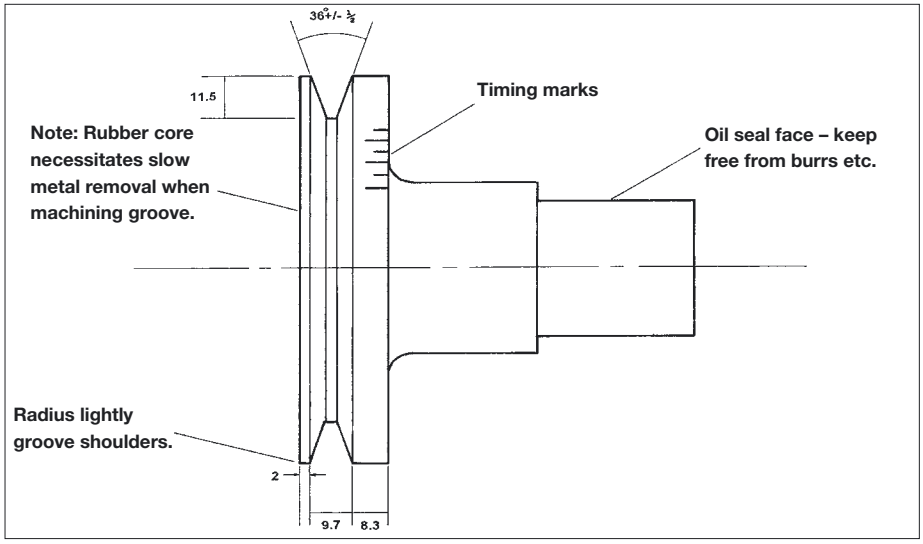


D2-1 Machining detail for fanbelt groove in SD1 crankshaft pulley.

2-2-4 Later Rover front pulleys may consist of differing components but should still provide ...

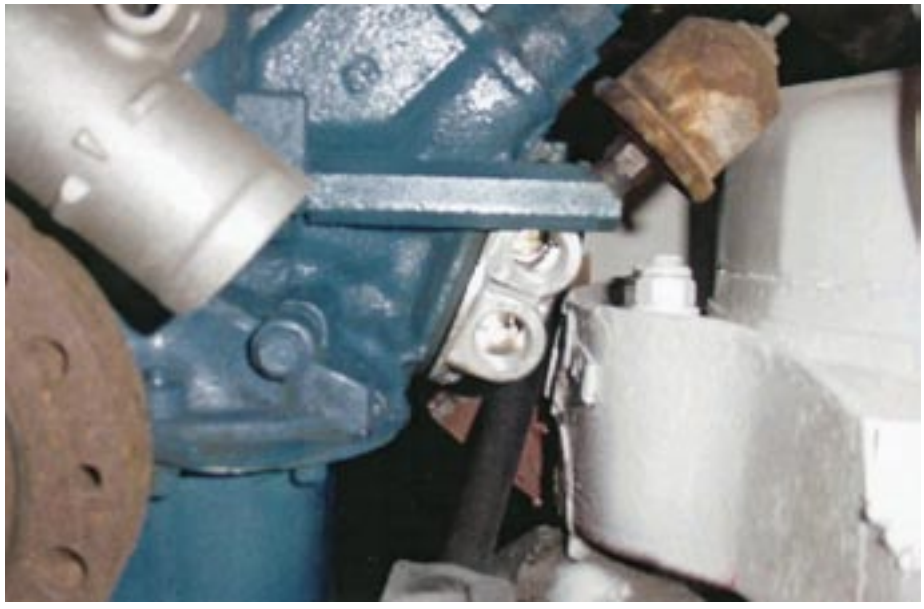
present a problem in that their front covers need replacing and you will need to find a distributor or the body for a distributor. The former is no problem as Clive Wheatley (MGB V8 Conversions) is having them re-manufactured but the latter are now quite scarce and you may have to resort to a Mallory twin-points dizzy.

The front pulleys for any post-Rover P6 will be difficult to find too given their popularity in conversions and kit cars. The SD1 and later crankshaft pulleys are all too long in standard form to enable you to fit a radiator once you have the engine in place, consequently a shorter pulley is essential.

The P5B/P6 Rover pulleys seen in picture 2-2-1 are ideal but in very short supply. Consequently you may need to remove the bolts that hold the various parts of most bottom pulleys together as per the SD1 pulley shown in photo 2-2-2. Throw the front and rear sections of the assembly away but keep the cast section with a rubberised, bonded, outer circular casting (photo 2-2-3). Have this machined as per drawing D2-1 to accept a fanbelt (photo 2-2-4). Incidentally, Land Rover and Discovery pulley assemblies are even more complex as picture 2-2-5 shows.

