

The Motor Road Test No. 11/59 (Continental)

Make: Vespa.

Type: 400 de Luxe.

Makers: Ateliers de Construction de Motocycles et Automobiles (A.C.M.A.), 5, rue de Tilsitt, Paris 8e. and Fourchambault, Nievre.

Test Data

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CONDITIONS: Weather: Showery, light breeze diagonally across course. (Temperature 50°-52°F., Barometer 30.2-30.3 in. Hg.). Surface: Mainly damp tarmac. Fuel: French commercial grade pump fuel (approximately 81 Research Method Octane Number), plus 2% S.A.E. 20W/40 oil.

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

WEIGHT
Kerb weight (unladen, but with oil, coolant and fuel for approx. 50 miles) .. 7 cwt.
Front/rear distribution of kerb weight 40/60
Weight laden as tested 10½ cwt.

MAXIMUM SPEEDS
Flying Quarter Mile
Mean of four opposite runs 51.8 m.p.h.
Best one-way time equals 54.3 m.p.h.
"Maximile" Speed (Timed quarter mile after one mile accelerating from rest.)
Mean of four opposite runs 51.8 m.p.h.
Best one-way time equals 53.7 m.p.h.

Speed in Gears
Max. speed in 2nd gear 40 m.p.h.
Max. speed in 1st gear 19 m.p.h.

FUEL CONSUMPTION (Top Gear)
74½ m.p.g. at constant 20 m.p.h. on level (oil, 3,700 m.p.g.)
70½ m.p.g. at constant 30 m.p.h. on level (oil, 3,500 m.p.g.)
59½ m.p.g. at constant 40 m.p.h. on level (oil, 3,000 m.p.g.)
46 m.p.g. at constant 50 m.p.h. on level (oil, 2,300 m.p.g.)

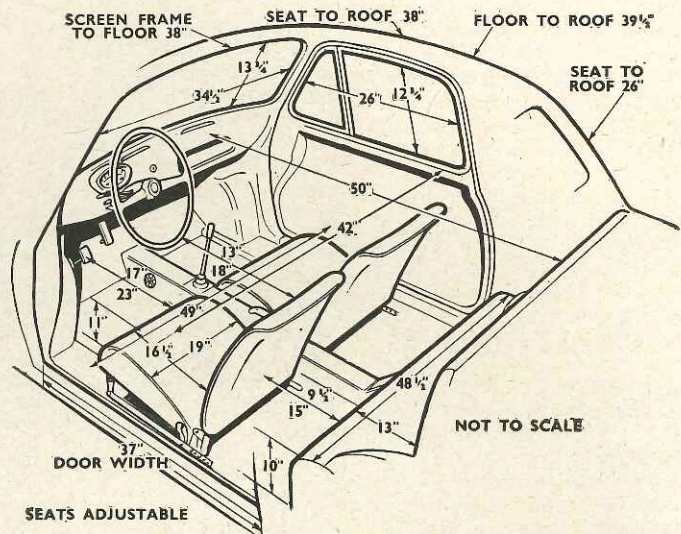
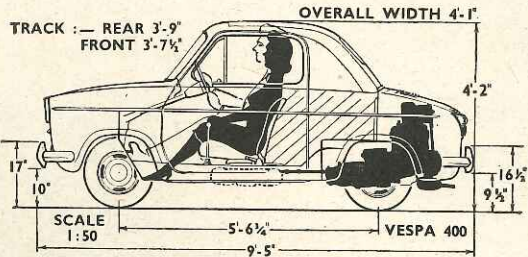
Overall Petrol Consumption for 601 miles, 13.0 gallons, equals 46.2 m.p.g. (6.1 litres/100 km.), plus oil 2,300 m.p.g.

Touring Petrol Consumption (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration); 55.3 m.p.g. plus oil 2,750 m.p.g.

Fuel tank capacity (maker's figure) 4½ gallons.

