

# The Motor Road Test No. 6/59

**Make:** NSU

**Type:** Prince

**Makers:** NSU Werke A.G., Neckarsulm, Germany.

**Concessionaires:** NSU (Great Britain), Ltd., 7 Chesterfield Gardens, Curzon Street, London, W.1.

## Test Data

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**CONDITIONS:** Weather: Cold, little wind (0-10 m.p.h.), fine. (Temperature 34°-36°F., Barometer 30.08-30.10" in. Hg.) Surface: Concrete and tar macadam, dry. Fuel: Premium grade pump petrol (approx. 96 Research Method Octane Rating).

### INSTRUMENTS

Speedometer at 30 m.p.h. .. .. 21% 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) .. 9½ cwt.  
 Front/rear distribution of kerb weight .. 41/59  
 Weight laden as tested .. .. 13½ cwt.

### MAXIMUM SPEEDS

Mean of two laps of banked circuit .. 62.7 m.p.h.  
 Best ¼-mile time equals .. 63.8 m.p.h.

**"Maximile" Speed.** (Timed quarter mile after one mile accelerating from rest.)  
 Mean .. .. 62.1 m.p.h.

### Speed in gears

Max. speed in 3rd gear .. .. 60 m.p.h.  
 Max. speed in 2nd gear .. .. 35 m.p.h.

### FUEL CONSUMPTION

64 m.p.g. at constant 20 m.p.h. on level.  
 69 m.p.g. at constant 30 m.p.h. on level.  
 63½ m.p.g. at constant 40 m.p.h. on level.  
 46½ m.p.g. at constant 50 m.p.h. on level.

**Overall Fuel Consumption** driven hard for 779 miles, 17.7 gallons, equals 44.0 m.p.g. (6.42 litres/100 km.).

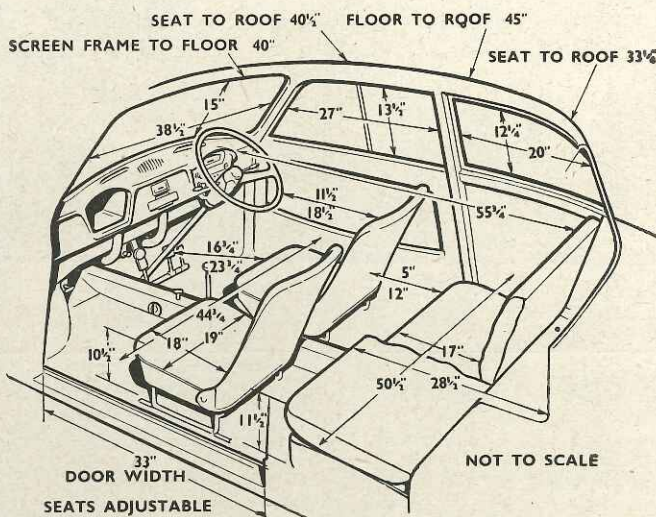
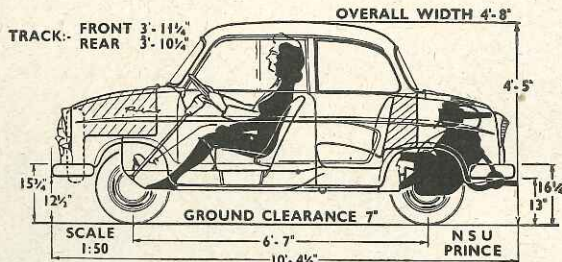
**Touring Fuel Consumption** (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration), 50.1 m.p.g.  
**Fuel Tank Capacity** (maker's figure) 5½ gallons.

### STEERING

Turning circle between kerbs:  
 Left .. .. 26 feet  
 Right .. .. 28½ feet  
 Turns of steering wheel from lock to lock .. 2½

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

0.96 g retardation (equivalent to 31½ ft. stopping distance) with 75 lb. pedal pressure.  
 0.75 g retardation (equivalent to 40 ft. stopping distance) with 50 lb. pedal pressure.  
 0.28 g retardation (equivalent to 108 ft. stopping distance) with 25 lb. pedal pressure.



