Fiat 124 Sport Spider - 1800 North American Version 1976 owner's manual

SERVICE NETWORK

When your car needs service look for the sign which identifies all authorized Fiat Dealers where trained personnel, specially designed equipment and facilities are available.

Our organization is at your full disposal for any suggestion or advice you may need.

SPARE PARTS

Use only authorized FIAT spares. It is the best guarantee for top performance and satisfactory operation of all components.

When ordering, please quote (see page 2):

- Car Model.
- Chassis Type and Number.
- Engine Type and Number.
- Number for Spares.
- Part Number(s) of Spare(s) Ordered.

BREAK-IN RECOMMENDATIONS

Current progress in design and manufacturing technology is so advanced that no hard-and-fast rule need be given for break-in. However, a few simple rules should be followed for the first 1000 miles:

- Avoid fierce accelerations soon after starting and allow time for the engine to warmup (a good habit even after break-in).
- Do not press in fully the accelerator pedal and avoid high engine speeds, when operating in the lower gears, that is, never allow the tachometer pointer to move into the yellow sector indicating high rpm rates.

- Change your road speed occasionally, especially on long trips. Avoid long drives at constant high or low speeds.
- Downshift whenever necessary to cope with driving conditions on route: you will avoid engine lugging at excessively low rpm.
- Avoid, if possible, severe stops at sustained speeds during the first few hundred miles: brakes will set properly and improve their life and effectiveness.

Remember that satisfactory operation and long life are dependent to a great extent on the care with which the car is handled during break-in.

Fiat 124 Sport Spider - 1800

Model year 1976

This Manual gives the information necessary for satisfactory operation and maintenance of the car.

We wish you pleasant motoring and trust the information provided will help to ensure the long life and safety of your car.

operation maintenance specifications

Appendix:

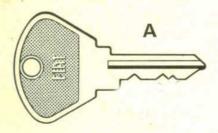
Catalytic Converter Version

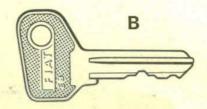
KEYS

Each vehicle is provided with two keys in duplicate; quoting the number stamped on each key is essential to obtain a replacement from FIAT's Sales Organization.

A For ignition switch

B For door and trunk locks.

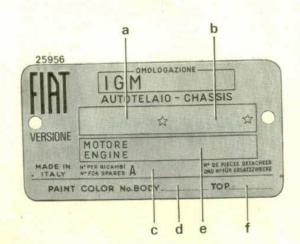


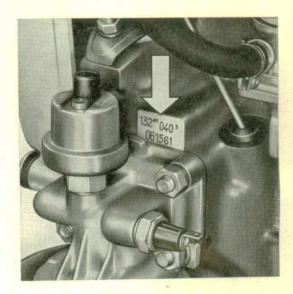


IDENTIFICATION DATA

■ Identification Plate

- a Chassis Type (124 CS1)
- b Chassis Number
- C Order Number for Spares (preceded by letter A which identifies the North American Version cars and must always be quoted in the orders for spares)
- d Body Paint Color Number
- e Engine Type (132 A1.040.5)
- f Top Paint Color Number







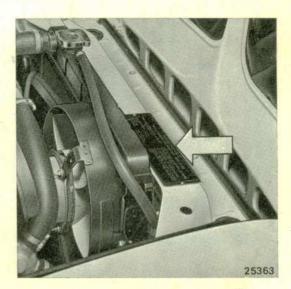
- Engine Type (132 A1.040.5) and Identification Number Punched on crankcase, near oil filter mount.
- Chassis Type (124 CS1) and Identification Number Punched on engine compartment bulkhead (permanent structure) right side.
- Type of vehicle and chassis number, located on panel top between instrument cluster and windshield.

