

**PRESS RELEASE**  
30 APRILE 1964

**NEWS FOR THE PRESS**

**FIAT**  
**850**  
FEATURES OF  
CAR AND ITS  
DESCRIPTION





Initially, the Fiat 850 will be sold in Italy, starting early in May. Exports are expected to take place a few months later.

## FIAT 850

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The Fiat 850 is an entirely new car coming between the 600 and 1100 models, both of which continue in production.

Fiat has not introduced a completely new model since 1961 when the 1300/1500 models made their appearance. Since that time new versions of already thoroughly successful models have appeared which have offered improved quality and performance and resulted in increased production. The 2300 has added distinction to the name of Fiat in the six-cylinder class. The production of Fiat cars continues to progress on the firm foundation of the economy models. The 500 and 600 continue to develop a tradition pioneered by Fiat throughout the world, and the 1100 continues its progress without pause.

On this basis and including the larger models in their numerous versions, Fiat car production has soared in 1963 to a daily average of about 4,000 units—an annual output of 1 million cars. These figures are at European level.

### THE CAR FOR TODAY

The appearance of the 850 is fittingly described by the slogan: “the car for today.” It complies, in fact, with all the current and future requirements of economy motoring, being a car for an ever greater number of people thanks to its easy manoeuvrability and economy of operation.

It is right in overall size, in the space it occupies on the road and in passenger capacity. It is right in terms of economy. A car for private, professional, social and domestic journeys.

Coming between the 600 and the 1100, the 850 completes the Fiat range of small cars. The 850 was designed and developed along the most modern technical lines based on the use of components and assemblies tested and proved over a long period on vehicles in wide general use. The aim has been to increase the performance and comfort available in cars with small capacity power units, while at the same time maintaining initial and running costs at a low level.

In fact the 850 is an economical car in these respects. But in terms of passenger capacity—it is a 4-5-seater—luggage space, and performance it is comparable with a 1-litre car. But in comparison with cars of this size, apart from its superior economy, it offers the additional qualities of minimum overall dimensions, and hence greater manoeuvrability in congested conditions and parking.

In practical terms the 850 behaves like a car with a larger engine. But it costs less and is more economical.

The Fiat 850 is the highest evolution of the small engine-capacity car. It puts the seal on the development of this category of car towards a higher technical level, with a higher standard of comfort, and usefulness. For a car of generally conventional design, it incorporates a number of technical innovations of great interest, as the following description reveals. A rear-engine arrangement has been adopted for the 850. Silent riding even at high speeds.

Two versions of cars are available, at the same price, using two different types of petrol: one with 40 H.P. (SAE) engine for normal petrol and one with 42 H.P. (SAE) engine for premium petrol (“super” version).



## FUNCTIONAL LINES

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### Description of model.

The body of the 850 was designed to obtain the maximum functional efficiency and a minimum of unnecessary ornamentation. The rounded lines are pleasantly proportioned. Aerodynamic research has revealed that the sloping rear window line is efficient and low drag is reflected in the fuel consumption obtained.

The clean, neat, side elevation incorporates two fine lines which give it a slender look while increasing body rigidity. The two large front-hinged doors provide easy access not only to the front seats but also to the rear ones. To exploit to the maximum the practical advantages of a short wheelbase and minimum overall dimensions, it was decided that two wide doors were preferable to four which of necessity would be narrow, making access to the interior difficult. Under the bonnet, which is hinged at the front, there is a large luggage compartment in which the spare wheel and battery are also located. The baggage capacity offered in this space is as large as that available in cars with larger engines whether front or rear mounted. What is more, the 850 has additional luggage space behind the rear seats, and still more is available when only two people are using the car, by folding down the rear seat on which another 4-6 cases can be placed. A large parcel tray beneath the dashboard is also provided.

The frontal appearance of the 850 is fashionable, revealing a classical elegance set off by the two large headlamps and a discreet use of decorative trim. The windscreen is large. Both doors are curved to increase internal spaciousness, and both may be locked externally by a key. Additionally, both doors are equipped with internal safety locks. The front doors incorporate wind-down windows and swivelling quarter lights which are equipped with rain deflectors to prevent water entering the car when the quarter lights are open.

At the rear of the car the large curved rear window provides excellent visibility, while beneath it a short hinged panel provides easy access to the engine and to the fuel filler cap. Louvres in the engine access panel cater for ventilation of the engine compartment and for the engine itself. The fuel tank is located in a separate recess between the engine and the passenger compartments. To facilitate engine removal, the lower rear panelling is readily detachable. For normal engine maintenance, however, the hinged upper panel provides adequate access. The ease with which the rear panelling may be removed and replaced also facilitates repair of accident damage. Two large rear lamp units at the rear incorporate tail, stop and indicator lights as well as reflector units. There are two number plate lights concealed by the solid chromium-plated steel bumpers which are fitted with over-riders containing rubber buffers.



## THE INTERIOR

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Comfort and functional efficiency are outstanding features of the interior of the 850. The driver enjoys excellent all-round visibility, not only to the front and side, but also upwards because of the large area of the windscreen, and to the rear. Separate, individually adjustable front seats cater for front passengers' comfort, and these seats hinge forward to provide access to the single bench-type rear seat with a fold-down back-rest. Arm-rests are provided on the front doors, and all passengers are provided with grab handles. Hooks for hanging clothes.

The neat dashboard has a sloping upper surface for greater safety and is covered in dark, non-reflective material. The controls and instruments provided include a key-operated starter solenoid and side-light switch. There is provision for fitting an anti-theft steering lock available at extra cost. Panel and screenwiper switches. Speedometer, fuel contents gauge and reserve warning, warning lights for low oil pressure, low dynamo charge, and excessive coolant temperature, for headlight main beam, direction indicators and side-light operation are fitted.

Exceptional care has been applied to the design of the heating and ventilating installation to meet winter and summer requirements. Fresh air is taken in from beneath the windscreen, away from fumes and exhaust gases, and distributed throughout the interior and on to the screen for demisting. Finned, rotating outlets on the dashboard may be adjusted to direct air to the screen for demisting or to the upper part of the interior. Three other separate and adjustable outlets are provided, two for front seat occupants and one for the rear passengers.

The heating installation incorporates a blower fan, and a water control valve with which the temperature of the incoming air may be adjusted.

Beside the heater there are two utility shelves, both padded to prevent injury in the case of accidents.

A windscreen washer is part of the standard equipment. Beneath the steering wheel are the direction indicator, headlight, dipping and flasher switches. The gear lever is centrally located on the centre tunnel, together with the choke control and the hand brake for maximum convenience. A courtesy light incorporated in the rear-view mirror is switched on when either door is opened. There are two padded adjustable sun visors and three ash-trays, one in the front and two in the rear. Behind the fold-down rear seat back there is space for additional luggage.

Sound-proofing and thermal insulation of the body shell have been thoroughly studied and successfully applied.



## SAFETY

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The safety problem has been extensively investigated both by crash tests in the Fiat Research Laboratories and by examining the results of real accidents. These investigations have enabled the design department to perfect and develop an exceptionally robust structure.

For example, two longitudinal members incorporated in the underframe, running from behind the front bumpers to in front of the rear bumpers, are designed to absorb impact, while the underframe itself has a section devised to prevent shock transmission. Apart from increasing the rigidity of the shell, these provisions have the additional function of protecting occupants of the car in frontal, rear, or lateral impacts. The engine-transmission unit mountings are arranged so that in the case of a violent axial shock the engine and transmission units are located in the normal way by the mountings and their movement controlled by a further unit which absorbs displacement through a cross member in the bodywork.

