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Introduction to the Fiat 500

The FIAT 500 was introduced in 1957 as the Nuova Cinquencento, or New 500, to differentiate it from the old 500 "Topolino" or "Mouse". The Topolino had been in production from 1936; indeed its original drawings were started in 1916! It was very much a miniature car, conventional with four cylinder water cooled engine at the front driving the back axle.

The New 500, with 479 cc two cylinder air cooled engine at the rear was fundamentally an economy car designed most ably as such. Late in 1960 a larger engine of 499 cc was fitted, and the word "New" dropped from the model name, which was reclassified 500D. By 1965 modifications incorporated deserved reclassification again, to 500F. In 1969 this standard model was supplemented by a more fully equipped version, the 500L.

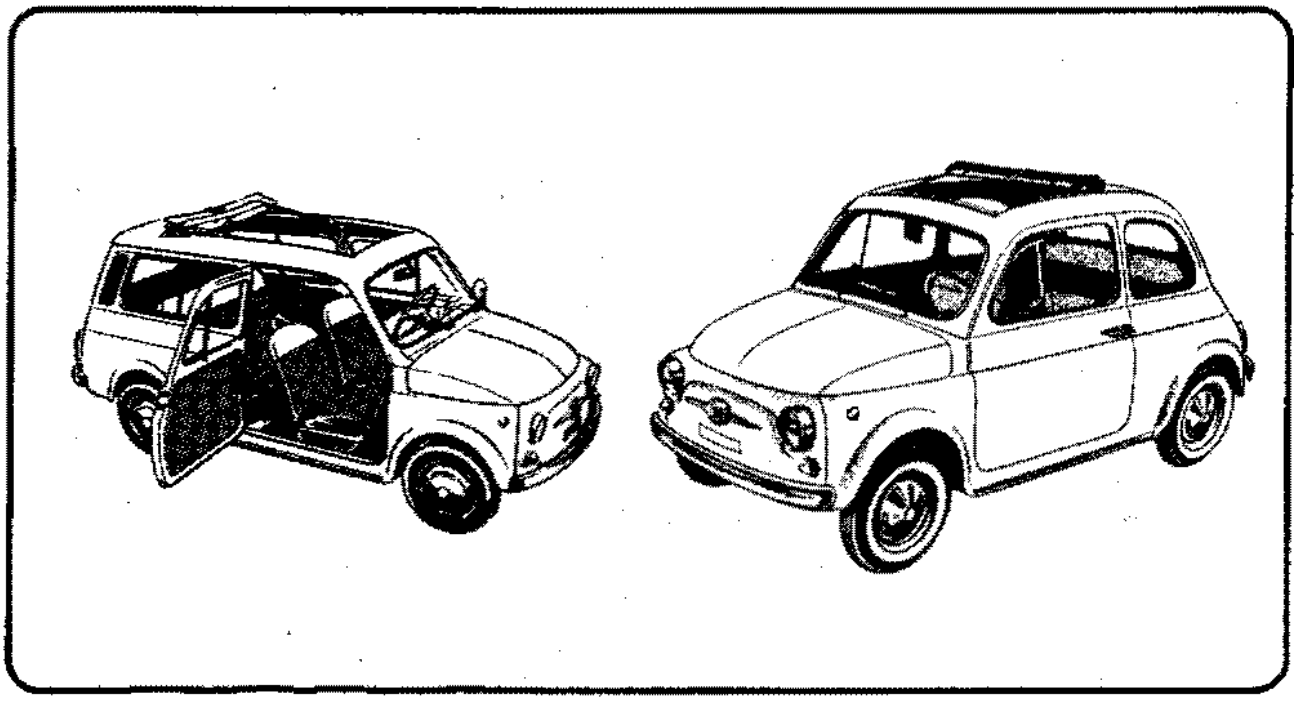
From 1960 to 1972 there was an estate car, sometimes called the Autobianchi Giardiniera. For most of that period there was also a van version of the station wagon, similar in specification except for the rear side windows.

For 1973 the engine was again enlarged, to 594 cc. This was at the time of the announcement of the larger bodied 126 FIAT. Both cars use the same engine, but the gearboxes are not shared the 500 keeping to its old one without synchromesh.

