ROVER LEARNING BUSINESS

ROVER

MG RV8
TECHNICAL REVEAL

Service Insight Video Training

This Service Insight training package has been designed to introduce you to the features and working procedures of the new MG RV8. After watching the video and reading the booklet, answer the questions on the quiz sheet and return the answer sheets to Correspondence Course Administration before 1st October 1993. Remember, Accredited Technician Points can be won for correct answer sheets.

THE MG RV8

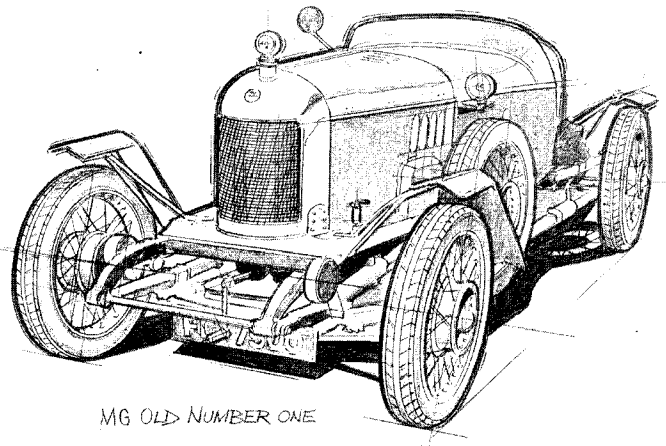
CONTENTS

IN THE BEGINNING

William Morris entered the motor industry in 1904 when he opened his first garage in Longwall Street, Oxford. By the 1920's, Morris Motors had grown into one of the largest car manufacturers in the world.

By this time, the task of running the garage empire had been given to Cecil Kimber, while Morris himself concentrated on manufacture. It was Kimber who, in 1924, decided to build a "special". Based on a Morris Oxford and powered by a 35 brake horse power, 1600cc Hotchkiss engine, it was built specifically for the Lands End Trial.

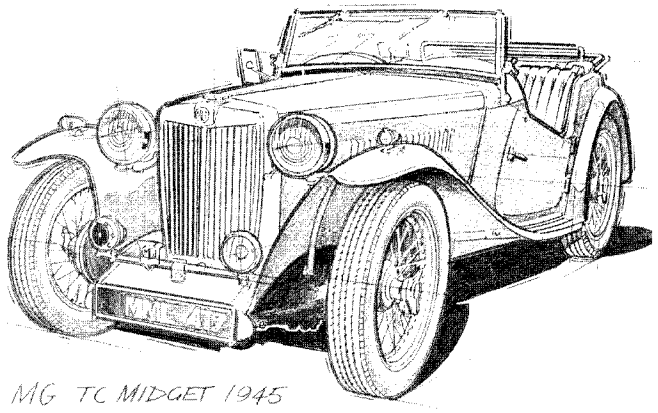
In late 1924, "Old Number One" as it was affectionately known, rolled out of Kimber's workshop. The following year, under the MG banner (Morris Garages), it won the Lands End trial.



MG OLD NUMBER ONE

Building on this success, MG, now being run separately to Morris Cars, built a succession of successful 2 seater sports cars. The K3 Magnette of 1933; the TA Midget of 1936; the TC Midget of 1945 (the first mass produced car built at the new Abingdon factory); and the TF Midget, produced between 1953 and 1955.

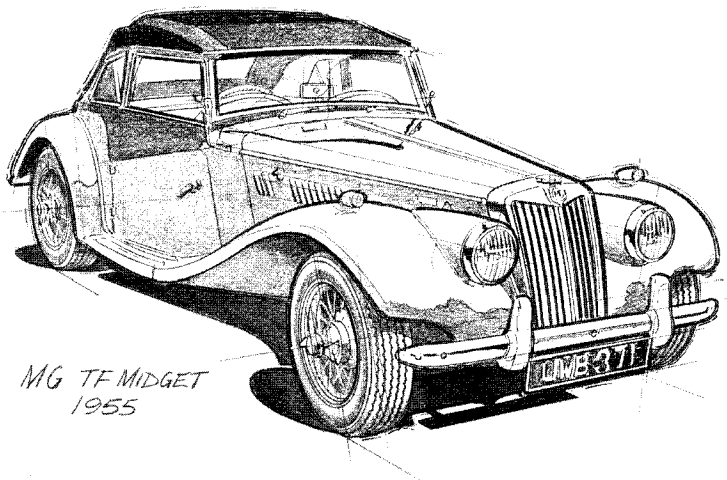
It was during the 50's and early 60's that MG decided to take on the record books. The MG EX 135, driven by Goldie Gardner, broke the 1500cc Land Speed record in 1951, reaching a top speed of 204 mph. The EX 181, driven by Stirling Moss, broke six land speed records in 1957 when it reached 245 mph on Bonneville Salt Flats, Utah.



MG TC MIDGET 1945

During this period, road car development wasn't being ignored. In 1955 the MGA was launched, and quickly became "the most popular sports car in the world".

1962 though, saw the introduction of a new, ground breaking sports car. The first MG to have a combined body/chassis (monocoque), the MGB was an instant classic. During its life, the MGB went through a number of changes. A GT version, designed by the Italian styling house "Farina", was introduced to complement the Roadster. In 1973 a big 3.5 litre V8 was shoe horned into the engine bay and the MGB GTV8 was born.



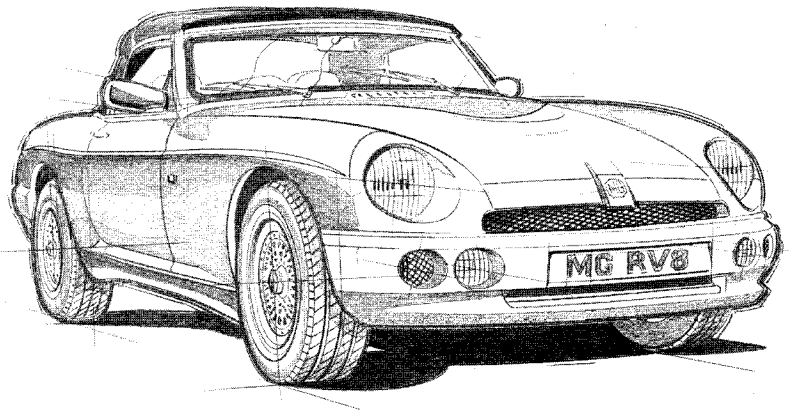
MG TF MIDGET 1955

On October 22nd, 1980, the last two MGB's rolled off the production line. Two months later, the factory gates at Abingdon were shut for the very last time.

Total production from Abingdon since the launch of the MGB in 1962 topped the half million mark, the bulk being MGB Roadsters for the American market.

MGB Roadster	386,789
MGB GT	125,323
MGC Roadster	4,542
MGC GT	4,457
MGB GTV8	2,591
TOTAL PRODUCTION	**523,702**

During the 80's, the MG badge was seen again. This time though, it appeared on performance versions of Austins, William Morris's one time great rival. The MG Montego, Maestro, and Metro were all noted for their exceptional performance, especially in Turbo form.



The mid 80's also saw the emergence of the MG EXE concept car. Although the EXE caused a sensation when shown, it has never seen production.

30 years after the launch of the MGB, MG is back with a vengeance. Enter the MG RV8.

NOMINATED DEALERS

Due to the specialised nature of this exciting new sports car, there are 80 nominated MG RV8 dealers in the UK (See Service Letter S/247/93). These dealers are allowed to undertake any repairs on the MG RV8. Remaining UK dealers can carry out any repairs except those where any of the new special tools (See Special Tools section), or Microcheck are needed.

Note:
The MG RV8 is covered under the Prior Consultation policy. Dealer Service, Cowley, must be contacted before ANY work is carried out. Dealer Service can be contacted on (0865) 745333.

SPECIAL TOOLS

The majority of special tools needed to work on the MG RV8 are already available. However, there are five new tools. These have been distributed to nominated dealers only (See Nominated Dealers section).