The exterior of the body shell has no external protrusions. The fuel tank, as already mentioned, is mounted in the centre rear of the car and completely separated both from the engine and interior compartments, by a diaphragm member. The fuel filler pipe incorporates both an overflow and a draining outlet, while the attachment of the pipe to the tank utilizes a flexible link to prevent damage to the tank as a result of an impact on the rear of the car.

Inside the car the following provisions for safety have been made. Mounting points for every type of safety belt; padded sun visors and utility shelves; dashboard lined with dull, non-reflective material; door handles concealed beneath the arm-rests, thus obviating accidental operation of the handles; window winders and dashboard switches located safely and conveniently; complete absence of internal projections. A three-way linkage has been evolved for the door-locking mechanisms to prevent the doors from bursting open in the case of an accident.

The front hinged bonnet cannot open accidentally, while large headlamps with a diameter of 170 mm (6.7 in) have been adopted to ensure adequate illumination at night. The area occupied by windows is substantial to ensure good visibility, and the front windows wind down completely within the doors.

A further important provision is the anti-smog arrangement provided which recirculates engine **blow-by** gases to prevent them reaching the atmosphere. Blow-by gases are combustion gases which are drawn into the sump without being burned in the combustion chamber, but the device incorporated in the 850 engine collects these unburned gases, passes them back into the induction system, so that they are burned, thus preventing pollution of the atmosphere—a growing problem in congested urban areas.



## MECHANICAL DETAILS

The Fiat 850 has a four-cylinder, four-stroke engine of 843 cc. (51 cu.in) capacity. The bore is 65 mm (2.56 in) and the stroke 63.5 mm (2.49 in). Compression ratio of 8 : 1. Maximum power: 34 H.P. (DIN) at 5,000 r.p.m., 40 H.P. (SAE) at 5,300 r.p.m. "Super" version: compression ratio of 8.8 : 1; maximum power: 37 H.P. (DIN) at 5,100 r.p.m., 42 H.P. (SAE) at 5,300 r.p.m.

The cylinder block is of cast iron, the cylinder head of aluminium. The three-bearing crankshaft has hardened journals. The carburettor is a single choke unit. Cartridge type air filter incorporating separate winter/summer intakes. Mechanical fuel pump. Forced lubrication by gear type pump. Centrifugal oil filter. Blow-by gases recirculation device.

**Sealed cooling system** incorporating a special translucent plastic expansion tank enabling the level of cooling fluid to be checked. The cooling fluid contains a permanent anti-freeze solution offering protection down to  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ). Axial flow plastic cooling fan.

**All-independent suspension system** ensuring high degree of riding comfort and perfect road holding under all conditions. **Front suspension** by transverse leaf spring and swinging arms. The spring, mounted in the centre, replaces the lower arms, and an anti-roll bar and telescopic shock absorbers complete the system. **Rear suspension** employs double-acting telescopic shock absorbers mounted on the rear extremities of the triangulated wheel locating arms. An anti-roll bar is fitted. The roll centre is exceptionally low.

Four speed **all-synchromesh** gearbox with Porsche-type synchronisers; a central, short-throw gear lever provides rapid and effortless gear-changing.

**Steering rod articulations lubricated for life:** only two grease points.

Hydraulic service brakes with cast-iron drums carefully designed to produce a high degree of fade-resistance. The hand brake operates on the rear wheels. Brake fluid reservoir of translucent plastic material for easy level checks.

Fuel tank capacity, 30 litres (6.6 Imperial gallons, 7.9 U.S. gallons). Tyres, 5.50-12.

**Dimensions:** Wheelbase  $79\frac{51}{64}$  (2027 mm). Front track  $45\frac{1}{8}$  (1146 mm). Rear track  $47\frac{43}{64}$  (1211 mm). Overall length  $140\frac{4}{3}$  (3575 mm). Overall width  $56\frac{3}{32}$  (1425 mm). Minimum turning circle radius 14.6 ft (4.45 m). Weight, fully laden 1,477 lb (670 kg). Carrying capacity 880 lb (400 kg) equivalent of 5 people plus 110 lb (50 kg) of luggage.

**Performance:** Maximum speed (fully laden): 1st gear: 18.6 m.p.h. (30 km/h). 2nd gear: 34 m.p.h. (55 km/h). 3rd gear: 53 m.p.h. (85 km/h). 4th gear: 74.6 m.p.h. approx. (120 km/h approx.). "Super" version - 4th gear: 77.7 m.p.h. approx. (125 km/h approx.). Reverse: 18.6 m.p.h. (30 km/h). Maximum gradient climbable in 1st gear: 31%.

**Acceleration times.** — **Standard version:** from rest, through the gears. 1 km in 46 secs. (full load), 44 secs. (2 passengers). From 30 km/h in top, 1 km in 49 secs. (full load), 47 secs. (2 passengers). **"Super" version:** from rest, through the gears. 1 km in 44 secs. (full load), 42 secs. (2 passengers). From 30 km/h in top, 1 km in 48 secs. (full load), 46 secs. (2 passengers).



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## TESTS AND

# FIAT 850

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## TESTS AND INSPECTIONS



## **How the 850 has proved its worth**

### **One million kilometers over three Continents**

Before release to production, every new Fiat model must pass numerous exacting tests: in the laboratory (also materials), on the bench and, finally, on the road. **And the 850 did go through them!**

Fiat uses the latest research techniques and test facilities. In the laboratory, the 850 was subjected for long months to a most gruelling treatment, both as individual components and as an assembly, to evaluate the performance of its major units and single parts under limit conditions. A few hours of such testing is equivalent to thousands of miles on the road.

#### **In the laboratory and on the test benches.**

The 850's endurance to road bumping has been assessed on the "shaker" bench. Suspension motion frequencies (jolting, pitching, rolling, etc.) have been measured, then determining the amount of vibration transmitted to the car occupants and "filtered" by the seats.

The body sheet metal was scientifically studied and acoustically evaluated by different frequency vibrations induced through electromagnetic shakers up to complete disappearance of all vibrations.

The seats, which obviously contribute in an appreciable degree to the riding comfort, have been accurately studied with the aid of special fixtures which reproduce, for hundreds of thousands of uninterrupted cycles the deflection caused by the occupant's weight. Seat shape has been checked with a special gauge which records the pressures exerted in different locations in seat cushion and back.

For the tuning-up, several engines of the 850 have run non-stop for thousands of hours on the test stand at different load and r.p.m. rates, ranging mostly in the high limit, and well above the speeds encountered in actual on-vehicle operation.

Finally, all mechanical units of major importance in achieving reliable operation and safety, like the transmission and the brakes, have been submitted in their single components and as a whole, to operation cycles repeated for several hundred thousand times: the severity of these trials ensure troublefree operation under any service condition.

#### **For thousands of miles under climatic extremes.**

The testing cycle of the 850 pilot cars has been programmed according to a progressive sequence imposing increasingly more difficult trials: prototype endurance tests on proving grounds and freeways, on roads of all types. A first lot of 850s was driven for several hundred thousand miles over "endurance and fatigue" tracks:



a punishment which has involved every single element—tyres, suspensions, brakes, engine, transmission, power train, steering mechanism and body—and has highlighted their exceptional qualities of strength and long life. Speed tests on freeways, at full throttle. Long drives also in heavy traffic.

A second lot of 850s was sent to Patagonia, then to Finland and Africa: from the frozen regions or the Arctic Circle to the scorching territories of equatorial Kenya and Tanganyika.