2-2-5 ... the vital harmonic rubber-bonded balancer you need.

The shortage of P5B/P6 front pulleys and the difficulty of finding a matching set of crankshaft, alternator and water-pump pulleys (all of which need to line up if the fan/drive belt is to run consistently) may lead you to consider bespoke/custom pulleys. As shown in picture 2-2-6, there is no disputing they enhance the appearance of any engine bay and are a necessity if you have no other way of aligning and sizing



3-5-9 … even with a Trans-Dapt #1413 adapter in place. Some adjustment to the engine position or the chassis rail will be required. This engine was moved about 1 inch to the right while …

3-5-11 … here. Note the filter location on the left inner wing. The parts are available separately (in which case note that it uses ½NPT tapered pipe threads) or in a kit with a filter holder and hoses (seen here too). This shot is also valuable as it shows the chassis mounts for Caterham flexibles and the line of the steering shaft. This is a rubber-bumper, front crossmember rack and, consequently, smaller rubber-bumper steering u/j. The inner wings have been opened out for the RV8-style exhaust manifold/headers for the Ford that will shortly fill this space.

3-5-10 ... this engine was kept central and the chassis rail bent slightly away from the engine as we see …

this will not work with a rear sump engine. Early rear sump engines had the dipstick mounted on the oil sump pan itself. Later engines all have a dipstick hole towards the rear of the block as seen at 3-5-12. This hole is blocked off on front sump engines. If you build your engine, fit a Lokar flexible dipstick – also on view in picture 3-5-12. However, if buying a crate engine, it will have a dipstick boss in the block, and will generally only fit a Ford dipstick tube. Unfortunately, this tube is too long and will have to be cut. The dipstick itself will also have to be cut and new oil level lines marked on it. Be sure that the tube is not too long or it may be impossible to install the manifolds/headers.

- The alternator on a Ford engine is usually mounted on the right side. However, the left cylinder head is mounted slightly to the rear of the right side, so there is slightly more space available if you mount your alternator on the left side of the engine (picture 3-5-13).
- For V8 conversions where there is minimal under-bonnet clearance, the engine-steady seen in 3-6-14 may help.
- If rebuilding your own Ford, choose the camshaft with care. There are many options but XE (Xtreme Energy) Comp Cams XE264HR comes highly recommended. It is mild yet capable of producing 384bhp at 6000rpm with the appropriate supplementary equipment. It also has a

5-3-1 This photograph clearly shows the right side inner wing aperture for the RV8 exhaust system. Sharp eyes may see the spot welds around the aperture showing the strengthening lip/rim has already been added to the underside of the inner wing. The rear of the front wheel is clearly seen but you may not notice the slightly flaring and angled style of the headlamp mounting (top left) declaring this also to be an RV8 replica bodyshell. The beneficial side effect of these two inner wing exhaust apertures is a significant increase in airflow through the engine bay.

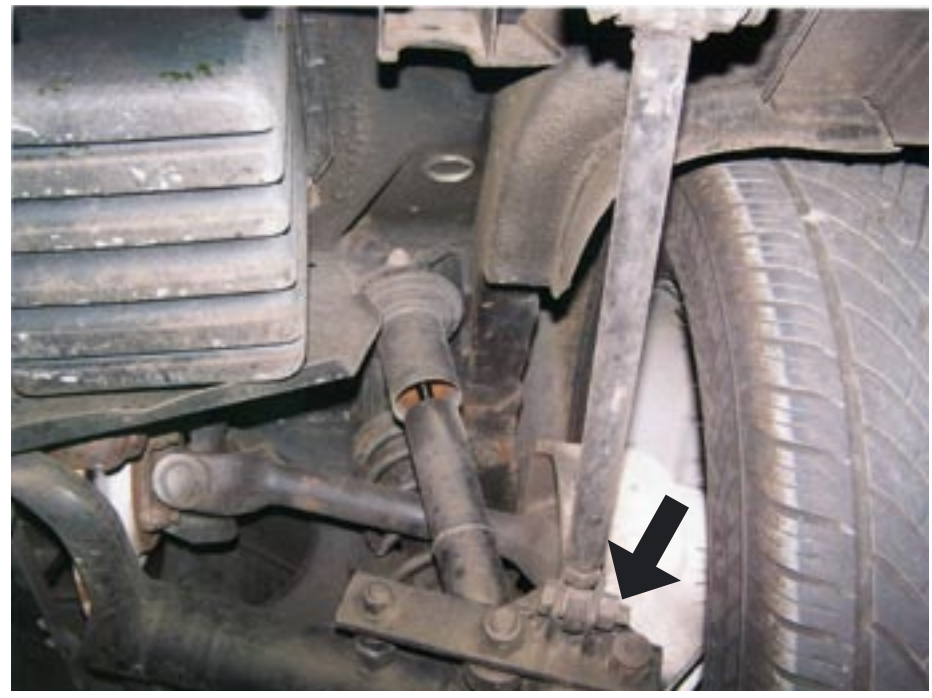
and minimize the under-bonnet/hood resistance to air flow and thus maximize the flow of air through the radiator. Even if you are using a block-hugger exhaust system, you can cut, strengthen and temporarily mesh-over similar holes to increase your air flow.

