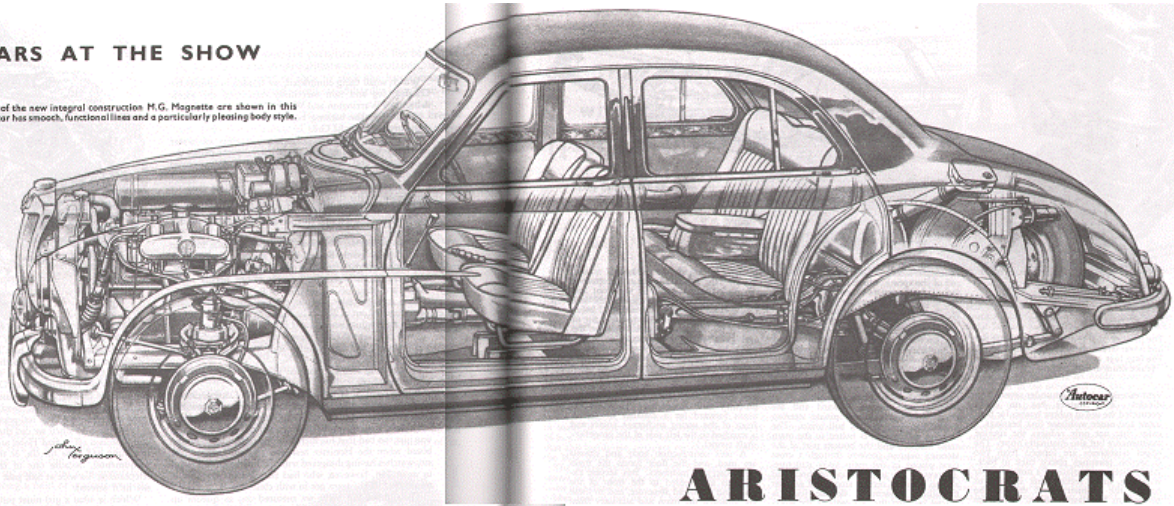


## NEW CARS AT THE SHOW

The major components of the new integral construction M.G. Magnette are shown in this cutaway drawing. The car has smooth, functional lines and a particularly pleasing body style.

REBIRTH  
OF THE M.G.  
MAGNETTE:  
MIDGET  
LOSES  
SEVERAL  
INCHES OF  
STATURE



## ARISTOCRATS

The major components of the new integral construction M.G. Magnette are shown in this cutaway drawing. The car has smooth, functional lines and a particularly pleasing body style.

THE name Magnette has not been current in the M.G. range since 1936, applying then to a model powered by an overhead camshaft six-cylinder 1,286 c.c. engine; in the 30's a saloon and two open Magnette cars were produced as well as the K3 racing type car.

The present M.G. Magnette, which supersedes the 1 ¼ - litre saloon which has been current, with modifications from time to time, since 1947, is a closed car, and it is the object of the manufacturers to produce a four-five-seater car with modern body styling, yet one that still retains the character and tradition of these famous cars with the octagonal name plate.

The car is of conventional design in most of its mechanical details; it is powered by a 1 ½ -litre four-cylinder engine, has an orthodox transmission consisting of a dry single-plate clutch and four-speed synchromesh gear box, an open propeller shaft, and a hypoid bevel final drive. Other items of specification include independent front suspension with coil springs and telescopic dampers, rack and pinion steering, and a special form of rear suspension using half-elliptic springs and a torque arm. All these

components are carried on the unit construction body, which is of the four-door-four-light type, and follows the Italian school of thought on body styling.

