

The Motor Road Test No. 22/58 (Continental)

Make: M.G.

Type: M.G. A Twin Cam Two-seater

Makers: M.G. Car Co., Ltd., Abingdon-on-Thames, Berkshire.

Test Data

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CONDITIONS: Weather: Warm and dry, light wind. (Temperature 52°-61° F., Barometer 30.0-30.1 in. Hg.) Surface: Dry concrete Autobahn (acceleration and maximum speed tests). Dry concrete banked track for fuel consumption tests.

Fuel: German pump fuel, approx. 97 Research Method Octane Number (acceleration and maximum speed tests), 100 R.M.O.N. elsewhere.

INSTRUMENTS

Speedometer at 30 m.p.h. ...	2% fast
Speedometer at 60 m.p.h. ...	6% slow
Speedometer at 90 m.p.h. ...	4% slow
Distance recorder ...	3% slow

WEIGHT

Kerb weight (unladen, but with oil, coolant and fuel for approx. 50 miles) ...	19½ cwt.
Front/rear distribution of kerb weight ...	53½/46½
Weight laden as tested ...	23 cwt.

MAXIMUM SPEEDS

Flying Quarter Mile	
Mean of four opposite runs ...	113.0 m.p.h.
Best one-way time equals ...	115.0 m.p.h.

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

Mean of four opposite runs ...	101.3 m.p.h.
Best one-way time equals ...	104.2 m.p.h.

Speed in Gears. (at 6,500 r.p.m. recommended limit).

Max. speed in 3rd gear ...	81 m.p.h.
Max. speed in 2nd gear ...	50 m.p.h.
Max. speed in 1st gear ...	31 m.p.h.

FUEL CONSUMPTION

Top gear

37 m.p.g. at constant 30 m.p.h. on level.
36½ m.p.g. at constant 40 m.p.h. on level.
33½ m.p.g. at constant 50 m.p.h. on level.
32½ m.p.g. at constant 60 m.p.h. on level.
29½ m.p.g. at constant 70 m.p.h. on level.
26½ m.p.g. at constant 80 m.p.h. on level.
22 m.p.g. at constant 90 m.p.h. on level.
17½ m.p.g. at constant 100 m.p.h. on level.

Overall Fuel Consumption for 1,593 miles, 71.7 gallons, equals 22.2 m.p.g. (12.7 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) 27.6.

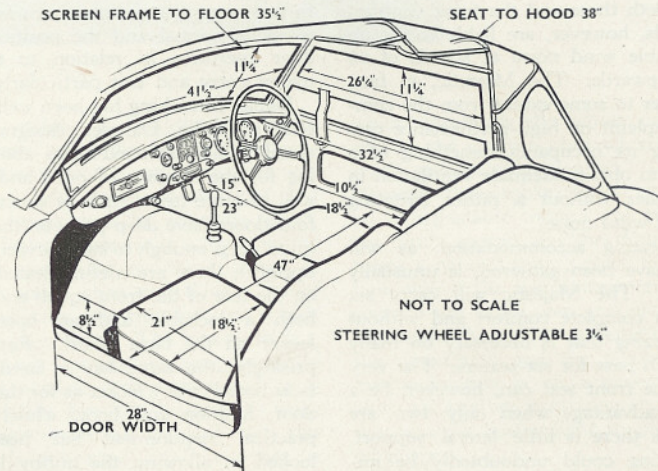
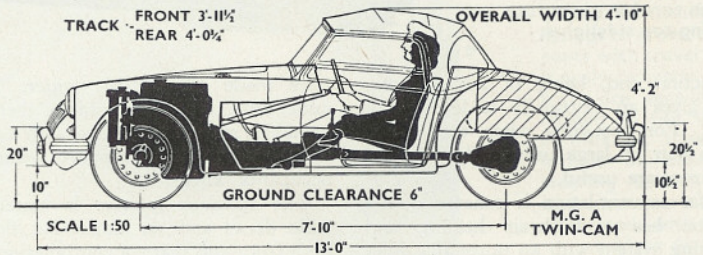
Fuel tank capacity (maker's figure) 10 gallons.

STEERING

Turning circle between kerbs:	
Left ...	31 feet
Right ...	30 feet
Turns of steering wheel from lock to lock	2½

BRAKES from 30 m.p.h.