As well as the major changes that were marked by a reclassification of the model, numerous small modifications have been and still are being introduced.

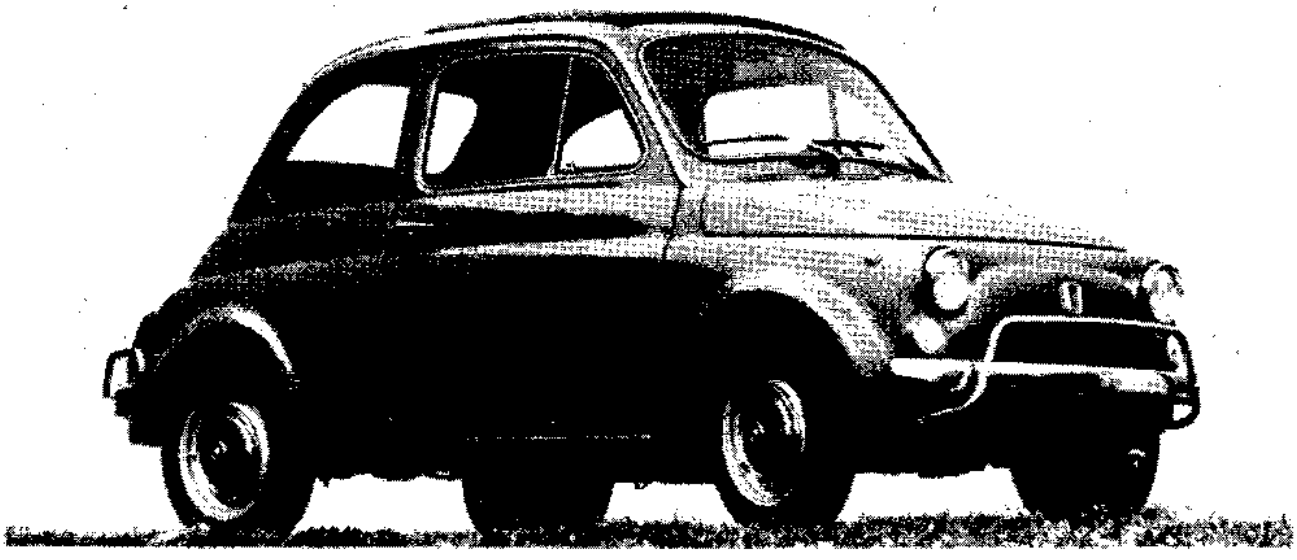
Being one of the easiest cars to park, one of the cheapest to buy, and very economical on petrol, it is also cheap to repair. The economy of repair comes partly from the ease of doing most jobs, and also from the 500's robustness. There are not the weak points that are sadly more prevalent with other cars.

It will be a sad day when the 500 finally disappears for it has proven itself to be highly successful in this its original terms of reference - a cheap, robust town car. In addition it has also excelled for many people throughout Europe as a businesslike touring car as well as competition car.



FIAT 500 Station Wagon (1968)

FIAT New 500 (1958)



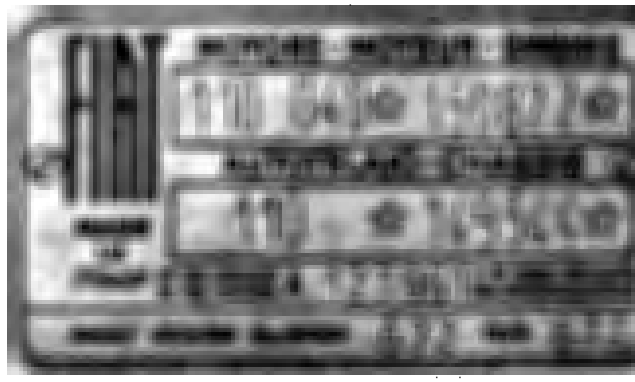
FIAT 500L (1972)