STEERING
Turning circle between kerbs:
Left 23 feet
Right 24½ feet
Turns of steering wheel from lock to lock 3½

BRAKES from 30 m.p.h.
0.99 g retardation (equivalent to 30½ ft. stopping distance) with 115 lb. pedal pressure.
0.84 g retardation (equivalent to 36 ft. stopping distance) with 90 lb. pedal pressure.
0.65 g retardation (equivalent to 46½ ft. stopping distance) with 75 lb. pedal pressure.
0.36 g retardation (equivalent to 83½ ft. stopping distance) with 50 lb. pedal pressure.
0.06 g retardation (equivalent to 500 ft. stopping distance) with 25 lb. pedal pressure.



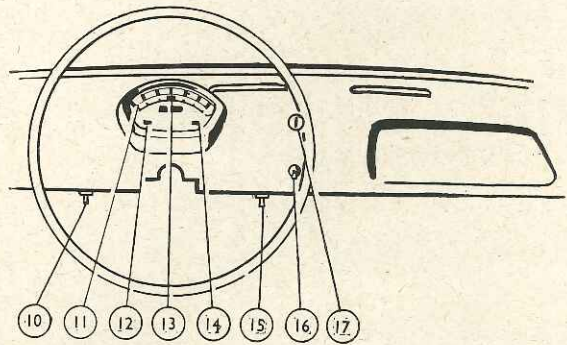
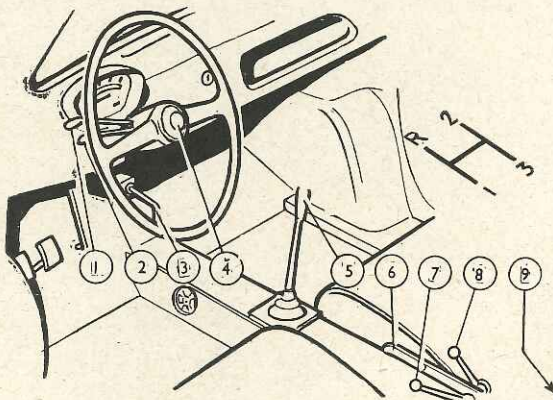
ACCELERATION TIMES from standstill

0-30 m.p.h.	11.0 sec.
0-40 m.p.h.	23.0 sec.
0-50 m.p.h.	58.0 sec.
Standing quarter mile	29.7 sec.

ACCELERATION TIMES on upper ratios

	Top gear	2nd gear
10-30 m.p.h.	22.3 sec.	10.7 sec.
20-40 m.p.h.	23.8 sec.	24.0 sec.
30-50 m.p.h.	49.6 sec.	—

HILL CLIMBING at sustained steady speeds
Max. gradient on top gear 1 in 17.2 (Tapley 130 lb./ton)
Max. gradient on 2nd gear 1 in 8.7 (Tapley 255 lb./ton)



1, Lights and dipswitch. 2, Direction indicator control. 3, Cold air intake control. 4, Horn button. 5, Gear lever. 6, Handbrake. 7, Choke control. 8, Starter switch. 9, Heater

on-off control. 10, Two-note horn switch. 11, Speedometer. 12, Fuel contents warning light. 13, Direction indicator warning light. 14, Dynamo charge warning light. 15, Parking

light switch. 16, Windscreen wiper switch. 17, Ignition switch. (Reserve petrol tap, not shown, is in rear engine compartment.)

The VESPA 400 de Luxe

Practical and Comfortable Motoring at Low Cost
in a Franco-Italian Small Car Soon to be Exported

COMFORT and smartness are not easily found amongst very small cars.

An international enterprise which has produced them in a drop-head model selling in France for only £255 (or in plainer form, £233) caused us to borrow a Vespa 400 for test on its home ground, even though the right-hand drive version has not yet gone into production. Low cost, furthermore, is not confined to the initial price, which for the well-finished de luxe version is some £40 less than the price of the old-fashioned model that is Britain's cheapest four-cylinder, and £49 less than the cheapest four-cylinder in France. Although petrol economy is expectedly only moderate from a two-stroke engine working quite hard, the cost of oil (bought in bulk), service, repairs and even depreciation should be small in proportion to the car.