The full list of special tools needed to work on the MG RV8 is given below. New/replacement tools can be ordered direct from VL Churchill.

EXISTING TOOLS

Tool Number	Description
18G 2	Puller.
18G 47	Multi-purpose hand press.
18G 47BA	Layshaft bearing remover adaptor.
18G 47BAX	Conversion kit to update primary shaft bearing removal.
18G 134BD	Adaptor replacer oil seal.
18G 284	Impulse extractor, UNF main tool.
18G 284AAH	Input shaft bearing track removal adaptor.
18G 705	Main tool, bearing removal.
18G 705-1A	Mainshaft seal removal adaptor.
18G 705-7	Layshaft bearing remover.
18G 1150	Gudgeon pin tool.
18G 1150E	Adaptor, gudgeon pin tool.
18G 1205	Adjustable flange holding wrench.
18G 1400	Remover, 1st gear syncro hub & gear cluster.
18G 1400-1	Adaptor, mainshaft/5th gear remover.
18G 1431	Mainshaft oil seal replacer & 5th gear hub replacer.
18G 1500	Fuel pressure test equipment.
18G 1519A	Valve spring compressor.
18G 1533	Bearing remover/replacer.
18G 1536	Lower ball joint remover/replacer kit.
18G 1564	Oxygen sensor diagnostic harness.
18G 1661	Assembly sleeve.
18G 1663	Dummy bearing.
RO 1014	Crankshaft protection sleeve.
RO 605351	Con rod bolt guide.

NEW TOOLS

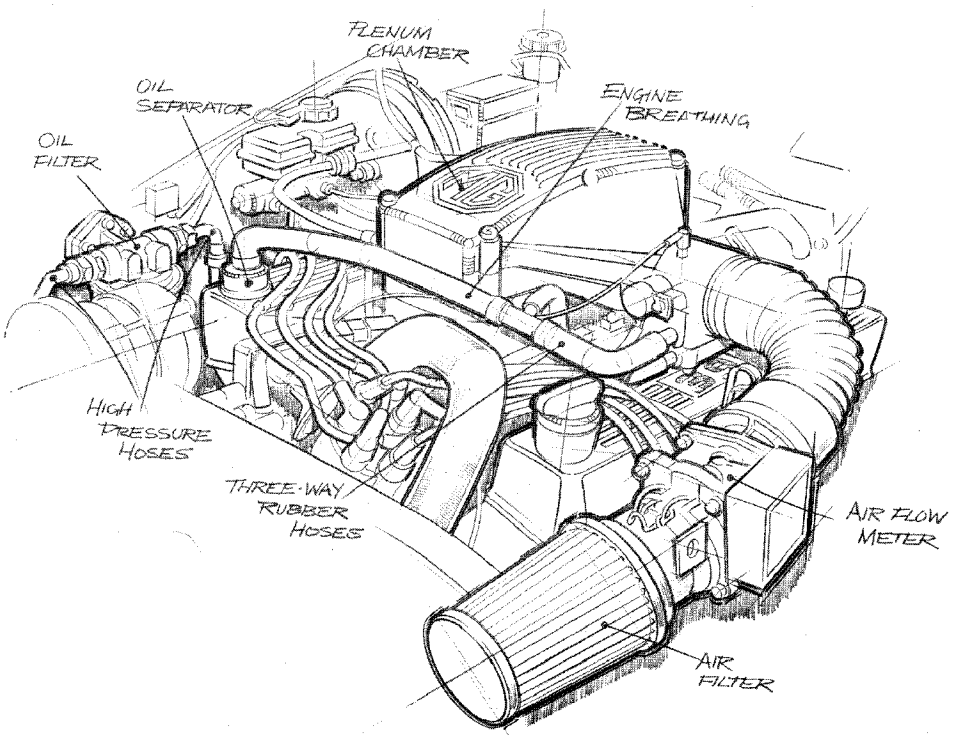
Tool Number	Description
18G 47-8	Side rod adaptor.
18G 47-MG	Bearing remover adaptor set.
18G 1664	Pinion oil seal replacer.
18G 1668	Steering rack to column alignment gauge.
18G 1669	Wishbone bushes remover/replacer.

THE POWER TRAIN

Engine

SPECIFICATION

Type	Aluminium alloy V8
Capacity	3946cc
Bore	94mm
Stroke	71.12mm
Compression ratio	9.35 : 1
Direction of Rotation	Clockwise
Firing order	1, 8, 4, 3, 6, 5, 7, 2.
Idle Speed	700 ±25rpm
Max. Power Output	190PS at @4750rpm
Max. Torque	318Nm at @3200rpm



The V8 engine fitted to the MG RV8 should be familiar to most of you as it's basically the same unit currently fitted to some Land and Range Rovers.

One of the first things you'll notice about the engine is the location of the oil filter. Mounted on the inner right hand wing, it's connected to the block by two high pressure hoses. This modification was made due to the lack of space in the M8's engine bay.

After draining the oil, refill the system more or less straight away. Do not leave it to drain over night.

The cooling system used by the V8 comprises of a cross flow radiator, an expansion tank, and a thermostatic, electrically operated cooling fan, which is mounted in front of the radiator.

Engine breathing is through an oil separator in the right hand cam cover. This is connected to the inlet air system either side of the throttle butterfly by a three way rubber hose.

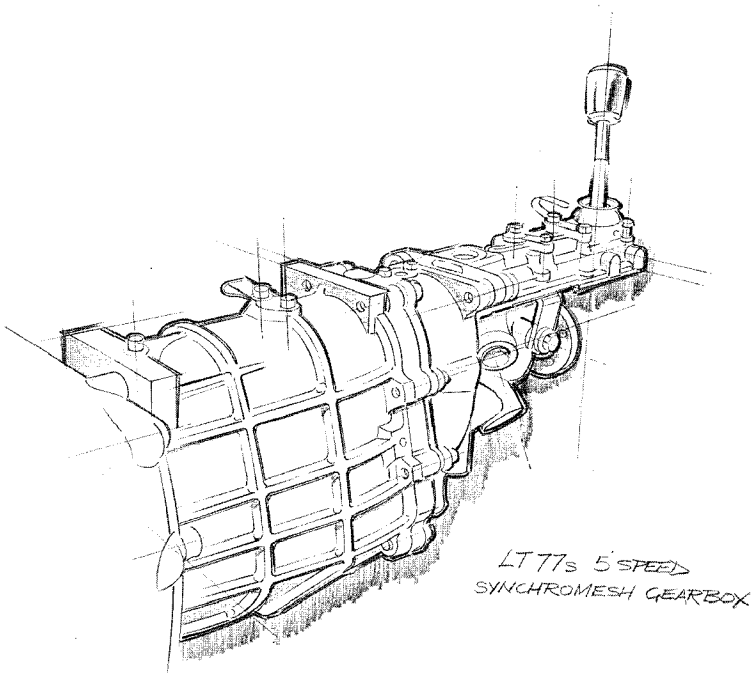
Gearbox

The gearbox fitted to the MG RV8 is the well proven LT77s. This five speed synchromesh gearbox is essentially the same gearbox that was fitted to the SD1.

All gears, including reverse, run on needle roller bearings. The main, lay, and primary shafts are supported by tapered roller bearings. A low pressure oil pump, driven from the rear of the lay shaft, supplies oil to the rest of the gearbox through drillings in the shafts.

For improved gear selection, 1st and 2nd gears employ double syncro rings.

