and manufacturers data show different TPMs.
	2	Clausager shows Canada and Japan having KPH speedos from 1978, and Canada and Japan 1980 models having 6 - digit odometer, but these changes are not shown in the Parts Catalogue.
	3	North American spec including Japan had 4 speedos for 1977 on, probably plastic 'glass' with protruding trip reset button.
	4"	85mph speedos with 6 - digit odometer, not in Parts Catalogue.
	5	Parts List shows this type continuing till Jun76
	6	Clausager states 80mm from Sep74 LHD roadsters only made for North American market after Jun76
	7	Reads to 120mph, additional kph markings. Figures outside markings, numbers go 10/20/30.
	8	Reads to 120mph, additional kph markings. Figures inside markings, numbers go 10/30/50.
	9	XA5(XAS?),175x14 tyres, 140mph
	10	Use with right - angle drive
	11	Axle ratio changed and hence speedo

Updated August 2010: Note that 1280 tpm overdrives were used on 4-cylinder chrome bumper cars and all V8s and had a black Laycock label, whereas 1000 tpm ODs were used on 4-cylinder rubber bumper cars and had a blue label. Thus on V8s there seems to be a mismatch between the 1280 tpm overdrive and the 980 tpm speedo, but this is almost exactly counterbalanced by the different axle ratio used on the V8.

December 2014

I needed to get into the mechanism in order to modify the mileage reading. Bee's trip odo has been jamming regularly this year, which made following Tulip instructions tricky. Fortunately the tenths was still going round, so I was having to add that to the main odo reading, then add to that the next inter (distance to the next turn) for the Navigator to write down. Bad enough, but because the trip and main odo aren't in synch sometimes I ended up a mile out either way. I was going to send it away over winter to be repaired, there are a couple of people who can then set any mileage you require (ordinarily it would be zeroed), but at £90 it's quite pricey and they take several weeks to do it. I'd got to the point of investigating how much new ones were for insurance purposes if mine should get lost, when I thought of looking for used on eBay. I found two, one was exactly right for Bee going by the reference number on the dial at £40. The other wasn't a very good picture but from what I could see looked right, at £20 in 'good condition and fully functioning', both mileages way different to Bee's of course. No shipping price in the ad, and you don't get that until you commit to buy which isn't helpful. Emailed the seller asking them to confirm the numbers and shipping price, but had to wait several days for a reply. Not exactly right - it was originally used on 74 models, but specified in the Parts Catalogue as being backwards compatible with earlier Mk2 cars so fine for me, and shipping a reasonable £5. By that time the £40 one had gone, so I committed to buy this one, then had to wait another week or so with no further info from the seller as to whether it had been shipped or not, before it turned up. First thing I did was test it

with my drill on reverse, and the speedo goes smartly round, but neither bloody odo worked! Annoying, as the face and the numerals were in as-new condition, and the bezel and glass were no worse than Bee's. I could have sent it back of course, but more hassle and aggro, and no further forwards. So for the sake of £20 I decided to use it as a learning experience and open it up and have a look at it. Same problems with getting the guts out as with Bee's, which I'd already tried months earlier in an effort to see what was wrong with her trip. See the full story here on fixing the odometers on both speedos as well as a description of how they work.

March 2008

And now for the question of gearbox drive gears! Whereas for the 3-synch cars the speedo tpms varied between non-OD and OD cars (but by less than 2%) the speedos for 4-synch cars quote the same tpms (1280 for chrome bumper cars and 1000 for rubber bumper) but there are still different part and reference numbers for the speedos according to whether the car was non-OD or OD. This continued up to September 76 and the 77 model year, when suddenly there is only one speedo (different again for the 'new' plastic dash) for LHD and one for RHD, still at 1000tpm as for previous rubber bumper cars, but no corresponding change in gearboxes or ODs.

Looking at the parts lists there always were different speedo drive gears and pinions, with different ratios, between non-OD and OD. But whereas the ratio difference is nearly 3% for the 3-synch gearboxes, it is only 1% for the chrome bumper 4-synch (I don't have all the ratio information for the rubber bumper cars). 1% is insignificant (given that speedos in the UK are allowed to over-read by up to 10% but not under-read) so having the same tpms for both is reasonable, but why the different speedo part and reference number if everything else is the same? Even 3% difference for the 3-synch is not that significant in the grand scheme of things, but the speedo tpms for non-OD and OD cars did take this into account. Although even that isn't straight-forward, as the information I have is that Jaeger instruments were 1060 for non-OD and 1040 for OD, whereas the later (1964) Smiths were 1040 for non-OD and 1020 for OD! Whilst the change from crossply tyres to radial may have required a change in gearing, radials weren't available until 1965, and crossplys remained standard on UK cars until 1972.

