

# The Motor Road Test No. 37/58

**Make:** B.M.W.

**Type:** 600

**Makers:** Bayerische Motoren Werke, 76, Lerchenauerstrasse, Munich 13, Germany.

**Concessionaires:** Isetta of Great Britain Ltd., Locomotive Works, New England Road, Brighton, Sussex.

## Test Data

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**CONDITIONS:** Weather: Cool and foggy with little wind. (Temperature 37°-42°F., Barometer 30.3 in. Hg.) Surface: Damp tarred macadam. Fuel: Standard-grade pump petrol (approximately 82 Research Method Octane Rating).

**INSTRUMENTS.** (Kilometre calibrations)  
 Speedometer at 30 m.p.h. ... .. 10% fast  
 Speedometer at 60 m.p.h. ... .. 10% fast  
 Distance recorder ... .. 3% fast

**WEIGHT**  
 Kerb weight (unladen, but with oil, coolant and fuel for approx. 50 miles) 10½ cwt.  
 Front/rear distribution of kerb weight.. 39½/60½  
 Weight laden as tested ... .. 14½ cwt.

**MAXIMUM SPEEDS**  
**Flying Quarter Mile**  
 Mean of four opposite runs ... .. 59.2 m.p.h.  
 Best one-way time equals ... .. 60.4 m.p.h.

**"Maximile" Speed.** (Timed quarter mile after one mile accelerating from rest.)  
 Mean of four opposite runs ... .. 58.7 m.p.h.  
 Best one-way time equals ... .. 60.8 m.p.h.

**Speed in Gears**  
 Max. speed in 3rd gear ... .. 51 m.p.h.  
 Max. speed in 2nd gear ... .. 35 m.p.h.  
 Max. speed in 1st gear ... .. 20 m.p.h.

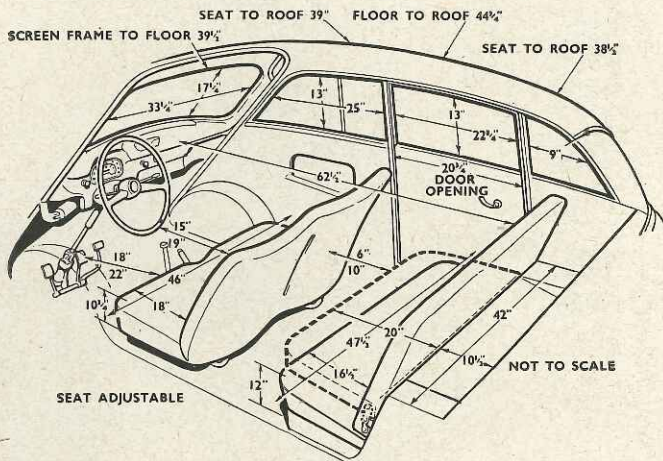
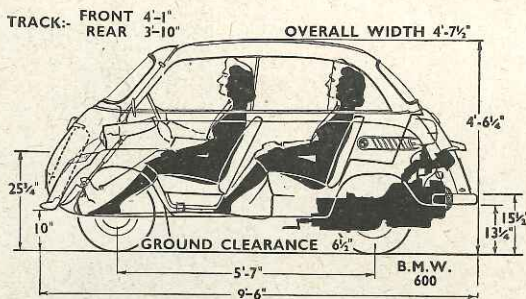
**FUEL CONSUMPTION**  
 68.0 m.p.g. at constant 30 m.p.h. on level.  
 59.5 m.p.g. at constant 40 m.p.h. on level.  
 53.5 m.p.g. at constant 50 m.p.h. on level.