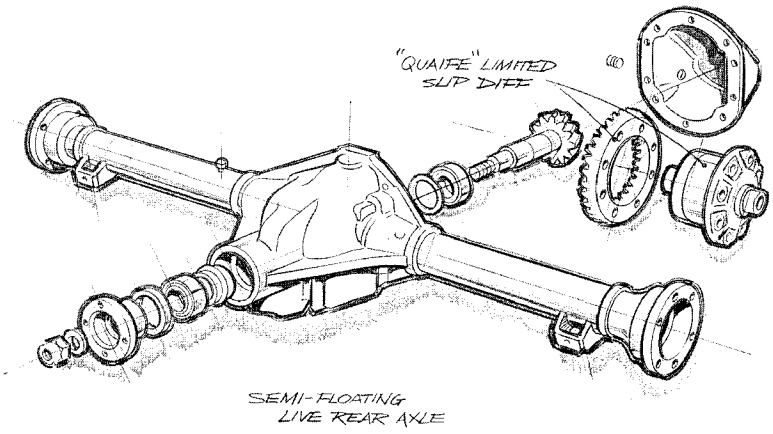
When working on this gearbox, use the same special tools (see Special Tools section) and working procedures as that used previously.



Rear axle

The final link in the power train is the semi-floating live rear axle. This features a "Quaife" limited slip differential. Oil refill is through the level plug in the side of the differential housing. Below that, on the bottom of the housing, is the drain plug. Before draining the oil, ensure the axle is warm. Both the drain plug and the level plug need to be removed to drain the oil in the axle. Refer to the Repair Manual for the correct grade of oil.

When refilling, allow time for the oil to flow around the axle and reach a common level.

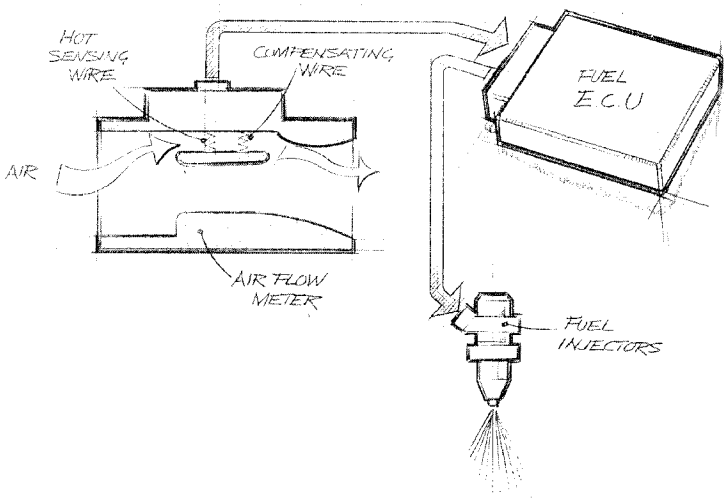


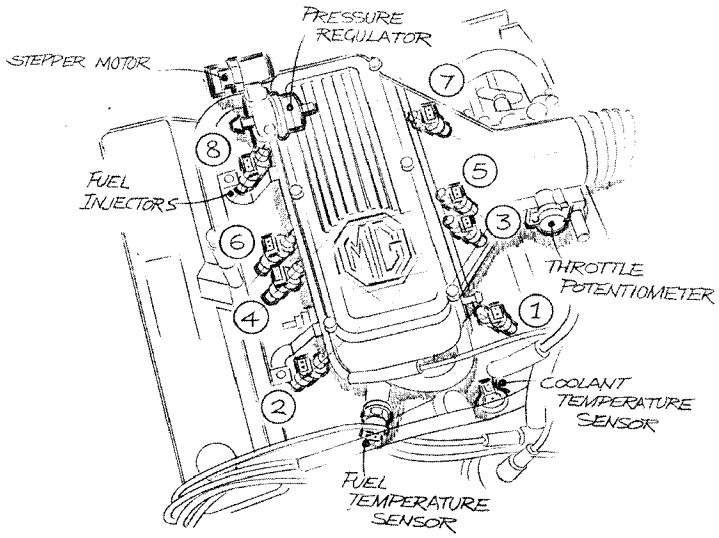
ENGINE MANAGEMENT

Introduction

Fuelling on the MG RV8 is controlled by the well proven Hot-Wire system. The Hot-Wire system gained its name because it controls fuelling by measuring the resistance of a pre-heated wire located in the air inlet system. As the amount of air passing across the wire increases, so its temperature decreases. This decrease in temperature causes the wires resistance value to increase.

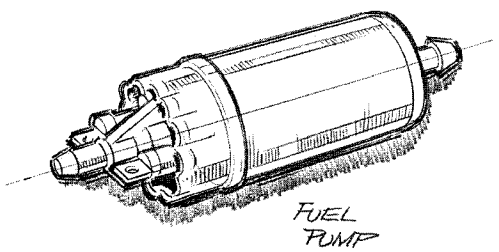
This increase in resistance is registered by the ECU, which then alters the fuelling accordingly. This isn't the only reading taken by the ECU though. In this section we'll look at the complete fuel management system; its components, and their operation.





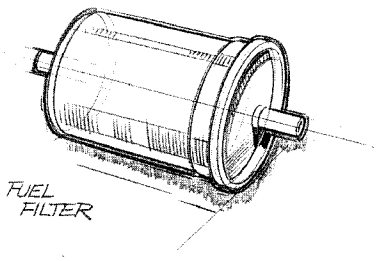
The Fuel System

Fuel is drawn from the tank by an electrically driven pump located below the right hand rear wing.
The pump also increases the pressure of the fuel.



Now at high pressure, the fuel travels along the fuel supply line and enters a fine mesh (2 Micron) filter. The filter is a vital part of the fuel system as it protects the finely machined injectors against small particles that may be present in the fuel. If these particles were allowed to reach the injectors, their lifespan and operating efficiency would be seriously affected.

When fitting a new fuel filter, make sure the arrow on the filter body is pointing in the correct direction. i.e. in the same direction as the flow of fuel.
The filter is located forward of the fuel tank.



After leaving the filter, the fuel travels towards the left hand fuel rail (cylinders 1, 3, 5, & 7). The injectors open alternately in groups of four. Injectors 1, 3, 5, & 7 all open at the same time, followed by injectors 2, 4, 6, & 8.

Not all the fuel entering the fuel rail is injected into the inlet tracts. Some is used by the injectors as both a coolant and lubricant. The remainder of fuel continues to travel along the fuel rail until it reaches the Pressure Regulator. The Pressure Regulator, as its name suggests, controls the pressure within the fuel rail.

When inlet manifold depression is high, it tries to suck fuel from the injector. In this case, the Pressure Regulator will lower the pressure in the fuel rail, to ensure that the correct amount of fuel is injected.

As depression inside the inlet manifold reduces, the Pressure Regulator raises the pressure inside the fuel rail. This extra pressure is needed to help "push" the correct amount of fuel into the inlet manifold.

Injector opening time is controlled by the ECU. Located under the glovebox, it uses readings sent from several sources (see Electronics section) to determine when, and for how long, to open the injectors. As we have just mentioned, each bank of injectors opens alternatively, with each bank firing once per engine cycle (two engine revolutions).

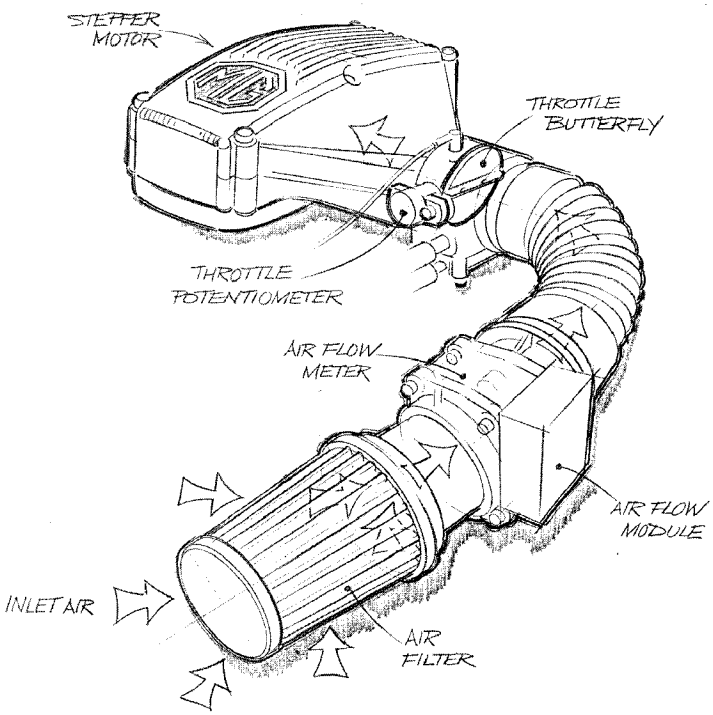
Fuel that hasn't been used by the injectors is allowed to pass through the Pressure Regulator and returns to the fuel tank via the aptly named Fuel Return Pipe.

