

# The Motor Road Test No. 23/60

**Make:** Morris

**Type:** Mini-Minor "850" de luxe saloon

**Makers:** Morris Motors, Ltd., Cowley, Oxford

## Test Data

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**CONDITIONS:** Weather: Fine and warm with little wind. (Temperature 66°-72°F., Barometer 29.9 in. Hg.). Surface: Dry concrete and tar macadam. Fuel: Premium grade petrol (approx. 96 Research Method Octane Rating).

### INSTRUMENTS

Speedometer at 30 m.p.h. . . . . 4% fast  
 Speedometer at 60 m.p.h. . . . . 1% fast  
 Distance recorder . . . . . accurate

### WEIGHT

Kerb weight, (unladen, but with oil, coolant and fuel for approx. 50 miles) . . . . . 12 cwt.  
 Front/rear distribution of kerb weight . . . . . 62½/37½  
 Weight laden as tested . . . . . 15½ cwt.

### MAXIMUM SPEEDS

Mean lap speed on banked circuit . . . . . 71.6 m.p.h.  
 Best one-way quarter-mile on straight 72.6 m.p.h.

**"Maximile" Speed.** (Timed quarter-mile after one mile accelerating from rest.)

Mean of opposite runs . . . . . 69.8 m.p.h.  
 Best one-way time equals . . . . . 69.8 m.p.h.

### Speed in gears

Max. speed in 3rd gear . . . . . 61 m.p.h.  
 Max. speed in 2nd gear . . . . . 39 m.p.h.

### FUEL CONSUMPTION

63½ m.p.g. at constant 30 m.p.h. on level.  
 58½ m.p.g. at constant 40 m.p.h. on level.  
 48 m.p.g. at constant 50 m.p.h. on level.  
 41½ m.p.g. at constant 60 m.p.h. on level.  
 34 m.p.g. at constant 70 m.p.h. on level.

**Overall Fuel Consumption** for 1,485 miles, 35.5 gallons, equals 41.8 m.p.g. (6.75 litres/100 km.).

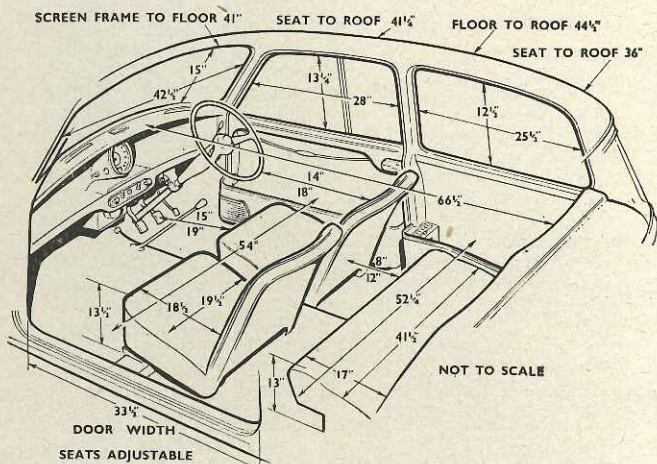
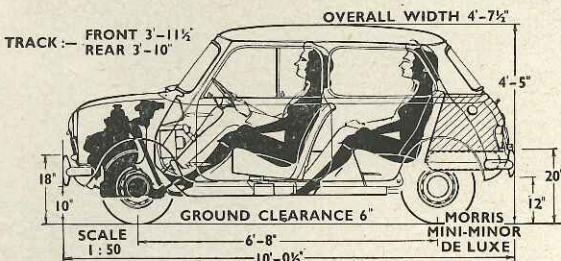
**Touring Fuel Consumption** (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration) 45 m.p.g.  
 Fuel tank capacity (maker's figure) 5½ gallons

### STEERING

Turning circle between kerbs:  
 Left . . . . . 31½ ft.  
 Right . . . . . 29 ft.  
 Turns of steering wheel from lock to lock 2½

### BRAKES from 30 m.p.h.

0.75 g retardation (equivalent to 40 ft. stopping distance) with 130 lb. pedal pressure.  
 0.66 g retardation (equivalent to 46 ft. stopping distance) with 100 lb. pedal pressure.  
 0.56 g retardation (equivalent to 54 ft. stopping distance) with 75 lb. pedal pressure.  
 0.40 g retardation (equivalent to 75½ ft. stopping distance) with 50 lb. pedal pressure.  
 0.21 g retardation (equivalent to 144 ft. stopping distance) with 25 lb. pedal pressure.