The 850 covered thousands of km in temperatures ranging from 33° F. below zero to more than 120° F. above zero, crossing frozen lakes and immense expanses of snow and tundra under the most arduous cross-country conditions, including "Safari" tracks and fringes of the sandy desert. Encounters with the Laplanders and herds of reindeer, with elephants, giraffes, zebra and other African fauna. Polar scenes and views of Kilimanjaro and Mount Kenya.

The 850 was proven also on the Belgian "pavé", on the French mountain roads and on the German freeways.

On the whole, the cars tested on the road have covered a total of a million kilometers on three Continents. This is how, by passing the most exhausting tests, the 850 has proved its sturdiness, mechanical efficiency and reliability, before reaching the motoring public.



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**FIAT**  
**850**

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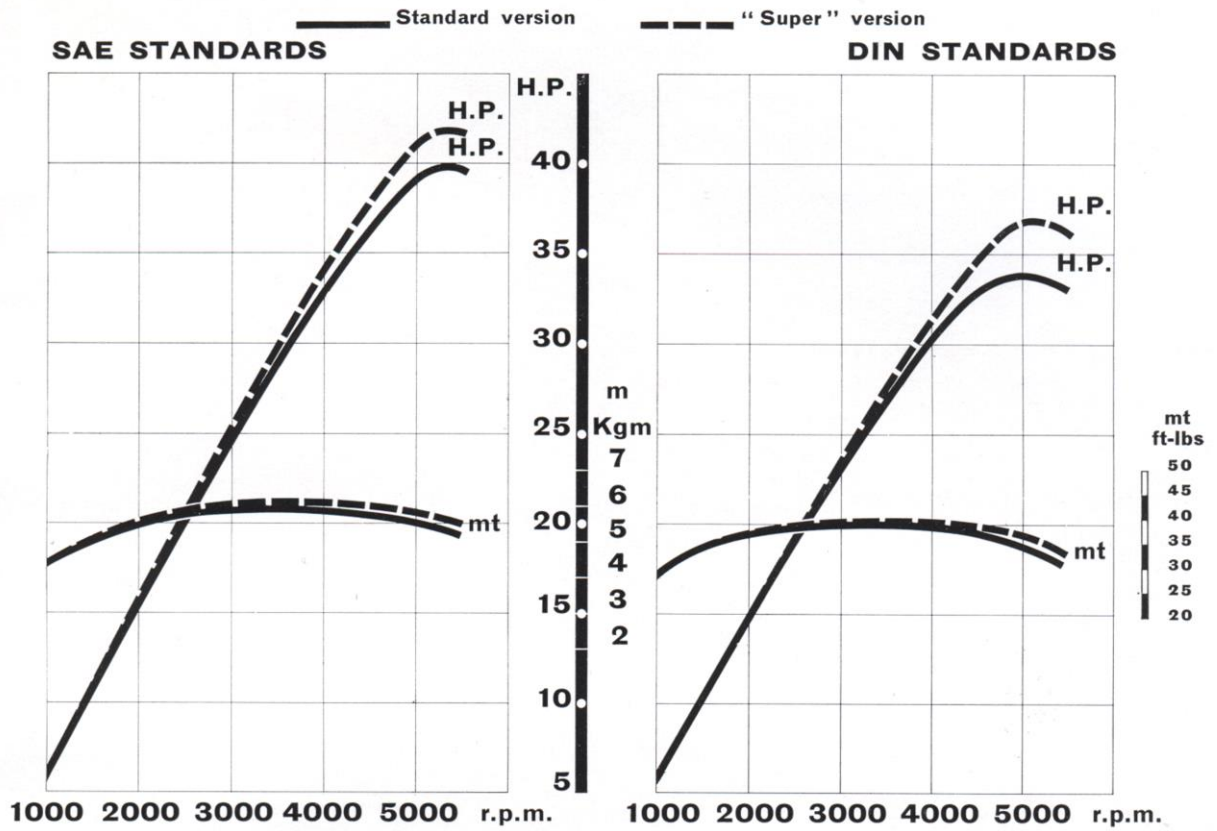
**TECHNICAL  
CHARTS AND  
DIAGRAMS**

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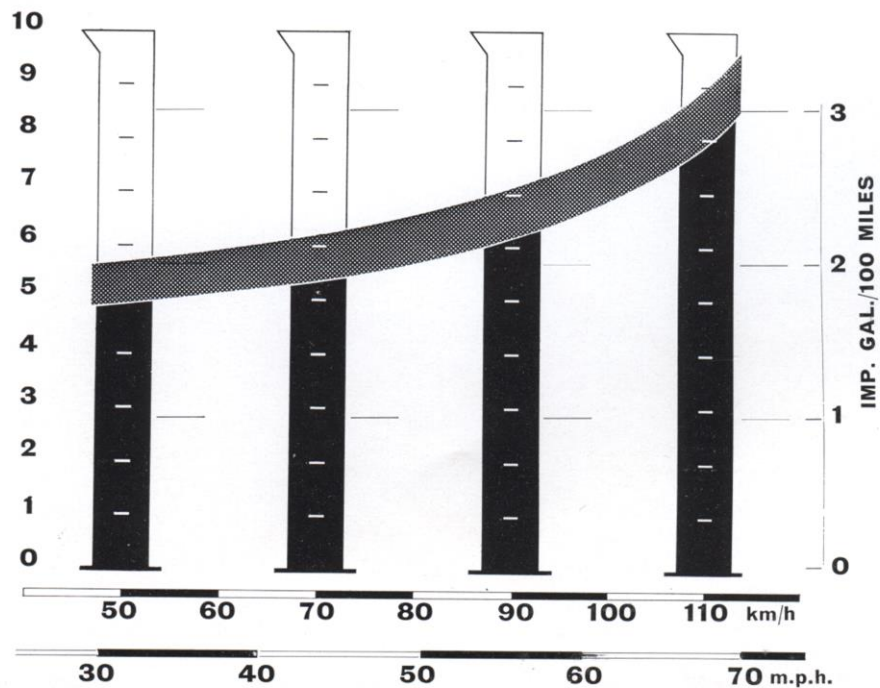