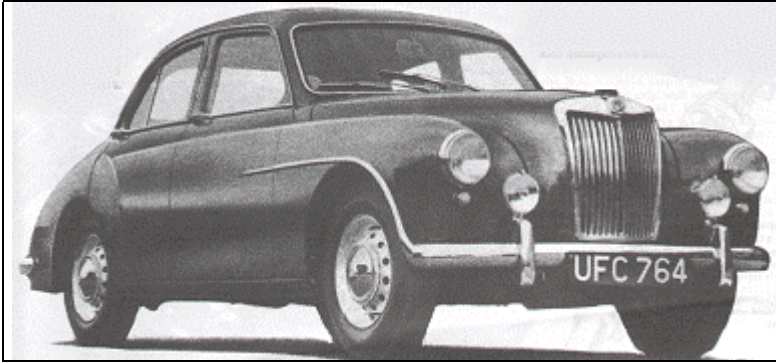
The engine is the first new power unit to be produced by the recently formed British Motor Corporation, and in a large number of details it follows previous Austin engine practice. A single casting forms the cylinder block and crank chamber, and the bottom face of the crankcase extends some 2 ¼in below the crankshaft centre line. The water jacket completely surrounds the bores for a distance of 4 ¾ in down from the cylinder head joint face—that is, a good way past the exposed portion of the bore when the piston is at bottom dead centre. A substantial web supports the centre main bearing and also the centre camshaft bearing. The crankshaft has three main bearings, and integral counterweights are placed on both sides of the centre main bearing, as well as on the insides of the outer main bearings.

The shaft is of very stiff construction and there is a slight overlap between the main bearing and big-end journals.

The connecting rods have a centre distance of 6 ½in and the big-ends are split at an angle of 43 degrees, the halves being held together by means of set bolts. They are located by machining the outer edges of the top half of the rod and the joint face of the cap, so that they are stepped, the resulting lugs at the outer ends of the caps fitting over the mating cap step on the top half of the rod. The gudgeon pin bearing is offset relative to the big-end journal length, and the pin itself is located in position by means of a set bolt. A small diameter bleed hole supplies lubricant to the cylinder bores.

The overhead valve gear is conventional; the rockers themselves are bushed and operate on a hollow shaft, end float being eliminated by means of coil springs placed on the rocker shaft.

Numbers 2 and 3 exhaust parts are siamesed and a three-branch manifold conveys the gas to the exhaust pipe. The exhaust parts are square section at the head joint face. The manifold itself runs straight back so that the exhaust pipe joint is at the rear of the engine. Two 1 ¼ diameter semi-downdraught S.U. carburettors are used to supply fuel to the siamesed inlet ports.



*The familiar M.G. style of radiator grille is retained. Small additional driving lamps are mounted above the over-riders.*

The inlet manifold consists of a light alloy casting containing a large tubular balance pipe. A gear on the camshaft drives the distributor via a diagonal cross shaft and also the oil pump by means of a short vertical shaft. Owing to the general layout of the car and the forward position of the engine, the front cross member and rack and pinion steering unit run under the back half of the engine; consequently the sump pressing forms a crankcase closing plate at the rear, but the main oil-carrying portion is concentrated at the front of the power unit; although the oil pump is placed towards the rear part of the engine, oil is in fact drawn from the front portion of the sump. Lubricant from the pump passes from a delivery hole in the pump joint face and into the cylinder block.

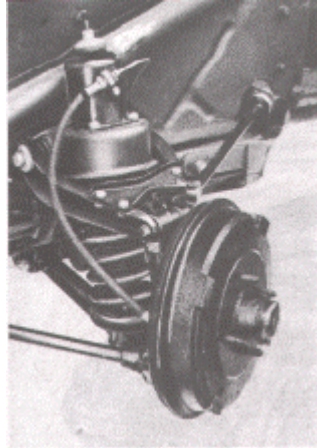
The front end of the cylinder block is bored to form a housing for the water pump. Coolant from the pump is circulated into the cylinder block and around the bores and then up through communicating passages in the cylinder block and head to the water jacket around the valves and ports. A thermostat is fitted to the water outlet point at the front of the cylinder head. The pump impeller and fan spindle is supported on two ball races

