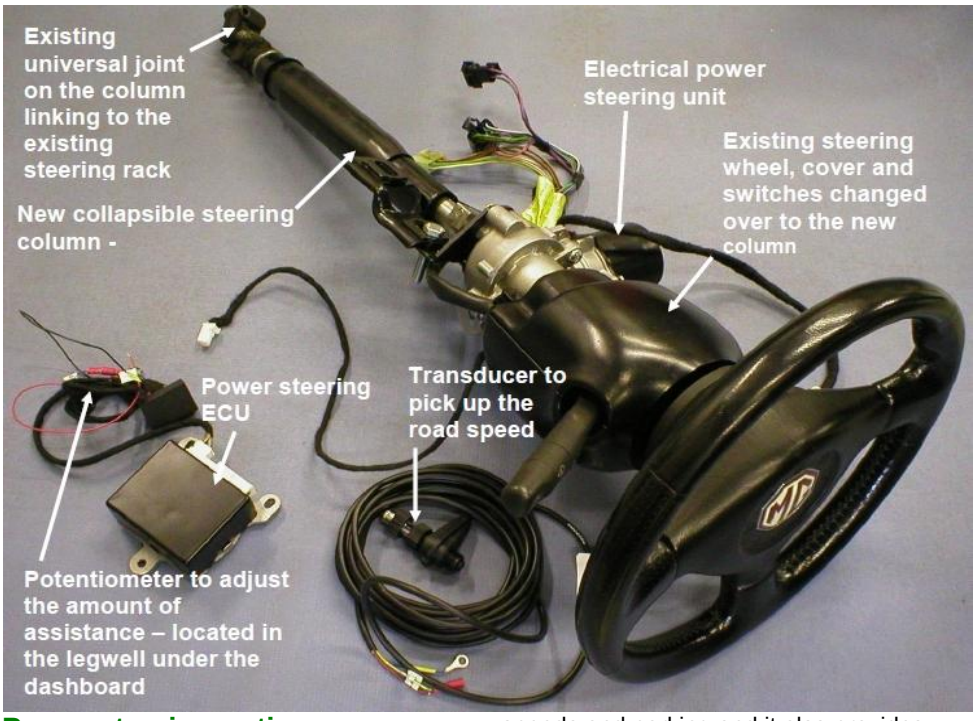


Power steering options

Fitting power steering to a classic MG is a topic often raised, particularly in relation to the RV8 which many people find heavy to steer. Hydraulic power assisted steering (PAS) systems have been available for a while, and some RV8s reimported from Japan have been retrofitted there with the MGF EPAS (electric power assisted steering) system. With a new EZ EPAS conversion available in the UK, how do these systems compare? Victor Smith reviews the available options.

Hydraulic PAS as a retrofit

The possibility of PAS as an option on the RV8 was considered by MG Rover when the model was in production at Cowley. They went as far as having one car fitted with a hydraulic system using a replacement Peugeot steering rack but decided not to go ahead as a production option on UK models because of the cost. They also accepted that for the Japan spec cars there was not sufficient space to accommodate the PAS kit in an already congested engine bay.

Some ten years later a hydraulic PAS conversion was available from the MGOC Workshop and many MGB, V8 and RV8 enthusiasts have since had that system as a retrofit. The conversion has a mechanical hydraulic pump, driven by a belt from the engine via a pulley and fed from an oil reservoir which provides the assistance through a new hydraulically assisted steering rack. This reduces the effort required to steer when manoeuvring at low speeds and parking and it also provides virtually effortless control on long journeys whilst still retaining a positive road feel. The installation uses the original steering column but involves removing the original steering rack and fitting a new replacement rack attached to modified rack mountings accurately welded to the front crossmember. The new rack has a slightly higher gearing and a marginally increased turning circle.

This well engineered power steering conversion is produced by an accredited British specialist manufacturer and has proved reliable. Initially there was natural concern with pressurized oil in a hot engine bay but the oil reservoir, originally located on the inner wing above an exhaust manifold, was well insulated.

The system can be made adjustable from the engine bay with the addition of a valve and by-pass pipe giving scope for a range of assistance from maximum PAS to none. Generally the noise created by the pump is small but when you are on full lock you can hear the pump as you will with most hydraulic PAS systems.