Designed in Italy by the Piaggio firm of scooter fame, but produced in France where the manufacture of popular cars is less of a monopoly, the Vespa is already on the road in numbers exceeding 12,000 and export is just beginning. Although its

ancestry is different, it is easy to see the car as a successor to the Topolino designed in pre-war days (itself an Italian conception), in providing up-to-date transport for two adults with the option of children or a fair amount of luggage in the back and a combination of useful performance with real economy. Others have attempted the same formula; the majority with far less success. Its basis is a limit on overall dimensions by concentrating firmly on only two seats, translated in modern terms into a more or less conventional but scaled down design with a compact rear engine and inside luggage space.

There is thus, on the whole, nothing very unusual about the Vespa. The most surprising feature on first acquaintance is the really generous leg room for the occupants of two comfortable, although simple seats, which use fabric and elastic upholstery on tubular frames. Wide, rear-hinged doors and a good range of adjustment make the seats easy to enter, while they are far enough back for the toeboard to be separate from the front panels of the car—an advantage in winter weather compared with some small rear-engined machines. It is necessary, and not uncomfortable, to sit slightly askew as the foot wells are between the wheel arches. The width at shoulder height is just sufficient for two broad men, and hollowed-out doors which have only a plastic lining on the steel panel add another seven inches at hip level which is the more valuable because the slot between the seats housing the handbrake, starter and choke levers is narrow enough to be congested by loose coat tails.

The interior furnishing is appropriately simple, without being either crude or garish. The floor covering is rubber, and for carrying children (or in fine weather with the hood down, adults) there is an optionally available cushion to go on the shelf behind the seats. On the "luxe"

Increasingly familiar in France, the Vespa is small for parking in narrow, crowded streets, economical on expensive but inferior fuel and comfortable over cobbled roads.

In Brief

Price (in France, of de luxe model as tested), 351,725 francs (approximately £255).	
Price of standard model with plainer trim (oil mixer extra), 321,075 francs (£233).	
Capacity	393 c.c.
Unladen kerb weight	7 cwt.
Acceleration:	
20-40 m.p.h. in top gear	23.8 sec.
0-50 m.p.h. through gears	58.0 sec.
Maximum direct top gear gradient	1 in 17.2
Maximum speed	51.8 m.p.h.
"Maximile" speed	51.8 m.p.h.
Touring fuel consumption	55.3 m.p.g.
Gearing: 12.25 m.p.h. in top gear at 1,000 r.p.m.; 29.6 m.p.h. at 1,000 ft./min. piston speed.	

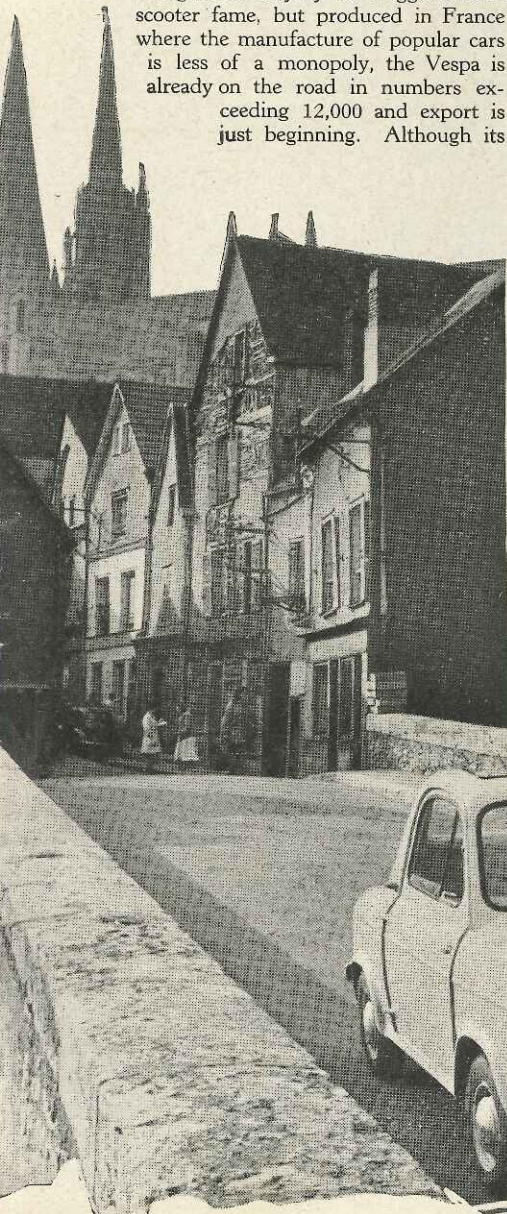
model tested there is an ignition key, with separate switches for the lights, whereas the "touring" model simplifies this to a single multi-purpose switch. The only instrument is a speedometer with a distance recorder, including in its dial a dynamo charge warning light, another for the flashing indicators and a third in substitution for a fuel gauge, while a useful detail is the switch to select a loud or soft tone from the rather tinny horn.