The Air System

In addition to controlling the amount of fuel that enters the combustion chamber, we also need to control the amount of air. If the correct volume of air isn't drawn into the combustion chamber, the fuel will not burn efficiently.

Inlet air enters the system through the air filter located at the front of the engine bay. From here it enters the Air Flow Meter. The Air Flow Meter is perhaps the most important component in the whole engine management system.

It is the Air Flow Meter that contains the heated sensing wire we mentioned earlier.



Inside the Air Flow Meter is a by-pass port. The heated wire runs across the port, and is accompanied by an un-heated "compensating" wire. Both have a small electric current running through them, and are connected to the Air Flow Module on top of the meter.

As air flows into the meter, a proportion of it is allowed to flow through the by-pass port. The un-heated "compensating" wire now registers the temperature of the inlet air, which is sent to the ECU via the Air Flow Module. The heated "sensing" wire is used to find out how much air is entering.

As we mentioned earlier, inlet air cools the heated wire as it passes over it. The greater the volume of air passing over, the cooler the wire gets. As the temperature of the wire goes down, its electrical resistance increases. This change in resistance is registered by the Air Flow Module and the information sent up to the ECU.

After leaving the Air Flow Meter, the inlet air travels towards the Throttle Butterfly. The Throttle Butterfly is controlled by the accelerator, and controls the amount of air allowed to enter the Plenum Chamber. The further down the driver presses the accelerator, the further the butterfly opens.

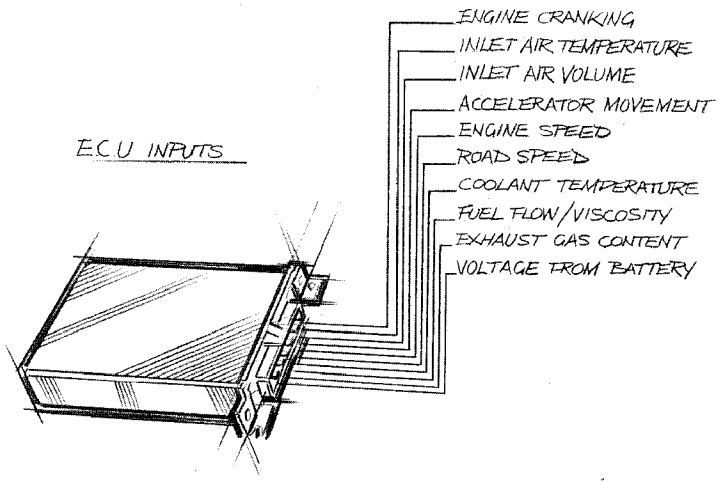
At idle, the butterfly is fully closed. In this condition, air is supplied to the Plenum Chamber via the air by-pass valve. The by-pass valve itself is mounted on the side of the Plenum chamber and is controlled by the stepper motor.

The stepper motor controls the amount of air allowed to pass through, keeping the idle speed stable. If the engine is fully warmed, and there are no additional loads, the stepper motor will create a small opening.

When the engine is cold, or there is a load acting on it, the stepper motor widens the opening, and in so doing, raises the idle speed. The stepper motor is controlled by the ECU.

Once in the Plenum Chamber, the air is drawn down into the inlet manifold, where it is mixed with the correct amount of fuel before entering the combustion chamber.

The Electronics System.

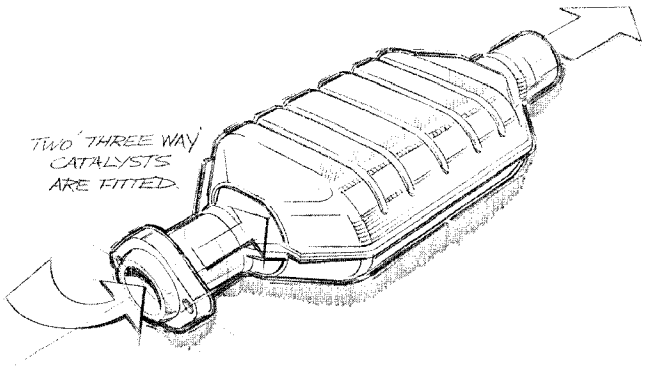


The "brains" behind the Hot-Wire system is the ECU. It receives the following inputs:

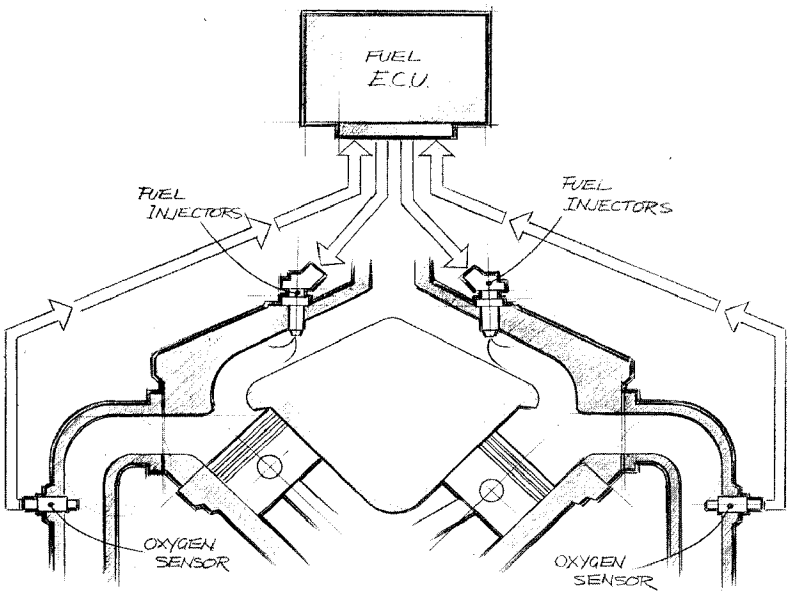
- An engine cranking signal from the ignition barrel.
- An inlet air temperature signal from the compensating wire.
- An inlet air volume signal from the sensing wire.
- An accelerator movement signal from the throttle potentiometer.
- An engine speed signal from the coil.
- A road speed signal from the speedo cable transducer.
- A coolant temperature reading from the coolant temperature sensor.
- A fuel flow/viscosity signal from the fuel temperature sensor.
- An exhaust gas content signal from the oxygen sensors.
- A voltage signal from the battery.

Using these signals, the ECU controls the opening times of the injectors, the idle speed (via the stepper motor), and exhaust emissions. In the event of a problem with the Hot-Wire system, the ECU can be interrogated using Microcheck and an updated Hot-Wire card (SMD 4072/12). The diagnostic port is next to the ECU.

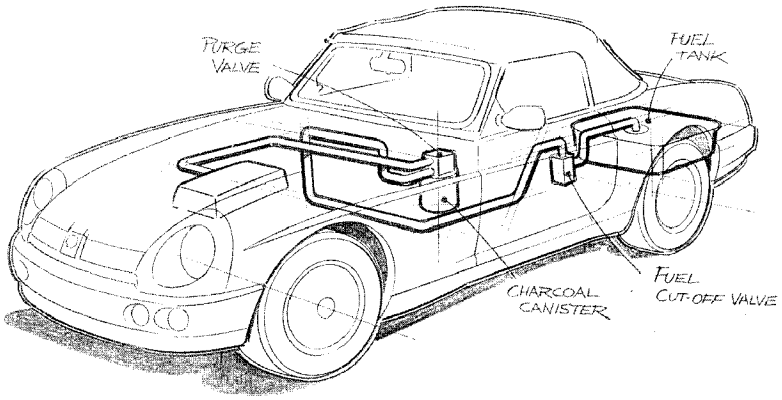
Emissions



The MG RV8 is fitted with a three way, closed loop catalyst system. The system comprises of two three way catalysts, and two heated oxygen sensors. Both sensors send messages up to the ECU, which then alters the fuelling accordingly. For more in-depth information on the operation of closed loop catalyst systems, refer to the Service Insight training package "Exhaust Emissions and Catalysts".