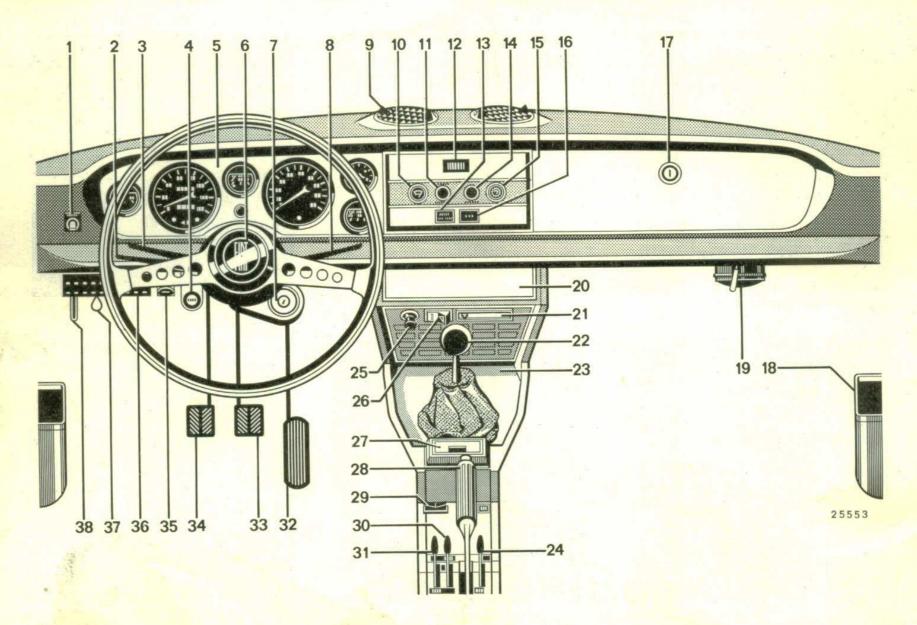


- F.M.V. Safety Standard 110 Tag
 Tire data and car capacity, located
 on glove compartment lid inner face.
- F.M.V. Safety Standard Conformity Tag Month and year of manufacture, gross vehicle weight rating, gross axle weight rating, chassis number and car type, located on left door pillar.
- Tag Air pollution control specifications for correct engine tuneup and adjustments, located in engine compartment, on front crossrail.









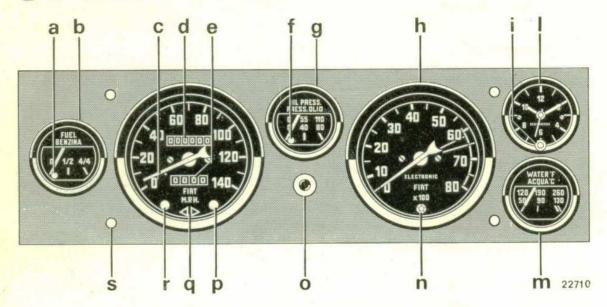
INSTRUMENTS AND CONTROLS

- 1 Lighting switch, three-position
- 2 High/Low beams change-over switch lever
- 3 Turn signal lights switch lever
- 4 Throttle knob
- 5 Instrument cluster
- 6 Horn button
- 7 Steering lock ignition switch
- 8 Windshield washer and wiper switch lever, three-position
- 9 Air outlets
- 10 Windshield wiper sweep rate knob
- 11 Brake system effectiveness/hand brake ON indicator
- 12 Ideogram illumination intensity adjustment potentiometer
- 13 Fasten belts indicator and buzzer

- 14 Vehicular hazard warning signal indicator
- 15 Knob switch and rheostat for instrument cluster lighting
- 16 25,000 Miles EGR indicator
- 17 Glove compartment lock
- 18 Utility recesses (two)
- 19 Fresh air outlets under dash
- 20 Optional radio housing blanking lid
- 21 Courtesy light with switch
- 22 Gearshift lever
- 23 Floor tray
- 24 Lever controlling air flow through outlets 10 and/or under dash
- 25 Cigar lighter

- 26 Vehicular hazard warning signal switch (with incorporated light)
- 27 Ash tray
- 28 Hand brake lever. To release the lever press in button on top of handgrip
- 29 Two-speed heater fan switch (3-position)
- 30 Air temperature control lever
- 31 Air volume control lever
- 32 Accelerator pedal
- 33 Service brake pedal
- 34 Clutch pedal
- 35 Inspection lamp receptacle
- 36 Fusebox
- 37 Hood release emergency cable
- 38 Hood catch release lever

OPERATION



Instrument Cluster

- a) Fuel Reserve Indicator (Red) Warning that the fuel supply available in the tank is between 5 and 7.5 liters (11/3 to 2 Gals).
- b) Fuel Gage
- c) Speedometer This instrument (which includes the odometer) is factory-sealed: any tampering by unauthorized persons will invalidate the warranty.