### ACCELERATION TIMES from standstill

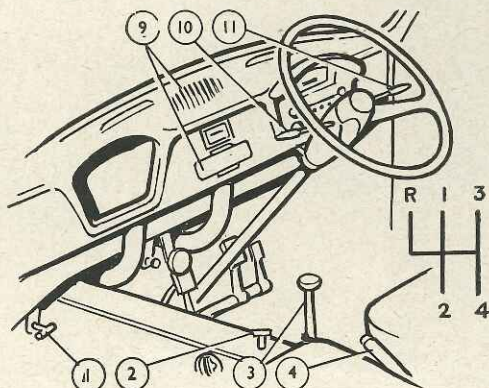
0-30 m.p.h. .. .. 8.4 sec.  
 0-40 m.p.h. .. .. 14.2 sec.  
 0-50 m.p.h. .. .. 25.8 sec.  
 Standing quarter mile .. .. 27.0 sec.

### ACCELERATION TIMES on upper ratios

	Top gear	3rd gear
10-30 m.p.h. .. ..	8.3 sec.	10.3 sec.
20-40 m.p.h. .. ..	12.0 sec.	18.3 sec.
30-50 m.p.h. .. ..	18.3 sec.	—

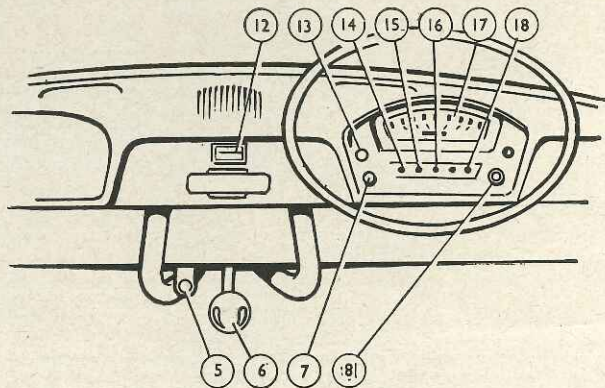
### HILL CLIMBING at sustained steady speeds

Max. gradient on top gear .. .. 1 in 13.1 (Tapley 170 lb./ton)  
 Max. gradient on 3rd gear .. .. 1 in 8.2 (Tapley 270 lb./ton)  
 Max. gradient on 2nd gear .. .. 1 in 5.5 (Tapley 395 lb./ton)



1, Luggage locker lid release. 2, Choke control.  
 3, Gear lever. 4, Handbrake. 5, Petrol reserve tap. 6, Heater and air control. 7, Lights switch.  
 8, Ignition and starter switch. 9, Blank for radio,

when fitted. 10, Direction indicator switch.  
 11, Headlamp flasher, dipswitch and horn. 12, Ash-tray. 13, Windscreen wiper switch. 14, Headlamp main beam warning light. 15, Dynamo



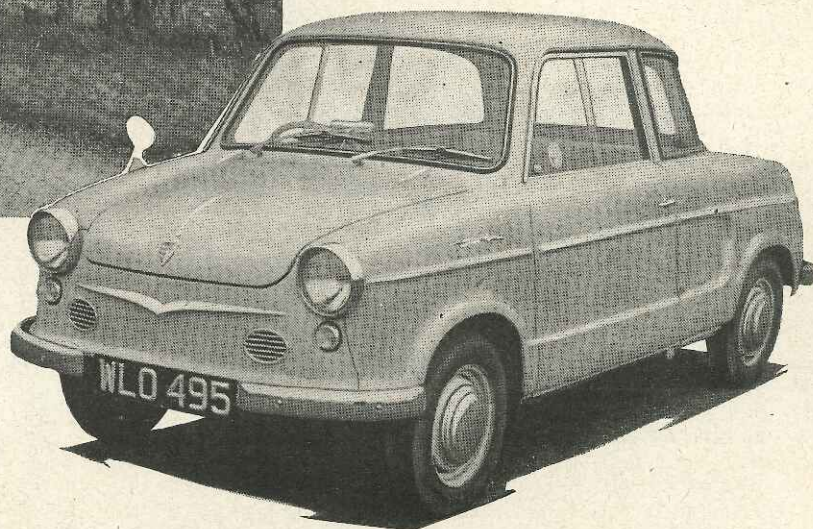
charge warning lamp. 16, Oil pressure warning light. 17, Speedometer. 18, Direction indicator warning light.