### ACCELERATION TIMES from standstill

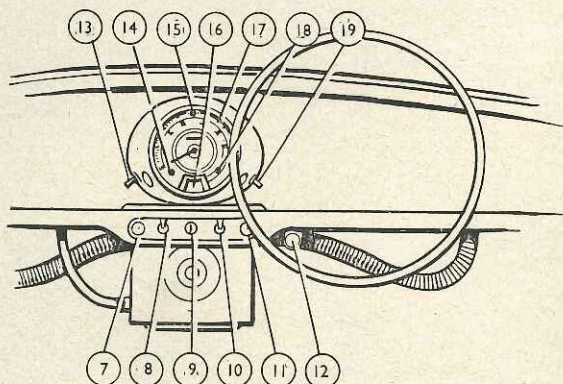
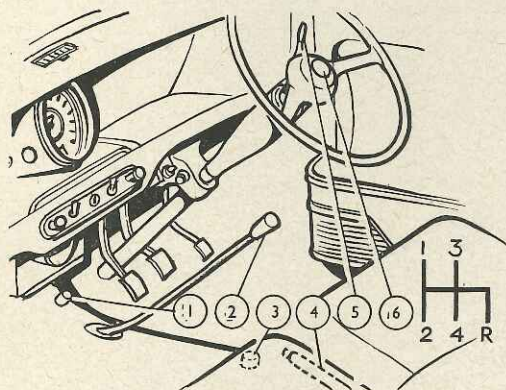
0-30 m.p.h. . . . . 6.4 sec  
 0-40 m.p.h. . . . . 11.3 sec  
 0-50 m.p.h. . . . . 18.1 sec  
 0-60 m.p.h. . . . . 28.7 sec  
 Standing quarter mile . . . . . 23.7 sec

### ACCELERATION TIMES on Upper Ratios

Top gear	3rd gear
10-30 m.p.h. . . . . 13.7 sec	9.0 sec
20-40 m.p.h. . . . . 14.6 sec	9.8 sec
30-50 m.p.h. . . . . 16.6 sec	11.5 sec
40-60 m.p.h. . . . . 22.3 sec	18.0 sec

### HILL CLIMBING at sustained steady speeds

Max. gradient on top gear . . . . . 1 in 12.4 (Tapley 180 lb./ton)  
 Max. gradient on 3rd gear . . . . . 1 in 8.0 (Tapley 275 lb./ton)  
 Max. gradient on 2nd gear . . . . . 1 in 5.6 (Tapley 395 lb./ton)



1. Headlamp dip-switch. 2. Gear lever. 3. Starter button. 4. Handbrake. 5. Direction indicator switch. 6. Horn button. 7. Heater fan rheostat. 8. Windscreen wipers switch. 9. Ignition switch.

10. Lights switch. 11. Choke control. 12. Windscreen washer button. 13. Panel light switch. 14. Oil pressure warning light. 15. Headlamp main beam indicator. 16. Fuel

contents gauge. 17. Speedometer and distance recorder. 18. Dynamo charge warning light. 19. Parcel shelf light switch.

# The Morris Mini-Minor de Luxe

A Roomy  
Baby with a  
Small Appetite  
and a  
Large Heart

ONLY 53 in. high and 10 ft. long overall, the Mini-Minor conceals astonishing roominess within its rather bluff exterior. Ideally compact and nimble for town work, the car also has performance and road-worthiness which make long journeys untiring for driver and passengers.



IT is unusual to be able to preface a Road Test report by referring to the car concerned as of prize-winning design. The award last month of the Dewar Trophy for 1959 to the British Motor Corporation, coupled with the name of Mr. Alec Issigonis for "advanced development in automobile design as exemplified by the Morris Mini-Minor 850 and the Austin Seven 850" is, in fact, unique because the trophy—which was instituted in 1906 for outstanding technical achievement in the automobile field—has never before been awarded for the actual design of a popular small car.

Few who have driven one of these near-identical Austin and Morris twins would quarrel with the award, for these cars

(which differ only in embellishments and name plaques) are as outstanding for their practical worth as for the technical ingenuity of their design.