0.90g retardation (equivalent to 33½ ft. stopping distance) with 100 lb. pedal pressure.
0.80g retardation (equivalent to 37½ ft. stopping distance) with 80 lb. pedal pressure.
0.51g retardation (equivalent to 59 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

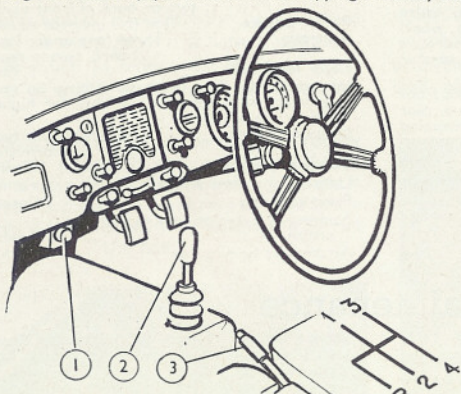
0-30 m.p.h. ...	2.6 sec.
0-40 m.p.h. ...	4.4 sec.
0-50 m.p.h. ...	7.3 sec.
0-60 m.p.h. ...	9.1 sec.
0-70 m.p.h. ...	12.3 sec.
0-80 m.p.h. ...	16.2 sec.
0-90 m.p.h. ...	24.6 sec.
0-100 m.p.h. ...	40.3 sec.
Standing quarter mile ...	18.1 sec.

ACCELERATION TIMES on upper ratios

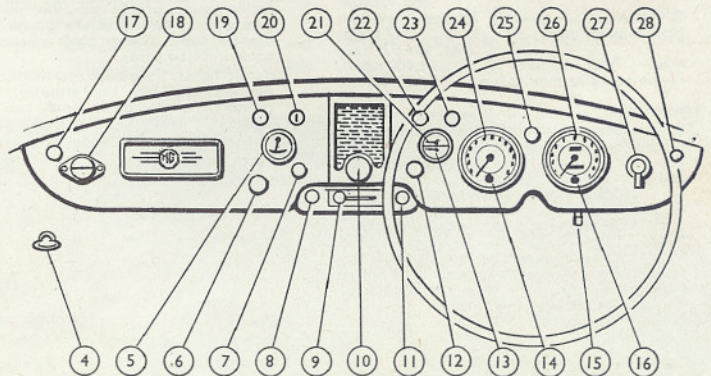
10-30 m.p.h. ...	2.6 sec.	Top gear 3rd gear	8.3 sec.
20-40 m.p.h. ...	10.7 sec.	6.5 sec.	
30-50 m.p.h. ...	9.7 sec.	6.5 sec.	
40-60 m.p.h. ...	8.8 sec.	5.5 sec.	
50-70 m.p.h. ...	9.4 sec.	5.5 sec.	
60-80 m.p.h. ...	13.9 sec.	8.3 sec.	
70-90 m.p.h. ...	15.2 sec.		
80-100 m.p.h. ...	23.1 sec.		
90-110 m.p.h. ...			

HILL CLIMBING at sustained steady speeds

Max. gradient on top gear	1 in 9.3 (Tapley 240 lb./ton)
Max. gradient on 3rd gear	1 in 6.6 (Tapley 335 lb./ton)
Max. gradient on 2nd gear	1 in 4.0 (Tapley 545 lb./ton)



- 1, Headlamp dip switch. 2, Gear lever. 3, Handbrake. 4, Bonnet catch release. 5, Fuel contents gauge. 6, Windscreen washer button. 7, Choke control. 8, Ventilator control. 9, Heater control and fan switch. 10, Horn



- 11, Demister control. 12, Starter button. 13, Water thermometer. 14, Dynamo charge warning light. 15, Trip resetting knob. 16, Headlamp main beam indicator. 17, Map reading light switch. 18, Map reading light.

- 19, Windscreen wipers switch. 20, Ignition switch. 21, Oil pressure gauge. 22, Lights switch. 23, Foglamp switch. 24, Rev. counter. 25, Panel light switch. 26, Speedometer and distance recorder. 27, Direction indicator switch. 28, Direction indicator warning light.

The M.G. A Twin Cam Two-seater



A Roadworthy Sports Car of Very High Performance

ONE hundred and eight net horsepower from an unsupercharged engine of 1.6 litres swept volume is a figure which only a very short time ago would have inspired a picture of a noisy, intractable and probably temperamental racing machine. As the power (together with the disc brakes) is the feature of paramount importance in the latest M.G., one may as well sum up the car to begin with by stating that it is relatively noisy, entirely tractable, quite untemperamental and will probably appeal in the main to owners who wish to win races.