- d) Odometer (Totalizer)
- e) Trip Recorder
- f) Insufficient Oil Pressure Indicator (Red) The light should go off when oil pressure is sufficient to ensure adequate engine lubrication.
- g) Oil Pressure Gage Normal oil pressure is 4.5 to 6 kg/cm² (64 to 85.3 psi) at rated engine rpm and oil temperature.

- h) Tachometer Electronically-operated from the ignition distributor. The yellow area indicates maximum engine speed for all gears whereas the red area shows the dangerous engine operating speeds.
- Clock Reset Knob Push and turn clockwise making sure that it springs back when released.
- I) Quartz Crystal Clock
- m) Engine Water Temperature
 Gage If the pointer enters the
 red area it means that the engine is
 overheating: it will then be necessary to immediately rev down the
 engine to idle speed (do not switch
 off). Should the pointer remain
 on the red area, contact the nearest
 FIAT Dealer for a cooling system
 check (including fan circuitry).
- N) Battery Charge Indicator (Red) With engine inoperative, and ignition key in position MAR, the charge indicator is on and must go out when engine is started; should indicator turn on while engine is running, this is a warning of a fault in the battery recharging system: turn immedia-

tely to a FIAT Dealer for assistance.

- Trip Recorder Zeroing Knob -Turn knob clockwise but never when car is running.
- p) High Beams Indicator (Blue)
- q) Turn Signal Arrow Indicator (Flashes green)
- r) Parking and Tail Lights Indicator (Green)
- s) Cluster Panel Mounting Knobs (Four)

Lighting Switch

Up = All lights OFF,
With Ignition Key at MAR:

Down = Parking and tail lights, headlight low or high beams and flashers (main beams).

With Ignition Key Removed:
Center (night parking only) = Parking and tail lights.
Down = All lights OFF.

EGR Indicator (Red)

Lights up:

 Upon completion of 25,000 Miles to warn the driver that EGR system needs servicing (See page 31). Whenever a starting attempt is made and goes out when the engine is running.

If the indicator stays on with the engine running and before reaching 25,000 Miles or does not come on at all contact the nearest Dealer.

Fasten Belts Indicator (Red) and Buzzer - Both are operative for a few seconds when a starting attempt is made with seat belts (driver and/or passenger) unfastened.

Brake System Effectiveness/Hand Brake ON Indicator (Red) - Lights up if pressure in either brake hydraulic circuit (front or rear) is excessively low due to leakages or line failure. A switch under the hand brake lever allows the driver to check if the bulb is efficient and at the same time indicates also if the lever is pulled upwards (brake applied).

Vehicular Hazard Warning Signal Switch - Turns ON (independently of key position in lock switch) the front and rear turn signal lights which will all flash simultaneously to warn of the presence of the stopped vehicle on the road, or moving under emergency conditions.

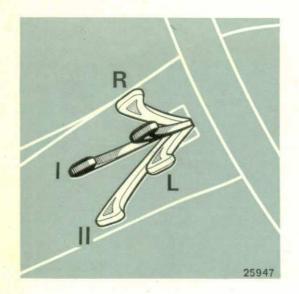


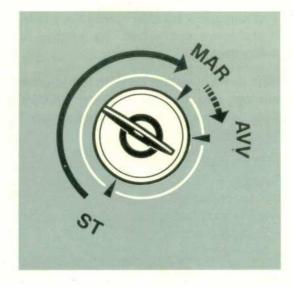
Windshield Wiper/Washer Switch Lever

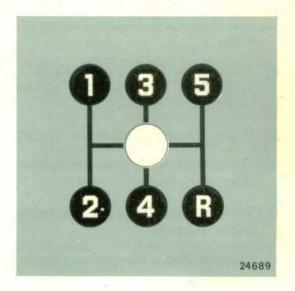
- a = Wiper off
- b = Wiper On-Off intermittently (particularly useful in drizzly weather)
- c = Wiper on continuously

Lifting the lever towards steering wheel, whatever its position, will switch on the washer.

