

The Motor Road Test No. 36/58

Make: Fiat-Abarth

Type: 750 Saloon

Makers: Fiat 600 car built by S.A. Fiat, Turin, Italy. (British concessionaires, Fiat (England), Ltd., Water Road, Wembley, Middlesex.) **Conversion** designed by Abarth & Co., Turin, Italy and applied by Anthony Crook Motors Ltd., High Street, Esher, Surrey as Abarth concessionaires for Britain and Fiat agents.

Test Data

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CONDITIONS: Weather: Cool, slightly showery with light wind. (Temperature 42°-52°F. Barometer 29.6-29.9 in. Hg.) Surface: Dry and slightly damp concrete and tarred macadam. Fuel: Premium-grade pump petrol (approx. 97 Research Method Octane Rating).

INSTRUMENTS

Speedometer at 30 m.p.h. accurate
Speedometer at 60 m.p.h. 5% fast
Distance recorder accurate

WEIGHT

Kerb weight (unladen, but with oil, coolant and fuel for approx. 50 miles) 11½ cwt.
Front/rear distribution of kerb weight 39/61
Weight laden as tested 15 cwt.

MAXIMUM SPEEDS

Mean lap speed on banked circuit 79.8 m.p.h.
Best one-way quarter mile 81.8 m.p.h.

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

Mean of four opposite runs 74.7 m.p.h.
Best one-way time equals 76.9 m.p.h.

Speed in Gears (at 6,000 r.p.m. recommended limit)

Speed in 3rd gear 58 m.p.h.
Speed in 2nd gear 37 m.p.h.
Speed in 1st gear 22 m.p.h.

FUEL CONSUMPTION

67.0 m.p.g. at constant 30 m.p.h. on level
56.5 m.p.g. at constant 40 m.p.h. on level
51.5 m.p.g. at constant 50 m.p.h. on level
43.5 m.p.g. at constant 60 m.p.h. on level
35.0 m.p.g. at constant 70 m.p.h. on level

Overall Fuel Consumption for 798 miles, 21½ gallons, equals 37.5 m.p.g. (7.55 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.

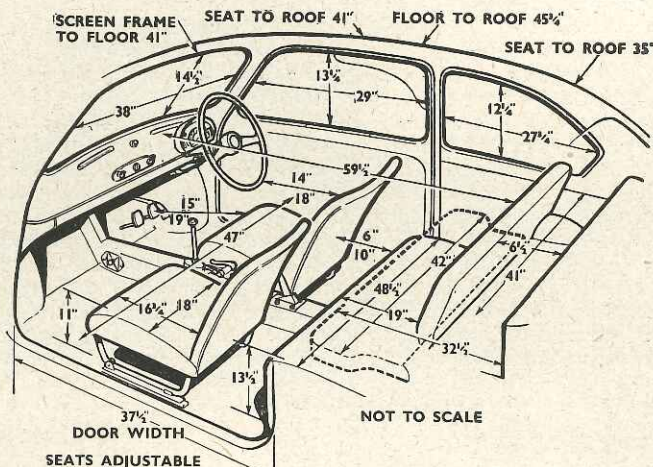
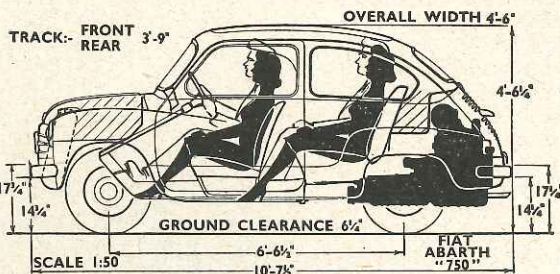
Fuel tank capacity (maker's figure) 6 gallons

STEERING

Turning circle between kerbs:
Left 28½ feet
Right 29½ feet
Turns of steering wheel from lock to lock 2½

BRAKES from 30 m.p.h.

0.85g retardation (equivalent to 35½ ft. stopping distance) with 140 lb. pedal pressure.
0.75g retardation (equivalent to 40 ft. stopping distance) with 100 lb. pedal pressure.
0.57g retardation (equivalent to 53 ft. stopping distance) with 75 lb. pedal pressure.
0.40g retardation (equivalent to 75 ft. stopping distance) with 50 lb. pedal pressure.
0.12g retardation (equivalent to 250 ft. stopping distance) with 25 lb. pedal pressure.