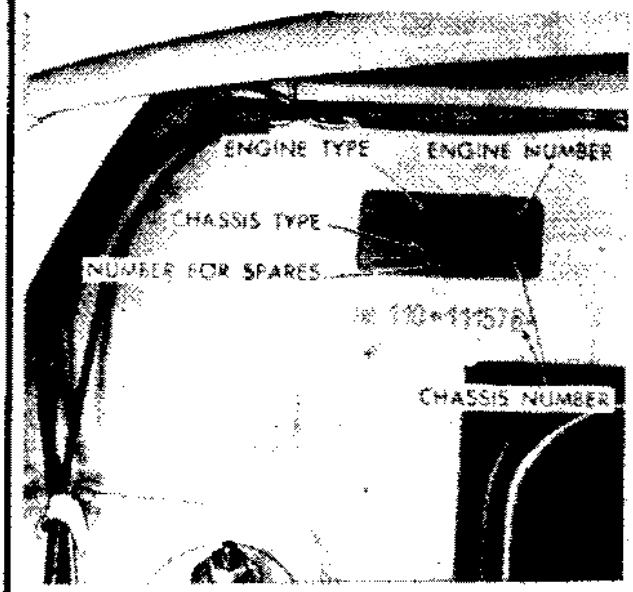
Vehicle identification and ordering spare parts

Numerous models of the FIAT 500 have been produced over more than a decade. There are, therefore, many different models which have been developed considerably from the first.

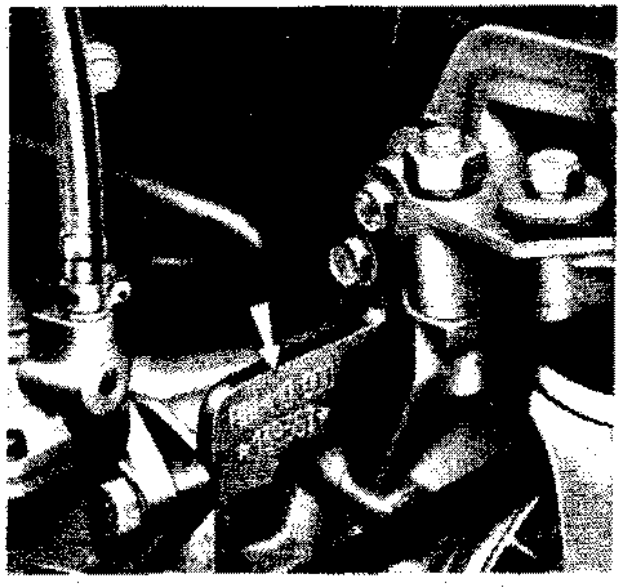
When identifying your own vehicle in order to purchase the correct spare part is essential to be specific. Always quote the chassis and engine numbers and state the year of manufacture, the model type and whether left or right hand drive.

FIAT franchised agents carry the largest stock of 'genuine' spare parts and certainly have a better knowledge than other garages. Pattern parts tend not to have the same quality and often do not fit properly and can be detrimental to performance and economy. If it is not possible to go direct to a FIAT agency, order through your local garage, still quoting the same vehicle numbers.





Identification plate giving engine and chassis number, and the spare part ordering number. Below the plate is the chassis number stamped on the body



Engine number on the crankcase

Routine maintenance

Introduction

1 In the paragraphs that follow are detailed the routine servicing that should be done on the car. This work has two important functions. First is that of doing adjustments and lubrication to ensure the least wear and most efficient function. But the second gain from maintenance, could almost be more important. By looking your car over, on top and underneath, you have the opportunity to check that all is in order.

2 Every component should be looked at, your gaze working systematically over the whole car. Dirt cracking near a nut or a flange can indicate something loose. Leaks will show. Electric cables rubbing, rust appearing though the paint underneath, will also be found before they bring on a failure on the road, or a more expensive repair if not tackled quickly. Even a little FIAT 500 is lethal if unsafe.

3 The tasks to be done on the car are in general those recommended by the maker. We have also put in some additional ones. For someone getting his servicing done at a garage it may be more cost effective to accept component replacement after a somewhat short life in order to avoid maintenance costs. For the home mechanic this is not so. The manufacturers must detail the work to be done as a careful balance of such factors. Leaving it too long gives risk of defects occuring between service checks. Making intervals too frequent tempts owners into disrespect of their advice, to leave work undone disastrously long.