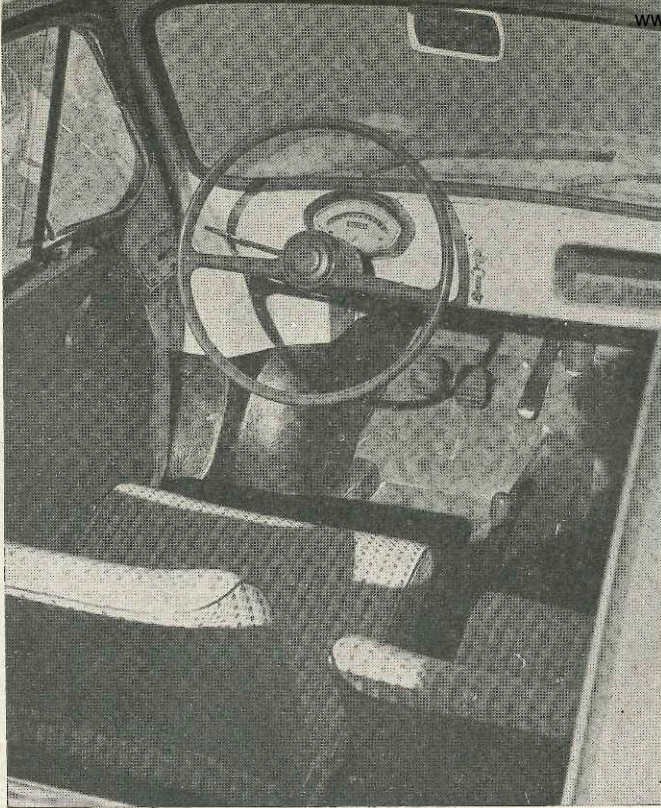
On the right-hand side of the fascia—current production being so far concentrated on left-hand drive cars only—there is a recess for maps and small impediments, and for particularly delicate objects which could be thrown forward from the rear luggage shelf—big in capacity but without a restraining lip.

On cars for export to the United States it is planned to fit sliding windows. At present, ventilation is quite adequately looked after by hinged panels in the windows and by fresh air, either cold from an intake at the front of the car or usefully hot after passing over the engine cooling fins, which blows on to feet and windscreen. Hot and cold can be mixed in rather arbitrary proportions. Most useful of all, the cabriolet roof is very simply rolled back or re-erected in a few moments by one man.

Helped by the well-sprung seats, riding comfort is unusually good for such a small car. The Vespa follows French fashion in riding better, comparatively, over very poor surfaces, such as back-street *pave*, than over indifferent main roads where the short wheelbase and light weight are more noticeable at the car's habitual 50 m.p.h. "maximum and cruising" speed. Although there is no sign whatever of mechanical strain under these conditions, the quick motion and the sound of a small engine at full throttle can become tiring over long periods. In fairness it must be said that much noisier small cars have been tested by *The Motor*, and that in any case a large proportion of the potential buyers are foreseen as urban or suburban motorists who will be content to cruise at a quieter 40-45 m.p.h.