ACCELERATION TIMES from standstill

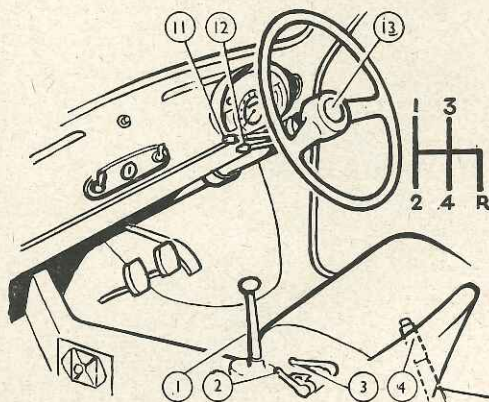
0-30 m.p.h. 6.4 sec.
0-40 m.p.h. 10.9 sec.
0-50 m.p.h. 15.7 sec.
0-60 m.p.h. 22.7 sec.
0-70 m.p.h. 38.4 sec.
Standing quarter mile 21.8 sec.

ACCELERATION TIMES on Upper Ratios

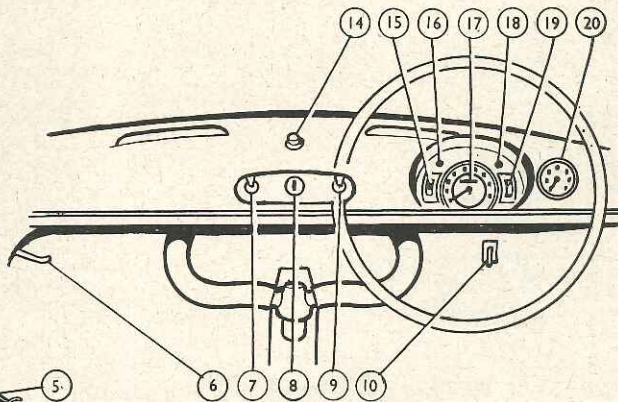
Upper Ratio	3rd gear
10-30 m.p.h.	12.9 sec.
20-40 m.p.h.	9.1 sec.
30-50 m.p.h.	10.0 sec.
40-60 m.p.h.	12.1 sec.
50-70 m.p.h.	—

HILL CLIMBING at sustained steady speeds

Max. gradient on top gear 1 in 14.4 (Tapley 155 lb./ton)
Max. gradient on 3rd gear 1 in 8.6 (Tapley 260 lb./ton)
Max. gradient on 2nd gear 1 in 4.6 (Tapley 475 lb./ton)



1, Gear lever. 2, Choke control. 3, Starter switch.
4, Handbrake. 5, Heater control. 6, Front luggage locker lid release. 7, Panel light switch.
8, Ignition switch. 9, Windscreen wiper switch.



10, Hand throttle. 11, Lights switch and dip switch. 12, Direction indicator switch. 13, Horn button. 14, Direction indicator warning light. 15, Oil pressure warning light. 16, Dynamo

charge warning light. 17, Speedometer and distance recorder. 18, Water temperature warning light. 19, Fuel gauge and low-level warning light. 20, Rev. counter (extra).

The FIAT- ABARTH 750

A Very Small
Italian Car in
Special 80 m.p.h.
Form



TRACTION for sure progress on loose surfaces is a merit of rear-engined cars with I.R.S., but it is in fast driving that the Fiat-Abarth 750 is really on top of its form.

AN exceptionally light and compact car with far-from-small performance has a great deal to commend it in present-day traffic conditions. With major re-design of its mechanical elements by the Abarth company of Turin, the Fiat 600 acquires an ability to make astonishingly rapid progress either on the open road or through heavy traffic, and nevertheless retains all its former merits of easy-to-park compactness and outstandingly light controls. In Britain the Fiat-Abarth 750 is by no means a cheap car to buy (although our test model comprised an Abarth power unit fitted into a second-hand car which had been already due for engine overhaul, this being one method of reducing the initial outlay) but its running costs remain very moderate and it has unique merits for anyone who values speed more than silence.