4 When you are checking the car, if something looks wrong look it up in the appropriate Chapter. If something seems to be working badly look in the fault finding section.

5 Always road test after a repair, and inspect the work after it, and check nuts etc for tightness. Check again after about 150 miles.

Tools

1 The most useful type of spanner is a "combination spanner". This has one end open jaw the other a ring of the same size. In any case it is difficult to buy double ended spanners in metric sizes with the second end having the next size that you want; they are usually only 1 mm different, and you do not need all of them.

2 You need two spanners of each size so that one is on a nut whilst the other holds the bolt.

3 The sizes you need are:-

8, *10*, 12, *13*, 14, *17*, 22, 24 and 27 mm.

The most frequently used ones are in italic. If you already have some inch spanners there is in several cases a good match.

2 BA for 8 mm
½ AF for 13 mm but too tight in some cases
¾ Whit for 13 mm but very loose
16 AF for 14 mm but very loose
11/16 AF for 17 mm but a bit loose
¾ AF for 19 mm but a bit loose
7/8 AF for 22 mm but a bit loose
11/16 AF for 27 mm Good fit

3 You will need a set of feeler gauges. Preferably these should be metric. In many cases we quote the inch equivalent of dimensions, and conversion tables are at the back of the book. But the car is metric, and errors will be avoided by working metric. In the long-term metric equipment will be a good investment.

4 You will see we specify tightening torques for nuts. This needs an expensive torque wrench. Many people get on well without them. Contrariwise many others are plagued by things falling off or leaking from being too loose, whilst others suffer broken bolts, stripped threads, or warped cylinder heads, because of overtightening.

5 Torque wrenches use the socket of normal socket spanner sets. Sockets, with extensions and ratchet handles, are a boon. In the meantime you will need box spanners for such things as cylinder head nuts, and the spark plugs. They are thinner than sockets in small sizes, and will go where the latter cannot, so will always be useful even if later you plan to get sockets.

6 Screwdrivers should have large handles for a good grip. You need a large ordinary one, a little electrical one, and a medium cross-headed one. Do not buy one handle with interchangeable heads. The large screwdriver must have a tough handle that will take hitting with a hammer when you misuse it as a chisel.

7 You can use an adjustable spanner and a self grip or pipe wrench of the Mole or Stillsons type.

8 With these tools you will get by. Do not do as much as we do in the photos; whenever possible use a ring spanner (or socket). We often show an open jaw spanner in use. This is to put its size marking in the photo.

9 If you undertake major dismantling of the engine or transmission you will need a drift. This is a steel rod or "tommy bar" about 3/8 inch diameter, and made of tough steel to stand hammering. Do not use a brass drift lest little chips are cut off and get into some component and ruin it. You will need a "ball/pane" hammer, fairly heavy too because it is easier to use gently, than a light one hard.

10 Files are soon needed. Four makes a good selection:

6 inch half round smooth
8 inch flat second cut
8 inch round second cut
10 inch half round bastard

11 You need a good, firm, hydraulic jack. A trolley jack is of major value for removing the engine. If you do ever get one, it must be in addition to and cannot replace the simple jack, which is needed too for smaller jobs.

Maintenance tasks

Weekly or 300 Miles (500 km) if sooner or before a long journey.

1 Check tyre pressures:

Front	Rear (light load)	Rear (full load)
18 (17)	23 (27)	27 (30) lbf/in^2
1.3 (1.2)	1.6 (1.9)	1.9 (2.2) kgf/cm^2

Figures in brackets for station wagon.

For radial tyres the front should only be 16 lbf/in2 (1.1 kgf/cm2.)

2 Check oil level in engine sump.

3 Check the level of brake hydraulic fluid in the reservoir under the front bonnet.

4 Check all lights are working. A convenient way to do the brake lights is to reverse near something shiny.

Monthly: or 1500 miles (2,500 km) if sooner.