Apart from minor details of trim, these two mechanical features are the only departures made by the "Twin Cam" M.G. A from its less expensive and very well known counterpart. It seems justifiable to leave for a moment a recapitulation of familiar virtues and vices, and concentrate for once upon a straight comparison figures between the old and the new.

In respect of maximum speed a comparison with the last M.G. A tested by *The Motor* cannot be exact, owing to the slightly greater drag effect of a fabric hood and sidescreens. An increase in net power output of exactly 50% has however raised the mean speed by 12% and the best one-way run to a creditable 115 m.p.h., the latter figure corresponding precisely to the peak engine speed of 6,700 r.p.m. This is by no means all. It might be supposed that the main advantage of a twin overhead camshaft design would be to increase performance at the upper end of the speed range, without comparable gains at lower revolutions. The only extent to which this is true is that, with the new car running on German pump fuel of approximately 97 Octane instead of its preferred 100 Octane, the rather academic acceleration test for 10 to 30 m.p.h. in top gear had to be omitted. Thenceforward the improvement in acceleration times is so marked as to warrant a table of direct comparisons between the standing-start figures for two cars.

match to speeds of 60, 70 or 80 m.p.h.

Observant readers will have noticed that although racing cars are excluded from this comparison the "Twin-Cam" has already been referred to as a potential winner of competitions. To what extent has racing performance been bought at the cost of inconvenience? There is, to begin with, a considerable increase in noise, both mechanically from the engine and from the tailpipe when the throttle is opened at all wide. Neither is particularly objectionable at the speeds of normal traffic, but both can become tiring with the prolonged cruising at 90 m.p.h. or so which is a very practicable possibility with this type of car.

So long as 100 Octane fuel can be obtained the engine is extremely docile at low revolutions and extremely smooth at high ones. On slightly lower grades it pinks only when pulling hard at low speeds, but has a very definite tendency to run-on after the ignition has been switched off. A fairly rich mixture setting of the twin S.U. carburettors was indicated by the fact that after a mild night under cover there was no need of the "choke" for starting, although steady speed fuel consumption tests bear out the reasonable economy achieved in fast Autobahn cruising. Under typical English conditions, indirect gears and high engine speeds are used as a matter of course to hustle the M.G. from point to point, and treatment of this sort has to be paid for. A check over 170 miles, using a good deal of full-throttle acceleration with a rev. limit of between 5,500 r.p.m. and 6,000 r.p.m., showed a fraction under 20 m.p.g., which

In Brief

Price (including oil cooler, as tested) £854
10s. plus purchase tax £428 12s. equals
£1,283 2s.

Capacity 1,588 c.c.

Unladen kerb weight ... 19½ cwt.

Acceleration:

20-40 m.p.h. in top gear ... 10.7 sec.

0-50 m.p.h. through gears 7.3 sec.

Maximum direct top gear
gradient 1 in 9.3

Maximum speed113.0 m.p.h.

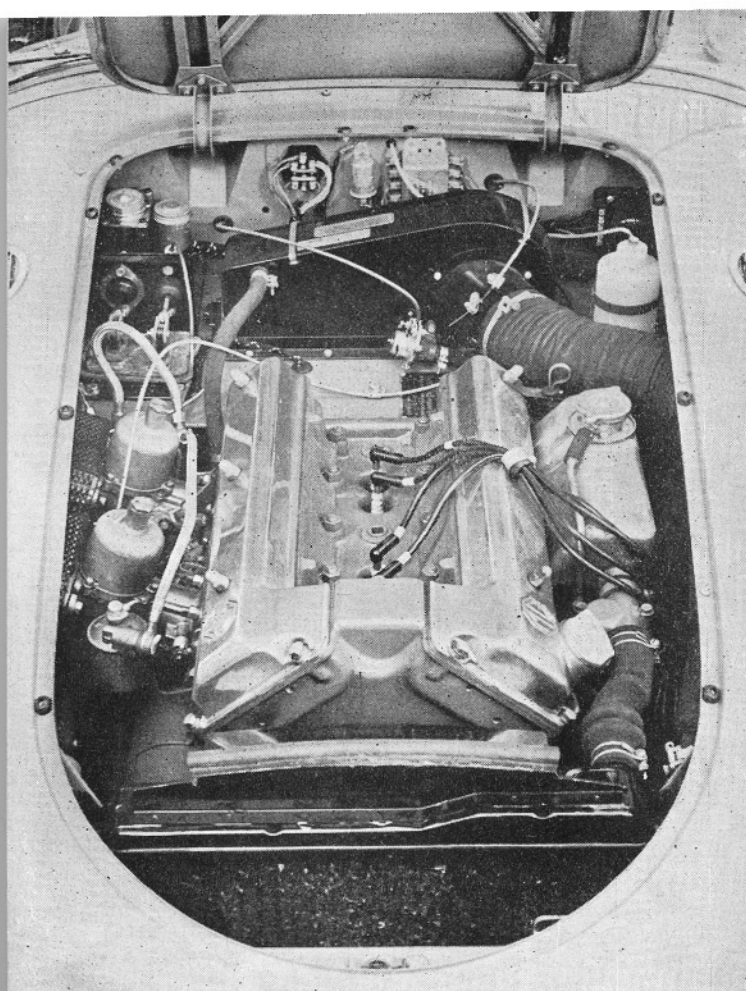
"Maximile" speed101.3 m.p.h.