For town driving a 5 ft. 7 in. wheelbase, 9 ft. 5 in. overall length and turning circle of under 25 ft. are enormous assets in finding a parking space in cities as congested as London or Paris, and all four corners of the car can be seen from the driving seat.





Two adjustable seats and extra space usable for luggage or children (with an optionally available cushion) leave plenty of room for the longest-legged driver. The on-off control for the heater is visible behind the seat.

Controls and instruments are simple but adequate, easily reached except for the handbrake, starter and choke levers which are crowded into a rather narrow space between the seats.

there is little to distinguish the Vespa from a normal family car, apart from its size. The car's one really "different" feature is its two-stroke engine which is unusual simply for being a two-stroke in many countries, and unique where the method of lubrication is concerned. There was sceptical criticism at the first announcement of the car when it was made known that the recommended proportion of oil to be mixed with the petrol was only 2%, or less than half the amount usual for British two-strokes. The recommendation has, however, been amply proved in practice, and while no period of hard driving has an appreciably adverse effect on the Vespa, it has none of the usual two-stroke smoke trail from its tail pipe. Further, expense and difficulty in obtaining the right mixture from petrol stations has been avoided by a clever metering device in which oil from a separate, 4½-pint reservoir can be pumped into the fuel tank in the correct proportion for any volume of petrol. At the worst fuel consumption obtained on our test, the amount of oil consumed was about equivalent to regular oil-changing on many medium-sized saloons.

Vespa 400 de Luxe

By way of pure speculation it is noticeable that the existing tail is long enough to contain a longer engine than the in-line two-cylinder unit by which the Vespa is powered.

The front suspension is a variation of the strut-type layout now finding increasing favour amongst light racing-sports cars. It is unconventional in that the rack and pinion steering is located in the free bonnet space above the driver's knees, where the short steering column is a sensible safety factor. In spite of a relatively low ratio the steering is positive and allows very quick deviation from a straight line. Lightness in a car of this size almost goes without saying; the suspension geometry automatically eliminates road reaction, requiring a spring-loaded self-centering device. On straight roads there is nevertheless a slight wandering tendency which needs fairly constant attention, while strong cross-winds have the pronounced effect which is more usual than unusual on rear-engined, swing axle designs. Apart from this, however, there seems to be no suggestion of either oversteer or understeer, and the car is consistently very responsive

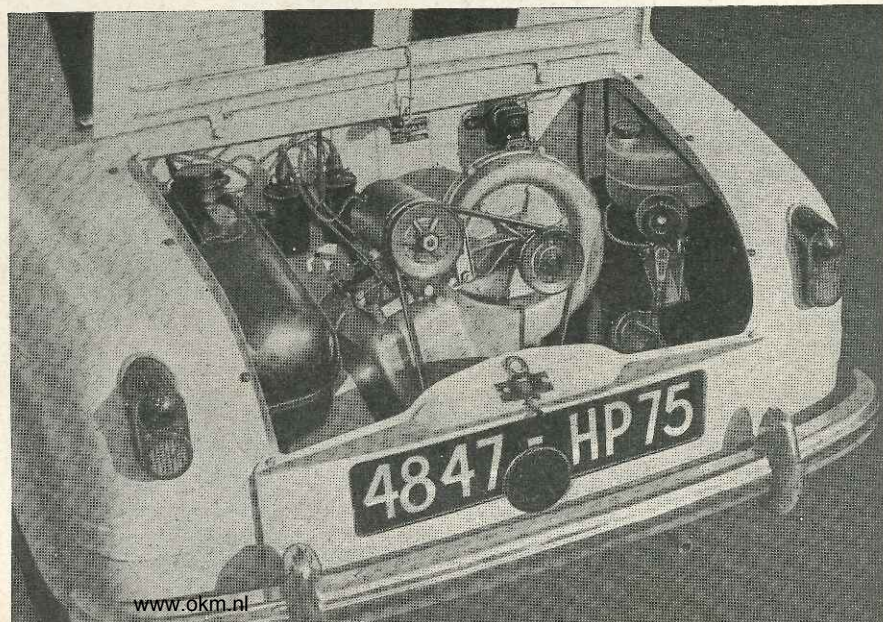
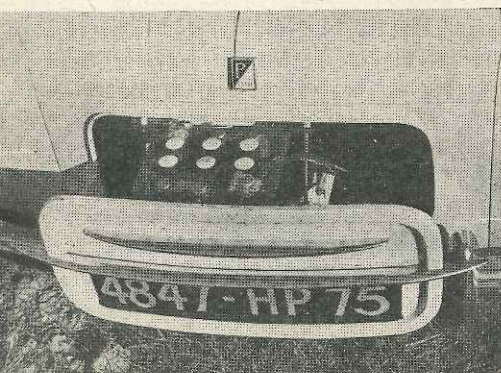
to its helm. Tenacious cornering is emphasized by a freedom from roll which puts many sports cars to shame. At the time of the Monte-Carlo Rally snow tyres were imported from Germany where 10 in. wheels are in more common use; large holes pierced in the wheels help to cool the brakes and make the fitting of snow grips an easy matter.