## POWER AND TORQUE CURVES



## FUEL CONSUMPTION

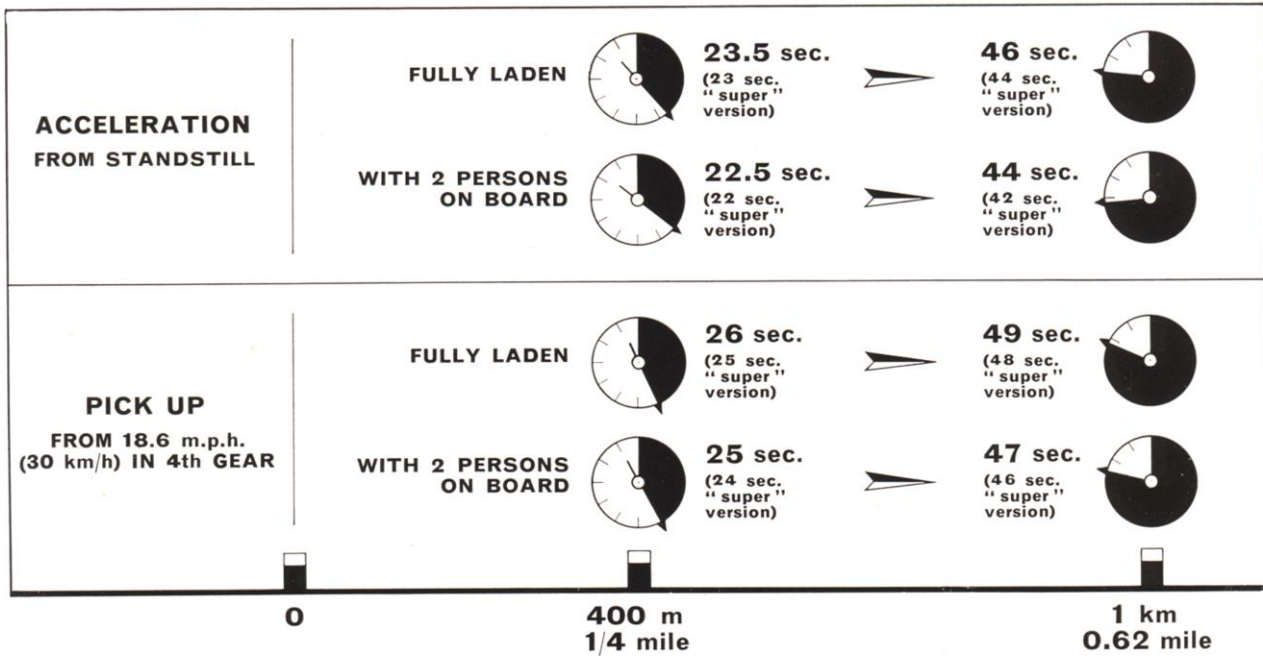
LITRES/100 km







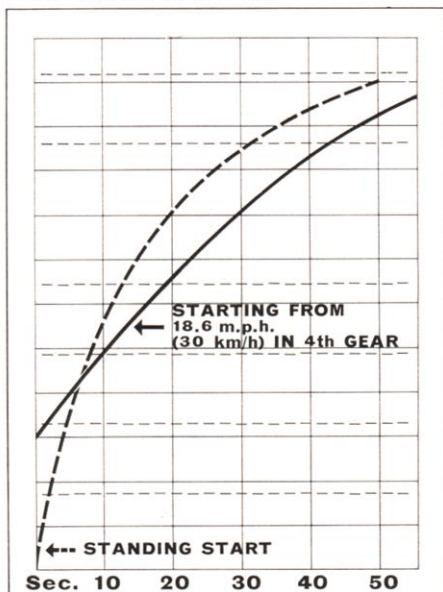
## ACCELERATION TIMES



## ACCELERATION TIMES

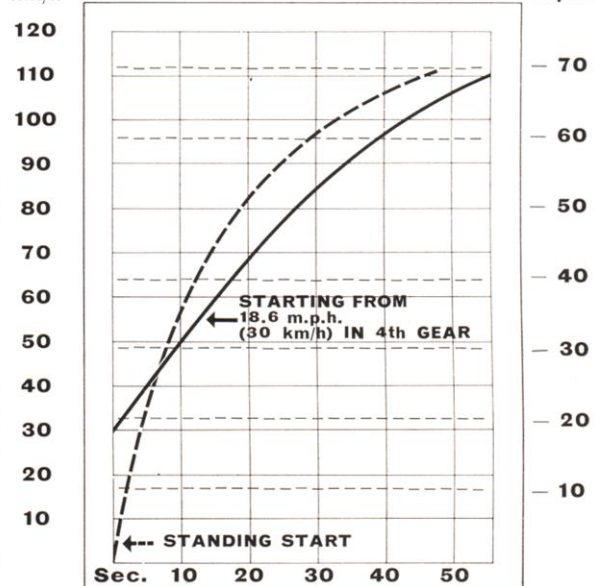
FULLY LADEN CAR

STANDARD VERSION



km/h

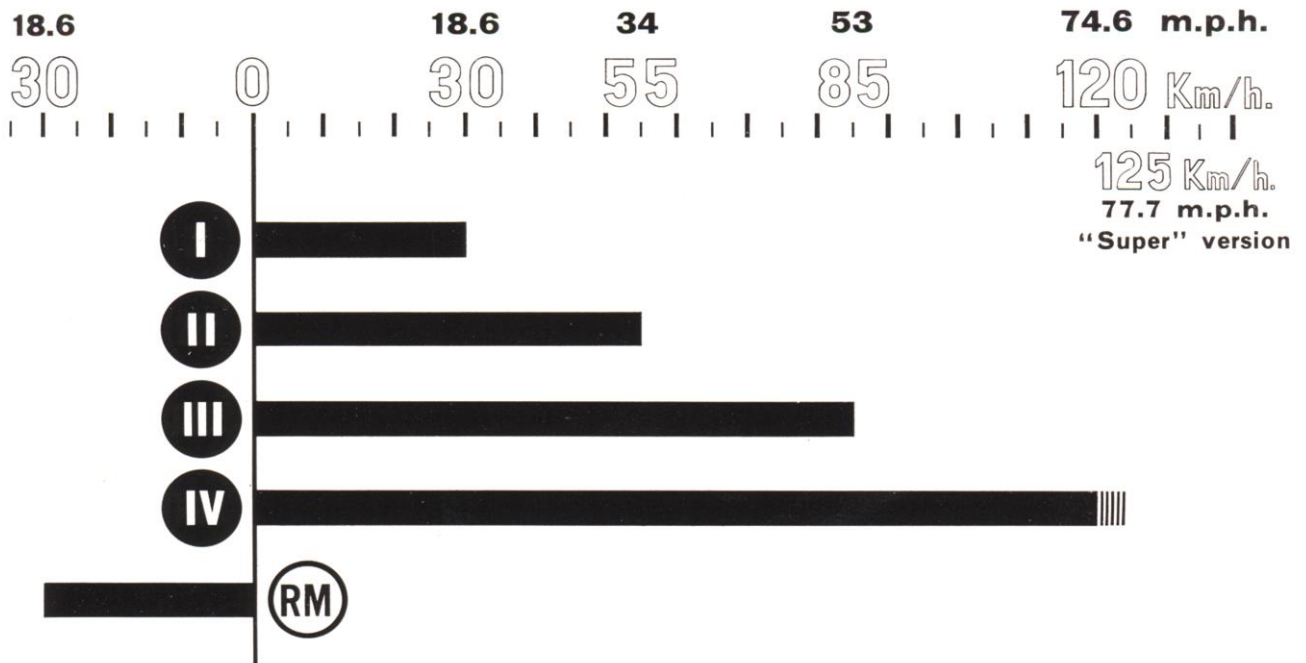
"SUPER" VERSION m.p.h.