Improved electro-hydraulic PAS

Later an improved conversion was developed with an electrically driven hydraulic oil pump attached to an oil reservoir - both are located at the front of the car behind the grille under the slam panel as you can see on the next page. These were useful changes which enabled the system to be fitted to Japan spec RV8s. David Driver, a former owner with a reimported RV8 still complete with all the Japan spec aircon equipment in the engine bay, confirmed the electro-hydraulic PAS installation was successfully put on his car. The original steering column is used with a new rack.

As with all PAS systems fitted for decades past, any system always has to have the failsafe characteristic that if the power assistance fails then the steering remains unaffected other than becoming heavier and requiring more physical effort from the driver. Fortunately failures with the electro-hydraulic PAS system are rare - there has been only one reported which resulted in a hose blowing off a metal connection and dumping all the hydraulic oil. So members report satisfaction with the quality of the electro-hydraulic PAS installation and they find the reduced steering effort has improved their driving experience.

EPAS retrofit with an MGF unit

A number of RV8s returning from Japan have an MGF EPAS retrofit which was carried out in Japan. So far we have not been able to trace who installed these systems in Japan but it is believed to have been the work of one company. The EPAS was a very advanced feature on the MGF back in 1995. With the MGF EPAS option the steering assistance is provided by an electrically driven power unit applying the assistance on the steering column. The electrical power unit is located in the legwell above the driver's legs – see the photo below. This option has good driver feel, is speed sensitive and silent, consumes power only when the steering assistance is required and is very good value. Members with this EPAS option report satisfaction with the installation, the reduced steering effort, the reliability of the system and the modest cost. Some MGF EPAS retrofits have been undertaken on RV8s by enthusiasts in the UK and by an RV8 specialist in Australia. The installation uses a either a new or used MGF EPAS steering column and the same RV8 steering rack but requires a new boss to be made to suit the original RV8 steering wheel and to fit the new column.

EZ EPAS – a well engineered retrofit

A new EPAS system was launched a couple of years ago by the Dutch group EZ Electric Power Steering (EZ) who developed their kits using well proven, good quality equipment sourced mainly from two major Japanese manufacturing groups, Koyo and NSK, who supply leading car manufacturers. The advantage of using these units is that numerous safety features are already built in which makes it easier to obtain TUV certification, a procedure involving rigorous

testing of components to verify they satisfy strict European regulations. The EZ retrofit equipment (see the main photo) is compact and uses the existing steering rack so retains the standard steering ratio and setup. The amount of assistance is fully adjustable using a knob operating a potentiometer and one option is to have a transducer added which then makes the system sensitive to speed and load.

EZ supply complete kits for installation by selected specialists. The bespoke brackets are CNC laser cut and designed to fit the original mounting points on your car. A key point is that no holes are drilled for the installation and there is no removal of the existing steering rack with consequent cutting or welding, so the car can always be converted back to its original steering column and Factory set up.

The simplicity of the system is a major benefit - it is completely hidden below the dashboard above the legwell and in the engine bay there are no changes. As the system does not need an oil reservoir, pump, belts and rubber pipework located in a cramped engine bay, everything remains original. With a well filled engine bay on an RV8 or MGBGTV8 that is good news. It's also quiet in operation with no noise from pumping fluid and it uses less energy than a hydraulic system as the electric motor only needs power when steering assistance is necessary, whereas a hydraulic pump is operating continuously when the engine is running.

A key safety feature is the new collapsible steering column should the car suffer a heavy frontal impact - essential for driver safety. The input and output shafts have the original male splines at the outer ends allowing the original steering wheel and steering box to be used. The other side of the shafts have female splines which connect to the power steering unit. This guarantees a reliable connection under all conditions.

The power steering ECU (electronic control unit) and the torsion sensor that determine the amount of assistance are reset by the specialist installer to suit the steering characteristics of the car. The modern ECUs work with CAN bus (controller area network) data signals which are not present in a classic car. To solve this, EZ has developed an interface that simulates the signals for engine speed, road speed and steering angle of the CAN bus and regulates the ECU. The speed signal is obtained through a speed sensor installed between the speedo cable and the speedometer.

The EZ retrofit EPAS kits have been installed on a range of classic cars from Astons to TVRs and many installations on MGs including MGAs and MGBs. EZ EPAS retrofits for RV8s and MGBV8s are available from Clive Wheatley mgv8parts, the well known MGV8 specialist, where Steve Newton has spent over six months developing the installation for the RV8 to ensure the kit is fitted correctly. He has provided EZ in Holland with vital feedback to ensure the kits they supply incorporate the necessary RV8 requirements.