With a lining area of 64 sq. in. for less than 7 cwt. unladen there should be little danger of overheating brakes, even in mountainous country, and there was certainly no sign of them during normal driving around northern France. The brakes are not entirely satisfactory, having an unprogressive feeling which is confirmed by Tapley figures showing hardly any return at all for 25 lb. pressure on the pedal. Some part of this may be attributable to a strong return spring, for the curve of braking effectiveness becomes normal above 50 lb. pressure, and courage to lock all four wheels is rewarded by almost 1g deceleration.

In all the respects so far mentioned,

Once, in the course of several days driving, the engine showed signs of temperament by stalling and refusing to re-start after a longish period of idling. At all other times it started instantly and silently from hot or cold, and showed the common air-cooled advantage of running without use of the choke after only a very

Front-mounted battery and rear-mounted engine are very easily accessible. To the right of the engine is the 4½-pint oil reservoir which when a handle is turned allows the right measure of oil to mix with any quantity of petrol.





After ducking under the low door frame a six-foot driver has just enough headroom. For fine weather motoring the hood can be rolled right back.

few moments. Sound insulation between the engine compartment and interior is reasonably good, the inevitable slight noise of a ducted cooling fan being offset by the absence of valve gear noise; there is no apparent "two-stroke rattle."

In performance the 393 c.c. unit, developing 14 b.h.p. at 4,700 r.p.m., is astonishingly flexible, pulling gently but quite smoothly away from no more than 15 m.p.h. in top gear. Up to about 25 m.p.h., however, spasmodic four-stroking is noticeable on the over-run. For covering long distances the Vespa's biggest limitation is probably the three-speed gearbox which restricts speed to about 35 m.p.h. on prolonged hills steeper than the 1 in 17 gradient climbable in top gear, but there is a very obvious increase in performance when this very light car contains only the driver, with no luggage.

Provided that the clutch is fully depressed the action of the gear-change with its short, stiff lever is of the highest sports-car standard, requiring only a little skill to engage its unsynchronized first gear. The synchromesh on the upper gears is effective without any baulking action.

Many buyers will adopt the Vespa as a second car. Many more can be expected to



choose it as practical transport for a small family of limited means, and for them particularly ease and cheapness of servicing will be almost as important as fuel economy. Regular lubrication is confined to three grease nipples and a few oiling points needing attention at intervals of about 1,500 miles. The 12-volt, 28 amp. hr. battery is mounted on a shelf which slides very simply out of the nose of the car, revealing at the same time the hydraulic brake fluid reservoir, while the degree of owner-maintenance anticipated is shown

by a multiple tool comprising plug spanner, wheelbrace and jack handle. The spare wheel is recessed in the floor beneath the passenger's seat.