With the essential novelties of the latter, most readers will already be familiar. All that need be said here by way of a reminder is that the 848-c.c. water-cooled, four-cylinder engine is placed across the car at the front and drives the front wheels via a gearbox and final drive built into the sump and that this arrangement, coupled with the use of small (10 in.) wheels and a unique all-independent system of suspension by rubber cones in compression has enabled a truly astonishing amount of passenger and luggage accommodation to be contained within an area of less than 47 sq. ft. and a height of only 4 ft. 5 in.

The question of room is one on which more should be said at the outset because this and the remarkable handling qualities are the two points above all others which come as such a surprise on so small a car. Indeed, it is only when one comes to use a Mini-Minor—as opposed to inspecting an example in a showroom—that the amount of space for passengers and their belongings comes to be truly appreciated.

In the front, the individually adjustable seats are of modest size but very comfortable, and those who prefer a more upright driving position can very easily obtain this by slipping small wooden blocks under the feet on which the rear of the seats rest. Interior width is ample for two large adults wearing overcoats, and the recessed doors (made possible by the use of sliding windows) add considerably to elbow room. Leg room is sufficient for tall drivers and,

although the intrusion of the front-wheel arches into the driving compartment makes it necessary to sit with the feet slightly towards the centre of the car, foot room is not cramped because there is no obtrusive transmission tunnel. Entry and exit are straightforward and call for no contortions.

At the rear, the seating is also comfortable and two adults of average size find no difficulty in accommodating a small child between them. Leg and foot room are adequate without being generous. Entry is achieved by tipping up the front seats and is a reasonably simple matter, but getting out gracefully through low and far-forward doors is less easy. Head room, as at the front, is entirely satisfactory.

Another aspect of the accommodation which one comes to appreciate more and more in daily use, is the truly astonishing provision for odds and ends. Both the front doors and the body sides in the rear compartment have deep pockets wide enough to accommodate vacuum flasks, and there is space below the rear seats for small cases. All this is in addition to a deep full-width parcel shelf where the fascia board of a more normal car would be, and another quite large shelf behind the rear squab. For bulkier luggage, there is a rear boot of sensible shape and moderate size, the lid of which can be let down as a luggage platform.

The front parcel shelf, incidentally, can be illuminated by a pair of lights incorporated in the central binnacle which carries the large-dial speedometer and a refinement on the de luxe model, which was the subject of our test, is a pair of lights which illuminate the rear pockets—

## In Brief

Price (de luxe model as tested) £378 10s., plus purchase tax £158 16s. 8d., equals £537 6s. 8d.

Price without de luxe equipment (including purchase tax), £496 19s. 2d.

Capacity ... .. 848 c.c.

Unladen kerb weight ... .. 12 cwt.

Acceleration:

20-40 m.p.h. in top gear ... 14.6 sec.

0-50 m.p.h. through gears ... 18.1 sec.

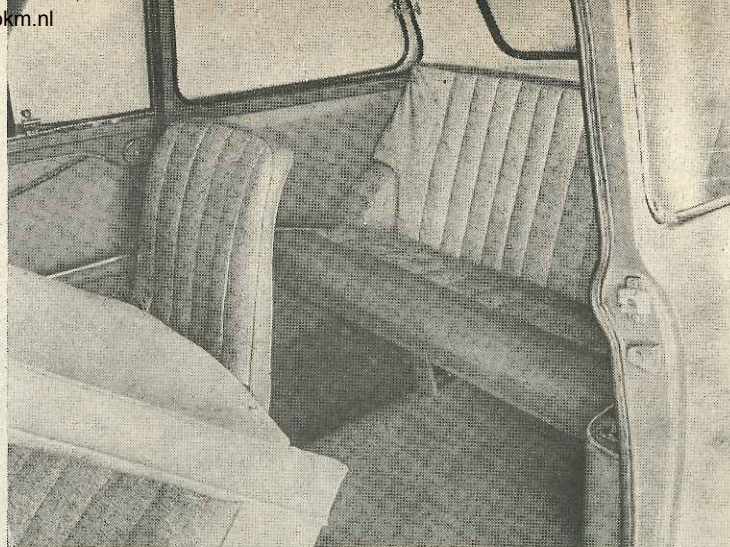
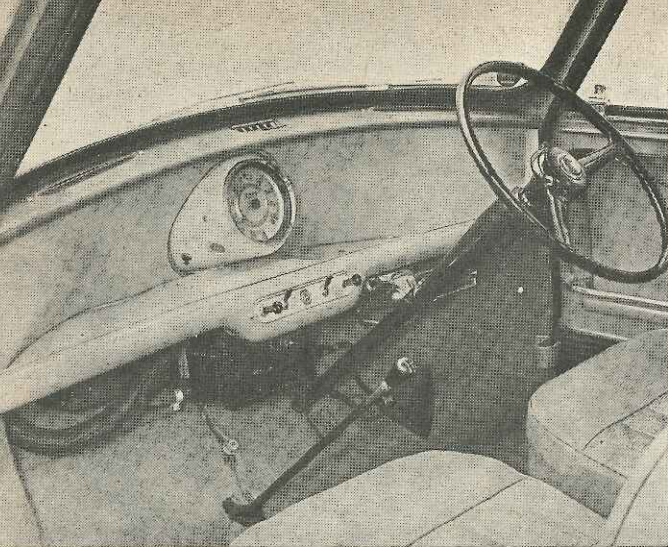
Maximum direct top gear gradient 1 in 12.4