Do all the weekly/300 miles tasks and in addition:

1 Check battery. Top up electrolyte to just above the plate separators with distilled water. Remove any corrosion and smear battery posts and terminal fittings with vaseline. If corrosion recurs take the terminals off and try to be more thorough.

2 Top up the windscreen washer reservoir with a mixture of water and detergent. (Mild household washing up liquid).

Every 3,000 Miles (5,000 km)

Do all the more frequent tasks and in addition:-

1 Check the car underneath. Look at the rubber dirt excluders on the steering ball joints. Check the flexible hydraulic pipes for the brakes (one at each front wheel, one just inside each rear suspension forward pivot), for rubbing or leaks.

2 Check under the car for oil leaks (or new oil leaks if minor seepage already occurs).

3 Lubricate the grease nippled on the king pins. Jack up the car to get the weight off the front suspension. Clean the nipples (one each side). Pump in grease till it exudes clean at the ends of the king pin. Wipe off excess grease (a little left around helps keep out wet).

4 Check the fan belt tension. It should be possible to press it down ½ inch (1 cm) using one finger and a hard pressure. To tighten, undo the three nuts clamping the two parts of the dynamo pulley, and move a spacer from between the two halves to the outside. Do not overtighten or the dynamo bearings will be overloaded. Excessive slackness wears the belt by slip. New belts stretch, and require checking two or three times in their first few hundred miles.

Every 6,000 Miles (10,000 km) or 6 Months if sooner:

Do all the more frequent tasks, and in addition:

1 **Engine oil change.** Drain the oil from the plug on the right of the sump when the car is hot, (17 mm spanner), into a pan that will have plenty of room with the 4½ pints in it, to prevent spillage. Allow the oil to drip for at least ten minutes. Clean the drain plug, and check its washer. Refit the plug, and refill the sump with 4 pints. Check the level on the dipstick and add a little more if required. The oil should be changed at 3,000 miles if the car is used mostly for town work, particularly in winter, or in dusty conditions. Use a top quality multigrade oil (Castrol GTX), without any other additives. If you have just bought an old car and the oil is very black flush out first with flushing oil. When draining this jack up the left of the car once most of the oil is out to make any dregs flow out better.

2 **Air cleaner** - renew the element.

3 **Spark plugs** - fit clean plugs. With the gap set to .025 in (
mm) plugs are Marelli CW 8N, Champion L87Y (or L7) or Bos
W225 T 1. Have two sets, the ones taken out being sandblast
by the local garage ready for the next change. Plugs should
replaced after the second time of use. The porcelain pl
insulators, and the leads, must be kept clean to ensure eas
starting.

4 **Distributor**

Undo the two clips and remove the cap. Pull off the rot
arm. Check that the points are not contaminated with oil or dir
Check their gap. This should be .019 to .021 inch (.47 - .5
mm). This may be almost impossible to measure other than b
eye, as a lump will have burned onto one contact, preventir
insertion of a feeler. If in doubt take out the contacts and clea
them by rubbing off the lump on an oil stone (or wet doorstep
See Chapter 4:5 for details. Lubricate the wick on the spindl
normally covered by the rotor arm with engine oil, and oil th
lubricator just outside the distributor. Add a drop of oil to th
contact breaker pivot and to the centrifugal advance mechanis
beneath the contact breaker. Clean the inside and outside of th
distributor cap, and the rotor arm.

5 **Ignition timing**

Check the timing. It will definitely need adjustment if th
contact breaker has been adjusted. The timing should be 10°
before top dead centre, TDC. There is a timing mark for TDC o
the timing chain cover on the rear of the engine. 10° BTDC ca
be established by measuring 13 mm (.51 inch) from the TDC
mark. See Chapter 4:8 for details.

6 **Transmission oil**

Check the oil level in the transmission. The car should be or
level ground. The level plug (13 mm spanner) is a small one, or
the right side of the casing, just behind the axle dirt excluder
The level should be up to the bottom of the thread holes. Fill
with Castrol Hypoy 90, which can be bought in convenient
plastic 'flexitops' complete with spout. Before removing the plug
clean carefully around and above it. Wipe again after the plug has
been loosened a turn.