The bottom line is that while changing a non-OD gearbox to an OD gearbox will introduce an error of nearly 3%, on a 4-synch car changing from a non-OD to an OD gearbox **of the same era** will only introduce a 1% error and can be ignored. the important thing to remember on 4-synch cars is that if you put a rubber bumper OD gearbox in a chrome bumper car or vice-versa, and don't change the speedo, you will introduce an error of around 20% which is very significant.

And to finally beat this subject to death the table below lists the various gearboxes and what speedo drive gears and pinions were used in each:

Era	**Chassis No.**	**Engine No.**	**Gearbox**	**Gear**	**Starts**	**Pinion**	**Teeth**	**Ratio**
Chrome	101 to 138360 (roadster) 137795 (GT)	18G, GA, GB	3-synch non-OD (dipstick level/filler)	1H3369	9	11G3264 or 22H1420L	28	1:3.111
Chrome	101 to 138360 (roadster) 137795 (GT)	18G, GA, GB	3-synch OD D-type (dipstick level/filler)	7H8294	5	17H8021	16	1:3.2

Chrome	138401 (roadster) 139471 (GT) to 359169 (roadster) 360069 (GT)	18GF-GK, 18V581-779	4-synch non-OD (dipstick level/filler) and Auto	22B468 (metal) or 22B649 (plastic)	10	22B654	26	1:2.6
Chrome and all V8s Note 2	138401 (roadster) 139471 (GT) to 359169 (roadster) 360069 (GT)	18GF-GK, 18V581-779	4-synch OD LH-type (black label) (dipstick level/filler)	37H3464 (blue)	8	37H3463 (white)	21	1:2.625
Rubber	360301 (roadster) 361001 (GT) to 523001 (roadster) 523002 (GT)	18V797-893	4-synch non-OD (side-plug level/filler)	DAM686 (black)	9	DAM687	Note 1	Note 1
Rubber	360301 (roadster) 361001 (GT) to 523001 (roadster) 523002 (GT)	18V797-893	4-synch OD LH-type (blue label) (side-plug level/filler)	37H8844 (red)	6	37H8845 (red)	20	1:3.333

Note 1: Values not known, but if the overall ratio is the same for non-OD as OD (which seems reasonable as the same speedo is used) then the pinion would have 30 teeth.
Note 2: This may seem incorrect as the 4-cylinder chrome-bumper car has a 1280tpm speedo and the V8 a 960tpm. You have to take into account the rear axle ratio as well, and the lower ratio of the V8 (prop-shaft turns slower for a given road speed) almost exactly counteracts the difference in speedos.

'Starts' refers to the number of threads on the worm gear fitted to the gearbox output shaft (a standard bolt only has one start). The number of starts is another way of setting the ratio between worm gear and cable drive pinion, the greater the number of starts the faster the pinion turns in relationship to the worm gear. This Wikipedia page explains the principle very well and has an animated graphic demonstrating a 4-start worm gear.

SC Parts Group has exploded diagrams of all the OD components (as well as the gearboxes) for all the MGB variants. All the pinions and drive gears are priced, implying that all are available.

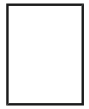
Did I say final? Speedo cables used were as follows: *March 2010*

Chassis No.		Gearbox	Cable	Length	Notes
101-9402 101-138400	RHD LHD	non-OD	GSD103	1143mm (3' 9")	It seems highly unlikely, if not impossible, for RHD and LHD cables to be the same length