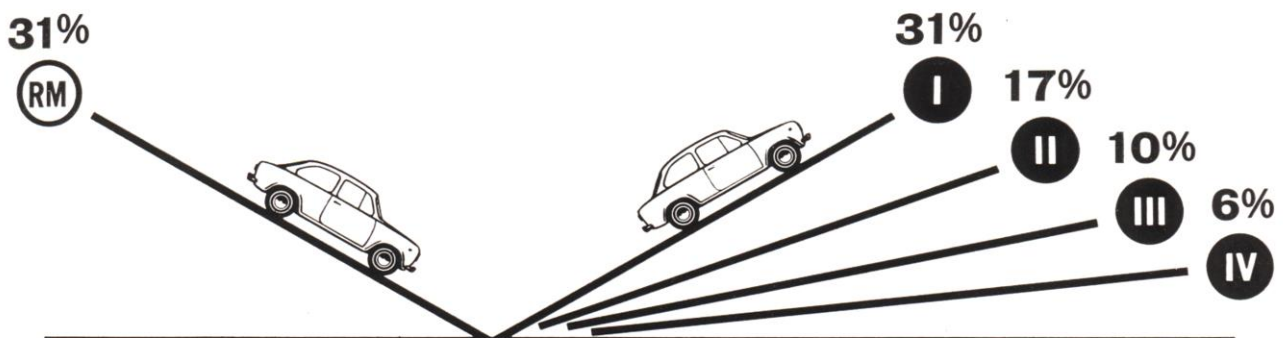


## MAXIMUM SPEEDS



## GRADEABILITY

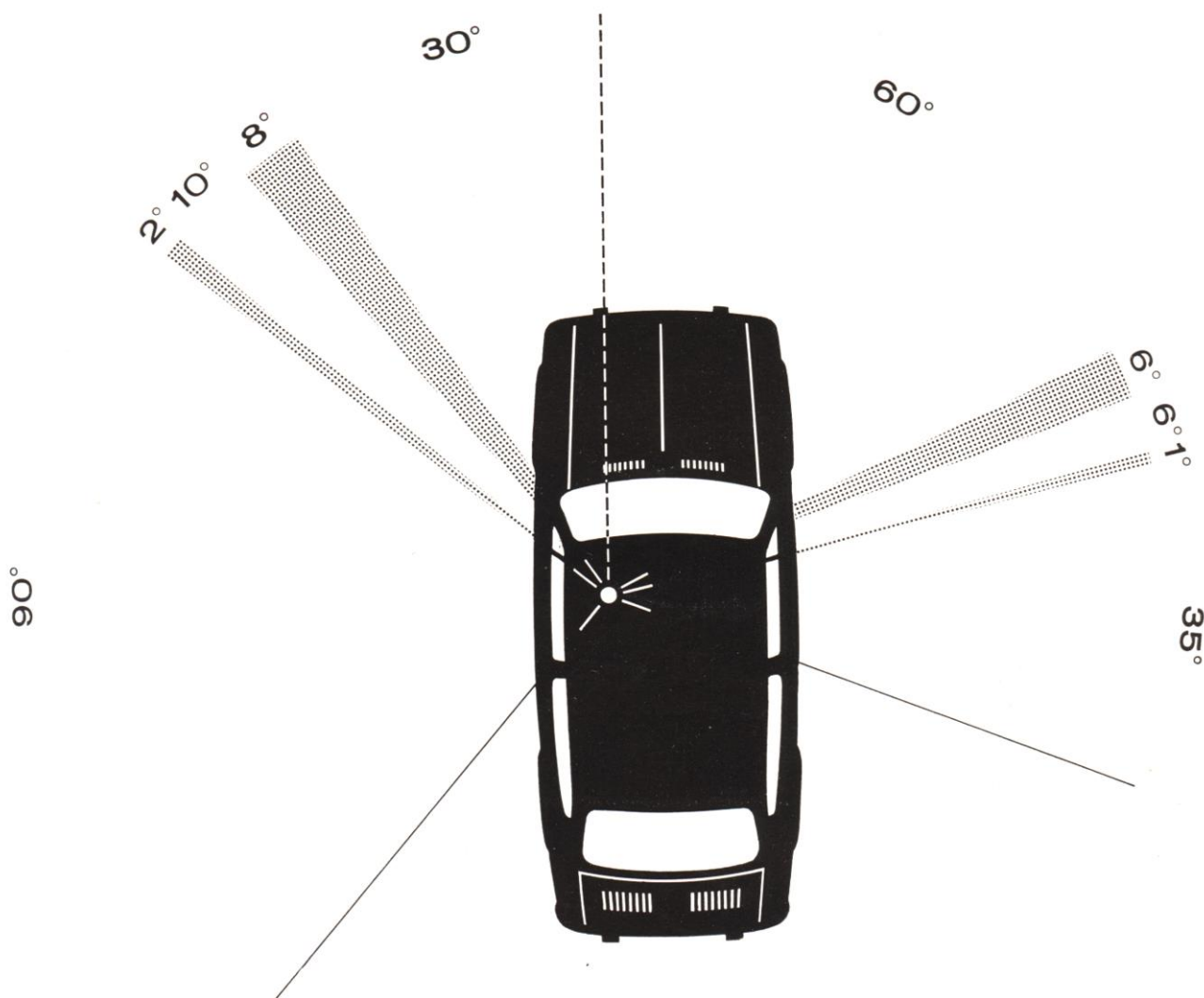
FULLY LADEN





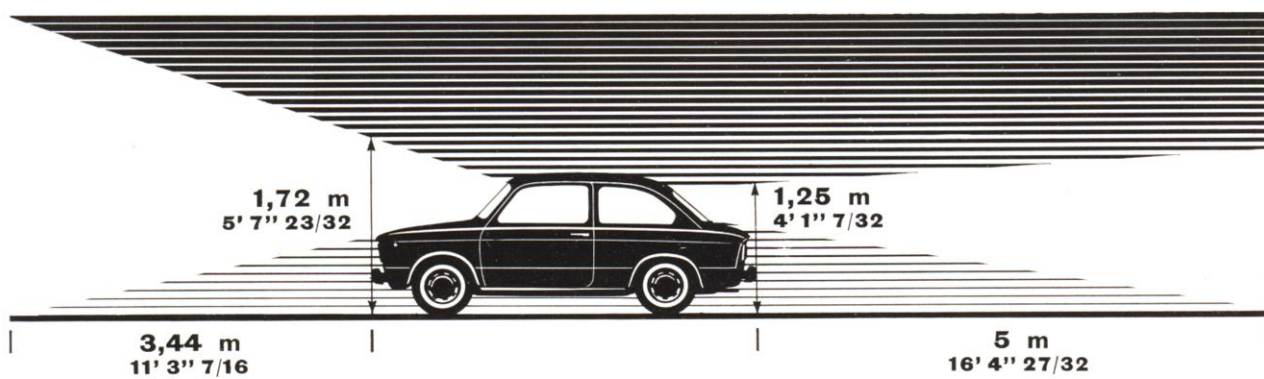
**FIAT**  
**050**

**VISIBILITY**



**FIAT**  
**050**

**VISIBILITY**

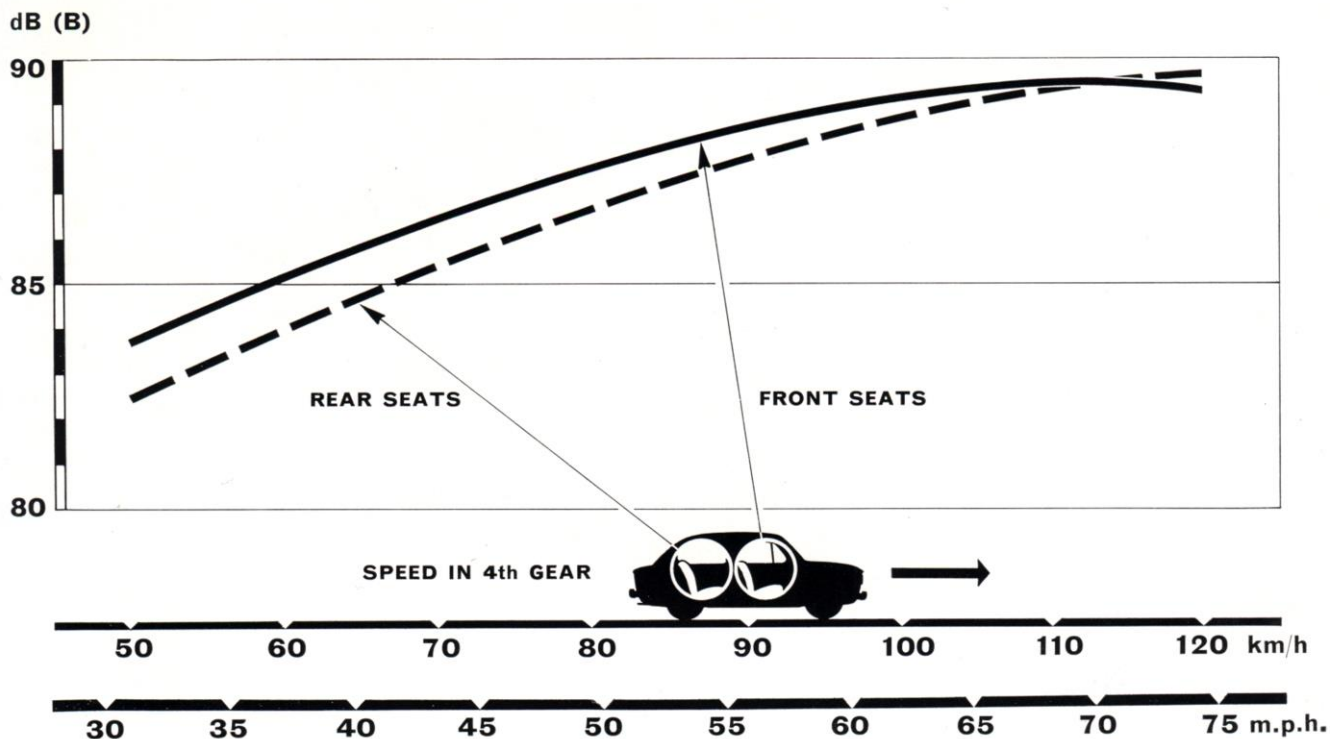