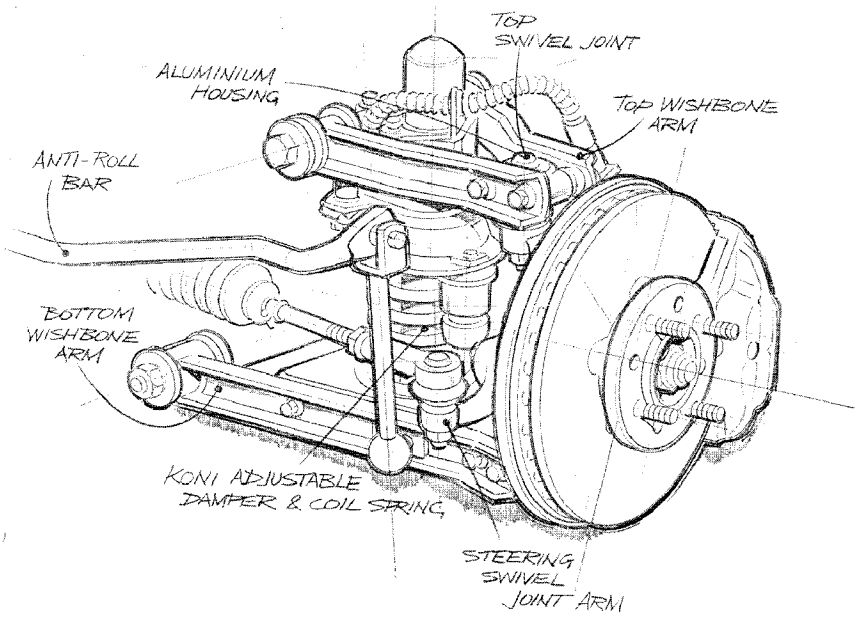
Caution:
Only ever use unleaded fuel in a car fitted with a catalyst. Failure to do so will seriously damage the catalyst. Similarly, never drive a catalyst equipped car suffering from a misfire. If unburnt fuel reaches the catalyst it will again, cause serious damage.



Further to the catalyst system, the MG RV8 is also fitted with a Fuel Evaporative Loss system. A charcoal canister, mounted on the bulkhead, is connected to the fuel tank to collect vaporised fuel when the engine is not running.

Mounted on the side of the charcoal canister is a purge valve. Controlled by the ECU, the purge valve empties the contents of the charcoal canister into the Plenum Chamber when engine temperature is above 54°C (130°F) and a manifold depression exists.

SUSPENSION AND STEERING



Suspension - Front

Like the original MGB, the components that make up the front suspension are all mounted on a crossbeam, which is held to the body via rubber insulated mountings.

The suspension is a double wishbone type, each wishbone being made up of two individual arms. The top arms are secured via "Slipflex" bushes to an aluminium housing, which is in turn secured to the crossbeam. These bushes incorporate a thrust washer on the bush outer face. In the event of having to fit a new bush, or refit an old one, make sure you liberally coat the outer face with Castrol Red Rubber Grease Number 2. You also need to apply grease to the inner face of the thrust washer.

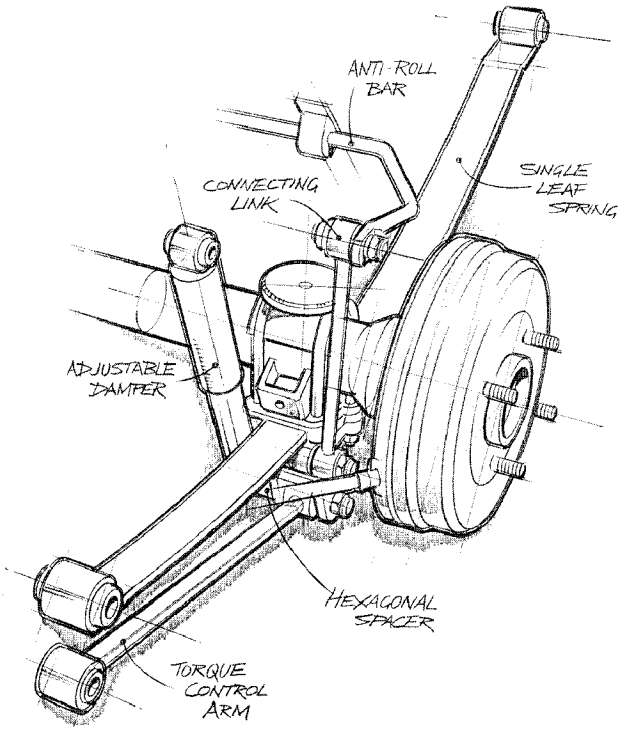
The outer ends of both the lower and upper arms contain a steering swivel joint. Castor angle can be adjusted by adding or subtracting shims either side of the top swivel joint.

A Koni adjustable damper is mounted within the coil spring. The top is secured to the same aluminium housing as the top arms. Mounted on the crossbeam next to the spring assembly is a bump rubber.

Finally, a 23mm diameter anti-roll bar is fitted in front of the cross beam. It is held to its connecting links via metalastic bushes, which should be fitted with the split facing forwards.

Front suspension - specifications

Nominal height	
- wheel arch to centre of hub:	355 ± 10mm
Trim height variation across each axle:	10mm MAX
Alignment	5' toe - in
Camber	0.4° positive ± 0.5°
Castor	3.8° ± 0.5°
King Pin Inclination	7.2° ± 0.4°



Suspension - Rear

The rear suspension is made up of two single leaf springs, two torque control arms, two adjustable dampers, and an anti-roll bar. The leaf springs are held in place via metalastic bushes at the front, and rubber half bushes at the rear. Four "U" bolts, two either side, hold two housings to the underside of the axle (one on each side). These housings are used to hold every component of the rear suspension in position.

Starting from the top of the housing, the leaf spring is sandwiched between the two halves of the housing. Below that is the connecting link for the anti-roll bar. The anti-roll bar fitted at the rear has a 15mm diameter and is located behind the rear axle.

Using the same mounting hole below the connecting link is the Koni adjustable damper, and the torque control arm. Always remember to fit the hexagonal spacer between these two when re-assembling. The top of the damper is, naturally, secured to the body.

The front end of the torque control arm is secured to a bracket just below the leaf spring front mounting point. Finally, a bump rubber, identical to that used on the front suspension, is secured to the inner wheel arch.

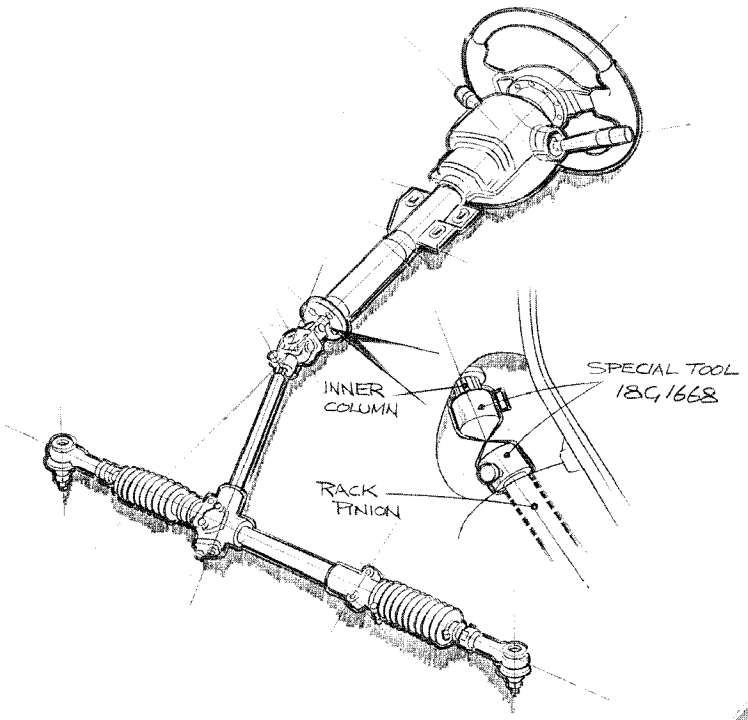
Rear suspension - specifications

Nominal height	
- wheel arch to centre of hub:	375 ± 10mm
Trim height variation across each axle:	10mm MAX

Adjusting the Dampers

The Koni dampers fitted to both the front and rear suspension assemblies must be adjusted every 48,000 miles. To do this, they must be removed from the car (see Repair Manual for details).