Touring fuel consumption ... 27.6 m.p.g.

Gearing: 17.2 m.p.h. in top gear at 1,000
r.p.m.; 19.4 m.p.h. at 1,000 ft./min.
piston speed.

Rest to:	Twin Cam	Normal
30 m.p.h.	2.6 sec.	5.0 sec.
40 m.p.h.	4.4 sec.	7.2 sec.
50 m.p.h.	7.3 sec.	10.8 sec.
60 m.p.h.	9.1 sec.	15.6 sec.
70 m.p.h.	12.3 sec.	21.4 sec.
80 m.p.h.	16.2 sec.	32.1 sec.

Perhaps the most revealing way to sum up this performance is to say that of all the cars so far tested by *The Motor* only machines built specifically for sports-car racing would keep pace with this 1,600 c.c. touring two-seater in a standing start



Accessibility is not the strongest point of the new and appreciably more bulky engine. The distributor cannot be reached without removing the heater air duct, just visible to the right of the top radiator hose. The camshaft covers are chrome-plated.



Cockpit layout is unchanged from the normal M.G. A., but the seats are more heavily padded and better shaped, while the instrument panel is covered in leather.

The M.G. A Twin Cam Two-Seater

puts a sharp restriction on the range of a 10-gallon fuel tank. Different styles of driving, on the other hand, do not appear to affect an oil consumption in the region of one pint for every 120 miles. The test car was fitted with the external oil cooler which is an optional extra, and which lies between the radiator and grille.

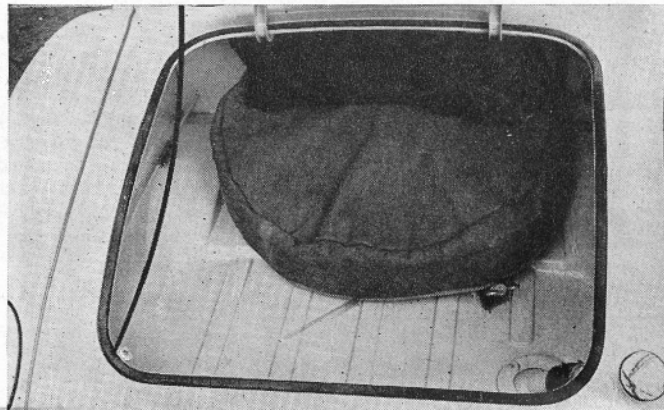
To continue the review of new features, the highest praise can be given to the Dunlop disc brakes, which are fitted in conjunction with centre-lock, perforated steel disc wheels. Really high average speeds, whether on busy motor roads or ordinary fast highways, make demands upon a braking system quite different from those of day-to-day driving. Consistent performance from disc brakes is by no means universal, yet the Dunlops combine smooth and progressive action right down to zero speed with a reassuring ability to slow the M.G. quite abruptly from 100 m.p.h. as often as small saloons hold their course in the fast lane of an Autobahn—which can be very frequently. They appear, moreover, to be unaffected by rain as well as heat.

Having dealt with those components by which, in return for some £180 of basic price, the owner of the "Twin Cam" M.G. obtains a considerable edge over his fellows, it would not be quite accurate to say that the car as supplied for test was in other respects just like its predecessor. The M.G. A has built up an enviable reputation for roadholding and sensitive handling, largely because it

is, so to speak, stronger than it is fast. It must be recorded that the faster model, after 500 miles in England and 1,000 on the Continent, was virtually without front shock absorbers and suffering accordingly. In particular quite severe scuttle shake and reaction through the steering wheel would build up at speeds between about 70 m.p.h. and 85 m.p.h.