**Overall Fuel Consumption** for 786.8 miles, 17.4 gallons, equals 45.2 m.p.g. (6.25 litres/100 km.)

**Touring Fuel Consumption** (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration) .. 53.7 m.p.g.  
 Fuel tank capacity (maker's figure) .. 5 gallons

**STEERING**  
 Turning circle between kerbs:  
 Left ... .. 27 feet  
 Right ... .. 31½ feet  
 Turns of steering wheel from lock to lock 2½

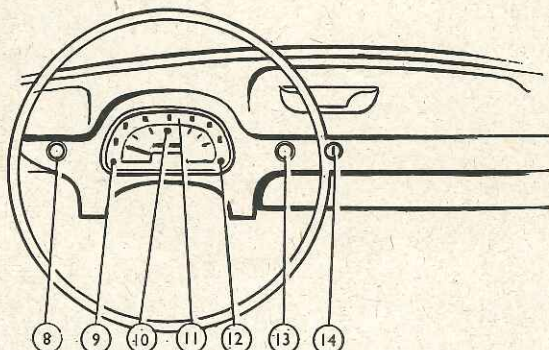
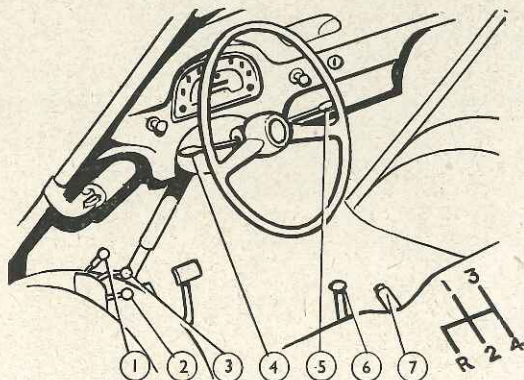
**BRAKES from 30 m.p.h.**  
 1.00g retardation (equivalent to 30½ ft. stopping distance) with 75 lb. pedal pressure.  
 0.80g retardation (equivalent to 37½ ft. stopping distance) with 50 lb. pedal pressure.  
 0.32g retardation (equivalent to 94 ft. stopping distance) with 25 lb. pedal pressure.



ACCELERATION TIMES from standstill				ACCELERATION TIMES on Upper Ratios			
0-30 m.p.h.	..	..	7.6 sec.	10-30 m.p.h.	..	Top gear	3rd gear
0-40 m.p.h.	..	..	14.2 sec.	20-40 m.p.h.	..	16.7 sec.	8.5 sec.
0-50 m.p.h.	..	..	24.8 sec.	30-50 m.p.h.	..	16.9 sec.	10.7 sec.
Standing quarter mile	..	..	25.6 sec.		..	22.5 sec.	16.2 sec.

**HILL CLIMBING at sustained steady speeds**

Max. gradient on top gear	..	1 in 12.5 (Tapley 180 lb./ton)
Max. gradient on 3rd gear	..	1 in 6.9 (Tapley 320 lb./ton)
Max. gradient on 2nd gear	..	1 in 5.1 (Tapley 430 lb./ton)



1, Choke control. 2, Heater control. 3, Petrol and reserve tap. 4, Headlamp flasher and dipper. 5, Horn and direction indicator switch. 6, Gear

lever. 7, Handbrake. 8, Lights switch. 9, Direction indicator warning light. 10, Headlamp main beam indicator light. 11, Speedometer and

distance recorder. 12, Dynamo charge warning light. 13, Windscreen wiper switch. 14, Ignition and starter switch.

# The B.M.W. 600



A Lightweight German Mile-a-Minute  
Four-seater of Exceptional Compactness  
and Operating Economy

**T**HE most obviously distinctive thing about the B.M.W. 600 which we have recently been testing on British roads is that it is 22 inches shorter overall than any 4-wheeled 4-seater car which is made in Britain. What is not always appreciated without practical experience is the fact that, despite its small size, this is in every sense a "real" car and should not be considered as a miniature. Only available in Britain as an import from Germany, the B.M.W. 600 is expensive here at present because import duty is added to the cost of a car from a Munich factory more famous for engineering quality than for rock-bottom prices. As an example of successful unconventionality, however, its interest goes far beyond the limits set by its present price to British sales.

The layout of this unique little car is well seen in our usual diagram on the opposite page. Two people occupy a seat which is only slightly behind the front wheels, reaching this seat through a forward door of the kind which "bubble cars" inherited from the hansom cab of an earlier century. Two more people can enter a conventional rear seat through a conventional side door, and behind them

there is a useful luggage well, the capacity of which can be multiplied by folding down the rear seat backrest in "estate car" fashion. Behind the rear wheels, a twin-cylinder horizontally-opposed engine of fan-cooled o.h.v. design is located, its not-too-small 585 c.c. size allowing good torque to be combined with the 19½ b.h.p. maximum output which ensures a top speed of just about a mile a minute. Built in simple but durable-seeming fashion, this miniature vehicle goes on to the scales at a ready-to-drive weight of only 10¾ cwt.