Maximum speed ... .. 71.6 m.p.h.

"Maximile" speed ... .. 69.8 m.p.h.

Touring fuel consumption ... 45 m.p.g.

Gearing: 14.85 m.p.h. in top gear at 1,000 r.p.m.; 33.1 m.p.h. at 1,000 ft./min. piston speed.



## The Morris Mini-Minor de Luxe

or "companion boxes" as the manufacturers term them.

Vision all round is very good, with thin screen and centre pillars and a large rear window to make manoeuvring easy. The fact that the base of the sloping rear window very nearly represents the rear extremity of the car is an additional aid to reversing in tight spaces, and the large quarter lights, besides being useful in this connection, also give an excellent side view for passengers in the rear. On the general score of vision, in fact, the Mini-Minor can be faulted in only one respect; the rear-view mirror is not big enough to take full advantage of the large rear window but is, nevertheless, sufficiently large to cause some obstruction to forward vision when turning left. A smaller mirror of the reducing type might well be the answer to these points.

As mentioned earlier, the front door windows are of the sliding type—or, more correctly, of the double-sliding type, as both panels are movable. Although the maximum aperture is only just large enough for a driver to pop his head out for reversing, this is not a serious handicap in a car so easy to manoeuvre as the Mini-Minor. Ventilation, however, is more of a problem. Opening a rearward panel produces a very definite draught and whilst this does not apply to opening the forward panel, the result in this case can be a transverse current of air over the knees of those in

front which can be unpleasant in chilly weather. Experiments with the rear-quarter lights produced no answer to these objections.

Probably these difficulties would not exist if the heater and demister were of the fresh-air type as a supply of air from some front entry-point might well pressurize the interior sufficiently to avoid these criticisms. Actually the heater is of the air recirculating type and, although adequate from a temperature angle, it is dependent on a rather noisy fan.

Just as the accommodation which the Mini-Minor offers comes as a surprise in relation to its overall size, so its performance exceeds what might be expected of a car with such very modest dimensions. There is nothing "miniature" about the way this model performs or handles and, far from needing to feel slightly apologetic about his rate of progress in a modern main-road traffic stream, the Mini-Minor owner is far more likely to be irked by bigger cars getting in his way.

With a maximum speed of just over 70 m.p.h. and acceleration which brings 60 m.p.h. within reach in comfortably under 30 sec., the Mini-Minor is a thoroughly practical proposition for long-distance

AS WELL as four adults and a child, a remarkable quantity of parcels and oddments can be accommodated in the Mini-Minor, its unrivalled stowage space consisting of wide shelves fore and aft, four deep, boxy pockets, and recesses under the rear seat. Big windows, virtually flat floor, swept-forward scuttle and hollowed doors contribute to the air of spaciousness. Although front shelf and rear pockets have built-in illumination, a proper interior light would be a very useful addition.

touring as well as being an almost unrivalled means of getting in, out, and through congested cities with a minimum of delay or trouble.