101-10611	RHD	OD	GSD116	1422mm (4' 8")	
101-138400 10612-138400	LHD RHD	OD	GSD117	1542mm (5' 0")	It seems highly unlikely, if not impossible, for RHD and LHD cables to be the same length
9402-138400	RHD	non-OD	GSD111	1219mm (4' 0")	
138401-410000	RHD	non-OD	GSD249	991mm (3' 3")	
138401-410000	RHD	OD	GSD116	1422mm (4' 8")	
138401-153877 (Canada) 138401-187210 (roadster) 138401-187840 (GT)	LHD	non-OD	BHA4596	1270mm (4' 2")	not USA, Sweden, Germany
138401-153877 (Canada) 138401-187210 (roadster) 138401-187840 (GT)	LHD	OD	GSD151	1829mm (6' 0")	not USA, Sweden, Germany
138401-282419 (USA) 153878-282419 (Canada)	LHD	non-OD	GSD104	1373mm (4' 6")	North America, Sweden, Germany, without service indicator
138401-410000 (USA) 153878-410000 (Canada)	LHD	OD	GSD151	1829mm (6' 0")	North America, Sweden, Germany, without service indicator
187211-328800	RHD	Auto	GSD103	1143mm (3' 9")	
187211-328800	LHD	Auto	GSD116	1422mm (4' 8")	not USA, Sweden, Germany
187211-328800	LHD	Auto	GSD117	1542mm (5' 0")	North America, Sweden, Germany, without service indicator
282420-410000	LHD	non-OD	GSD145		North America, Sweden, Germany, without service indicator
360301-386600 (Canada) 360301-422791	LHD	non-OD	BHA5351		North America, Sweden, Germany, gearbox to service indicator
360301-386600 (Canada) 360301-422791	LHD	OD	BHA5360	1016mm (3' 4")	North America, Sweden, Germany, gearbox to service indicator
360301-386600 (Canada) 360301-422791	LHD	all	BHA5359	584mm (1' 11")	North America, Sweden, Germany, service indicator to speedo
410001 on	RHD (all)	OD	GSD315	1450mm (4' 9")	
410001 on	LHD	non-OD	AAU3868	1200mm (3' 11")	without service indicator
410001 on	LHD	OD	AAU3870	1700mm (5' 7")	without service indicator

All V8	RHD	OD	GSD116	1422mm (4' 8")	

Cable routing
On non-OD boxes the cable attaches after the gearbox proper, which on 3-synch at least is just forward of the removable crossmember, as in this image from Clausager. There appears to be a clip holding it to the tunnel wall right by the clutch slave, then it passes through the bulkhead at the hole in the top of the (RHD) drivers footrest.


On OD boxes it attaches further back, after the OD, above the fixed crossmember on 4-synch boxes.


It should then pass under the removable cross-member and be supported by a P-clip, however both Bee and Vee have theirs above and cable-tied to the other cables and pipes. In Bee's case the cross-member is the wrong way round so the tapped hole is on the other side. And whilst Vee's is correct, and I could have fitted it in the correct position, where they are is more protected from any rocks, traffic-calming measures etc. and as neither have exhibited any problems in my ownership where they are I've left them be.


It eventually passes through the bulkhead as above ..... and from there makes a graceful turn backwards into the speedo head.


Some people with LHD cars have indicated their cable comes up past the RHD entry point, across the engine compartment at the heater shelf, then in through the bulkhead in front of the driver direct to the speedo, rendering a speedo head right-angle drive unnecessary. This including 3-synch cars using the large hole under the hinge slot, although Clausager appears to show a 74 car routed in this manner but using a smaller hole further above and towards the centre of the car than the large hole (which contains the heat control cable?).

EGR Service Indicator


North American rubber bumper cars had an EGR valve service indicator which was a warning light triggered every 25,000 miles. A resettable counter intercepted the speedo cable, and was positioned on the heater shelf as shown here on Bill Etter's car. The warning light was illuminated each time the car was started as a lamp test facility. The service indicator was deleted for Canada from 1976 on, and for the rest of North America from 1977 on.

There is also the question of right-angle drives. (*Updated April 2017*)


The Parts Catalogues indicate that **all** cars had one at the gearbox end (13H 2567) to allow the cable to run straight (more or less) alongside the gearbox as it travels forwards. However neither of my 4-synch OD cars has one, the cable makes a neat enough turn through 90 degrees here. There is also the point that the large bulge of the (LH-type at least) OD immediately in front of the speedo cable connection makes a right-angle pointless as the cable would have to go up into

the tunnel and then make a tight turn forwards, or even worse go downwards and risk damage, it can't go anywhere near straight back. On non-OD 3-synch gearboxes the cable is connected in front of the removable cross-member and the narrower casing here as well as being angled backwards slightly with a right-angle drive allows the cable to travel forwards alongside the gearbox. However on non-OD 4-synch gearboxes the connection is much closer to the main part of the gearbox, which is wider, and it is also angled forwards, which prevents the (sensible) use of a right-angle drive.