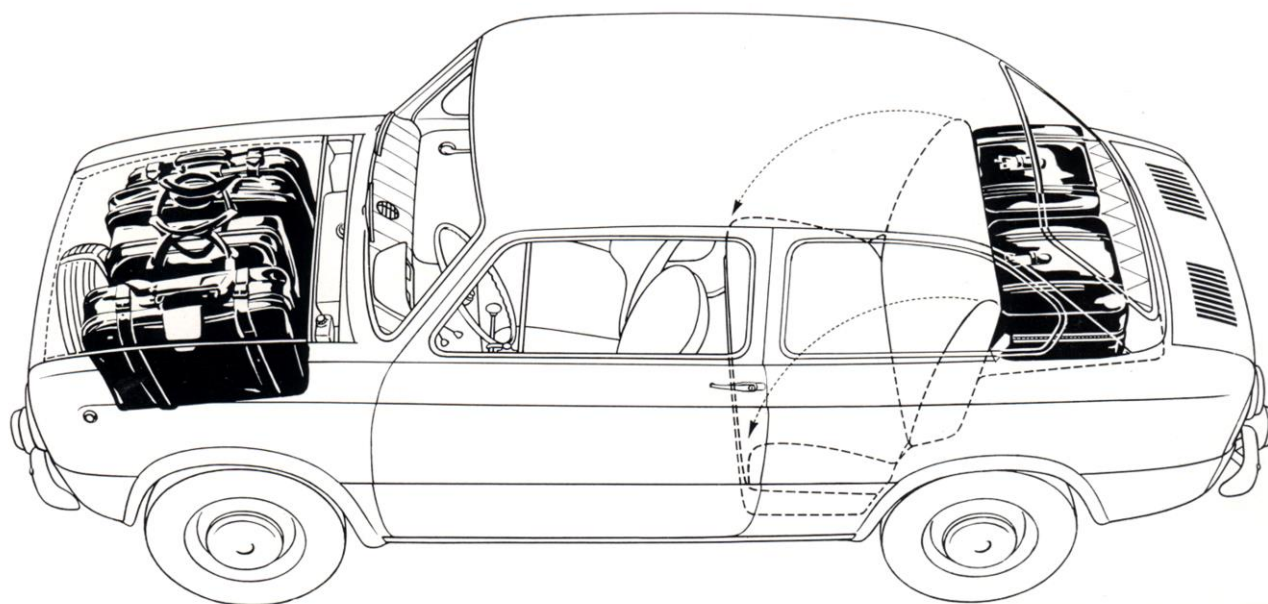
## INTERNAL NOISE LEVEL

CAR ON TEST ROLLERS IN ANECHOIC ROOM - ENGINE AT FULL POWER



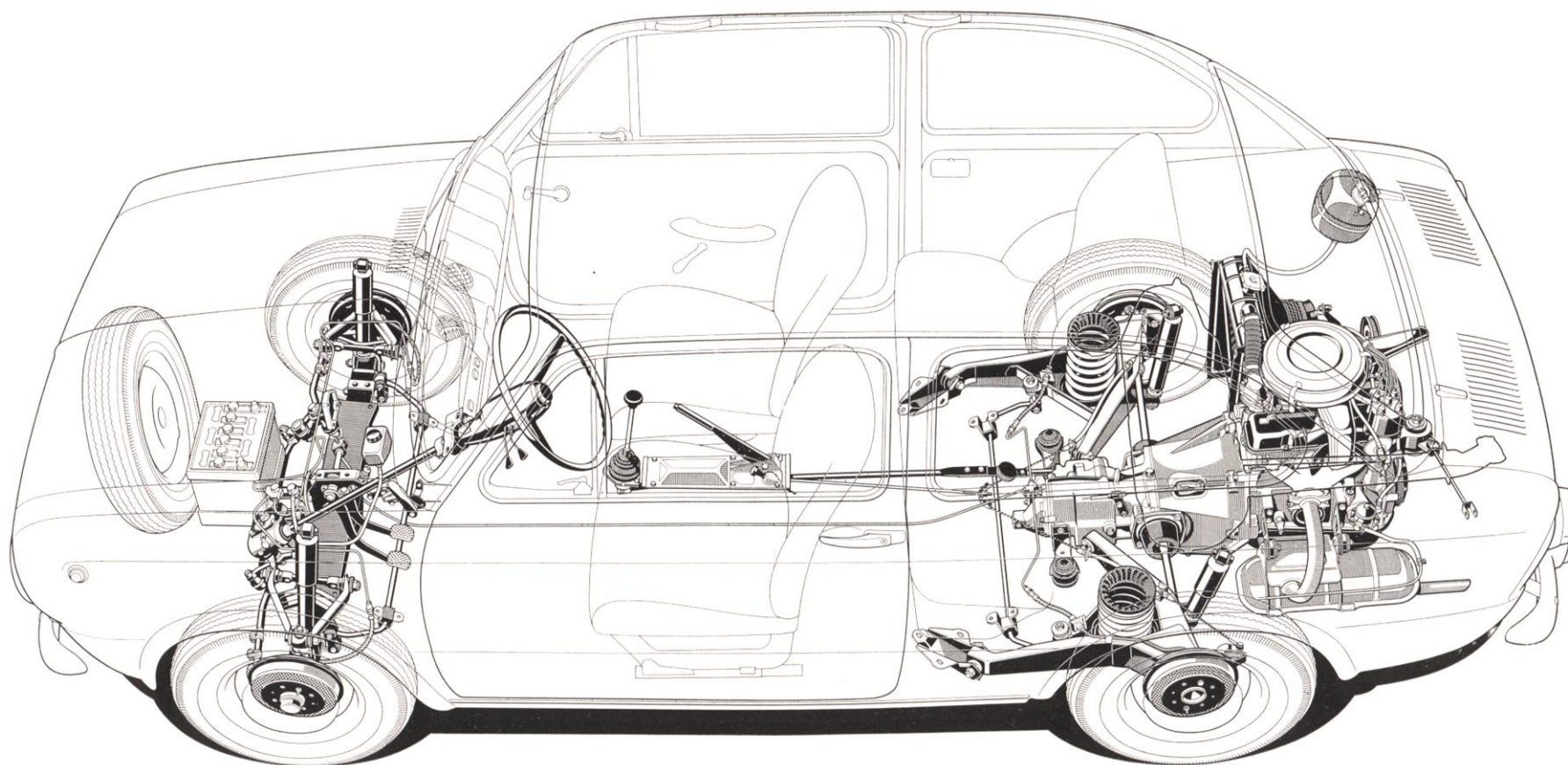
## LUGGAGE ACCOMMODATION SPACE

(6.36 cu.ft. [180 dm<sup>3</sup>] IN FRONT PLUS 1.41 cu.ft. [40 dm<sup>3</sup>] AT REAR, BEHIND SEAT)