It must perhaps be explained that this car is a Fiat 600 saloon with factory-approved modifications, the most important of which is fitting of a new and very much sturdier crankshaft to lengthen the piston stroke from 56 mm. to 64 mm. At the same time, the cylinders are re-bored 0.040 in. oversize to accommodate new high-compression pistons of solid-skirt design, the enlarged cylinders having

747 c.c. displacement instead of the former 633 c.c. A new camshaft giving 60° of valve overlap instead of only 12° operates lightweight valves, in a modified cylinder head on to which an oversize carburettor bolts. A lightened flywheel carries a clutch in which extra-strong springs are used; a new divided exhaust system replaces the normal one; the fan drive speed is reduced, and a larger radiator fitted. Finally, a new crown wheel and pinion are installed to give higher gearing (for suburban use only, the ordinary gear ratios may be retained, acceleration then being better but top speed and fuel economy reduced) and the speedometer is re-calibrated to suit.

As might be expected, the effect of these extensive modifications to the power unit is very great. From being a small saloon capable of about 60 m.p.h. on low-grade petrol, the Fiat in Abarth-modified form becomes an 80 m.p.h. car which, running on premium-quality petrol, can reach 60 m.p.h. from a standstill in only 22.7 seconds. It acquires, in fact, the speed and through-the-gears acceleration of a very good 1½-litre saloon, but with much less bulk and a considerably smaller consumption of fuel. It is power at quite high r.p.m. which produces the results, and whilst the Fiat-Abarth will potter smoothly through a town in top gear there is very little response to the throttle in that ratio below 30 m.p.h. In effect, the engine may be said to come to life when its speed rises above 2,500 r.p.m., develops its best torque

at 3,500 r.p.m. and keeps on pulling hard with turbine-like smoothness right up to 5,500 or 6,000 r.p.m. With an engine which even when enlarged by 18% is still smaller than any British 4-cylinder unit, and a gear ratio as high as 4.37/1, kick-in, and a gear ratio as high as 4.37/1, kick-in, the back top gear acceleration is not to be expected, but the ability to accelerate two people from 30 m.p.h. up to 60 m.p.h. in 3rd gear within only 16.7 seconds indicates extremely quick getaway when the end of a 30 m.p.h. speed limit is reached, and around town 2nd gear gives phenomenal liveliness. Our test model showed an occasional momentary misfire at around 5,500 r.p.m., due we suspect to dirt in a far from new fuel system, but otherwise was utterly trouble-free: an oil consumption rate of only about one pint per 1,000 miles, some 4,000 miles after the Abarth conversion had been applied to the engine, hinted at probable power-unit durability and also at the possibility of further performance improvement after additional running-in mileage had been covered.

Rather unfortunately, the engine which is delightfully free from any kind of mechanical fussiness produces rather loudly resonant noise within the steel saloon body over a range of speeds around 4,500 r.p.m., and to a lesser extent there is also resonance at half this speed. The resonance at just over 30 m.p.h. in top gear is easily avoided by a downward gear-change, but the noisy range of speeds between 60 and 70 m.p.h. is much more annoying as a distance in excess of ¼ mile

In Brief

Price as tested: Basic Fiat car £432 plus purchase tax £217 7s., and Conversion £275, equals £924 7s.

Capacity 747 c.c.

Unladen kerb weight ... 11½ cwt.

Acceleration:

20-40 m.p.h. in top gear ... 22.1 sec.

0-50 m.p.h. through gears ... 15.7 sec.

Maximum top gear gradient ... 1 in 14.4

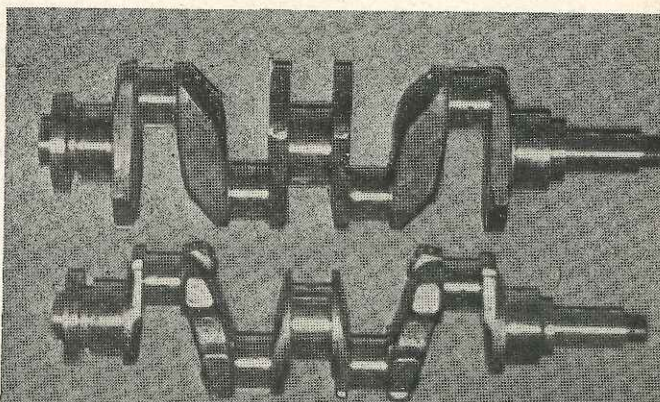
Maximum speed 79.8 m.p.h.