On OD gearboxes the cable attaches further back above the fixed cross-member. This cross-member on 4-synch cars has a notch which together with the connection being angled slightly forwards allows the cable to leave the gearbox at almost a right-angle, the bulk of the curve turning forwards being in front of the cross-member and under the floor. Early cars do not show this notch (Clausager p76), but 3-synch gearboxes with the earlier D-type OD do seem to offer more space to allow a right-angle drive to be used.

However if a broken right-angle drive on a non-OD gearbox was not replaced (they are expensive) this may need a slightly longer cable to avoid a tight turn. The big issue is whether LHD cars had an additional one at the speedo head or not. Again the Parts Catalogues indicate one was always used (BHA 4794 up to 76, the same 13H 2567 as for the gearbox for 77 on), because the cable came up through the same hole in the bulkhead (above the clutch foot rest) as in RHD cars then across the car behind the dash. This would have resulted in too tight a turn behind the speedo in the limited space available, hence the second unit, but see above.

What year is my MG?

By John H. Zajac

Often the question comes up regarding "What year is my MG?" with the early cars. Cars built in 1951, or even 1950 are titled as "1952" TDs, for example. Early MGBs built in 1962 or 3 may be listed as 1963 or 1964s. Owners of early cars are especially urged to know their VIN numbers in order to get the correct original equipment. Why?

My understanding of the situation is that the "model year" was an American, primarily GM, invention. In the 1930's GM's chairman, Alfred Sloan began the practice to showcase annual styling changes. Soon, every other US manufacturer followed suit, and the concept of a "model year" starting in the fall of the year started.

This system was alien to most European manufacturers, including MG. VW even used their rather stable product plan to their advantage with the Beetle's advertising in the States. The European manufacturers basically updated their cars when required for competitive reasons, and only loosely followed a "model year" concept. MG up until the late sixties was like this, hence the issue with when was it built, when was it sold, what year is it anyway, what do I put on the title? Early cars had model years "designated" by the dealer. It was a world where model years were ingrained into American paperwork registration, and titles (after all, who couldn't tell the difference between a '59 Chevy and a '60?), but with imports from Europe, well, it was a different story. The dealer typically filled out the paperwork so that a car sold in the model year (October to October) was of that model year, regardless of date of manufacture.

What changed that "system" was the safety and emissions regulations which phased in requirements *by model years* for cars sold in the US. Once that occurred, all the European manufacturers had to follow US procedures for VINs, and linking US-destined cars to specific model years and levels of safety and emissions equipment. Of course, old habits are hard to break, and while I'm sure MG put in all legally required

equipment, I've heard how sometimes earlier parts sometimes ended up in the next model year's cars on occasion.

So - it's not unusual for cars exported to the States sold prior to 1967 (I think that's when the first safety/emissions laws became effective) to have wildly different dates of manufacture vs. model year on their title, and why after that a system was imposed on the VIN designation. Later cars, therefore, will have their model year "baked into" the VIN regardless of the date for manufacture. It's easy to imagine how MG would have had to have been building the next year's model in late spring or early summer in order to be in showrooms in the U.S. by the fall.

From 'Original MGB with MGC and GT V8' by Clausager

True VINs, including the model year, only appeared on the very last MGBs - those built between June 1979 and October 1980. Before that car or chassis (UK) or serial (North America) numbers of the form 'G-HN5/nnnnnn-G' (for an MG, 1800cc engine two-seater tourer, 69-79 model, built at Abingdon) were used. In the UK a vehicle's 'year' is generally regarded by owners as the date it was first registered, the exception being for inclusion in the 'Historic' registration class and its free annual Road Fund Licence or Tax Disc, where the cut-off date (31st December 1972) relates to the date of manufacture rather than the date of first registration.

Clausager refers to 'model years' from 1969 on, which started production in November 1968. Thereafter the new model year could start production at any time from May 1978 (for the 1979 model year) to December 1974 (for the 1975 model year) but was typically August or September. 1974 saw another main change-point in September, for the '1974 1/2' model year cars and the full rubber bumpers. Small changes appeared constantly throughout production, however. The changeover points, listed by chassis/serial number, could be a little chaotic as 'old' parts were used up before 'new' parts were used. Therefore it was common for a car with a chassis/serial number *before* the change point to have some parts that should only have appeared *after* the change point, and vice-versa. The only thing that could be said for sure is that, as far as is known, matched items were fitted i.e. you wouldn't get a car with one 1976 headlight and one 1977!