Without being in any major fashion unconventional, the Vespa combines ingenious, tested and practical features in a well-integrated whole. Primarily small and economical, it could have a tremendous appeal in world markets at the right price; and the factory price in France, at present rates of exchange, is approximately £255 in this de luxe form.

Specification

Engine	
Cylinders ...	2 (two-stroke) air-cooled
Bore ...	63 mm.
Stroke ...	63 mm.
Cubic capacity ...	393 c.c.
Piston area ...	9.64 sq. in.
Valves ...	Rotary inlet (ports in crankshaft webs)
Compression ratio ...	6.4/1
Carburettor ...	Solex 30 AHCD
Fuel pump ...	Nil (gravity feed)
Ignition timing control ...	Centrifugal
Max. power (gross) ...	14 b.h.p. at 4,700 r.p.m.
Piston speed at max. b.h.p. ...	1,940 ft./min.
Transmission	
Clutch ...	Dry plate
Top gear (s/m) ...	4.225
2nd gear (s/m) ...	7.0
1st gear ...	14.4
Reverse ...	14.4
Propeller shaft ...	Nil (rear engine)
Final drive ...	Spiral bevel
Top gear m.p.h. at 1,000 r.p.m. ...	12.25
Top gear m.p.h. at 1,000 ft./min. piston speed ...	29.6
Chassis	
Brakes ...	Hydraulic
Brake drum internal diameter ...	6 3/8 in.
Friction lining area ...	64 sq. in.
Suspension:	
Front: Telescopic struts and trailing arms with coil springs and torsion anti-roll bar	
Rear ...	Swing axles and coil springs
Shock absorbers ...	Hydraulic telescopic combined with coil springs
Steering gear ...	Rack and pinion with self-centring spring
Tyres ...	Michelin or Dunlop, 4.40-10

Coachwork and Equipment

Starting handle ...	No	Locks:	
Battery mounting ...	On sliding shelf at front of car	With ignition key	Ignition, driver's door
Jack ...	Lazy tongs screw type	With other keys ...	None
Jacking points ...	Under each door pillar	Glove lockers ...	One open in fascia
Standard tool kit: Combined jack handle, wheelbrace and plug spanner.		Map pockets ...	None
Exterior lights: 2 head, 2 side, 2 amber indicator, 2 tail/stop, rear number plate.		Parcel shelves ...	One large behind seats
Number of electrical fuses ...	3	Ashtrays ...	One in fascia
Direction indicators ...	Amber flashing, self-cancelling	Cigar lighters ...	None
Windscreen wipers ...	Two-blade electric, non self-parking	Interior lights ...	One
Windscreen washers ...	None	Interior heater: Standard, fresh air from engine cylinders with demisting provision and cold air supply.	
Sun vizors ...	Two	Car radio ...	None
Instruments: Speedometer with decimal total distance recorder.		Extras available: Chrome embellishments for wheels, etc., rear seat cushion, petrol mixer for standard model (normal equipment on de luxe model), whitewall tyres.	
Warning lights: Fuel reserve, headlamp main beam, indicators, dynamo charge.		Upholstery material ...	Fabric
		Floor covering ...	Rubber
		Exterior colours standardized ...	Five
		Alternative body styles ...	None

Maintenance

Sump ...	None (petrol lubrication) Esso 20W/40	Sparkling plug type ...	Bosch M240T1 or T11; Floquet E101; K.L.G. CK 100
Gearbox and rear axle ...	1 1/4 pints, S.A.E. 90 E.P.	Sparkling plug gap ...	0.024 in.
Steering gear lubricant ...	Grease	Valve timing: Rotary valve in crankshaft webs	
Cooling system ...	Air cooling	Tappet clearances ...	None (two-stroke)
Chassis lubrication: By grease gun every 1,500 miles to 3 points.		Tyre pressures:	
Ignition timing ...	8° b.t.d.c.	Front ...	16 lb.
Contact-breaker gap ...	0.016 in.	Rear ...	23 lb.
		Brake fluid ...	Lockheed No. 5
		Battery type and capacity	12 volts, 28 amp hr.