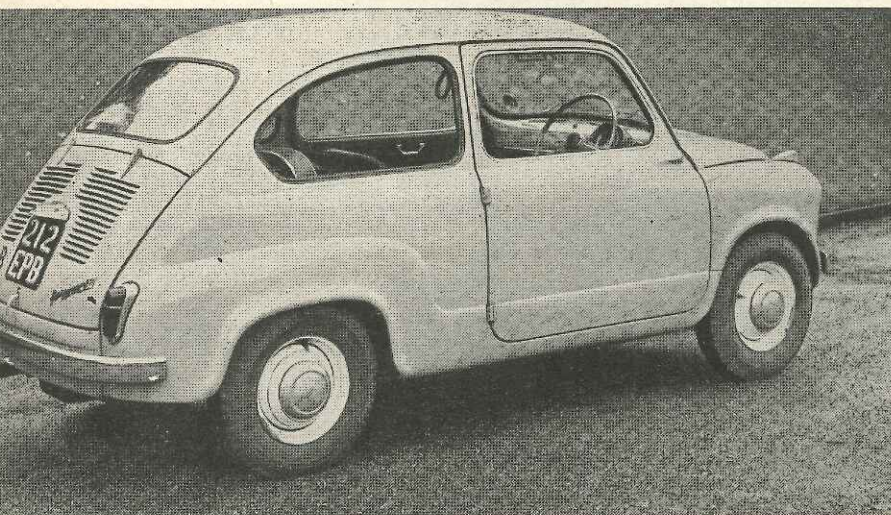
"Maximile" speed 74.7 m.p.h.

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

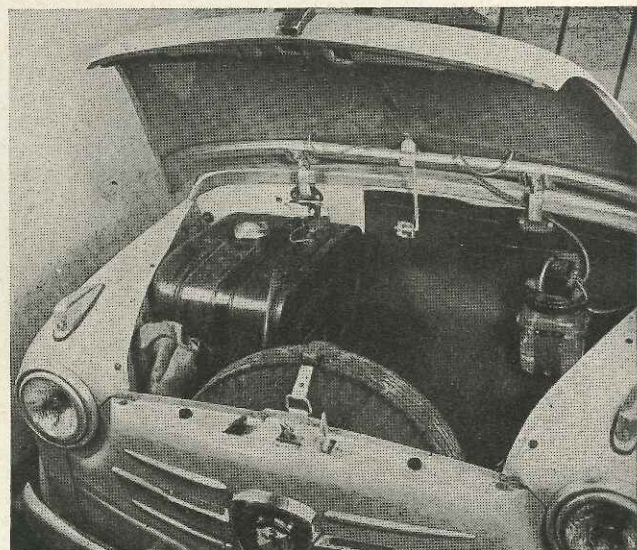
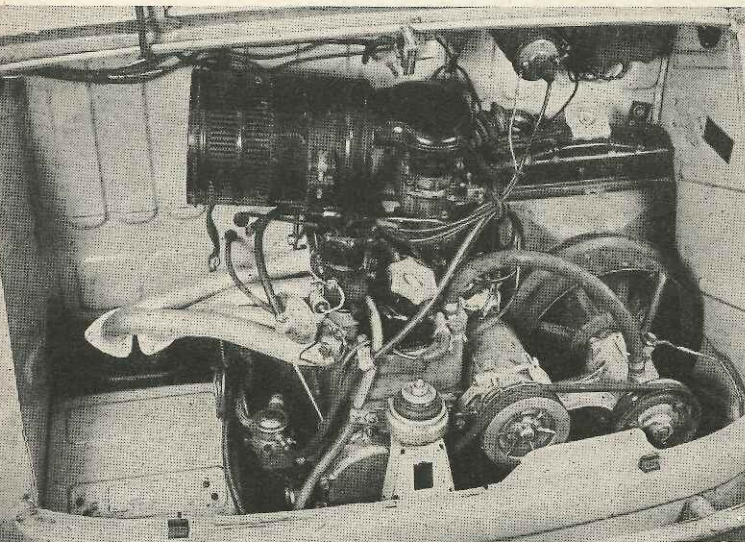
Gearing: 14.1 m.p.h. in top gear at 1,000 r.p.m.; 33.6 m.p.h. at 1,000 ft./min. piston speed.