7 **Oil can lubrication**

Put a few drops of engine oil from an oil can on all parts such
as door hinges, their catches (the 500L has little plastic plugs in
the holes), control pedal pivots, carburettor controls and cables,
and the front and rear bonnet catches and hinges. Lubricate the
handbrake cable fixing pins at the back of the rear brakes.

8 **Clutch**

Check the free play between the pedal and the clutch. The
pedal should move for ½ - ¾ inch (15 - 20 mm) for 110F cars
with diaphragm clutches, and 1¼ ins (35 - 40 mm) for all earlier
ones, against only the light load of its pull-off spring before
taking up the clutch pressure. If necessary adjust where the cable
is attached to the clutch withdrawal lever on the transmission
casing above the left drive shaft.

9 **Tappets**

Check the valve clearance. It should be .006 in (.15 mm)
cold. The engine can be turned over using a 10 mm spanner on
the oil filter bolts. Adjust the tappets of one cylinder when those
of the other are just at "change over": the exhaust will have just
shut and the inlet be about to open; both will have no clearance.
Slide in the feeler gauge on one of the tappets being adjusted. It
should slide in readily, but resistance be felt. Trying to twist
round the push rod gives a good guide. A feeler the next size
smaller should slide in decidedly freely, and one a size too large
should be very stiff, having to be forced in, and then it is
impossible to rotate the push rod. Repeat for the other valve of
that cylinder, then do the second cylinder after turning the
engine over one revolution. After that do the first again just to
check your own measurement has not been at fault.

10 **Fuel system**

Clean the filters. There is one in the pump, reached by
undoing the screw holding the domed cover on top. On some
cars it is in the inlet union. See Chapter 3. In the carburettor
there is one under a large nut on the float chamber, near the fuel
pipe union. If the car is new, so the tank clean, and always

RM1 The dipstick and oil filler

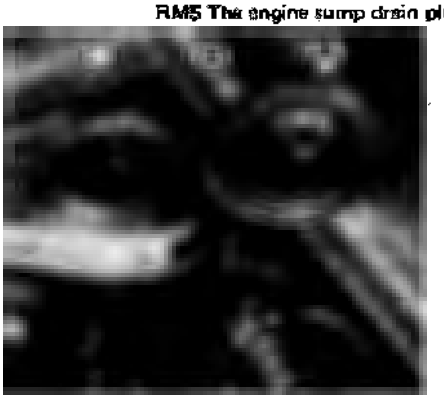
RM2 The hydraulic brake fluid reservoir

RM3 King pin grease nipple (one each side)

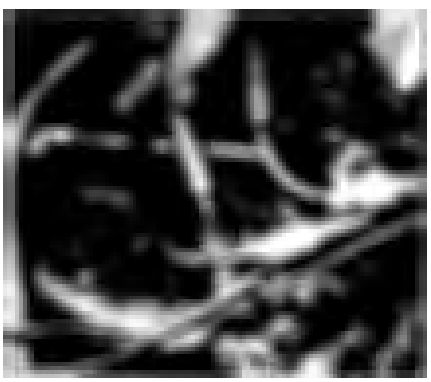
(B) Gene

RM5 The engine sump drain plug

RM6 Sedan air cleaner (A) Body top retaining clips (B) Carburettor intake and body top

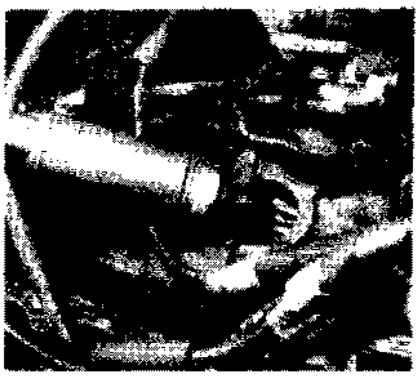


RM7 Station wagon air cleaner - front right cover of engine
Undo the butterfly nut (A), lift off the lid (B), to get at the element (C).



RM8a Plug change: first pull off the lead

RM8b Unscrew terminal spacer. (Station wagon has dirt excluder - lead goes on plug)



RM8c You must use self gripping plug spanner. Plug falls into air cowling if dropped