Dating your car by its windows - based on the original compiled by Neil Cairns. *Updated October 2008*

MGs made in the 1950's to the late 1970's can be dated by the 'TRIPLEX CODE' etched into or screen printed onto the toughened glass. This also works for any other make using TRIPLEX glass.

Note that it dates the GLASS, so is only an indication of the cars age, assuming the glass is original.

If you are not quite sure of the year of your car, but the decade is known, just look for dots above and below the TRIPLEX TOUGHENED or LAMINATED logo on the glass. Unfortunately it is complicated by the code system changing in January 1969.

Before January 1969 one dot above T, R, E or X gives the quarter of the year the glass was manufactured:
T = Jan, Feb, March
R = April, May, June

E = July, Aug, Sept
X = Oct, Nov, Dec

From January 1969 the code indicated the month not the quarter, and although the same four letters were used there could be one, two or three dots used:

```
        .                                       :     .
Jan     TRIPLEX (dot over the T)        Jul     TRIPLEX
         .                                      :     .
Feb     TRIPLEX (dot over the R)        Aug     TRIPLEX
           .                                    .     :
Mar     TRIPLEX                         Sep     TRIPLEX
          .                                      .    :
Apr     TRIPLEX                         Oct     TRIPLEX
        :                                            .:
May     TRIPLEX (double dot over T)     Nov     TRIPLEX
        :.                                           :
Jun     TRIPLEX                         Dec     TRIPLEX
```

But which year? Nine letters make the word TOUGHENED, one dot below a letter gives the year of the decade:
T = 1, O = 2, U = 3 and so on. However, if you see no dot (or possibly a dot under a space **after** the last letter), the year is zero.

Say your car is a 1950's MG, then TRiplEX TOUGHENED, with one dot over the 'R' in Triplex, and the other under the last 'E' in Toughened, indicates 'April/May/June 1958'.

My 75 GT has Sicursive side glass but a Triplex heated back-light with a dot over the E and one under the G, indicating March 74. The car has a build date of May 1975, so you can see that glass (and quite probably other components) could be hanging round for some time before being used - no Just In Time then!

My thanks to Pierre De Rijck of Belgium for questioning this information when he found multiple dots on his windows, as originally the information from Neil only indicated one dot. The additional info came from these Spitfire and Mini sites. However it should be noted that these two differ for 1969 and later for the months of March and April. The former shows the dots over the I and P of TRIPLEX whereas the latter shows then over the E and X as previously. As **both** sites show only the E and X letters being used in all other cases, I'm tempted to think the Triumph site is in error and have assumed such. Pierre also mentioned his two side windows had different codes. This could have been due to breakage in the past, but in his case the two codes seem to be consecutive months in the same year and so are more likely to be from two production batches rather than one. If LHS and RHS glasses are made, packed and shipped separately rather than as pairs this is more then likely, especially given the apparent gap between manufacture and fitting. Less so if the glasses were shipped as pairs, but still possible if one were damaged or a defect found during the build of the car.

Links

Body Brakes Clutch Cooling Electrics Engine Fuel Gearbox Heater Ignition Propshaft Rear_Axle Steering_and_Suspension Wheels

The following sites carry information on a variety of topics:

So good it deserves a line of its own right at the top - a set of 'How to' videos from John Twist and University Motors

I've had to delete the links to the MGOC articles on things like axle clonk repair etc. as you have to be a member to get access to them now. But even then it isn't easy finding them - you have to go to Members Area, Technical Archive, enter search terms and select 'Within Enjoying MG only'. Looks easy written there, but I had to have several goes to get there the first time.