Windshield Wiper Sweep Rate Knob - Provides high or low sweep rates in either wiper continuous or intermittent operation, depending on the position of wiper lever switch.







High / Low Beams Change-Over Switch Lever (With lighting switch down and ignition switch at MAR)

Low beams

II = High beams

By tripping the lever towards steering wheel headlight high beam flashes are obtained even with all lights out (Daylight signals).

Turn Signal Lights Switch Lever Automatically trips back to OFF.

R = Right turn

L = Left turn

Steering Lock Ignition Switch (*) (See page 16 for starting procedure instructions)

MAR (Run) = Engine ignition ON and accessories energized

AVV (Start) = Engine starting

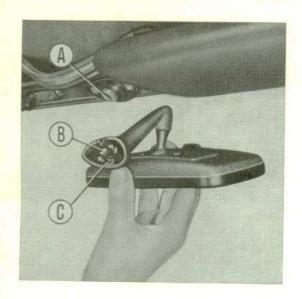
ST (Stop) = Steering post anti-theft lock in. Key removable

Remove Key Buzzer - Operates when the steering wheel side door is opened to leave the car and the ignition key is forgotten in the lock switch.

Gearshifting Pattern - To engage reverse (R), press the lever and shift as indicated by the gating pattern.

The total or partial removal of key will lock the steering post even if car is in motion. To facilitate the disengagement of steering post lock, rock slightly the steering wheel while rotating the key. Key must not be left in position MAR when engine is inoperative and must be removed only when leaving the car, especially if unattended.

^(*) Even with key removed (position ST) the following circuits are still energized: courtesy lights; horns; cigar lighter and housing indicator; vehicular hazard warning signal; remove key buzzer; clock; inspection lamp receptacle.



Inner Rear View Mirror - Collapsible, with anti-glare (Day/Night) position controlled by a lever. If the mirror comes off its seat, following an impact, refit by engaging spring B on stud A — make sure the two location dowels are properly registered with relevant seats — and press on base C. Engagement is of the snap-on type.

Outer Rear View Mirror on steering wheel side door adjustable from driver's seat,

Ash Tray

Raise the lid to open. For periodical cleaning, grab the stubber and take out the tray.

Cigar Lighter

To switch on, press in the knob: after about 15 seconds it will snap out, ready for use. When parking lights are ON, an indicator illuminates the lighter housing.

DOORS

Opening

From outside - Press in the release button.

From inside - Pull up lever A.

Upon opening either door the courtesy light turns ON automatically.

Locking

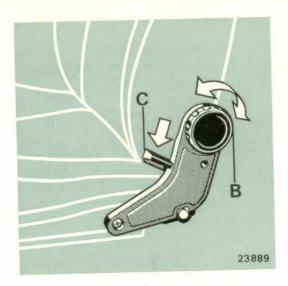
From outside - Both doors are provided with key-operated locks. Stepping out of the car on the curb side is thus also possible. Always use the key: never lever A.

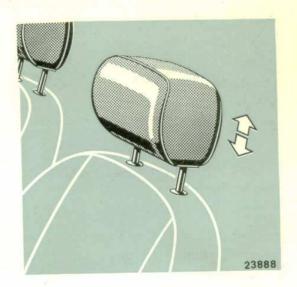


From inside (safety latch) - With door already shut set the lever A down. The lever will thus first insert the safety latch and then snap back to rest.

Note: Lubrication of lock cylinders is not recommended. At most, blow some graphite powder into the cylinder keyhole. In cold climates it is recommended to squirt in the keyhole some special antifreeze fluid for locks. Repeat the operation every time the car is washed or at least every 15 days. If insertion of key in the frozen lock proves difficult, simply warm up the key.







SEATS

Seats may be adjusted for leg reach after moving control lever **A** downwards.