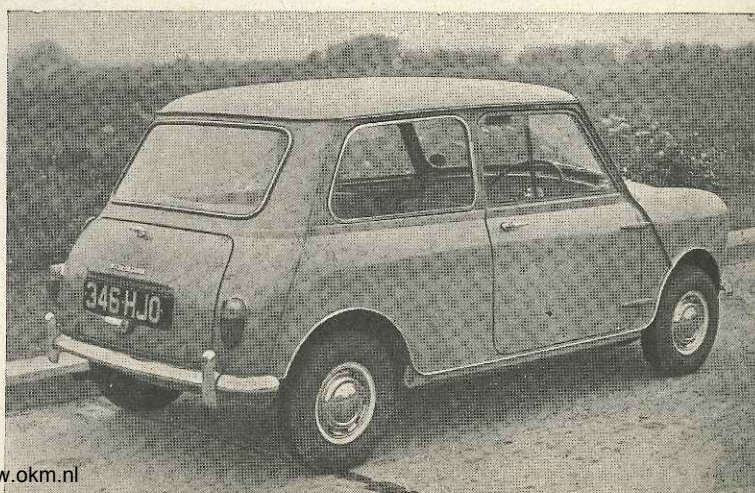
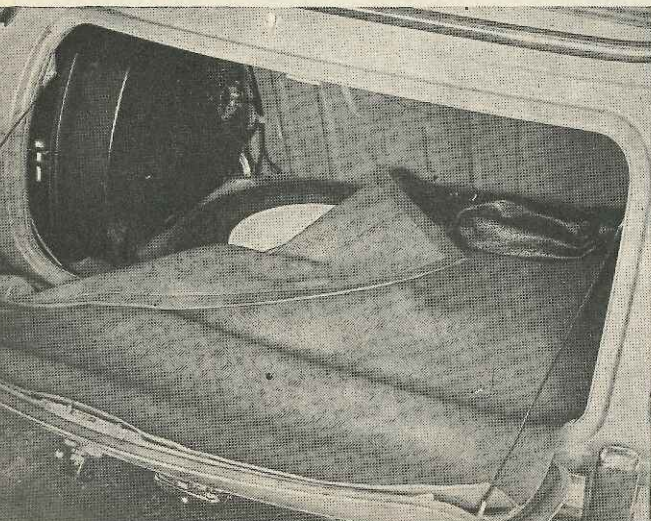
Although the transverse engine layout involves extra gear wheels being under load during top-gear motoring, our test model compared very favourably with earlier examples in being almost completely free from transmission noise at town speeds. Driven quickly it begins to sound rather more "busy" but it cruises excellently at 60 m.p.h. or more with a noise level which is very reasonable for such an inexpensive car. Free from pinking on premium-grade petrol and reasonably tolerant of "mixture" (but not of "regular grade") fuel, the engine will pull smoothly down to less than 20 m.p.h. in top gear.

During our test, an incipient misfire developed in wet weather as a result of one sparking plug lead touching the ignition timing control vacuum pipe, but this was cured in a moment by bending the offending pipe.

### Little Choke Needed

Starting, achieved by pressing a very convenient floorboard button, is always easy and the car gets into its stride with minimum use of the mixture control. Another good point is the excellent accessibility for maintenance—this applying to the grease-gun nipples as well as the engine auxiliaries. As for fuel consumption, only very hard driving or an excessive amount

"A WHEEL at each corner" gives the car a four-square look which is borne out in its exceptional roadholding. Use of compact independent rear suspension enables a useful luggage boot to be placed between the wheels, the spare wheel and battery being housed in the floor. The boot lid can be used as an extra luggage platform, and the rubber mat is clipped at the rear so that it can form a cover for this baggage in wet weather.