BASIS for sustained extra performance is replacement of the Fiat 600 crankshaft (seen above) by the long-stroke crankshaft of sturdier counterbalanced design also shown in the photograph.





CONVENTIONAL in its outline, the close-coupled two-door saloon Fiat-Abarth reveals that it is rear-engined only by having cooling air louvres in its rear panel. An unusual detail is a lock on the engine compartment.



EXTREMITY details of the Fiat-Abarth 750 are shown in these two photographs. On the left is the rear-mounted engine with radiator alongside it, a special exhaust manifold being the only conspicuously unusual feature. Below the "bonnet" there are the fuel tank, spare wheel, tools, and a luggage space partially occupied on the test model by an electrical windscreen washer.

is needed to accelerate through the "sound barrier" before a quieter cruising speed of 70 m.p.h. is attained: noise inside the car is the complaint, rather than excessive loudness of the healthily crisp exhaust note which is audible to passers-by.

Astonishingly, this small car modified to travel at speeds which are seldom expected of anything so light feels as if its suspension, steering and brakes had been designed to cope happily with even higher speeds than the 80 m.p.h. which it can reach on level going. The springs are rather firm unless a full load has been packed into the tiny body, and at night the rise and fall of the headlamp beams shows that a wheelbase of only 78½ inches is following road undulations more closely than is usual, but very effective insulation against shocks is provided by the four-wheel independent springing layout. The steering is extremely sensitive, so that if the driver moves his hands the car moves in immediate response, but if the sluggishness sometimes mistaken for stability is lacking there is an equal lack of exaggeration in the Fiat's response to the helm. Clumsy driving will easily make this car snake, but

normally it runs perfectly straight at high or low speeds, corners fast without appreciable roll or sway of the bodywork, and can be swerved through gaps in traffic with remarkable accuracy. With only about 4½ cwt. of the Fiat's modest weight supported on the front wheels, the steering is light even when the car is at a standstill, and the turning circle is very compact indeed.

Built within sight of the Alps, this car has brakes which remain free from fade in spite of being asked to stop the car from higher-than-normal speeds. Not using the fashionable two-leading-shoe type of front brake, the Fiat calls for rather higher pressures on the brake pedal than such a small vehicle might have been expected to require, and with the rear seat unoccupied locking of the rear wheels slightly impairs the ultimate retardation in an emergency, but the general impression given by the

The FIAT-ABARTH 750

brakes is of reassuring and sustained effectiveness. The pull-up handbrake did not at first seem very reassuring, but it did in fact do its job when pulled on hard, the fact that it is an entirely separate unit working on the transmission explaining why the car almost inevitably rolls back a few inches after being checked on a hill. Restarting on hills demands use of fairly high engine r.p.m., owing to limited low-speed torque and a lightened flywheel, but in slippery conditions the adhesion available from the driving wheels is remarkably good.

Run on the better premium-grade fuels (but not on the 100-octane petrol which is needed by an alternative version of this engine with 9.8/1 compression ratio) this model with its 9/1 compression ratio is not as cheap to run as an untuned car driven at lower cruising speeds, but is on the other