and a springloaded gland prevents leakage of coolant. Power from the engine is transmitted by an 8 in diameter Borg and Beck dry single plate clutch (fitted with hydraulic with-drawal mechanism) to the four-speed gear box. The box is of conventional design with single helical constant mesh gears. Synchromesh is provided on top, third and second gears. The layshaft is supported on needle roller bearings. The gear box extension provides a bearing for the sliding end of the propeller-shaft, which in turn transmits the drive to the hypoid rear axle. The axle assembly consists of a banjo casing with a machined front face to which is bolted the axle nose piece carrying the gear assembly. The pinion shaft is supported by opposed taper roller bearings, while the crown wheel and differential gear assembly is mounted on ball races. The crown wheel is attached to the differential carrier by means of bolts and both this carrier and the nose piece are very well stiffened to prevent distortion under operating conditions. A two-pinion differential is used and both differential gears and pinions are provided with thrust washers. The inner ends of the axle shafts are splined, while the outer ends are flanged to provide the

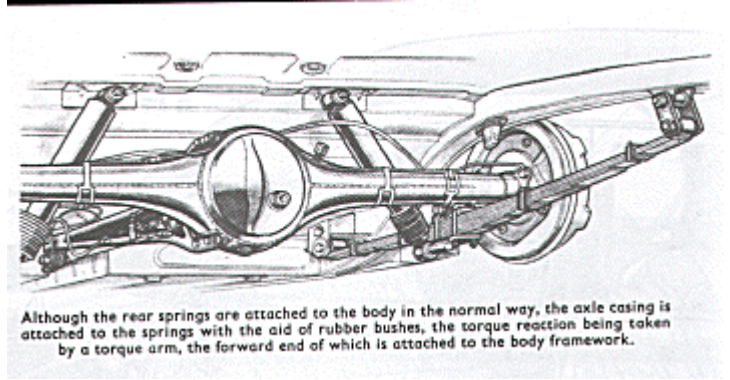
attachment points for the hub bearing housing and brake drum. It is, therefore, necessary to assemble the hub bearing housing together with its oil seal and double row ball bearing, and lock the inner race in position (by means of a nut which fits on to the screwed end of the axle casing) before the half shaft is placed in position. The brake back plates are attached to a flange on the axle casing with four bolts.

Although the front suspension is conventional in design inasmuch as it is independent by means of coil springs and orthodox pressed steel top wishbones, it also incorporates additional tie rods to prevent excessive deflection under severe conditions. This feature has no doubt permitted the use of rubber bushes for both inner and outer wishbone link bearings, a usage that not only reduces the routine maintenance but also eliminates noise. The upper wishbones are formed from two U section pressings placed back to back.

Although the rear springs are attached to the body in the normal way, the axle casing is attached to the springs with the aid of rubber bushes, the torque reaction being taken by a torque arm, the forward end of which is attached to the body framework.



*The pressed steel top wishbones and upper and lower struts can be seen from this angle. The four lugs cast on the outer face of the brake drum are for balancing purposes.*



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A universal joint interrupts the steering column. As well as providing a measure of flexibility, this unit also helps to insulate the steering wheel from road shocks and vibrations.

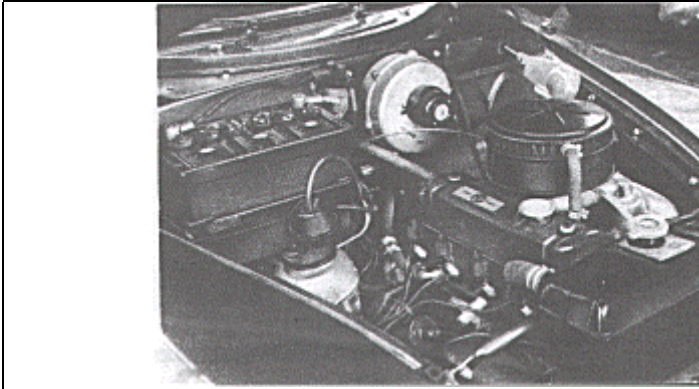
At the bottom, in place of a normal lower wishbone, an I section link is used to control the geometry, and this is also pivoted on Metalastik bushes. The front hubs are mounted on ball bearings and held in place by means of a nut and split pin, a pressed cap being fitted to the outer end of the hub to retain the grease.