In terms of figures, the most impressive thing about this little B.M.W. is its economy of running costs. Engine oil consumption during our test was virtually nil, the cheapest grades of fuel sufficed to keep the engine free from pinking, yet the overall petrol consumption of 45.2 m.p.g. is notably superior to any four-seat saloon which we have sampled which offers at all comparable performance. As usual, we drove this little car hard for a major part of the time that it was in our hands, making free use of the four-speed gearbox to obtain rapid acceleration, although a strong "second pressure" in the accelerator linkage does encourage a driver to ease back from full throttle to a setting which allows a 50-55 m.p.h. cruising speed to be held economically on open roads.

The well-balanced design of this small car has been happily successful in allowing good cruising fuel economy figures (such as 59½ m.p.g. at a steady 40 m.p.h.) to be secured without resort to an exaggeratedly high top gear. Extreme top

gear liveliness is not to be expected, but there is pleasantly immediate response to the accelerator pedal in top gear over the vital speed range from 15 m.p.h. to 50 m.p.h., especially when the driver is alone but also when a heavy passenger load is being carried. A four-speed gearbox (with synchromesh on all its forward ratios) permits the keen driver to get along at much more than the average speed of main road traffic, 3rd gear being so quiet at a steady 30 m.p.h. that one can easily forget to engage top gear around town, and the red "3" mark at about 40 m.p.h. on the speedometer seeming to err on the side of caution since 50 m.p.h. can be exceeded in this ratio. The central gear lever ought to be convenient, but in fact proves liable to get hidden amongst the coat-tails of an overcoated driver or a passenger in the comfortably-shaped but fairly narrow front seat.



It would be untrue to claim that this air-cooled twin-cylinder four-stroke engine entirely equals the refinement of the best

## In Brief

Price in Britain: £449 15s. 4d., plus purchase tax £226 4s. 8d. equals £676.

Capacity ... .. 585 c.c.  
Unladen kerb weight ... 10¾ cwt.

Acceleration:  
20-40 m.p.h. in top gear ... 16.9 sec.  
0-50 m.p.h. through gears ... 24.8 sec.

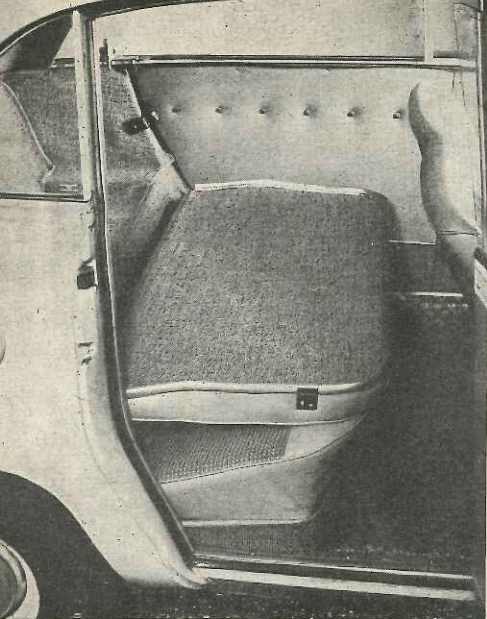
Maximum direct top gear gradient ... .. 1 in 12.5

Maximum speed ... .. 59.2 m.p.h.

"Maximile" speed ... .. 58.7 m.p.h.