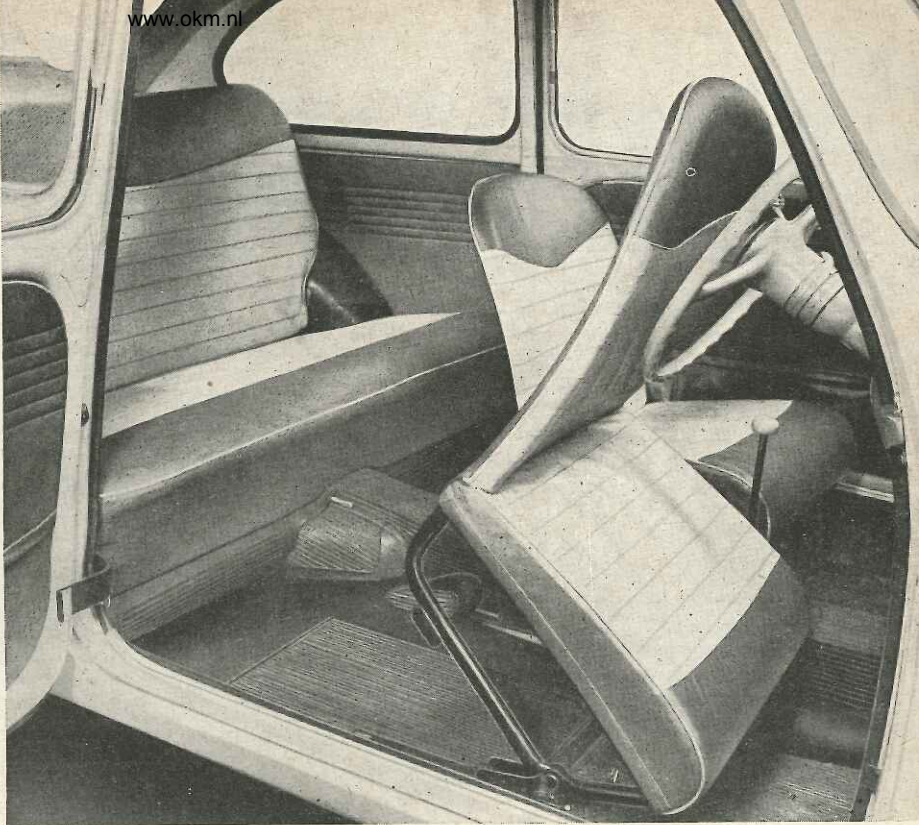
hand extremely economical in relation to the point-to-point average speeds which it records. Our overall figure of 37½ m.p.g. reflects good economy in spite of very free use of the indirect gears, and the measured consumption rate of 51½ m.p.g. when cruising at a steady 50 m.p.h. in top gear indicates that anyone willing to exercise a little restraint can still make a gallon go a quite astonishingly long way. The fuel tank holds 6 gallons, and a low-level warning lamp is a welcome supplement to the usual contents gauge.

Most buyers of this model are likely to regard the two-door saloon body as an "occasional four seater," rear seat headroom being no more than adequate, and rear seat leg room depending almost entirely upon how far back the two adjustable front seats have been set. It is perfectly possible to carry four adults however, and even when this is being done

TWIN adjustable front seats make two people comfortable, and there is a rear seat of limited roominess which can be folded forwards to extend the size of a luggage space which exists behind it.

some luggage can also be accommodated in two modest compartments, one behind the rear seat, and the other in the front "bonnet" which also houses the spare wheel, fuel tank and 12-volt accumulator. If the car is to be used as a two seater however, the rear seat backrest can be pulled forwards (rubber blocks normally hold it upright) and a very large floor with a slight lip at its forward edge then becomes available for luggage. Body interior width is not great, elbow room being a little less than on some modern cars of 1-litre size, but the front seats made various shapes and sizes of tester quite reasonably comfortable.

Simply furnished, and with some of the self-tapping screws used to secure items such as grab handles tending to come loose on a car which (apart from the power unit) was far from new, the body nevertheless has some useful refinements of detail. A courtesy switch on the driver's door operates the interior light which is mounted on the driving mirror, and there is a separate switch for the instrument panel lighting. The direction indicators are self-cancelling, and the electrical windscreen wipers self-parking, whilst the fingertip control used for the lighting system also has much merit: unhappily the placing of both lighting and indicator switch arms on the same side of the steering column, one behind the other, has led to one of the "fingertip" controls being just too short, and the other just too far away from the wheel for real convenience, both of them being liable to confusion one with the other. A central lever controls the excel-



lent four-speed gearbox, which has good synchromesh on the upper 3 ratios but an occasionally hard-to-find reverse gear, the fact that 3rd gear is as quiet as top in this all-indirect transmission being an immense advantage on this tuned version of the Fiat. A simple built-in heating system by which heated air from the main radiator could be diverted to windscreen or body interior was little used by our staff, who suspected the presence of engine fumes in the heated air.