- **from Paul Kile**
- **Paul Lewis**
- **and Norm Nock all of the Sacremento Valley MG Car Club**
- **Barney Gaylord's 'The MGA with an attitude' - mainly MGA but some details and much general information will be applicable to the MGB.**
- **MGA and MGB technical information from British Automotive**
- **Scions of Lucas (SOL). Technical info for MG and other marques much of the 'other marques' info will also apply to MG to some extent.**
- **Skye Poier's 'The MGB Experience' site**
- **Rich Mason's 'Helpzone'**
- **Tech Tips from the NAMGBR**
- **Robert Epstein's 'MGB Tech Tips'**
- **John and Elaine Hubbard's 'MGB-GT' pages**
- **Chicagoland MG Club - Tech tips**
- **for a variety of marques and MG models from Moss Motors (now only available by logging-in)**
- **Parts sources from (Bob?) Lundgren**
- **Automobile Repair manuals Online (not)**
- **Robert Bentley manuals**
- **MGB Parts List available online from Moss USA. Other MG models and marques available.**
- **Miscellaneous MGB info from AutoChart Inc.**
- **Classic car restoration courses at UK Further Education Colleges from Restored Classics**
- **Maintenance tips, recalls and Technical Service Bulletins from SlickCar by Kris Rinson**
- **Fuel Additives Lubricants and Coolant reference information from Stephen Ringlee's Volvo Maintenance FAQ**
- **UK MOT info from MOTUK (geddit?)**
- **UK MOT info from Haynes**
- **Using a vacuum gauge for fault diagnosis.**
- **Les Bengtson's Classic MG Sports Car Restoration information**
- **More speedo info from Autochart**
- **Yet more speedo info from Paul Tegler**
- **Speedo repairs from Anthony Rhodes or as a downloadable PDF**
- **Speedo repairers and suppliers Speedograph Richfield successors to Smiths Industries**
- **Bespoke and replacement instruments from Caerbont Automotive Instruments**
- **Another on-line Parts Catalogue from Brown and Gammons in the UK**
- **Handy Reference Information from Pegasus Auto Racing - Decimal inch equivalents copper electrical wire specs and more.**
- **Smiths and Jaeger speedo repairs from Tigers United**

- **John Twist's Tech Tips hosted by NAMGBR, on a variety of topics.**
- **US Mechanic EDU brings together the best mechanic training information available in one convenient place.**

Body Links:

- **Bodywork from John Elwood.**
- **Paint Codes from Paul Tegler's 'Teglerizer' site**
- **British car keys cut in the USA by Pete Groh.**
- **Roadster screen from Lee Daniels** (updated link)
- **MGB Chrome Bumper Conversion sites from Google**
- **Body Rotisserie from Bob Beaupre**
- **Body Rotator from Skye Poier**
- **'The Instillation (sic) of Sills & Rockers' from Classic Auto Restoration Services. A commercial site but includes 'How to' and FAQs.**
- **Hood/top fitting from Washington DC Centre MG Car Club**
- **Remanufactured parts from British Motor Heritage Ltd.**
- **Brief information on fitting a child seat in the back of a GT. The lap and diagonal static belt from Securon can be found here. NOTE:** Check the legality of these in the UK following the change in UK law from 18th September 2006, although it seems that systems with an older BS approval marking will remain legal until May 2008. Other than that it is **legal** to have an unrestrained child (or two) in the back of a GT, but **illegal** to have them restrained with an **unapproved** system.
- **Herb Adler on radio speakers, door alignment, door latches, central door locking, alternative seats, fitting an arm-rest cubby, bonnet release, wheel arch liners**

Brake Links:

- **Brake fluid from Veteran Triumph Register**
- **Servo overhaul on a TR6 from Buckeye Triumphs.**
- **Low brake fluid level warning - note the remote servo can suffer seal failure which causes all the fluid to be sucked out of the master!**
- **Herb Adler on alternative brake light switches**

Clutch Links:

- **Herb Adler on clutch release/throwout bearing**

Cooling Links:

- **'Advanced Cooling System Basics' (sic) from Stewart Components**
- **Herb Adler on cooling system enhancements**

Electrics Links:

- **Smartscreen intermittent wiper control.** So good I have them on both my MGBs.
- **Lamp/bulb and fuse info from 'Automotive Lite Bulbs'**
- **More lamp/bulb info from Daniel Stern Lighting including FAQs, Tech info and 'How To'. Note that headlamp aiming shows LHD, reverse the images for RHD.**
- **Lots of electrics info on the 'The T*****h TR6 Web' much of which is also relevant to MGs.**
- **Alternator conversions from Bob Muenchausen.**
- **Converting 4-cylinder tachs to V8 from the British V8 Forum.**
- **Tach calibration and repair from Mark Olsen's Sunbeam Tiger pages. Includes the circuit diagram of the inductive circuit.**
- **Rebuilding a tach with modern electronics from Theo Smit's Tiger pages includes a link to a description of how to modify the inductive tach to work with electronic ignition.**
- **Tip from Crane (may work with other manufacturers products) if your inductive tach (64 to 72) doesn't work with your new electronic ignition.**
- **Enlargeable coloured wiring diagrams in PDF format from Advance Auto-wire. These differ from the Workshop Manual Haynes Bentley in that associated components are placed together so reducing the amount of wiring snaking about and hence making them easier to follow.**
- **Lucas relay info on CRC's TVR site.**
- **Lucas Technical catalogues for bulbs, switches etc.**
- **Racemettle geared starters, contains useful info on the number of pinion teeth used by each model.**
- **Herb Adler on column switches, radio speakers, instrument voltage stabiliser, central locking, alternative brake light switches, LED instrument lighting**