- Assist air flow through the radiator, particularly at slow speed, via fan(s). Mechanical and electric fans are explored later in the chapter.
- The volume of air feed to the radiator will be enhanced by a front ST (Special Tuning) air dam. Available in plastic or fibreglass, these dams bolt on as a substitute for the original front valance and an example is shown in photo 5-3-2. Take care parking front-on to any high curbs, however, and I recommend the fibreglass material since, while it may not look as pretty, it is much easier to repair. A not insignificant additional benefit of a front air-dam is that front end stability is also enhanced making this a **must**. If, for some reason, you do not plan to employ the ST front valance, it is important that you ensure that the later MGB front valance with twin ventilation slats is fitted to the car, as is clearly shown in photo 5-3-3.
- Bonnet louvres are really only effective when the car's speed is above 30mph and then only when they are positioned in an area of (relatively) low air pressure. The area in front of any car is a high-pressure area due to the car's movement compressing the air and pushing it out of the way. The air that is forced up over the front is deflected upwards, and so a short area behind the leading edge of the bonnet is actually at low pressure and some of the louvres seen in picture 5-3-4 may be of considerable help. At the other end of the bonnet we find that the windscreen generates another high-pressure area which is why most motor manufacturers place the heater intake there. Consequently, the vents shown in photograph 5-3-5 may help air exit the engine bay at slow speed but could actually allow air to enter it at high speed.
- The high pressure area in front of the windscreen is about one-and-a-half windscreen heights forward from the base of the screen. Clearly the louvres need to

5-3-3 The vented front valance fitted as standard to later chrome-bumper MGBs. I initially fitted this to my GT V8 conversion, but changed to an ST spoiler in the interests of additional air flow though the radiator and better front-end stability.

5-3-2 This is Pete Mantell's superb Ford 302 conversion with an ST front valance/spoiler. Note the MGC bonnet which increases the space available for the front mounted Ford distributor.

8-3-11 One of two boot/truck securing locations. Do make quite sure the frame is central by equalising both sides at the front and rear, and clamp it in place before you drill the holes for all your securing bolts. Use large load-spreading plain washers or a plate as seen here on both sides of the fastenings, and, if not aircraft grade fastenings, at least use high-tensile bolts and positive-locking nuts. The hole? There are two (one was an obsolete fuel-pump aperture) and they serve to allow access to the top mounting bolts for the rear/aft dampers.

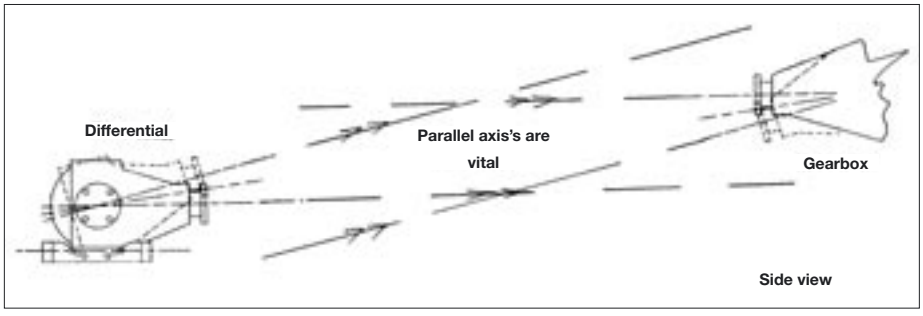


8-3-12-1 This view will differ from the usual Jaguar rear mounting arrangement because the dampers have been moved outboard by 3in (75mm). However, the rear radius arm mounting will be as you expect to find it. The arrowed bushes need replacing with polyurethane ones and, ideally in my view, the arm needs cutting and re-welding here to crank the front end of the arm over towards the centre of the car in order that the front pivot is axially in line with the inner wishbone pivot.

you've mounted your engine with a slight downward tilt (as most are), the Jag cage will need to be mounted with the matching upward tilt/angle shown in D8-2. This will probably entail the use of metal packing pieces to ensure the propshaft installation angle is correct. This detail is relevant to any IRS installation but in the case of a Jaguar unit you will need a pair of CWI adjustable side brackets to ensure the axis of the engine/gearbox unit and the axis of the differential are parallel (not aligned) with each other. These brackets are therefore an essential purchase for any MGB Jaguar installation – ask CWI for part number 1340-1342.