Right out of the ordinary run of small cars, this Abarth 750 derivation of the Fiat 600 saloon (a convertible model is also available for an extra £20 basic price, or

glamorous Italian specialist bodywork by Zagato or Bertone can be obtained at a very much higher price) has very strong attractions in its economical high performance, light and instantly responsive controls, and ability to squeeze into small parking spaces which other cars have had to pass by. Understandably, an appreciable number of motorists are deciding that, despite a first cost (including purchase tax) of over £900 and an interior which at some speeds is rather noisy, the Fiat-Abarth 750 has real attractions in comparison with the more conventional and less entertaining saloon cars of larger size which could be bought and run on a similar yearly budget.

Specification

Engine	
Cylinders	4
Bore	61 mm.
Stroke	64 mm.
Cubic capacity	747 c.c.
Piston area	18.1 sq. in.
Valves	O.h.v. (pushrods)
Compression ratio	9/1
Carburettor	Weber 32 mm. downdraught
Fuel pump	Mechanical
Ignition timing control	Centrifugal and vacuum
Oil filter	Fram by-pass
Max. power (net)	41.5 b.h.p.
at	5,500 r.p.m.
Piston speed at max. b.h.p.	2,310 ft./min.
Transmission	
Clutch	Single dry plate
Top gear (s/m)	4.37
3rd gear (s/m)	6.50
2nd gear (s/m)	10.0
1st gear	16.5
Reverse	20.8
Propeller shaft	None (rear engine)
Final drive	8/39 spiral bevel
Top gear m.p.h. at 1,000 r.p.m.	14.1
Top gear m.p.h. at 1,000 ft./min.	33.6
Chassis	
Brakes	Hydraulic
Brake drum internal diameter	7.3 in.
Friction lining area	67 sq. in.
Suspension:	
Front	Independent by transverse leaf spring and wishbones
Rear	Independent by coil springs and diagonally pivoted arms
Shock absorbers	Telescopic
Steering gear	Worm and wheel
Tyres	5.20-12

Coachwork and Equipment

Starting handle	None
Battery mounting	Under floor of front luggage locker
Jack	Screwed pillar jack
Jacking points	2 external on body sides
Standard tool kit: Jack, wheelbrace, chock, 3 double-ended spanners, pliers, screwdriver, sparking plug spanner, tool bag.	
Exterior lights: 2 headlamps, 2 sidelamp/winkers, 2 stop/tail/winker lamps, number plate lamp.	
Number of electrical fuses	3
Direction indicators	Self-cancelling flashers
Windscreen wipers	Self-parking electrical, twin-blade
Windscreen washers	Optional extra
Sun visors	Two, hinge mounted
Instruments: Speedometer with non-decimal non-trip distance recorder, fuel contents gauge.	
Warning lights: Dynamo charge, oil pressure, coolant temperature, fuel level, direction indicators.	

Locks:	
With ignition key	Ignition switch
With other keys	(a) driver's door
	(b) engine compartment
Glove lockers	None
Map pockets	Two inside doors
Parcel shelves	None
	(luggage-well behind rear seat)
Ashtrays	None
Cigar lighters	None
Interior lights: One above driving mirror, with courtesy switch on driver's door only.	
Interior heater: Warm air ducted from engine radiator to windscreen and body interior.	
Car radio	Optional extra
Upholstery material	Plastic
Floor covering	Rubber mats
Exterior colours standardized	6
Alternative body styles: Convertible, Multipla utility models on forward-control chassis, 2-seat coupe bodies by Italian specialist coachbuilders.	

Maintenance

Sump	5 pints S.A.E. 30/40 oil
Gearbox and differential	2½ pints S.A.E. 90 EP gear oil
Steering gear lubricant	S.A.E. 90 gear oil
Cooling system capacity	9 pints (2 drain taps)
Chassis lubrication	By grease gun every 900 miles to 6 points
Ignition timing	8° before t.d.c. static
Contact-breaker gap	0.018 in.
Spark plug type	Marelli 240
Spark plug gap	0.024 in.
Valve timing: Inlet opens 30° before t.d.c. and closes 70° after b.d.c.; exhaust opens 70° before b.d.c. and closes 30° after t.d.c.	
Tapet clearances (cold)	0.008 in.
Front wheel toe-in	0.240-0.320 in. at rims
Camber	0.020-0.023 in. per wheel at rim
Castor angle	8°-10°
Tyre pressures:	
Front	14-16 lb.
Rear	18-22 lb.
Brake fluid	Fiat
Battery	12 volt, 28 amp. hr.