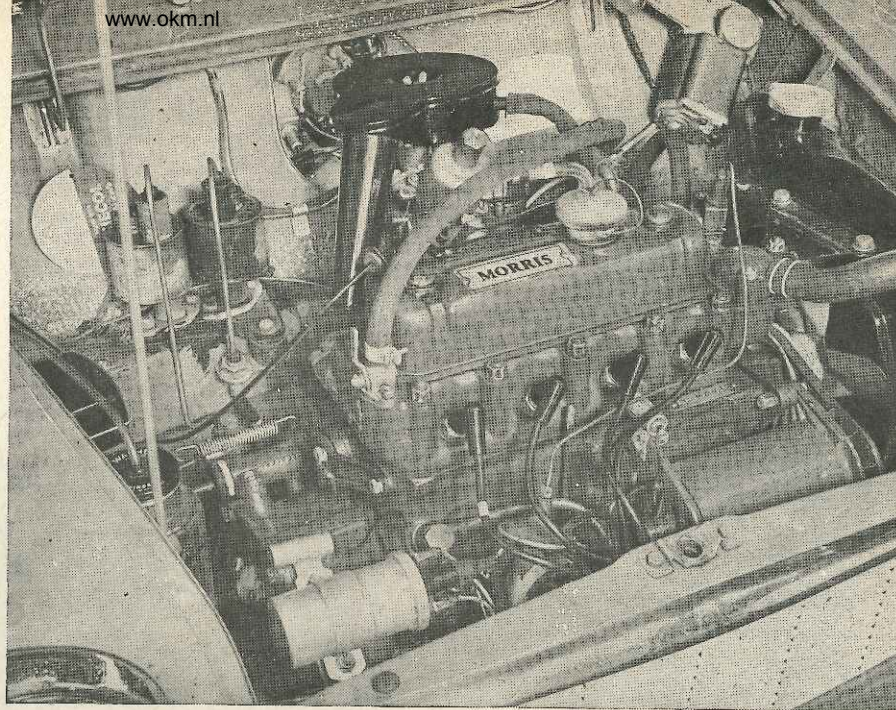
SET transversely across the car, with the gearbox below, the four-cylinder engine is very accessible for routine maintenance. The intake nozzle to the air cleaner can be swivelled to draw warm air from above the exhaust manifold in cold weather, and the fan blows cold air through the side-mounted radiator to outlets under the left front wing.

of dense traffic work serves to bring the figure down to below 40 m.p.g. and most owners will easily better that figure under give-and-take conditions.

The gear ratios are well chosen, third giving a comfortable 50 m.p.h. with a useful margin still in hand, and second allowing for changeless progress from rest to over the limit in built-up areas. As will be gathered from this, the car will start comfortably in second gear although, as with most small cars, first is probably preferable.

The gear lever is conveniently placed and although the change is reasonable under normal conditions, the synchromesh can be over-ridden by brisk changes. Another minor point of criticism is that the movement across the "gate" feels vague until one becomes familiar with the car, despite improvements since the model was introduced. Gear noise in the lower ratios is about average for a small car.

Placed conveniently between the front seats and in a handy position in relation to the gear lever, the handbrake is powerful and will just hold the car on a gradient of 1 in 3. On the model tried, the footbrake called for rather heavy pedal pressures for a car of this size and the ultimate efficiency as recorded by a Tapley meter was rather below the normal run. On the other hand, it is fair to say that the brakes prove entirely adequate and the incorporation of a pressure limiting valve to avoid the rear wheels locking is a comforting feature.



Finally there is the question of the general handling qualities of the Mini-Minor and for these one must award very high praise. The all-independent suspension gives a ride which is firm without being harsh on very bad surfaces or at low speeds, the Mini-Minor is very comfortable and steady under normal conditions, although on some wavy surfaces its riding can become rather lively. Very notable indeed is the fact that neither the ride nor the exceptional cornering qualities are seriously affected by the number of passengers. The steering is light and positive, with no appreciable kick over rough surfaces, and on corners, which can be taken fast with very little roll, the handling is above reproach. The car follows the chosen

line with absolute steadiness and although the effect of changing from the pulling condition to over-run can be detected by a slight reduction in the degree of under-steer, the change brings about none of the instability which in the past has been a disconcerting feature of some front-drive cars. The Mini-Minor, in fact, is a car in which even exuberant inexperience is unlikely to lead to serious trouble.

In short this 850-c.c. B.M.C. design is an outstanding example of advanced theory being proved to the hilt in practice, and it is doubly satisfying to find such a car emanating from a British factory at so modest a price.