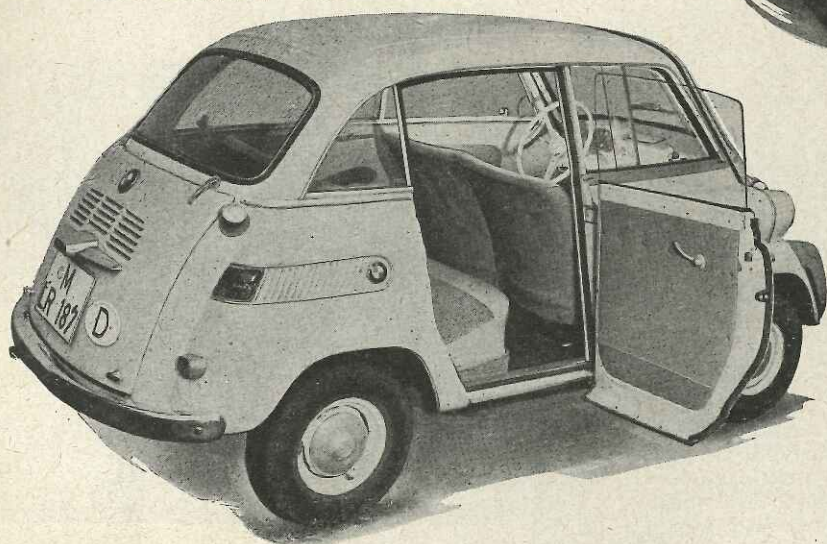
Touring fuel consumption ... 53.7 m.p.g.

Gearing: 12.15 m.p.h. in top gear at 1,000 r.p.m.; 27.3 m.p.h. at 1,000 ft./min. piston speed.

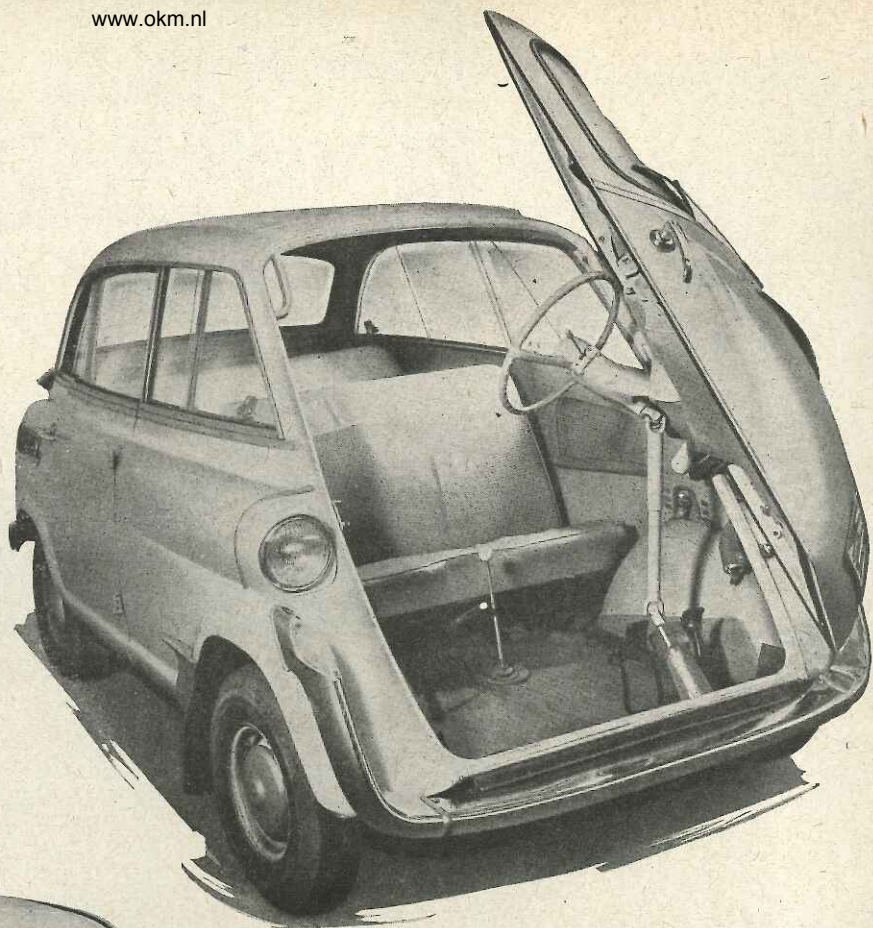
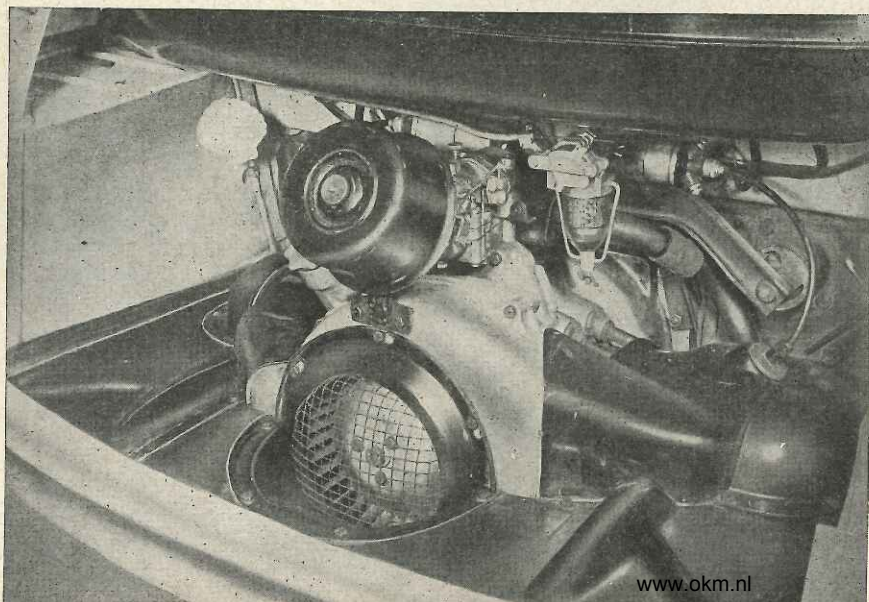