Place the lower eye of the damper in a vice fitted with soft jaws. Now push the top half of the damper fully into the lower half. This will engage the valve within the damper itself. Now turn the top half anti-clockwise as far as it will go, and mark its position against the lower half with a felt tipped pen. The top half now needs to be turned through half a turn clockwise for every 48,000 miles the car has travelled. When this has been done, pull the top half away from the lower half and refit the damper to the car.



STEERING

The manual steering rack fitted to the MG RV8 is mounted to the front of the suspension cross beam, and is controlled via a fixed column assembly. The column is secured to the body by three fixings at the bottom, and three at the top. The top fixings also incorporate a slotted bracket.

To align the rack pinion to the inner column, special tool 18G 1668 is used. Simply add or remove shims from either of the rack mountings until the two halves of the tool are aligned. This done, remove the tool and fit the universal joint.

Caution:
The steering column incorporates nylon pins. In the event of the driver hitting the steering wheel during an accident, these pins will shear, allowing the column to move forwards and reduce potential injury. When removing the steering wheel, or carrying out any repairs on the column, do not apply shock loads. These may damage the pins, necessitating a new column. Refer to the repair manual for procedure to remove the steering wheel.

Steering wheel turns lock to lock	3.3:1
Turning circle - between kerbs	10.95m
- between walls	11.22m

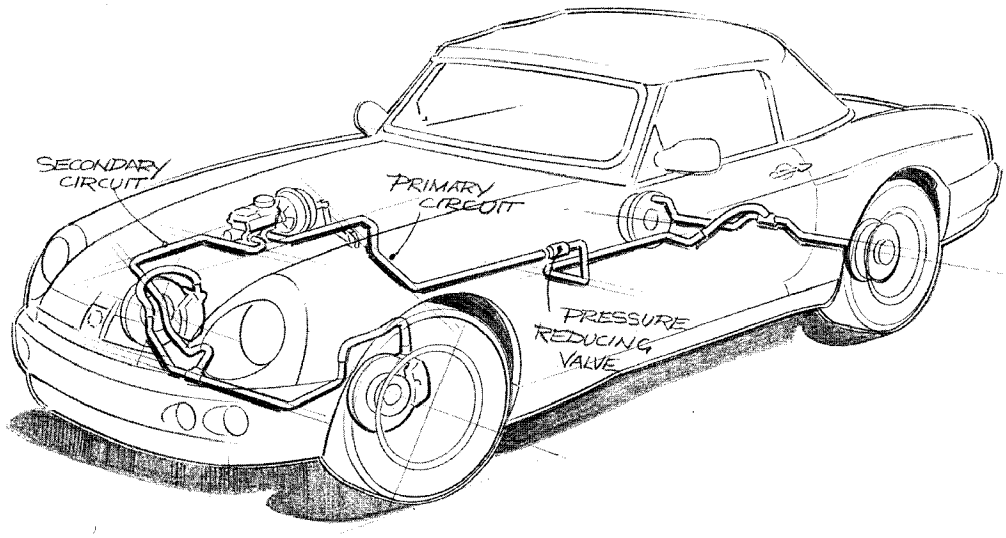
WHEELS AND TYRES

The MG RV8 is fitted with 6J x 15" alloy wheels as standard. The outer surface of the wheels have a clear lacquer coating which means they must be blind balanced. This means that all balance weights must be fixed to the inner surface of the wheels.

You'll find one balance weight clipped onto the inner rim. If any additional weights are needed, they must be of the stick-on type only. They must be applied as near to the hub mounting face as possible. Do not, under any circumstances, attach balance weights to the outer face.

Tyre size	205/65 ZR
Pressures - Front	22 lbf/in^2
- Rear	24 lbf/in^2

THE BRAKING SYSTEM

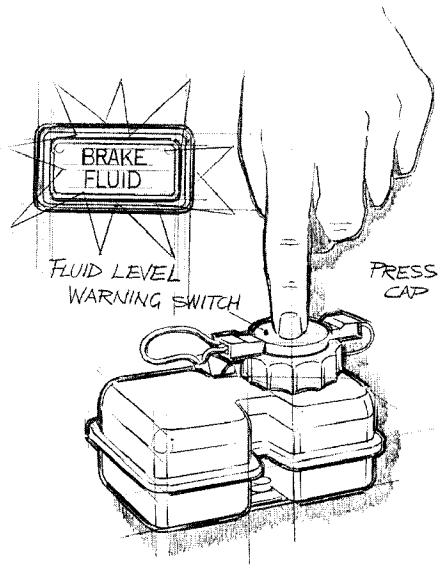


INTRODUCTION

The main components fitted in the MG RV8 braking system are:-

- A dual circuit master cylinder.
- A direct acting servo.
- Front disc/caliper assemblies.
- Rear drum assemblies.
- A pressure reducing valve.

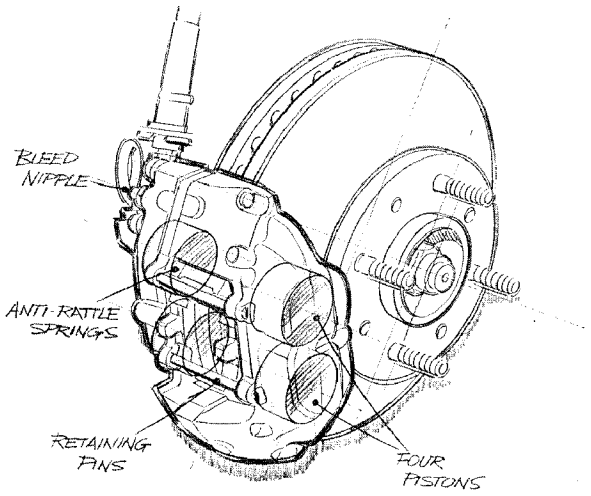
The braking system is split into two halves, thanks to the dual circuit master cylinder. The primary system operates the rear drums, while the secondary system operates the front callipers. In the unlikely event of one of the systems failing, the other will remain in operation. In this case the driver will notice that both pedal travel and stopping distance is increased.



A fluid level warning switch is located in the reservoir cap. This, along with the oil level warning light, can be checked in the following way. Turn the ignition on and release the handbrake. Now press down on the centre of the reservoir cap.
The warning light should now illuminate.

The 38 DA direct acting servo (boost ratio: 2.56:1) fitted to the MG RV8 is non-serviceable, although its operation can be checked. Press the brake pedal several times to exhaust the servo. Now hold the brake pedal fully down and start the engine. If the servo is operating correctly, the pedal will sink slightly.

THE FRONT CALIPER ASSEMBLY



The MG RV8 is fitted with 11 inch (272mm) ventilated front discs, which are made from the same material as those fitted to the Rover 800. Each disc is brought to a standstill by a four piston caliper. All four pistons are actuated from a single fluid input adjacent to the single bleed nipple. An anti-rattle spring is secured by the retaining pins on the back of the pads. Finally, each pad also has an adhesive backing shim.