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## Specification

<b>Engine</b>	
Cylinders ... ..	4
Bore ... ..	62.94 mm.
Stroke ... ..	68.26 mm.
Cubic capacity ... ..	848 c.c.
Piston area ... ..	19.3 sq. in.
Valves ... ..	Overhead (push-rod)
Compression ratio ... ..	8.3/1
Carburettor ... ..	S.U. HS2
Fuel pump: S.U. electric (PD type, rear mounted),	
Ignition timing control ...	Centrifugal and vacuum
Oil filter ... ..	Tealemit or Purolator
Max. power (gross) 37 b.h.p. (net, 34 b.h.p.) at ... ..	5,500 r.p.m.
Piston speed at max. b.h.p. ... ..	2,460 ft./min.
<b>Transmission</b>	
Clutch: 7½ in. B.M.C. single dry plate, hydraulically operated.	
Top gear (s/m) ... ..	3.765
3rd gear (s/m) ... ..	5.317
2nd gear (s/m) ... ..	8.176
1st gear ... ..	13.657
Reverse ... ..	13.657
Propeller shaft ... ..	None (f.w.d.)
Final drive ... ..	Helical spur gears
Top gear m.p.h. at 1,000 r.p.m. ... ..	14.85
Top gear m.p.h. at 1,000 ft./min. piston speed ... ..	33.1
<b>Chassis</b>	
Brakes: Lockheed hydraulic (with leading and trailing shoes all round and pressure limiting valve on rear).	
Brake drum internal diameter ... ..	7 in.
Friction lining area ... ..	67.5 sq. in.
Suspension:	
Front: Independent by transverse unequal wishbones and Moulton rubber cone springs.	
Rear: Independent by trailing links and Moulton rubber cone springs.	
Shock Absorbers:	
Telescopic hydraulic, orifice controlled (Armstrong, Girling or Woodhead Monroe).	
Steering gear ... ..	Rack and pinion
Tyres ... ..	Dunlop tubeless, 5.20-10

## Coachwork and Equipment

Starting handle ... ..	Nil
Battery mounting ... ..	In rear luggage locker
Jack: Bipod screw-type operated by jack handle.	
Jacking points: Two external, under body sides.	
Standard tool kit: Jack, wheelbrace and jack handle, sparking plug box spanner, tool bag.	
Exterior lights: Two headlamps with inset side lamps, 2 stop/tail lamps, number plate lamp.	
Number of electrical fuses ... ..	2
Direction indicators: Amber flashers, self-cancelling.	
Windscreen wipers: Electrical two-blade, non-self-parking.	
Windscreen washers: Manually operated, with twin jets.	
Sun visors ... ..	Two, hinge-mounted
Instruments: Speedometer with non-decimal distance recorder and inset fuel gauge.	
Warning lights: Dynamo charge, oil pressure, headlamp main beam, direction indicators.	
Locks:	
With ignition key ... ..	Driver's door
With other keys ... ..	Luggage boot
Glove lockers ... ..	None

Map pockets: Four very large compartments alongside front and rear seats.	
Parcel shelves: Full-width shelves below fascia and behind rear seat.	
Ashtrays: One on fascia, two alongside rear seats.	
Cigar lighters ... ..	None
Interior lights: Twin lamps on front parcel shelf, one lamp in each rear companion box.	
Interior heater: Smiths re-circulatory heater and screen demister.	
Car radio ... ..	Optional extra
Extras available: Radio, whitewall tyres, Weathermaster tyres.	
Upholstery material ... ..	Plastic leathercloth
Floor covering ... ..	Pile carpet with underfelt
Exterior colours standardized ... ..	Three
Alternative body styles: Standard saloon with simplified equipment. (Differences include: no heater, cloth upholstery, rubber floor covering, non-adjustable passenger's seat, fixed quarter lights, no passenger's sun visor, no wheel embellishers, no screen washer.)	

## Maintenance

Sump: (including gearbox and final drive) 7.6 pints to refill plus 1.4 pints in filter, S.A.E. 30 (summer), 20 (winter).	
Steering gear lubricant ... ..	S.A.E. 140
Cooling system capacity 5½ pints (2 drain taps)	
Chassis lubrication: By grease gun every 1,000 miles to 12 points.	
Ignition timing ... ..	t.d.c. (static)
Contact-breaker gap ... ..	0.014-0.016 in.
Sparking plug type ... ..	Champion N5
Sparking plug gap ... ..	0.025
Valve timing: Inlet opens 5° b.t.d.c. and closes 45° a.b.d.c.; Exhaust opens 40° b.d.c. and closes 10° a.t.d.c.	

<b>Tappet clearances (Cold)</b>	
Inlet and exhaust ... ..	0.012 in.
Front wheel toe-out ... ..	½ in.
Camber angle ... ..	2°
Castor angle ... ..	3°
Steering swivel pin inclination ... ..	9½°
Tyre pressures: Front 24 lb. Rear 22 lb.	
Brake fluid ... ..	Lockheed (S.A.E. spec. 70-R1)
Battery type and capacity: Lucas BL7A, 12-volt, 34 amp. hr.	