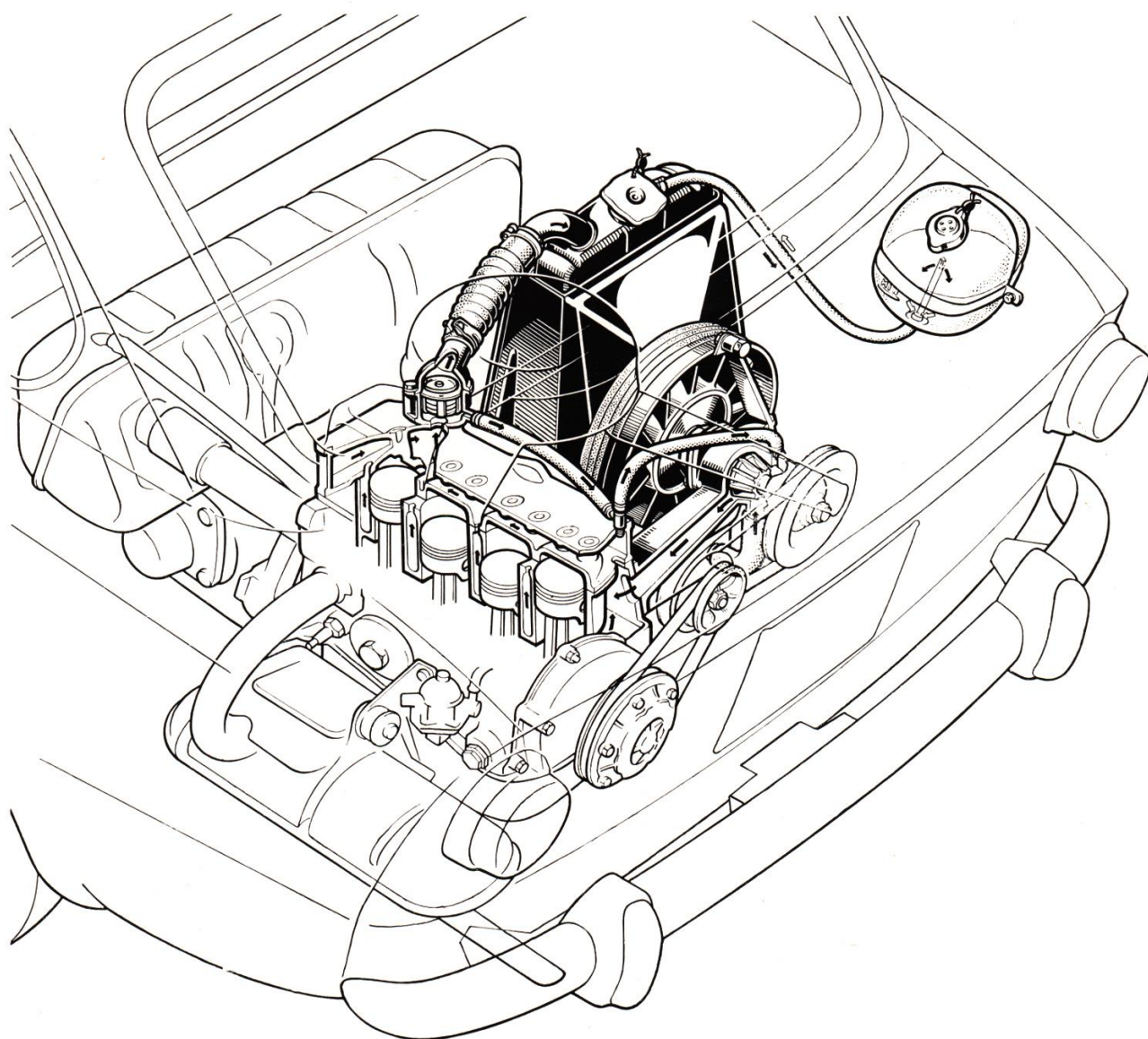
PHANTOM VIEW





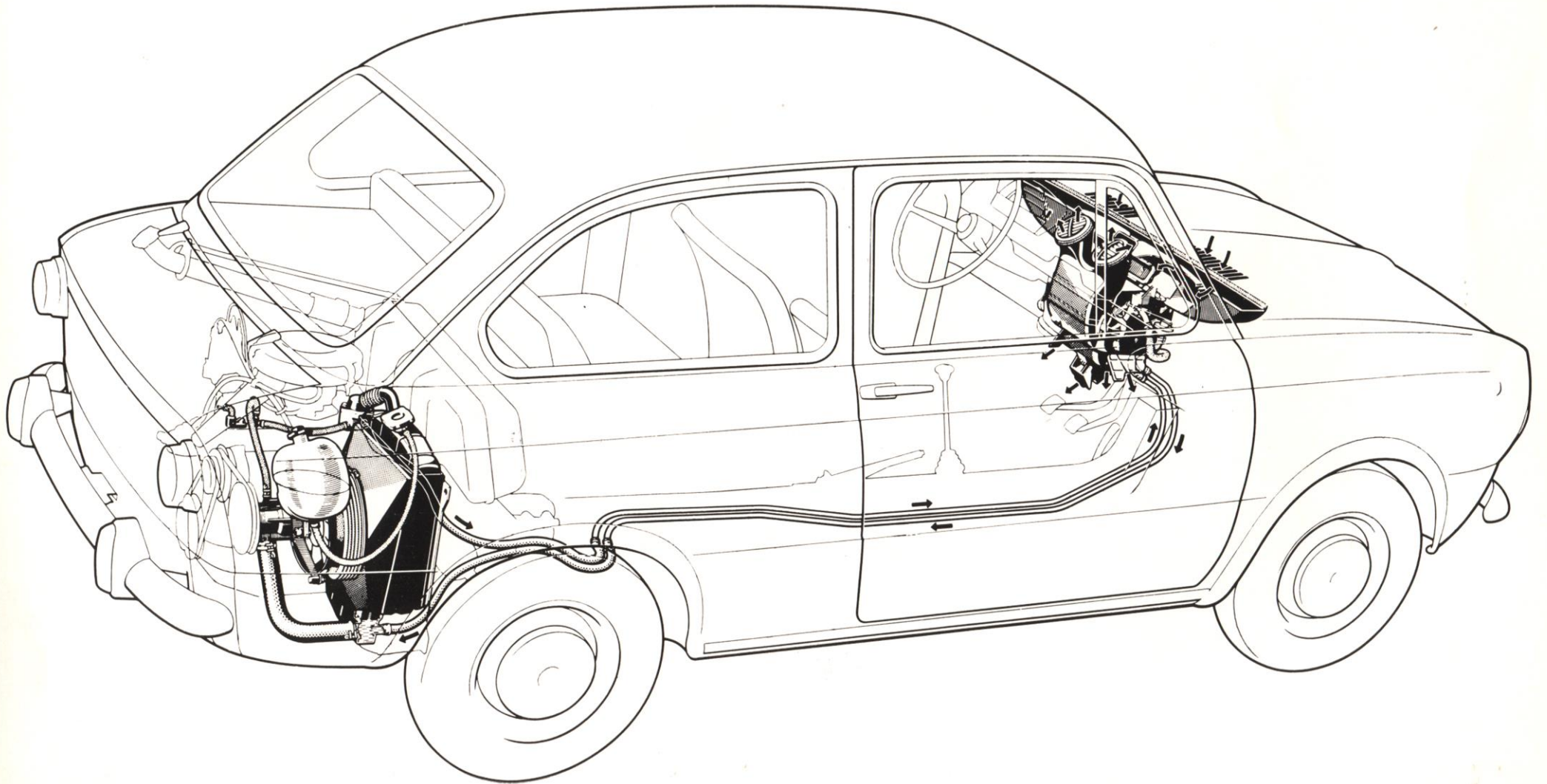
**FIAT**  
**850**

**SEALED COOLING SYSTEM**



## HEATING SYSTEM

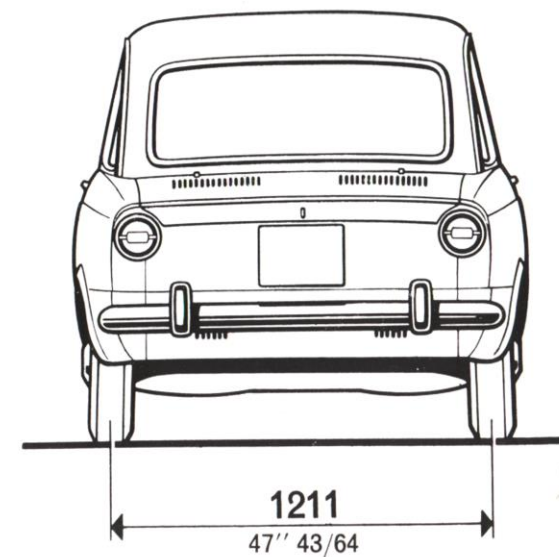
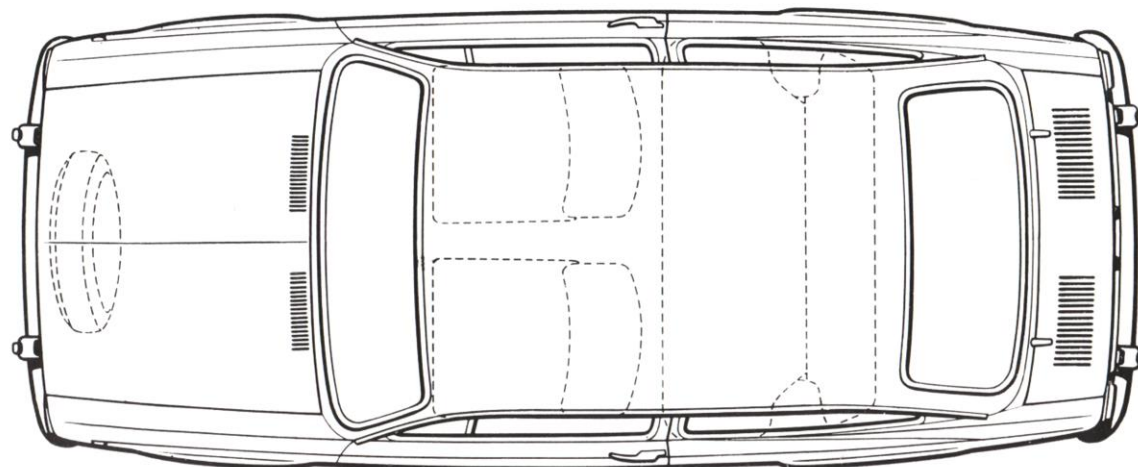