On the road the electric power steering system is truly speed-sensitive. It will steer light at low speeds and not become lighter at high speed. The amount of assistance can be selected using a knob operating a potentiometer located on the trim alongside the driver's leg, so the driver can select the amount of steering assistance they want by turning the knob for more assistance if the car is fitted with wider tyres or a smaller steering wheel. As the adjustment is so easy to make a lady driver can dial in more assistance to suit her preferences and then when another driver takes over the car a further adjustment to suit their needs can be made very easily.

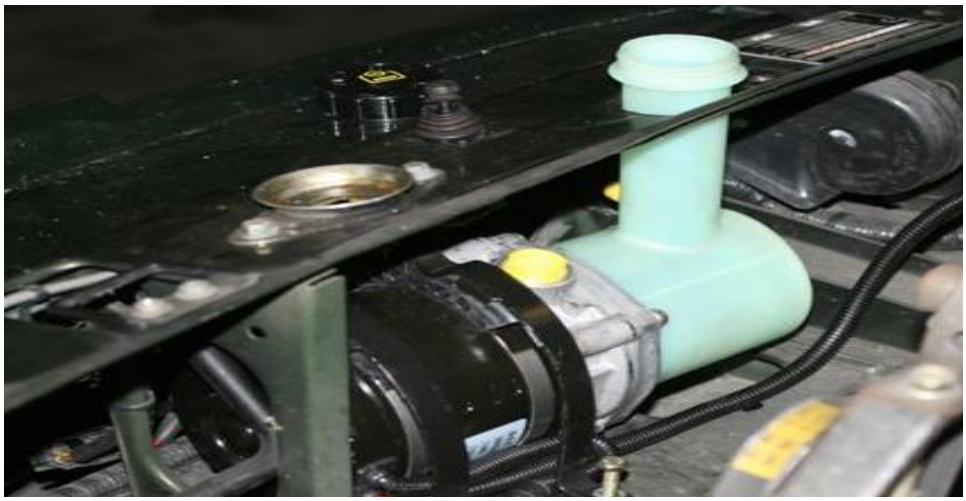
The fail safe characteristics are good too - in the unlikely event that the electric power steering system has a defect, the car would steer through the original rack exactly as it did prior to the power steering conversion.

Clive Wheatley is enthusiastic about the new EZ EPAS system for the RV8 saying "it is well engineered with all new parts including a new collapsible steering column, and is a simple and neat installation requiring very few modifications to the car. The system uses a new, specially designed EPAS kit, not new or recycled MGF EPAS parts." His colleague Steve Newton can usually do an installation in a day.

How do the alternative PAS systems compare?

The hydraulic systems have been popular for almost a decade but the EPAS options, particularly the well engineered EZ system, do offer advantages – no change to the original steering rack, a complete replacement steering column with the EPAS unit attached and located in the legwell, no hydraulic equipment or pipework in the engine bay, low power consumption and the convenience of adjusting the power assistance from the driving seat with the EZ unit. The hydraulic PAS kits are £2,350 and the EZ EPAS is £2,100 each fully fitted by well regarded installers. Both include VAT. The MGF EPAS retrofit is much less but is not generally available in the UK. So on points the EZ kit looks the better option.

Finally two footnotes: as any PAS retrofit is a major safety related modification, it's essential the policyholder notifies their motor insurer with details of the conversion and who carried out the work. Most specialist classic car insurance brokers and insurers will simply record the information with no policy amendments, particularly where the installation has been carried out by a well regarded specialist known to work to high standards. This article is only for information and as it involves a safety critical area of the car, it is not a recommendation to use the modified parts required and the conversion work involved.



Courtesy light upgrade

One issue that some enthusiasts may find a little frustrating with the Factory V8 compared to a modern car is the lack of sufficient courtesy lighting. Whilst it obviously isn't an issue during the day, the somewhat feeble amount of light emitted from the lamp mounted on the radio console below the dash can make using the car at night difficult if you need to read maps or find things in the car. Here Jonathan Moulds describes a very worthwhile improvement at little cost which is relatively easy to carry out.

There is a simple solution to the problem in the form of LED type flexible strip lights with an adhesive backing. These can be sourced relatively cheaply on the internet or from your local electronics store and fixed to the underdash cross brace and wired neatly into the MG's original wiring harness. The current consumption of LEDs is very small so the extra battery drain is insignificant.