Engine Links:

- **V8 power for the MGB from Dan Masters**
- **MG V8 conversions from Mike Barnes**
- **V8 conversion from Glenn somebody or other**
- **More V8 conversion from commercial site V8 Developments**
- **'MGB V8 Conversions by Roger Parker' - a noted authority**
- **A Buick V8 conversion by Leon Zak**
- **MG Engines from the TA to the MGF by Neil Cairns**
- **BMC engine numbers from 1952 to 1990 also by Neil Cairns. However the section on Gold Seal numbers doesn't include those for the MGB, for which see here.**

- **More info from Neil Cairns, this time on the differences between the 18V engine as used in the MGB and that used in the Marina.**
- **Got an 18V engine with a funny number? These were used in the Sherpa van.** (Note March 2007: Not currently available but I'll leave this link here for a while in case it comes back.)
- **Rover V8 engine number ranges from Capri Racing. Doesn't actually include the factory V8 MGB (or the RV8 as far as I know) but may be helpful if you get hold of an engine for a conversion.**
- **Oil filter study from Russ W. Knize.**
- **Engine oil bible from 'The Speed-Trap Bible' by Chris Longhurst. Also see the sections on Snakeoils and Additives.**
- **'More Than You Ever Wanted to Know About Motor Oil ' from The Vintage Triumph Register. Biased towards the makes and grades available in the USA.**
- **Another oil filter study from SHOClub**
- **More oil info, this time from a British biker, but mostly applicable to cars. Explanations of viscosity, detergency, relationship between gear and engine oil viscosity ratings, synthetics and additives ("Don't!" in this last case).**
- **Another oil filter study. Two words of warning though - this relates to very high output close-tolerance Ford engines, and to me at least the detailed data conflicts with the conclusions.**
- **Compression Tests - from Puma Racing**
- **Engine weights for many marques by Dave Williams, passed to me by Bob Howard. MG 4-cylinders under 'BL', V8 and V6 under 'Rover'. Some engine dimensions, only for the V8 in the case of MG, also some gearbox weights. See here for Workshop manual info.**
- **Cylinder-head casting numbers - a frequent source of questions - from British Automotive**
- **MGB cylinder head identification from Sean Brown's Flowspeed.com, mainly for North American spec engines.**
- **A little more MGB cylinder head identification info this time from Paul Walbran Motors in New Zealand.**
- **Herb Adler on oil leaks, head removal, running-on, exhaust**

Fuel Links:

- **Carburettor Models by Year from Paul Tegler's 'Teglerizer' site**
- **Polishing SU dashpot covers by Paul Tegler**
- **'Living with Unleaded' from Rick Astley**
- **SU Carburettors by Scott Fisher and Roger Garnett**
- **Tech info from ZTherapy**

- **THE S.U. VARIABLE CHOKE CARBURETTOR by Malcolm Land - what it is and how it works.**
- **SU Carburettor Tips by Jim Taylor from the Jaguar Clubs of North America, including piston 'drop test' specs**
- **Unleaded Fuel - a technical guide from Puma Racing.**
- **Detailed pictures of the HIF6 carb linkage pieces on the factory V8 from British Auto.**
- **SU Fuel Pumps description, rebuilding and modification by Dave Dubois.**
- **RON MON and PON (American) octane ratings explained from Wikipedia and compared by Mad Mole.**
- **Zenith/Stromberg water choke by Rick Jaskowiak. And for a picture of a manual choke conversion click here.**
- **SU/Butec carb data from Peter & Rita Forbes' Engine Webpages.**
- **SU carb and fuel pump parts from SU Burlen. Includes spec data on things like piston springs.**
- **'Minty Lamb SU Needle Compare-o-rama'. Shades of Wallace and Gromit, but it is an on-line SU needle comparison and selection program.**
- **Alternatively a downloadable comparison and selection program from Scott A. Beavis.**
- **Herb Adler on fuel pumps, carbs, using a Colortune, fuel tank sender, fuel leaks**