THE FRONT seats are reached through the opening front panel, to which the double-jointed steering column is attached; gear lever and handbrake are close together in the centre of the floor. A single offside door gives access to the rear seats, the backrest of which can be folded flat to form a luggage platform ahead of the normal baggage well, as seen above.

### The B.M.W. 600



EXTREMELY neat detail design is evident, the decorative slats on the rear quarter panels being in fact air intake louvres for the rear engine which is reached through the louvred rear door. Although the horizontally-opposed twin-cylinder engine is fully enclosed in the body there is enough space around it to avoid difficulties in routine maintenance.

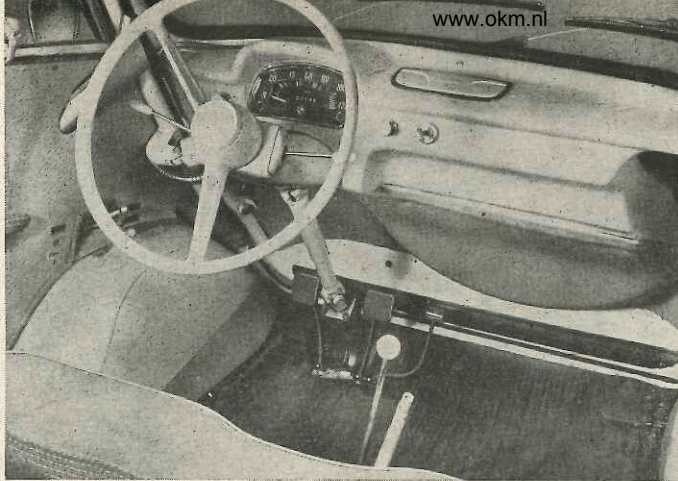


water-cooled four-cylinder units, but at most times the disadvantage which accompanies simplicity and freedom from freezing worries is very slight. The tick-over of this engine is smooth, as is its running at speeds above 15 m.p.h. in top gear, and the amount of noise inside the car is very modest during normally economical driving; although at high engine r.p.m. and with "second pressure" applied to the accelerator the power unit becomes much more audible, the same is true of most orthodox small cars. It is only below 15 m.p.h. that slight jerkiness on the over-run asks the lazy driver to change down out of top gear. With the choke correctly used, the engine was instant in starting from cold, in response to a silent dynamo-starter unit controlled from the ignition key, but did not warm up and settle down to operate normally and idle reliably without aid from the choke quite as soon as do some other air-cooled units.