Fit a ¼in (5mm) heavy rubber pad between the cage and body to minimise road noise and vibration. You will need to through-bolt the cage to the MGB's flat body panels in at least four locations – two in the boot/trunk and two in the passenger compartment just behind the battery box cover. You will see one of these locations in picture 8-3-11.

8-3-12-2 A closer view of the unnecessarily altered bottom damper mounting. The spacing washers seen very clearly here substitute for the original space taken up by properly positioned dampers.



D8-2 Installing the propeller shaft with parallel axis.

13-1-2 ... consider this much smaller, lightweight unit with its internal fan.

13-1-2 endorses this point. This is aided by the trend of incorporating the cooling fan inside the alternator, and this can be seen in photograph 13-1-3. Size for size, therefore, with the output of the alternator about double what is was five to ten years ago, the necessity for a larger amperage alternator need not generate a space problem, even inside the most crowded engine compartment.

In the UK, Clive Wheatley (picture 13-1-4) and/or Cambridge Motor Sport (picture 13-1-5) have these and other options available. However, you may care to visit your local breaker's yard and look

13-1-3 A modern high amperage alternator with internal fan. Note the different fan/ drive belt (no more 'V' belts) which gives food for thought insofar as water pump and crankshaft pulley shapes are concerned.

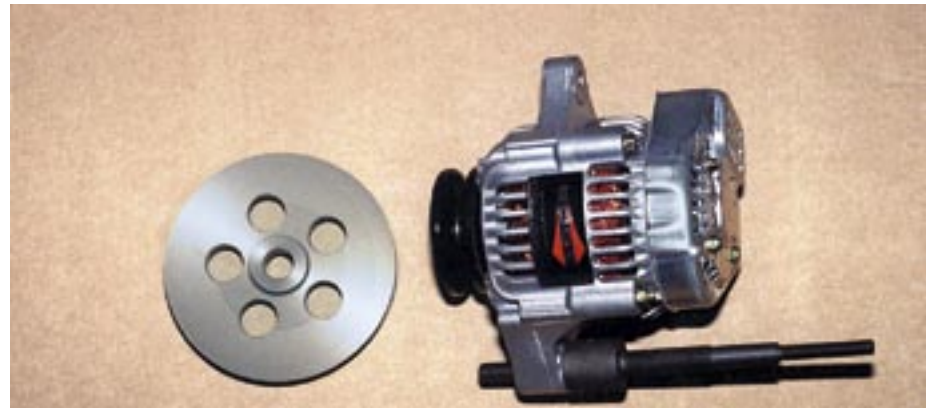
13-1-4 The traditional 45 amp MGB GT V8 alternator and excellent reproduction V8 mounting bracket available from Clive Wheatley,

for small alternators. They are common on modern Japanese cars and I'm sure you will find one that is small enough. However, you also need to ensure that the direction of rotation, wiring arrangements and output potential are suitable for your intended application.

In the US, converters need hardly go further than their nearest speed shop as General Motors' (Delco) internally regulated alternators, called type S1, are the units of choice for most MG V8 conversions. The GM alternators come in a couple of sizes/ amperage ratings – 10SI and 12SI, and are relatively inexpensive. These are some of the most common alternators in the US and are, consequently, available everywhere. However, a look at www.madelectrical.com/electricaltech/delcoremy.shtm will give more information. The exact model chosen will depend on the amperage required and the clearance available in the alternator's proposed mounting position. D+D Fabrications has Delco 80 amp, three-wire units available.

Incidentally, I think you are best avoiding single-wire alternators. They cost more than the equivalent three-wire, have no advantage in an MGB and don't work until the engine revolutions become elevated. A standard three-wire will generate usable amounts of current at idle. The idea of a one-wire alternator is to simplify installation and, while this may work on many cars, the MGB (depending upon its year) has either three or five wires connected to the Lucas alternator or two connecting wires if it is still fitted with an early dynamo. In short, it's actually easier (in an MGB) to use the more usual three-wire alternator. Furthermore, you'll lose the use of your ignition warning light if you use a one-wire generator.

The conventional V8 alternator location for the Rover engine is in front



13-1-5 A neat Cambridge Motor Sport 45 amp alternator conversion kit. Also in shot is the large aluminium pulley that you will need to drop alternator (any alternator) rpm down to something more practical when the engine is running at the high rpm expected in competition. Note the special single mounting pivot supplied with the kit.