Gearbox Links:

- **A gearbox testing tool from Kai Radicke**
- **Adding overdrive to a non-overdrive gearbox by Octarine Services**
- **Theoretical Top Speed calculator from mySportsCar.**
- **Modifying the rear crossmember to give improved access to the gearbox mount bolts. NB: Not sure if this is strictly necessary if you attach the crossmember to the gearbox before you raise the cross-member up to the chassis rails.**
- **Herb Adler on gearbox problems, alternative gearbox**

Heater Links:

- **Heater Valve Improvements for BMC B-Series Engines from Bob Muenchausen's 'Muenchausen's Garage'**
- **MGB Heater Rebuild and Upgrade from Chicagoland MG Club**
- **Herb Adler on an alternative heater tap**

Ignition Links:

- **Distributor curves from Paul Tegler's 'Teglerizer' site**
- **Electronic Ignition Systems from Autocar Electrical Equipment Co Ltd**

- **More distributor info from Doug Jackson's 'British Automotive'.**
- **Even more distributor info from TDC Engineering many Lucas serial numbers not just MG.**
- **Yet more distributor info from AutoChart Inc.**
- **Tuning (as opposed to 'setting-up') Lucas distributors also from TDC Engineering.**
- **A problem and solution when installing electronic ignition systems.**
- **Product information for the 123 electronic distributor. For installation and technical data see here.**
- **Transpo supply the electronic module for the 45DM4 distributor. Select 'Ignition Modules', 'Delco', and it is the DM1906.**
- **Original-spec advance springs, yes advance springs, from Distributor Doctor, although unfortunately only for 25D and not 45D. Other springs available if you can quote dimensions, also all other distributor parts and a rebuilding service.**
- **Points, condensers, rotors and caps reputedly of better quality than those from the usual suspects, as well as electronic ignition conversions.**
- **Herb Adler on the distributor**

Propshaft Links:

- **Driveline alignment - problems and solutions from Drivetrain Specialists of Las Vegas**

Rear Axle Links:

- **Wheel hub and rotor/disc measurement points from Wheel Vintiques**
- **See just how much a live axle like on the MGB can move about when pushed**
- **Herb Adler on banjo diff, octagonal nuts**

Steering and Suspension Links:

- **Tube shock conversion from Paul Tegler's 'Teglerizer' site**
- **Suspension bible from 'The Speed-Trap Bible' by Chris Longhurst**
- **Make your own steering column/rack shaft alignment tool.** Original link replaced by a section in 'Spanners' as more information has come to light, click on the globe then 'Column/Rack Alignment'.
- **Herb Adler on steering, rear bump stops, spring breakage**

Wheel Links:

- **Tyre sizes and axle ratios from Skye Poier's 'The MGB Experience' site**
- **Tyre sizes and axle ratios from Scott Galaba's BMW M Coupe and Z3 Coupe site.**

- **Wheels and tyres bible from 'The Speed-Trap Bible' by Chris Longhurst**
- **Tyre Size Comparisons from Club DSM**
- **Tire/Wheel Combination Calculator from Rick Tolan**
- **Solent Wheels, who apparently make a good job of refurbing V8 wheels where the chrome is peeling. They powder-coat the whole wheel silver, then top-coat the alloy with satin black, and polish the areas round the cut-outs, all for £50. I understand they split the centre from the rim and re-rivet in the process.**
- **Central Wheel Components. They can make stainless spokes to fit MGB wheels for you to fit but do not work on the wheels themselves, only motorbike wheels. Highly polished they are close to chrome, but are said to resist breakage better.**
- **British Wire Wheel - based in the USA despite the name. Sell both Dunlop and Dayton so a useful price comparison.**
- **Tyre sizing sidewall info construction etc from Dunlop**
- **Wheel and Tyre Sizing from AGP Motorsports**
- **Lots of stuff on wheels and tyres from the All Morgan site**
- **My local wire-wheel rebuilder - Phillips & Son, Unit 3, Seven Stars Road, Oldbury, West Midlands, 0121 544 9060, just a couple of minutes from J2 of the M5. The map (click the globe) has the green arrow close to where they actually are between the canal bridge and the A457, even though that is shown as Park Lane and not Seven Stars Road.**
- **Weights of many wheels, probably all after-market.**

If you know of any sites containing technical information that you would like to see listed here (including your own of course) please mail me with the URL.

http://www.mgb-stuff.org.uk/