An unfortunate effect which this car shares with some other cars incorporating rear-mounted engines, especially when they are air cooled, is a rather cold interior during winter weather. Provision is made for bringing some of the fan-circulated engine cooling air into the body interior, but when the outside air temperature drops towards freezing point this provides screen de-misting and a very slight degree of interior warmth for one side of the car only. For more temperate weather, three sliding windows permit ample ventilation to be secured without undue draughts, and apart from too-thick windscreen pillars there is a fine all-round view out of the car so long as the windows do not mist up.

There is much to be said in favour of the single forward-opening door which

THE INSTRUMENT panel is on the front door, which also accommodates the spare wheel. Choke, heater and fuel cock controls are on the left-hand body side, headlamp dipswitch lever on the left of the steering column, horn and direction indicator lever on the right.



accompanies an over-the-axle driving position on this car, even when applied to a vehicle long enough to demand normal rather than nose-to-the-kerb parking. It is an especial convenience to be able to pull up beside the kerb and immediately open the door to step out, without any need to await a gap in the stream of passing traffic. On our test model it was unfortunate that spring counter-balancing of the forward door (within the thickness of which the spare wheel is concealed from view) was just not strong enough to hold the door securely open at all times, and entry to or exit from a fairly low seat was further impeded by the fact that use of a more orthodox fascia panel than is fitted to the smaller Isettas did not seem to let the steering wheel swing quite so completely out of the way; these however are only alterable details of a fundamentally satisfactory space-saving layout.

Only a single door is provided for access to the rear seat, on the right-hand side of this left-hand-drive German model. The rear seat does not provide much knee-room for big men facing squarely forwards, but headroom is ample and there is so much breadth of floor entirely unobstructed by any transmission hump that by sitting slightly sideways two adults can

make themselves reasonably comfortable—one adult can be very comfortable indeed in the back seat, behind which the luggage well is quite usefully roomy. The all-independent coil spring suspension layout used for this model does not at any time give outstanding comfort, the moderately flexible springs not infrequently contacting their flexible buffers when a full load is being carried briskly along a rough road, but whilst no high praise is earned there is equally never any cause to describe the riding of this extra-lightweight vehicle as uncomfortable. We were interested to note that, despite having rather small wheels, it could drive steadily through surprisingly deep mud without loss of traction, thanks to I.R.S. and a rearward centre of gravity.

In some respects the handling qualities of the B.M.W. 600 disappointed us, even after a worn-out rubber bush at one end of the steering drag link had been renewed (the test model had about 17,000 miles recorded on its speedometer) to eliminate lost motion. It soon became natural to take advantage of the compactness and lightness of the vehicle by weaving through traffic in very brisk fashion, but whilst road holding was good the steering remained slightly less light and less quick in

response than we would have expected. The hydraulic four-wheel brakes proved quickly responsive and the pull-up hand-brake was above criticism, but hard braking tended to lock one rear wheel and to bottom the front suspension audibly.

Simply furnished in plastics, haircord carpet and rubber matting, the body interior was nevertheless equipped with some useful refinements of detail. There is a good interior lamp, and whilst no contents gauge is provided there is a reserve tap for the 5-gallon petrol tank. Behind the steering wheel there are two finger-tip control levers, that on the right operating the self-cancelling turn indicators and also (when squeezed towards the steering wheel) the horn, that on the left dipping the headlights and also (when squeezed) flashing the headlamp main beam regardless of whether or not any lights are switched on. Faith in the power unit's reliability is reflected by the total absence of any gauge or warning light to indicate oil circulation irregularities.

In recent years, orthodox small cars have gradually been growing up and a new breed of miniature cars has come into being, but in this country a wide gulf has been left between the small cars with over-900 c.c. engines and the miniature cars with engines of under 300 c.c. In Britain, perhaps, the greatest importance of the B.M.W. 600 is, as a reminder to both manufacturers and car buyers that, somewhere midway between these sizes, a compromise can be struck which combines most of the carrying capacity and effortless performance of one with most of the compactness and economy of operation of the other. It is sincerely to be hoped that before long either this or some equivalent car will be built in Britain so that it can be marketed here at a truly competitive price.