To fit the strip lights the centre console must be removed by taking out the four chrome screws around the gear lever (noting from which of the four positions the shortest of the four screws was affixed) and by also removing the single screw at the rear of the inside of the centre console pocket. Also you may find it more convenient to unscrew the gear knob and its lock nut. The entire assembly must now be slid back around an inch, lifted over the gear lever and set aside. At this point you must also remove the L shaped brace for the glove box as this will impede the fitment of the passenger side strip light later on.

The lower dash assembly must now be withdrawn to access the wiring behind the courtesy lamp. To do this, there are four chrome screws on the sides of the lower dash panel which must be removed. It may also be necessary to remove the front facia of the radio (where fitted) to allow the lower dash panel to slide forward exposing the wiring harness.

You can now mock up the LED strip light by holding it against the 1 inch square box section brace that runs behind the dashboard and taking an approximate measurement you will need to extend the wiring for the strip lights. An appropriate length of wire can be soldered onto the positive and negative wires on the strip lights and Lucas type bullet connectors soldered onto the ends. LED strip lights must be connected up with the correct polarity in order to function. If they are connected up incorrectly they will not illuminate.

Look for the purple wire feeding the back of the courtesy light. There will be a single inline type connector fitted between it and the main dash harness. The single inline connector must be replaced with a four way type connector. The courtesy light can then be reconnected to the main harness and the positive wire from the LED lights connected into the remaining two connectors. The earth side of the LED strip lights must be connected to the same connector as the earth lead from the courtesy light. This earth lead is the one interrupted by the courtesy light switches. You will need to either exchange the four way connector for a 6 way connector or, run a short lead from the remaining space in the original four point connector block to another four point connector block. The strip lights are now wired up such that they will now illuminate both when the doors are opened and also when the switch is activated on top of the courtesy light.

Fitting the LED strip lights is a simple case of peeling off the plastic backing and pressing them firmly to the underside of the 1 inch box section brace which runs across the width of the car. The dash can then be reassembled in reverse order as above.

For the installation on my V8 (Flamenco 2538) I chose to use two 15 bulb LED strip lights as they are approximately 30cm in length which is just about right for each side under the dash. I also chose to use green strip lights to compliment the backlighting of the instrument dials. However, there is of course a wide selection of choices. White or yellow light would be just as effective. A fully illustrated note is available on the V8 website as V8NOTE437.

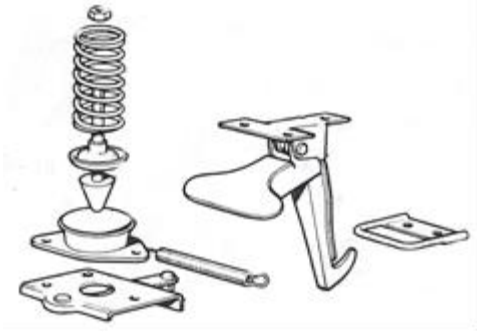
Brand new V8 distributors available

The Distributor Doctor has fortunately acquired a few brand new, UK made Lucas 35D8 distributors in the earlier style complete with points and external dwell adjustment with the hexagonal bar. They also have the original vacuum advance unit with the offtake midway down the slope which is exactly correct for the Factory V8 model. Martin Jay was pleased to see the advance curve was so close to the original 2% tolerance curves and says "these are the real thing, absolutely not to be confused with low grade reproductions. They are available at £195.00 plus VAT." He can also supply the new distributor fitted with the Pertronix electronic ignition kit as a replacement for the points.

Caution with your bonnet catch

Malcolm Venables reported a dangerous experience with his bonnet catch failing which allowed the bonnet to blow up onto his screen. Here he describes how it happened and recommends the bonnet catch is checked carefully as a service item.

Malcolm reported that having finally got his Factory MGBGTV8 back on the road last year, he had been gradually ironing out all



the wrinkles. A couple of months ago whilst driving home from picking up a new computer monitor he had the bonnet fly open. He knew this is not an unheard of experience, but it did take him by surprise particularly as he made a point of listening for the catch to click home when shutting the bonnet. Fortunately it happened as he was leaving a 40mph limit and on a straight road with little traffic, so he was able to stop the car safely. However the bonnet was now bent back over the windscreen and the roof.

Careful examination revealed that the primary locking mechanism had started to work loose, that is the spigot that screws into a threaded hole in the bonnet and had a certain amount of play, sufficient to become disengaged with the latch. However Malcolm was surprised the safety catch didn't hold.