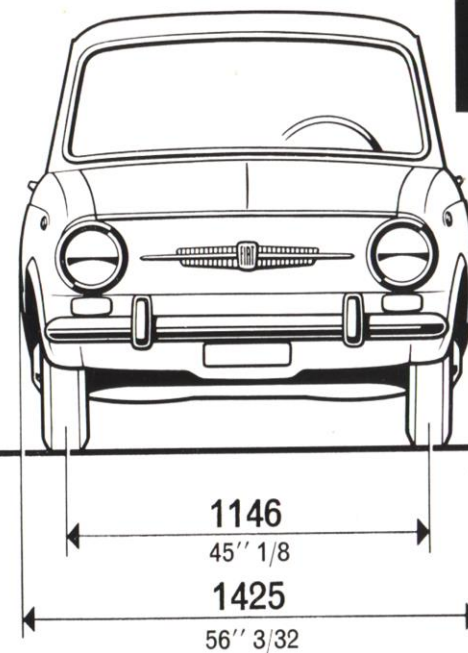
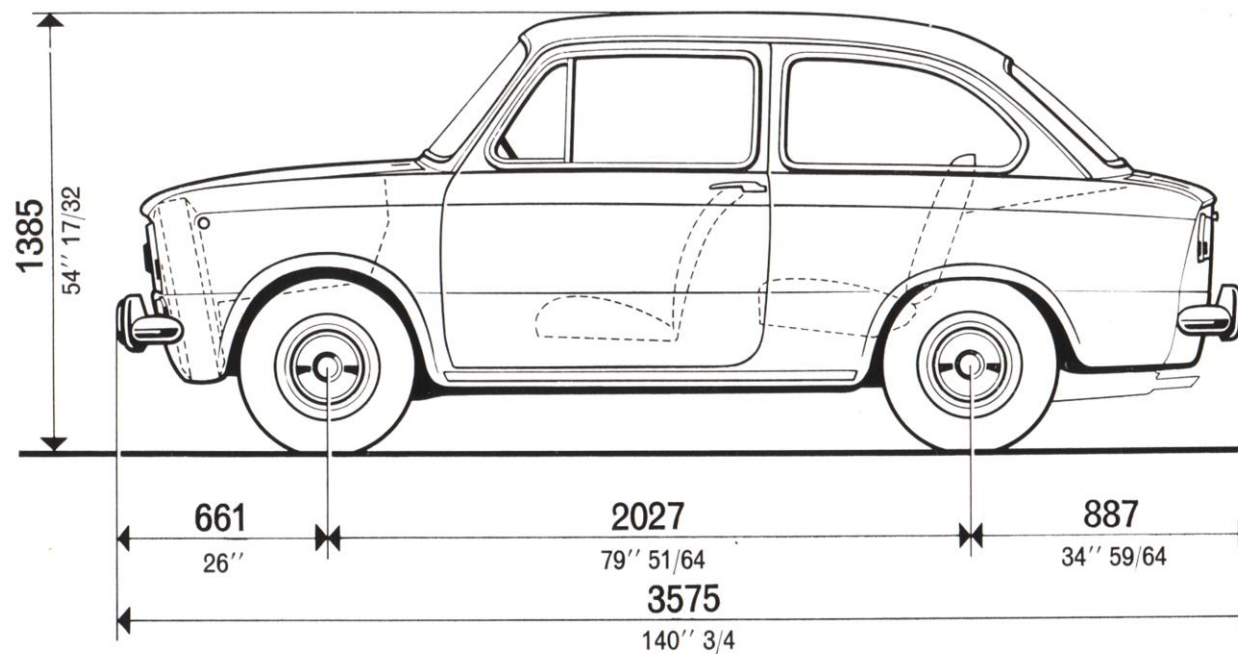
FIAT  
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# OUTER DIMENSIONS

FIAT  
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# OFFICE