## Specification

<b>Engine</b>	
Cylinders ...	2 (horizontally opposed, air cooled)
Bore ...	74 mm.
Stroke ...	68 mm.
Cubic capacity ...	595 c.c.
Piston area ...	13.3 sq. in.
Valves ...	Pushrod o.h.v. 6.8/1
Compression ratio ...	None (gravity feed)
Carburettor ...	Zenith 28KLP1 horizontal
Fuel pump ...	None (gravity feed)
Ignition timing control ...	Fixed
Oil filter ...	Full-flow
Max. power (net) ...	19.5 b.h.p.
at ...	4,000 r.p.m.
Piston speed at max. b.h.p. ...	1,780 ft./min.
<b>Transmission</b>	
Clutch ...	Single d.p.
Top gear (s/m) ...	4.6
3rd gear (s/m) ...	6.9
2nd gear (s/m) ...	10.5
1st gear (s/m) ...	19.2
Reverse ...	18.75
Propeller shaft ...	Nil (rear engine)
Final drive ...	7/38 spiral bevel
Top gear m.p.h. at 1,000 r.p.m. ...	12.15
Top gear m.p.h. at 1,000 r.p.m. piston speed ...	27.3
<b>Chassis</b>	
Brakes ...	Hydraulic
Brake drum internal diameter ...	7.1 in.
Friction lining area ...	67 sq. in.
Suspension:	
Front ...	Dubonnet-type i.f.s. by coil springs
Rear ...	Independent by trailing links and coil springs
Shock absorbers ...	Telescopic
Steering gear ...	Worm and nut
Tyres ...	5.20—10

## Coachwork and Equipment

Starting handle ...	None
Battery mounting ...	Under rear seat
Jack ...	Screw pillar type with ratchet handle
Jacking points ...	External sockets under sides of body
Standard tool kit ...	None
Exterior lights: 2 dipping headlamps with pilot bulbs, 2 tail lamps, number plate lamp.	
Number of electrical fuses ...	6
Direction indicators: Self-cancelling flashers, white front, amber rear, combined with stop lamps.	
Windscreen wipers ...	2-blade electrical, self parking
Windscreen washers ...	None
Sun vizors ...	None
Instruments ...	Speedometer with non-decimal non-trip distance recorder
Warning lights: Dynamo charge, direction indicators, headlamp main beam.	

<b>Locks:</b>	
With ignition key ...	Ignition/starter switch and front door
With other keys ...	None
Glove lockers/map pockets ...	2 deep wells alongside front seat
Parcel shelves ...	None (luggage well behind rear seat)
Ashtrays ...	One on fascia panel
Cigar lighters ...	None
Interior lights ...	One in roof
Interior heater: Warm air from engine ducted to windscreen interior and front and rear compartments.	
Car radio ...	None
Upholstery material ...	Plastic
Floor covering ...	Rubber mats
Exterior colours standardized: Six single-colour; five two-colour.	
Alternative body styles ...	None

## Maintenance

Sump ...	3½ pints, S.A.E. 10W/30 (summer and winter)
Gearbox and final drive ...	2½ pints, S.A.E. 10W/30 oil
Steering gear lubricant ...	Grease
Cooling system capacity ...	Nil (air cooled)
Chassis lubrication: By grease gun every 1,200 miles to 10 points, and check level of 10W/30 oil in i.f.s. reservoirs.	
Ignition timing ...	Marked on cooling fan, adjacent to contact breaker
Contact-breaker gap ...	0.016 in.
Sparking plug type ...	Bosch W225T2 (long reach)
Sparking plug gap ...	0.027-0.031 in.
<b>Valve timing (with clearance increased to 2 mm.): Inlet opens 4° after t.d.c. and closes 36° after b.d.c.; exhaust opens 36° before b.d.c. and closes 4° before t.d.c.</b>	
<b>Tappet clearances (cold):</b>	
Inlet ...	0.006 in.
Exhaust ...	0.006-0.008 in.
Front wheel toe-in ...	0.080 to 0.115 in. at rims
Camber angle ...	1½°
Castor angle ...	16°
Steering swivel pin inclination ...	5°
<b>Tyre pressures:</b>	
Front ...	15-17 lb.
Rear ...	22-25 lb. according to load
Brake fluid ...	A.T.E.
Battery ...	12 volt, 31 amp/hr