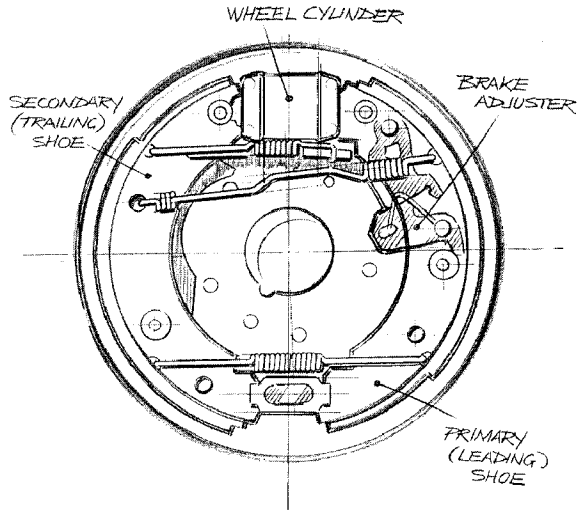
Disc diameter	272mm
Disc thickness - New	25.25mm
- Minimum	24.00mm
Maximum run-out	0.04mm
Maximum disc thickness variation	0.015mm

THE REAR DRUM ASSEMBLY

The rear drum assembly is a self adjusting, leading/trailing shoe design, operated by a double acting wheel cylinder. A fixed location point secures the shoes' lower ends.

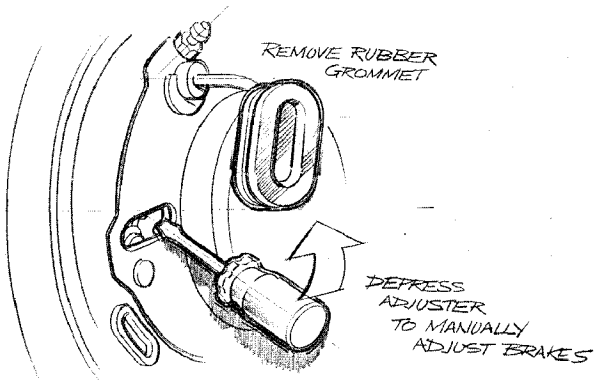
When the brakes are applied, pressure to the wheel cylinder pushes the top of both shoes outwards until they contact the drum. The primary shoe (See illustration below) continues to be pulled outwards by the wrap around effect of the rotating drum. Fluid pressure continues to apply pressure to the secondary (rear) shoe.

Fluid pressure to the drums is controlled by the pressure reducing valve. It has a pressure setting of 33/38 stamped on the side and can only be fitted one way.



The rear drums, as we have just mentioned, are self adjusting. This is possible due to a linkage which works in a similar way to a ratchet. As the shoes start to wear, the piston has to push them further for them to contact the inside of the drum. When the shoes travel further than a pre-determined point, the linkage "clicks" over one notch, moving the primary shoe nearer the drum.

This adjustment can also be made manually via an access hole in the backplate. The shoes can be moved towards or away from the drums. The latter is handy when having to release a rigid drum.

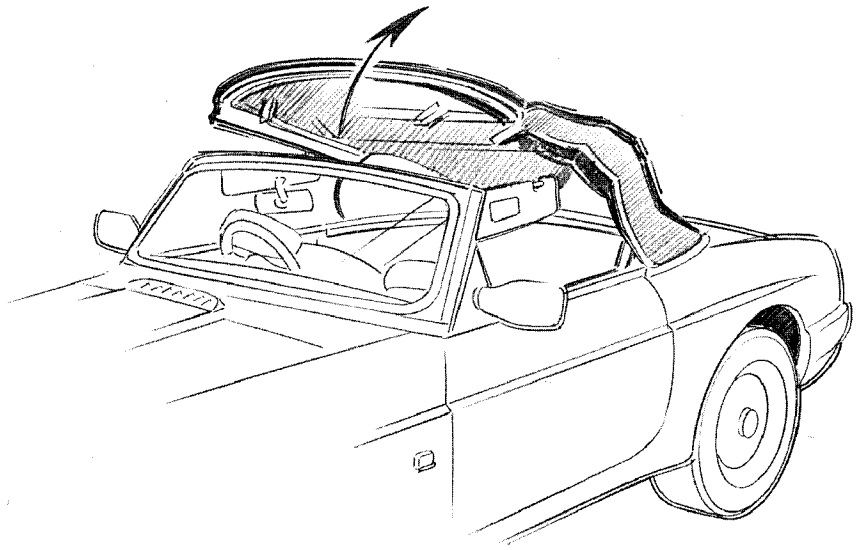


The handbrake is cable operated and acts on the secondary shoe. The adjuster is situated on the right hand side of the prop shaft tunnel.

The bleeding sequence for this split system is as follows:

- LHR
- RHR
- LHF
- RHF

THE HOOD ASSEMBLY



The hood fitted to the MG RV8 is basically made to the same design as that on the MGB, although some changes have been made. Their are no longer any rear quarter lights, the material is more hard wearing, and the fasteners more substantial.

The hood is fixed to the body with eleven bolts that run along the back of the passenger compartment. The hinges are held in place by three screws on either side. If you have to remove the hood for any reason, place a protective cover over the boot. The method for folding the hood is as follows:-

- Unzip the back window and lie it flat.
- Undo the two fasteners at the top of the windscreen pillars.
- Move the sunvisors aside.
- Release the two front clips that hold the front of the hood to the top of the windscreen.
- Move the seat backrests fully forward.
- Undo the four side poppers (two on either side).
- Fold the hood.

A new feature of the hood is the protective cover. Stored in the boot, it's both quick and simple to fit. After slotting the two halves of the frame together, fit the frame to the car. Their are two location points, one either side. The cover can now be laid over the frame. Its held in place by five clips at the back, two studs at the front, and a popper on either side.

For full service details on the hood, check out the Repair Manual.

I.C.E.

INTRODUCTION

Fitted as standard equipment on the MG RV8 is a top of the range Philips in-car entertainment system, with CD autochanger. Like all systems fitted to Rover cars, a four digit code is used to help deter thieves. To enter the code, carry out the following sequence.

- Switch on the radio. "CODE" will appear on the display. Press pre-set button 1.
- Press the "UP" tuning button until the first correct digit appears.
- Press pre-set button 1 to store the first digit in the unit's memory.
- Press the "UP" tuning button until the second correct digit appears.
- Press pre-set button 1 to store the second digit.
- Enter the third digit, again using the "UP" tuning button.
- Press pre-set button 1 to store the third digit.
- Select and enter the final digit.
- Press pre-set button one. If the code has been successfully entered, a two tone beep will sound and the radio will operate.

If an incorrect code is entered, a warning sound will be heard and the unit will switch off for one minute. The display will show the word "WAIT". During this time DO NOT switch the radio off. Once the delay period is over, "CODE" will reappear on the screen.

As we have just mentioned, the first delay period is one minute. If an incorrect code is re-entered for the second time, this delay period doubles to two minutes. This delay period will double every time an incorrect code is entered.

An additional anti-theft measure is the detachable keyboard. To remove it, slide the release key downwards and pull the keyboard forwards. Once removed, the keyboard must be stored in its protective case. The refit procedure is the reverse of the removal procedure.

RDS

The Philips in-car entertainment system is equipped with RDS (Radio Data System), and enables your radio to pick up the following information:

- The name of the radio station as opposed to its frequency. This is then shown on the display.
- Alternative FM frequencies for the station you're tuned into. This allows the radio to tune to the strongest signal.
- All traffic announcements, giving them priority over the programme you are tuned into. (This function can be switched off if necessary).
- Information from other radio networks.

When you tune into an RDS radio station, the station name will appear on the display, and the "AF" indicator will illuminate. The radio will now automatically and constantly scan all alternative frequencies on which that station can be received. It will then automatically lock onto the strongest signal. If you're on a long journey, you may travel through several different transmitter areas. This may mean that another signal becomes stronger. In this case, the radio will automatically re-tune to that frequency.