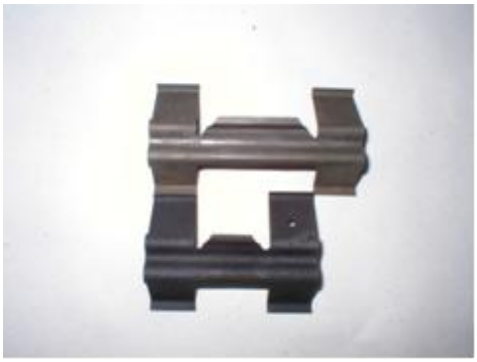
Malcolm had on rare occasions in the past known the bonnet to pop at low speed if not completely shut, but this would always happen very shortly after starting off and would always be contained by the safety catch. However on reflection the MGB bonnet has an aerofoil shape and he felt that once 40mph or so is reached there is sufficient lift to overcome the safety catch, certainly it is much more flimsy than the one on his C class Mercedes for example.

So the moral of the story is make a careful check of the condition of all the bonnet securing devices and as, with everything else on the car, significant wear is likely after 30 years. Malcolm was very fortunate in obtaining an unused Heritage bonnet on eBay for under £100 which he thought was a bargain, but he has also now fitted a bonnet strap just to be sure!

Editor's footnote: the MGB Workshop Manual AKD3529 covers removing and refitting the bonnet lock in Section R: The Body (on page R2 issue 10 in the 15th edition) and notes that when refitting the lock ensure that the bonnet lock, safety catch and the bonnet are correctly aligned before finally tightening the securing screws. After assembly adjust the latch pin to obtain ease of closing, lubricate the lock, catch, hinges and check them for correct operation.

RV8 front disc brake caliper clips

Finding replacement clips for RV8 front disc brake calipers is difficult as John Cumming found recently saying “two clips on my car are broken and I have tried the usual suppliers without success, does anyone know if the same clips were fitted to any other make and model of car?” Tony Young noted he found from his research a few years ago that the clips and pins on the RV8 are unique. The very good 4-pot AP calipers



were originally fitted to the 1980s Austin Princess but when used on the RV8 they were modified with a thick spacer inserted between the two halves of the caliper body to clear the thicker ventilated disc used on an RV8. So the RV8 pad retaining clips are wider than the 'standard' ones. It seems that some specialist brake parts suppliers may not be aware of that difference as the clips they supplied were not right for the RV8. Clive Wheatley confirmed the RV8 clips are different and currently are very scarce but the good news is he had already got resourcing these essential parts in hand. It’s an example of a knowledgeable “full service” specialist RV8 parts supplier working quietly to ensure fellow enthusiasts have a good replacement parts service. What had taken time was finding a new manufacturer because his previous local supplier in the West Midlands had gone out of business.

Alternative replacement RV8 fog and indicator light units

As an alternative to sourcing RV8 foglight units from “MG Rover” sources, you can go to your local Ford dealer and purchase a replacement unit part no. F7261216 as the part was also fitted to a 1994 model year Ford Fiesta 1.6 SI 16v. The replacement from Ford comes with only the lamp unit so if you are replacing an existing lamp you will need to reuse the bracket from the old unit including the rear cover and wiring with the RV8 connecting plug. If you are converting a Japan spec RV8 by removing the aircon intake and substituting the fog lamp, then you will need to find those parts. This tip was first noted by Bryan Ditchman in 2003 who added “do remember if you have a broken fog lamp, do not throw anything away!”

Eric Pfändler in Switzerland reports he found an alternative source for an RV8 direction indicator lamp including the lens ZKC6428 from his local Land Rover parts supplier under part number AMR6527.That part includes the whole lamp unit including the plastic amber lens.

V8 Curry Evening

A curry evening is a popular annual start to the season for V8 enthusiasts and in recent years has been held on the Saturday evening before the Stoneleigh MG Show the following day. For 2012 the curry will be on Saturday 18th February at the Palash Bari, an Indian restaurant in the village of Fosters Booth on the A5 in Northamptonshire between Towcester and Weedon. For satnavs the postcode is NN12 8LB. Meet in the bar at 6.30pm for dinner at 7.00pm prompt in a private dining room. Prior bookings are necessary with Tony Lake on 01604 589104 – full details and a booking form are available on the V8 website.