Whilst the shock absorbers are operative—and presumably after a more robust pattern has been adopted—the handling of the car is in the excellent M.G. A tradition. The steering is neither especially light nor especially heavy, but absolutely positive and responsible in a manner which is rare. Just sufficient understeer is present to make the car straight running and insensitive to cross-winds, without requiring efforts of skill or strength on a winding road. The cornering power of the new Dunlop Road Speed RS4 tyres is exceptional on a dry surface, provided that higher pressures are adopted than the 18 lb. front and 20 lb. rear recommended

Space in the boot is limited by the necessity to fit in a spare wheel, but a couple of soft grips can be carried without much difficulty. On top of the wheel is a full set of tools.



for "normal" driving—at least 24 lb. and 26 lb. seems to be desirable. In the wet these tyres favour enterprising use of the accelerator if corners are to be taken fast, when the rear wheels break away very easily, but at the same time very controllably. The embarrassing and much more dangerous phenomenon of a front-wheel slide is happily unknown to the M.G. driver.

Stated thus baldly, the plain facts of roadholding behaviour may not convey to a reader unfamiliar as yet with the M.G. A its most endearing characteristic: that of being fun to drive. This quality as a whole is hard to pin down, yet instantly recognizable by anyone coming fresh to the car, and is probably owed to the obvious but not universal circumstance of a set of controls which all work perfectly. The steering and brakes have been remarked upon. An essential of any sports car is a really good gearbox and that of the M.G. is first class, with a light and completely positive movement of the short lever but no obstruction to snatched changes from the synchromesh. The only objections are a reverse position located

next to second and therefore provided with rather too strong a guard spring for convenience, and a biggish gap between the second and third ratios which allow speeds of approximately 81 and 50 m.p.h. respectively at 6,500 r.p.m. The clutch is completely without slip, and befits a car which will readily spin its wheels during get-away on a dry road. The accelerator, in spite of a flexible cable connection, works well and is placed so that it is easy to blip the throttle with the side of the foot to synchronize engine and transmission speeds while braking.

In a car with slower steering, requiring more arm work, the bucket seats might be uncomfortably close up to the steering wheel even for the long-legged. As it is, shorter drivers move in a rather restricted space, but the seats themselves are comfortable, well padded, more upright than most and excellent in holding the driver in place. At medium tyre pressures—high enough to ensure good roadholding, but below the 30-32 lb. requested for maximum runs—the suspension provides a much more comfortable ride than might be expected of so solid-feeling a car, possibly on account of softer sidewalls in the new tyres. Even over really bad pave, jarring through the steering wheel was the only unpleasant sensation.

The seats are fairly low slung between the chassis side-rails, with the advantage of greater protection against the elements from high doors and the corresponding disadvantage of slightly reduced visibility. Nevertheless, any driver tall enough to see over the scuttle has a clear view of both front wings, while transparent panels now sewn into the hood fabric allow almost 350-degree vision even when it is raised. The latter operation is one requiring a good deal of perseverance for one man to complete it in less than four or five



The hood, although rather cumbersome to erect, is extremely efficient in keeping out rain and draughts. Centre-lock pressed steel wheels are standard equipment.

minutes, although the hood offers the compensation of being one of the most weatherproof of its kind when erect. No drop of water entered in quite heavy rain, and the windscreen is kept well clear outside by electric wipers and inside by a powerful fresh-air heater and demister. Plated studs on the scuttle, for attaching the tonneau cover, produce rather trying reflections in the windscreen.

Stowage of the hood, complete with its folding frame, behind the seats, considerably reduces the limited space available for luggage, the greater part of the boot (whose lid is released by a concealed toggle inside the car) being occupied by the spare wheel and tools. A couple of soft grips, together with small articles which can be wedged into odd spaces or the door pockets, just about complete the possible payload when two people are carried. It would appear that an enterprising accessory manufacturer might produce a lockable glove box to make use of the part of the fascia panel now occupied alternatively by a decorative emblem or

the optional car radio controls.

Quarts into pint pots frequently take up a lot of the available space. The extra width of a twin o.h.c. cylinder head has filled the bonnet to very near its capacity, and the engine is by no means as accessible as formerly. The dipstick, requiring as it does frequent attention, is almost completely hidden from view; a fault which could be most easily cured by fitting a long tube rising to the top of the engine. Similarly the distributor cannot be reached at all without first uncoupling the air duct to the interior heater.

The "Twin Cam" M.G. A is not intended for very large scale production, and such details as these may well be unimportant to the comparatively few people who, by their choice of the more costly model, indicate that performance is their first consideration. When one or two matters have been attended to there is little doubt that numerous competition successes will come the way of the M.G., the more so because of its favourable situation in the 1,600 c.c. category.