# The NSU Prince

A Remarkable 583 c.c.  
German Car



CHEST HIGH to a six-foot man, the Prince is an unconventional but neat-looking rear-engined two-door saloon of steel construction with large window areas.



## In Brief

Price in Britain £426 2s. 7d. plus purchase tax £214 8s. 3d. equals £640 10s. 10d.

Capacity ... .. 583 c.c.  
Unladen kerb weight ... 9½ cwt.

Acceleration:  
20-40 m.p.h. in top gear ... 12.0 sec.  
0-50 m.p.h. through gears 25.8 sec.

Maximum direct top gear  
gradient ... .. 1 in 13.1

Maximum speed ... .. 62.7 m.p.h.  
"Maximile" speed ... .. 62.1 m.p.h.

Touring fuel consumption ... 50.1 m.p.g.

Gearing: 12.8 m.p.h. in top gear at 1,000 r.p.m.; 29.5 m.p.h. at 1,000 ft./min. piston speed.

**W**HEN—as they undoubtedly will—examples of the latest NSU Prince find their way into the experimental departments of British car manufacturers, there will be some hard thinking because this recent essay in ultra-small-car design by a famous German motorcycle manufacturer sets high standards in miniature motoring.

Although occupying but 48 sq. ft. of road space and capable of an easy U-turn in a 30-ft. carriageway, the Prince has ample space in the front for two six-foot adults whilst still leaving room in the rear for two not-so-young children or one adult sitting sideways—or, again, for two grown-ups over short distances. Despite a wheelbase of only 6 ft. 6½ in. and diminutive wheels, a very acceptable standard of springing and road holding is provided. And powered by a two-cylinder, air-cooled, four-stroke engine of only 583 c.c., it nevertheless offers a performance which makes it an outstandingly quick means of transport in town and enables it to take its place in a main-road traffic stream without its driver feeling self-conscious about getting in other people's way.

All this is achieved with a degree of fuel economy which enables a hundred touring miles to be covered on a couple of gallons of petrol and which even the most heavy-

footed driving fails to reduce to 40 m.p.g. And with it all, the Prince is attractive to look at and possesses in high degree that elusive quality of being fun to drive.

It does not need expensive market research to tell that these are qualities sought after by enormous numbers of motorists and potential car owners in Europe and many other parts of the world.

Naturally, there is another side to the picture and the NSU Prince is not without its faults and shortcomings. In particular, it is noisy—noisy by Continental standards and very noisy to British ears attuned to small four-cylinder, water-cooled engines discreetly isolated from the main car structure. It would be idle, too, to pretend that it reaches the same standards of comfort and general refinement as the typical British small car of 800-1,000 c.c.

It is at this point that a word should be said about price. This can be regarded from two angles. To the motorist in this country, its inclusive price of £640 10s. 10d., inflated by import duty as well as British purchase tax, is not low, and it must rely for its appeal on its notable economy, its handiness in traffic and the fact that it can be stored in a space that will not house a conventional small car. To the British car manufacturer it represents a serious threat to sales in neutral export markets where import duties place it under no price handicap and it undersells the cheapest we have to offer.