Weak or distorted reception is often blamed on a faulty radio. This though, is rarely the true cause of the problem. Remember, a car radio receives signals while the vehicle is moving - constantly changing direction, moving nearer to, or further away from, the transmitter, not to mention constantly changing terrain! Always test the radio thoroughly before condemning it.

RDS is automatically switched on when you tune into a FM radio station. To turn it off, press the TA/AF button for longer than 2 seconds.

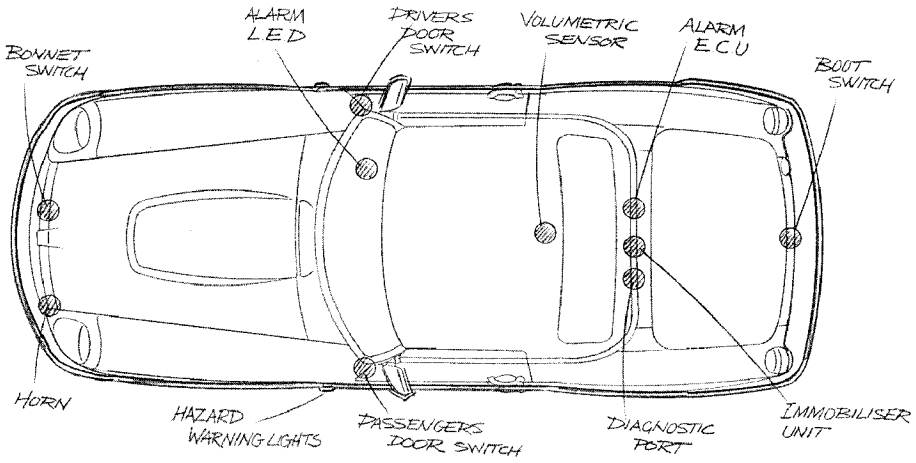
THE CD AUTOCHANGER

An optional extra on the MG RV8 is a CD Autochanger. To enter the CD mode, simply press the "CD" button. No surprises there! Now using the six radio pre-set buttons, you can select a CD of your choice.

The CD's (a maximum of 6) are held in a changer unit, which is located in the boot. To insert or remove discs, first slide back the cover and press the eject button (this will only work with the ignition switched on). The disc magazine is now ejected from the changer unit. The discs can now be mounted into the magazine, and the magazine loaded back into the changer unit.

Warning:
The CD changer unit should not be used in temperatures outside the range -10°C to +60°C. The unit should only be used in the manner described above. Any other method of use could result in the user being exposed to invisible laser radiation exceeding the limit of laser class 1.

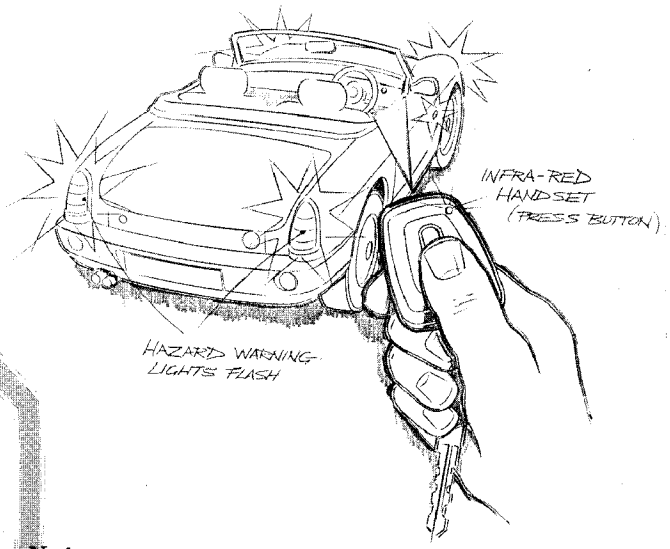
THE BURGLAR ALARM



INTRODUCTION

A stunning sports car like the MG RV8 is obviously going to gain a lot of attention. Some of this attention though, may be unwanted. Because of this, the MG RV8 is fitted with both a volumetric and perimetric alarm system. Both systems work equally well with the hood up or down. The main components of the system are:-

- The alarm ECU.
- The immobiliser unit.
- The volumetric sensor.
- The diagnostic port.
- The alarm LED.
- The drivers door switch.
- The passenger door switch.
- The boot switch.
- The bonnet switch.
- The horn.
- The hazard warning lights.



ARMING THE ALARM

To arm both the perimetric and volumetric alarm systems check all the hinged panels are shut. Now lock both doors using the larger of the two keys. Point the infra-red handset at the car and press the button. If the signal is received, the hazard warning lights will flash three times.

The alarm LED will now flash quickly for five seconds before reverting to one flash per second. The LED will continue to flash at this rate until the alarm is disarmed, and acts as a visual deterrent to any would be thief. Both the volumetric and perimetric systems are now armed.

Note:
It's important to remember that the infra-red handset will NOT lock the car.

The volumetric sensor is located inside the centre arm rest. It must have a period of no movement inside the car for at least 15 seconds after the infra-red signal is received. If there is continual movement inside the car from the moment of activation, the volumetric system would in effect, not arm.

With both the perimetric and volumetric systems armed, the horn will sound and the hazard warning lights will flash if:

- The bonnet is opened.
- The boot is opened.
- Either of the doors is opened.
- The ignition is switched on.
- The engine is cranked.
- The volumetric sensor detects a movement within the car.

To disarm the alarm, press the button on the handset while pointing it at the car. The hazard warning lights will flash once to inform you the alarm has been disarmed.

It is also possible to arm just the perimetric side of the alarm. To do this, check both the bonnet and boot are shut. Now shut and lock either the drivers or passengers door. Leave the other door open. Now arm the alarm as before (with one of the doors still open).

If the signals received, the alarm LED will illuminate (no flash). Now shut and lock the open door. The hazard warning lights and the alarm LED will now flash the same as before.

Now only the perimetric side of the alarm is armed. It can be disarmed in the normal way.

Note:
Both alarm systems remember their state when the battery is disconnected. i.e. if the battery is disconnected with the alarm armed but not sounding, it will revert back to the same state when the battery is reconnected. Similarly, if the battery is disconnected with the alarm sounding, it will continue to sound when the battery's reconnected.

ROLLING CODE

The alarm system fitted to the MG RV8 features a rolling code. This means the code sent by the infra-red transmitter changes every time the button is pressed. If you press the button out of range of the car, the synchronisation between handset and receiver will be lost. To regain synchronisation, press the button on the handset three times very quickly, while pointing it at the car.

VEHICLE IMMOBILISATION

An added benefit of the alarm systems fitted to the MG RV8 is the inclusion of a vehicle immobiliser. Located behind the boot trim panel, it's controlled by the alarm ECU next to it. When the alarm is armed, it cuts off electrical supply to:-

- The boot release.
- The fuel pump.
- The starter motor.
- The starter relay.
- The main relay.
- The fuel level gauge.
- The coil.
- The fuel ECU.

SELF TESTING THE ALARM SYSTEM

The following test should only be carried out if Microcheck is not available to carry out a full diagnostic check.

- Switch the ignition "OFF" and make sure both boot and bonnet are shut.
- Check the alarm is disarmed.
- Open the boot.
- Switch the ignition "ON", "OFF", then "ON" again.
- Open the bonnet

If you have successfully entered the self test mode, the horn will sound and the alarm LED will light for approximately 100ms. You can now test the Perimetric side of the system. While in the Perimetric self test mode, the anti-theft ECU will respond in the following way.

- When any hinged panel is opened the alarm LED will illuminate.
- The hazard warning lights will flash if the bonnet is closed.
- If an attempt to crank the engine is made, the alarm LED will illuminate.

The anti-theft system will automatically exit the Perimetric self test mode when the infra-red handset is operated. It will now enter the Volumetric self test mode. To confirm this, the alarm LED will illuminate for approximately 5 seconds.

To test the volumetric system, simply disturb the air space within the car. If you're successful, the alarm LED will illuminate. To exit the Volumetric self test mode, operate the infra-red handset. To confirm you've exited the self test mode, the horn will sound for approximately 100ms.