Specification

Engine	
Cylinders	4
Bore	75.4 mm.
Stroke	89.0 mm.
Cubic capacity	1,588 c.c.
Piston area	27.7 sq. in.
Valves	Overhead (twin o.h.c.)
Compression ratio	9.9/1
Carburettors	Two S.U. H6
Fuel pump	S.U. electric
Ignition timing control	Centrifugal and vacuum
Oil filter	Tecalemit full flow
Max. power (net)	108 b.h.p.
at	6,700 r.p.m.
Piston speed at max. b.h.p.	3,910 ft./min.
Transmission	
Clutch	Borg and Beck 8 in. s.d.p.
Top gear (s/m)	4.3
3rd gear (s/m)	5.908
2nd gear (s/m)	9.520
1st gear	15.652
Reverse	2v/468
Propeller shaft	Hardy Spicer open
Final drive	Hypoid
Top gear m.p.h. at 1,000 r.p.m.	17.2
Top gear m.p.h. at 1,000 ft./min. piston speed	19.4
Chassis	
Brakes	Dunlop disc
Friction lining area	32 sq. in.
Suspension:	
Front	Coil springs and wishbones
Rear	Semi-elliptic
Shock absorbers:	
Front and rear	Armstrong lever
Steering gear	Cam Gears rack and pinion
Tyres	Dunlop Road Speed 5.90-15 tubed

Coachwork and Equipment

Starting handle	Yes
Battery mounting	One each side behind seats
Jack	Screw
Jacking points	No fixed points
Standard tool kit: 3 double-ended spanners, 4 box spanners, tommy bar, feeler gauge, grease gun, adjustable spanner, pliers, Phillips screwdriver, tool roll, wheel nut hammer, screwdriver, tyre pump.	
Exterior lights: 2 head, 2 side/indicator, 2 stop/tail/indicator, rear number plate.	
Number of electrical fuses	2
Direction indicators	Flashing, self-cancelling
Windscreen wipers	Lucas electric
Windscreen washers	Optional, Tudor
Sun vizors	None
Instruments: Speedometer with decimal trip distance recorder, rev. counter, oil pressure gauge, fuel gauge, water thermometer.	
Warning lights: Indicators, dynamo charge, headlamp main beam.	

Locks:	
With ignition key	Ignition only
With other keys	None
Glove lockers	None
Map pockets	Two in doors
Parcel shelves	One behind seats (with hood up)
Ashtrays	Optional
Cigar lighters	Optional
Interior lights	Optional
Interior heater	Optional, Smiths 3½kw. fresh air type
Car radio	Optional, Radiomobile
Extras available: Heater and demister, cold air ventilation, cigar lighter, adjustable steering column, luggage grid, wing mirror, tonneau cover, radiator blind, horn, foglamp, radio, competition windscreen, ashtray, windscreen washer, hardtop, sliding sidescreens, badge bar, sun vizor, seats, oilcooler, tonneau cover.	
Upholstery material	Leather and leathercloth
Floor covering	Carpet
Exterior colours standardized	Five
Alternative body styles	Coupe

Maintenance

Sump	12 pints, S.A.E. 30 (below 32° F., S.A.E. 20)
Gearbox	4 pints, S.A.E. 30
Rear axle	2½ pints, S.A.E. 90 (extreme cold, S.A.E. 80)
Steering gear lubricant	S.A.E. 90 oil (extreme cold, S.A.E. 80)
Cooling system capacity	13½ pints (1 drain tap)
Chassis lubrication By grease gun every 1,000 miles to 9 points	
Ignition timing	t.d.c.
Contact-breaker gap	0.015 in.
Spark plug type	Champion No. 3
Spark plug gap	0.024-0.026 in.
Valve timing: Inlet opens 20° b.t.d.c., closes 50° a.b.d.c.; exhaust opens, 50° b.b.d.c., closes 20° a.t.d.c.	

Tappet clearances (hot)	
Inlet	0.018 in.
Exhaust	0.018 in.
Front wheel toe-in	Nil
Camber angle	1°
Castor angle	4°
Steering swivel pin inclination	9°
Tyre pressures:	
Normal, Front	18 lb.
Rear	20 lb. (see text)
Fast, Front	22 lb.
Rear	24 lb.
Competition, Front	24 lb.
Rear	26 lb.
Brake fluid	Lockheed No. 103
Battery type and capacity	Lucas SG9E 12v., 51 amp./hr.