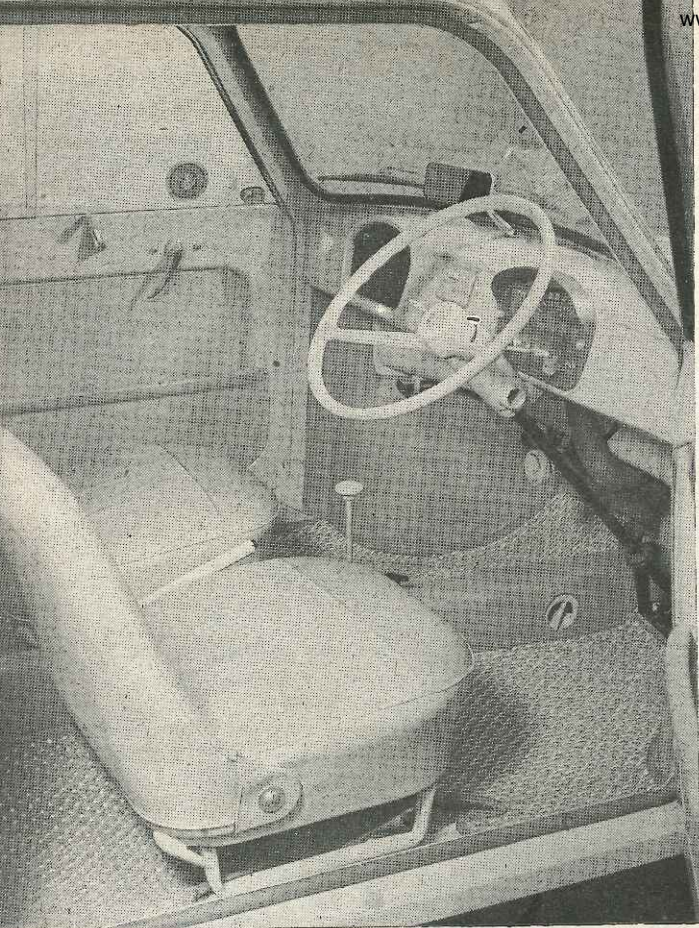
The layout and design of this thought-provoking car are unorthodox rather than revolutionary. The basis is a pressed-steel unitary structure which, owing to the large window area, relies for its strength to a

great extent on a punt-like floor, reinforced at the sides by substantial sills and in the centre by a box-section backbone which serves the additional purpose of housing the control linkages for the rear engine and of acting as a hot-air duct for the heating system. Apart from normal ribbing for rigidity, the underbelly is quite smooth, with nothing to suffer damage by grounding over rough terrain. Suspension is all-independent and there are but three grease nipples on the entire car, each requiring attention only at intervals of 2,500 miles.

The air-cooled, vertical-twin, four-stroke engine is positioned transversely behind the rear axle line and is built in unit with a single dry-plate clutch, four-speed gearbox (now of the all-synchromesh type) and the helical-gear final drive and differential.

The power unit itself is notable for inclined overhead valves working in hemispherical combustion chambers and operated by a single overhead camshaft driven by a unique system of connecting rods and eccentrics. Other unusual features are a combined dynamo, starter and contact breaker built into the flywheel.

No starting handle is provided, but frosty nights in the open failed to produce any apprehensions about the ability of the starter once the right combination of choke and small throttle opening had been discovered. It paid not to depress the clutch pedal when operating the starter, but how much this was due to clutch drag and how much to the fact that, on the test car, operation of the clutch was occasionally liable to open the throttle is a moot point. This disconcerting fault, made possible by



**SEPARATE** seats, a central backbone serving as a hot-air duct from the rear-mounted engine, door pockets of very large size, and a hooded quadrant speedometer can be seen on the left. Sliding side windows are opened or closed by winding handles.

ometer). At this speed, the effects of fan whine and the noise of a gearbox and final drive in a small unitary-construction shell are at their minimum, and the noise level becomes acceptable, if not entirely unobtrusive. At this speed, too, there is plenty of throttle in hand for overtaking or for normal main road hills, on which, unlike many small-engined cars, the Prince maintains its speed remarkably well.

Naturally, a short wheelbase and 12-in. wheels have their effect on suspension and the car is more sensitive to poor surfaces than a larger vehicle. With the rear seats unoccupied, there is a certain liveliness about the reaction to bad bumps, but the degree of comfort is still well within acceptable limits; with a full load, the response is more subdued and it is noteworthy that a load of 46 stone produced no evidence of bottoming.