A strut is attached to the front pressing of the top wishbone and extends forward to a pick-up point on the body frame, to which it is flexibly attached (in a similar way to the rear-facing strut attached to the lower suspension link). Consequently, the brake reaction torque places these struts in compression, reduces deflection on the other suspension links and prevents change in castor angle. The lower spring pan is attached to the I section lower suspension link by means of two bolts. It is

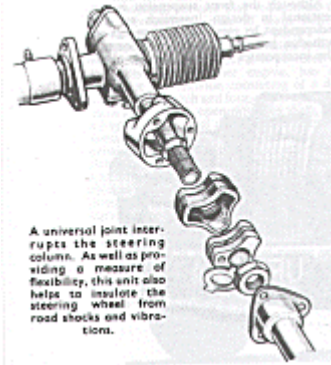
suitably formed to mate with the bottom end of the spring, which is pig-tailed. The top of the spring is housed in a pressed spring pan which forms the outer extension of a main structural cross member. A bump rubber is attached to the lower side of this cross member and contacts the bottom suspension link. A rebound check is provided by the telescopic spring damper, which is placed inside the spring and attached to the suspension link at the lower end by means of two eye bolts, while the top end is attached to a pressed steel extension bolted to the top of the spring pan. The steering arms extend forward and are attached to the rack and pinion steering mechanism by means of ball joints. The steering mechanism is bolted to the main cross member and the bottom part of the steering column projects through a cross tube placed in the main body structure. To prevent the transmission of shock and also to permit a certain amount of angular flexibility, a form of flexible joint is placed

between the two parts of the steering column. Owing to the use of rubber bushes for the suspension bearings, there are only three grease nipples on each side of the front suspension, two to lubricate the king pins and one for the outer steering ball joints.

The suspension at the rear is conventional in as much as it employs a live axle and half-elliptic leaf springs, but rather unusual as regards the method of attaching the axle. The leaf springs are attached by using rubber bushes at the front and shackles at the rear, but instead of the axle casing being attached by means of U bolts, it is flexibly mounted with the help of rubber bushes attached to brackets on the springs. The road springs control the axle movement in a similar way to a normal Hotchkiss drive layout, except that they do not take torque reaction under either driving or braking conditions. To resist these forces a torque arm is bolted to the axle casing some 3in to the left of the propeller-shaft centre line.



*This engine is fitted with the export version of air cleaner. A tubular shaped unit mounted parallel to the rocker cover is used for home market cars. The battery is placed on the right side of the bulkhead, while the windscreen wiper motor can be seen on the left. Both the radiator and the engine oil filler caps are easily accessible.*



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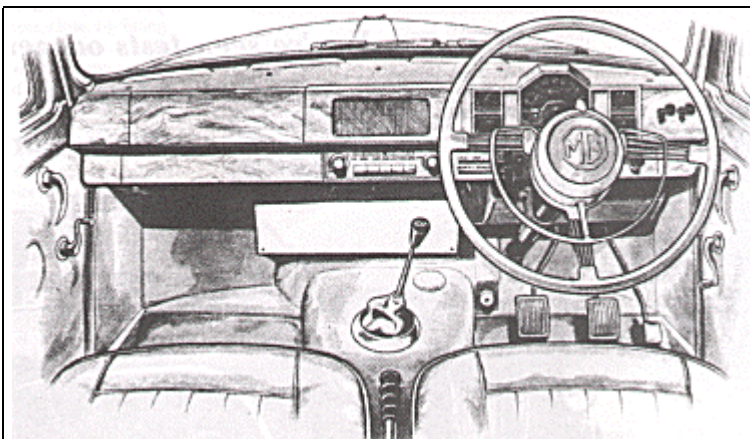
This arm extends forward for a distance of 7in in front of the spring anchorage points and is attached to the left side of the propeller-shaft tunnel.