The rack-and-pinion steering is very light and delightfully responsive. Cornering qualities, too, are very satisfactory, and

## The NSU Prince

mounting the pedals concentrically on a single shaft, may have been primarily due to initial stiffness, but should certainly receive attention. Usually an advantage of air cooling is quick warming-up, but although the Prince is reasonably good in this respect, the very efficiency of the ducted fan cooling slows down the process somewhat.

Throughout the range, the unit is surprisingly smooth and, above all else, willing. It gives that delightful feeling of being unburstable and, to all intents and purposes, it probably is, because its output has been deliberately restricted, partly in the interests of reliability and partly because, in Germany, insurance premiums rise steeply when the stated power output exceeds 20 b.h.p.

Restricted or no, the Prince has ample power to deal with its light kerb weight of 9½ cwt. and its quite surprising get-away, compact size and quick and positive response to the helm make it an extremely rapid car in traffic. Interested glances from other drivers turn to astonished stares when they find themselves left at the lights. All good clean fun and a big boost to the morale of the driver at the wheel of one of the smallest cars on the road.

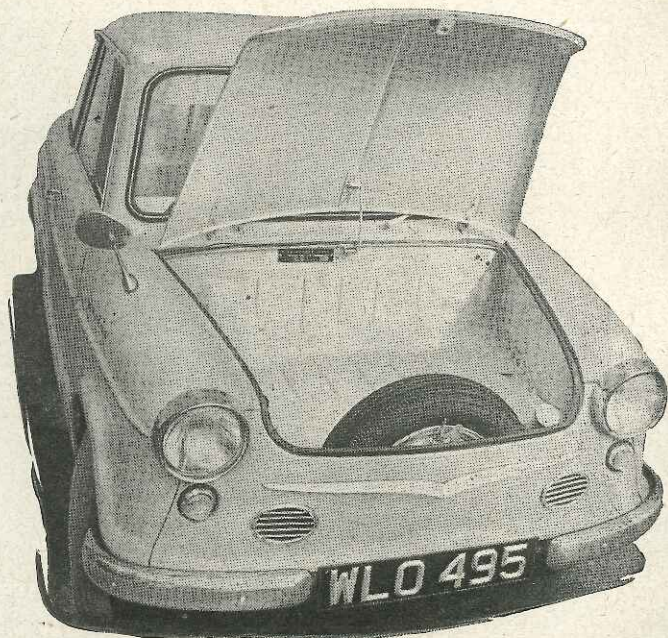
This, however, presupposes one thing—that the driver of the Prince has taken full advantage of the amber to find bottom gear. In other respects, the change was highly satisfactory, with the lever nicely placed and the response to quick upward changes a great aid to overall acceleration, but finding the lowest ratio in an all-synchromesh gearbox was a very uncertain process with the car at a standstill.

Naturally, one cannot expect the same

**SPACE** under the front "bonnet" is available for the carriage of some luggage on a flat floor; also carried here are the spare wheel, tools and petrol tank, a spring-loaded prop automatically holding open a lid which is unlocked from inside the car.

degree of flexibility from a twin as from a multi-cylinder engine, and the Prince did not take kindly to speeds below 20 m.p.h. in top. Above that figure the torque proved surprisingly good and the Prince would steam away in top gear in a manner not usually expected of miniature cars. Its best pulling powers, in fact, are in the middle speed range, although the engine will actually rev. to a quite surprising degree. In third gear, for example, it will even reach 60 m.p.h., although there is normally no point in exceeding 45 m.p.h. because the acceleration tails off above that speed.

In top gear, the maximum lies comfortably above the "60" mark and at no speed is there any feeling of overworking the engine. At the same time, the noise level is high and is most marked at low and high speeds. Probably the best cruising range is around a true 45 m.p.h. (just over 50 m.p.h. on the wildly optimistic speed-

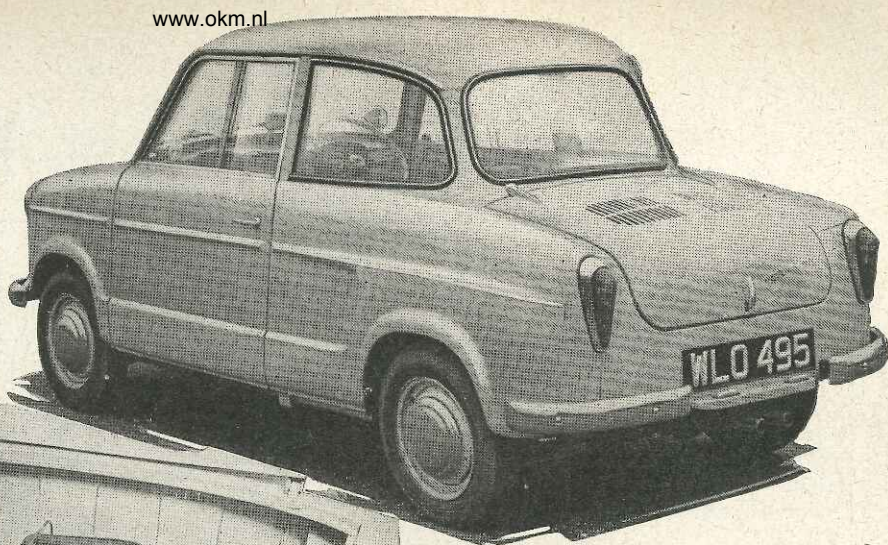


although the swing-axle rear suspension can produce very marked oversteer characteristics if a corner is taken too rapidly, a twitch on the helm is normally sufficient to set matters right. The oversteer is greatly reduced if the car is heavily laden. The brakes are very well up to their job and a pleasant detail is an accessible hand brake that really works. Other controls are straightforward and well placed, and a first-rate feature is the finger-tip lever on the right of the steering column which sounds the horn, dips the lights or flashes the headlamps for warning purposes. Its mate, on the other side of the column, operates the winking direction indicators, but is not self-cancelling and has an inconveniently small movement.

Despite its overall size, the Prince has an excellent window area and vision, in all directions, is first rate, the deep screen and large windows also having the important advantage of giving the interior a surprising

LOUVRES above the rear engine compartment admit air to the engine cooling fan of an unusually lively miniature car. At an extra cost of £45 a folding roof panel is available.

ACCESSIBILITY of the twin-cylinder engine is good, a single dipstick recording oil level in the sump which serves gearbox and final drive as well as for engine lubrication. There are only 3 grease nipples on the car, for attention every 2,500 miles.



air of spaciousness. The sliding side windows are unusual in having rack-and-pinion operation, but the winders are awkwardly placed and apt to dig into the shoulders of passengers who have the slid-

ing seats adjusted well forward. The seats themselves are reasonably comfortable without being luxurious and gave the impression that they might improve with increased usage.

Luggage accommodation is often a point of criticism with rear-engined cars, but the Prince is particularly well planned. There is room in the front under-bonnet locker for one really large suitcase (28 in. by 17 in. by 8 in.) as well as tools, spare wheel and odds and ends; behind the rear squab there is some space for small items, or the squab can be folded down to convert the whole rear compartment for luggage; finally there is a small cubby hole in the fascia and both doors have enormous pockets.

The general finish and furnishing are on simple but not displeasing lines, all the essentials are present and a very notable feature (for a rear-engined car) is a fresh-air heater that produces a large volume of really hot air just where it is wanted. Obviously, this new German challenger has been produced only after enormous thought; and in the minds of car designers as well as buyers in all parts of the world it will provoke a very thoughtful reaction.