A unit construction body and chassis are used, and the floor forms the main stress-carrying members. Box section extensions are welded to the front of the floor and bulkhead structure, and to these are attached the main and auxiliary front cross members. Extra stiffness for the main floor section is provided by the propeller-shaft tunnel pressing, a central cross member, and box section side members which also form the sills. Box section members

extend back from the floor section to provide the anchorage points for the rear springs.

The basic shape of some of the major pressings is similar to that for another vehicle produced by the British Motor Corporation, the Wolseley Four Forty-four. However, the overall height of the car is considerably lower. Curved glass is used for the windscreen as well as the rear window to produce uniform contours. The interior of the Magnette is particularly well trimmed and finished; the driving compartment is extremely well laid out with a three-spoke steering wheel

providing a clear view of the instruments which are grouped in front of the driver; the speedometer cowl, containing more than a suggestion of the familiar M.G. octagon motif, is also placed on the centre line of the steering wheel. The remote control gear lever and central hand-brake lever are conventionally placed between the front seats, and the use of pendant pedals for the clutch and brake enables the floor to be completely sealed. A heater unit, windscreen washing equipment and twin fog lamps are all included as standard equipment.



*A suggestion of the familiar octagon motif makes the fascia unmistakably M.G. A short, central gear lever, much appreciated by keen drivers, is retained and the instruments are grouped in front of the driver. There is no central spoke at the top of the wheel to obscure the dials.*

**M.G. MAGNETTE SPECIFICATION:**

**Engine.**-4 cyl, 73.02 x 83mm (1,489 cc.). Compression ratio 7.15 to 1. 60 b.h.p. at 4,600 r.p.m. Maximum torque 78 lb ft at 3,000 r.p.m. Three-bearing crankshaft. Heartshaped combustion chambers. Overhead valves operated by push rods and rockers. Single side camshaft.

**Clutch.**-8in diameter dry single plate. Six springs. Hydraulically operated withdrawal mechanism.

**Gear Box.**-Overall ratios: top 4.875; third 6.698; second 10.792; first 17.745; reverse 23.204 to 1.

**Final Drive.**-Live axle (8:39). Ratio 4.875 to 1. Hypoid pinion differential.

**Suspension.** - Front: independent, coil springs, wishbones and links. Rear: halfelliptic and torque arm. Suspension rate (at the wheel): front, 188 lb per in; rear, 144 lb per in. Static deflection: front, 4 in; rear, 4.43in.

**Brakes.**-Front: two-leading shoe. Rear: leading and trailing shoe. Drums (front) 10 in diameter, 1 ¾ in wide. Rear: 10 in diameter, 1 ¾ in wide. Total lining area: 134.4 sq in (67.2 sq in front).

**Steering.**-Rack and pinion.

**Wheels and Tyres.**-5.50-15in tyres on 4-15in rims. Four-stud steel disc wheels.

**Electrical Equipment.**-12-volt; 51 ampere hour battery. Head lamps, double dip, 42-36 watt bulbs.

**Fuel System.**-9 1/4 gallon tank. Engine sump oil capacity 1/2 pints.

**Main Dimensions.**-Wheelbase 8ft 6in. Track (front) 4ft 3in, (rear) 4ft 3in. Overall length 13ft 11 1/2in. Width 5ft 1in. Height 4ft 10 1/4in. round clearance 55/8jin. Frontal area 20 sq ft. Turning circle 37ft 6in. Weight (with 9 gallons fuel) 22 cwt. Weight distribution: 54.3 per cent front; 45.7 per cent rear. Basic price £645, plus British purchase tax £269 17s 6d. Total £914 17s. 6d.

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