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## Specification

<b>Engine</b>	
Cylinders ... ..	2, fan cooled
Bore ... ..	75 mm.
Stroke ... ..	66 mm.
Cubic capacity ... ..	583 c.c.
Piston area ... ..	13.7 sq. in.
Valves ... ..	Single overhead camshaft
Compression ratio ... ..	6.8/1
Carburettor ... ..	Bing 7/26/1 barrel-throttle downdraught
Fuel pump ... ..	Mechanical
Ignition timing control ... ..	Centrifugal
Oil filter ... ..	Micronic full-flow behind sump drain cover
Max. power (gross) at ... ..	24 b.h.p. at 4,800 r.p.m.
Piston speed at max. b.h.p. ... ..	2,080 ft./min.
<b>Transmission</b>	
Clutch ... ..	Single dry plate
Top gear (s/m) ... ..	4.52
3rd gear (s/m) ... ..	6.39
2nd gear (s/m) ... ..	10.00
1st gear (s/m) ... ..	18.74
Reverse ... ..	24.35
Propeller shaft ... ..	None (rear engaged)
Final drive ... ..	Helical gears
Top gear m.p.h. at 1,000 r.p.m. ... ..	12.8
Top gear m.p.h. at 1,000 ft./min. piston speed ... ..	29.5
<b>Chassis</b>	
Brakes ... ..	Hydraulic
Brake drum internal diameter ... ..	7.1 in.
Friction lining area ... ..	64½ sq. in.
<b>Suspension:</b>	
Front ... ..	Independent by coil springs and unequal wishbones
Rear ... ..	Independent by coil springs and divided axle
Shock absorbers ... ..	Telescopic double-acting, enclosed in springs
Steering gear ... ..	Rack and pinion
Tyres ... ..	4.40—12

## Coachwork and Equipment

Starting handle ... ..	None	With other keys ... ..	None
Battery mounting ... ..	Below rear seat	Glove lockers ... ..	One on fascia panel
Jack ... ..	Screw pillar type with ratchet handle	Map pockets ... ..	Two large door pockets
Jacking points ... ..	2 external under body sides	Parcel shelves ... ..	None (small luggage space behind fold-down rear seat)
Standard tool kit: 3 double open-ended spanners, 1 plug spanner, 1 wheel-nut spanner, screwdriver, tommy-bar, wheel disc lever, ratchet jack.		Ashtrays ... ..	One on fascia panel
Exterior lights: 2 headlamps with pilot bulbs, 2 stop/tail lamps, 2 number plate lamps.		Cigar lighters ... ..	None
Number of electrical fuses ... ..	6	Interior lights ... ..	One above fascia panel (manual switch only)
Direction indicators: Flashers (white front, red rear), non self cancelling.		Interior heater: Cold air from atmosphere or warm air from engine directed to front and rear compartments and to windscreen inner surface (standard equipment).	
Windscreen wipers ... ..	Electrical two-blade, self-parking	Car radio ... ..	Extra
Windscreen washers ... ..	None	Extras available: Sealed-beam headlights, overriders, reinforced 32-amp. hr. battery, window deflectors, leatherette upholstery (perforated and two-tone), 34 b.h.p. engine (fitted at factory).	
Sun visors ... ..	One	Upholstery material ... ..	Woven plastic
Instruments ... ..	Speedometer with non-decimal trip distance recorder	Floor covering ... ..	Rubber mats
Warning lights: Dynamo charge, oil pressure, headlamp main beam, direction indicators.		Exterior colours standardized ... ..	7
Locks: With ignition key ... ..	Ignition/starter switch, driver's door	(two-colour combinations £15 extra)	
		Alternative body styles	Convertible, £45 extra

## Maintenance

Sump ... ..	3½ pints plus approx. ¼ pint in filter, S.A.E. 20/20W	Tappet clearances (cold)	Inlet and exhaust 0.004 in.
Gearbox and final drive lubricated from engine sump.		Front wheel toe-in ... ..	0.04-0.06 in. at rims
Steering gear lubricant ... ..	Grease	Camber angle ... ..	2°
Cooling system capacity ... ..	Nil (air cooled)	Castor angle ... ..	6°
Chassis lubrication: By grease gun every 2,500 miles to 3 points		Steering swivel pin inclination ... ..	7°
Ignition timing ... ..	Top dead centre, static	Type pressures:	
Contact-breaker gap ... ..	0.014 in.	Front ... ..	19-21 lb.
Spark plug type ... ..	Bosch W175 T2, 14 mm.	Rear ... ..	21-24 lb.
Spark plug gap ... ..	0.027 in.		according to load
Valve timing ... ..	Not available	Brake fluid ... ..	ATE blue
		Battery type and capacity	12 volt, 24 amp. hr.