Once the desired position is found, release the lever and make sure the seat has locked.

The position of the backrest is adjusted by turning knob **B**.

For access to the rear compartment push down lever **C** and tilt backrest downward.

On top of each seat backrest is fitted a headrest: to re-set height pull up or push down the complete headrest, as required.

The headrest must be so adjusted as to support the head and not the neck of the occupant.

SEAT BELTS

Seat belts provided as standard original equipment are of the 2-point lap type.

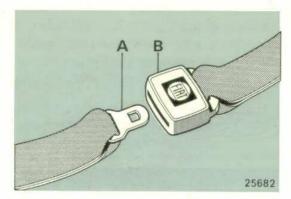
Free belt outboard webbing A from its storage retainer C.

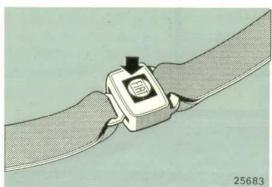
Pull belt fully out from retractors without stopping as otherwise it will be necessary to return the belt to the stowed position to release the retractor stop mechanism.

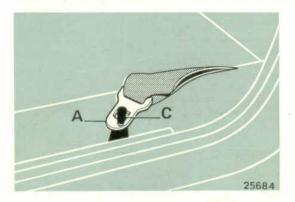
To fasten, fit tongue A into buckle B until a sharp click is heard.

Adjust the belt snugly around the hips, not the waist, allowing excess webbing to be pulled back into retractor.

To free yourself from the belt restraint: simply press in the buckle button.







Warning

Before fastening the belts make sure the seats and headrests are properly positioned.

Each belt is intended for use by one adult or one child over 6 years of age.

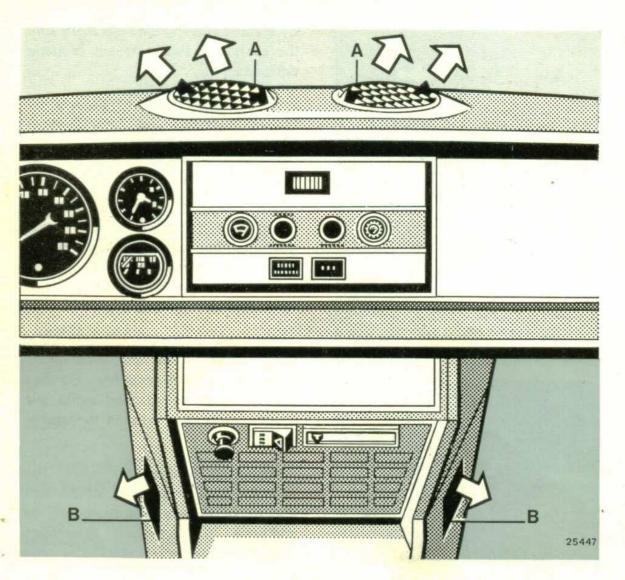
Occasionally, check that webbing is in good condition.

In the event of an accident, even if the belt you were wearing is apparently undamaged it is suggested that you replace it with a new belt assembly of the same type.

To keep belts clean, wash only, using warm water and mild soap. Rinse and dry thoroughly. Do not use strong detergents and avoid any chemical that may weaken the equipment.

Users are warned to consult the Manufacturers in case of doubt and not to make any alterations of, or additions to, seat belt assemblies and/or anchorages.

VENTILATION AND HEATING



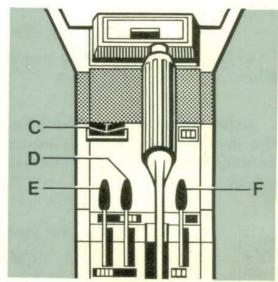
Ventilation and heating are adjustable according to seasonal requirements.

To ensure best comfort to occupants it is important to become familiar with system controls and operation.

Admission of Heated or Fresh Air

Heater fan switch C is energized only when ignition key is in position MAR.

Pressed in at right = High speed
Intermediate position = Off
Pressed in at left = Low speed



Lever D controls the air temperature.

Pulled all back - No heating of air

Pushed all forward - Maximum heating

of air

Lever E controls the air volume.

Pulled all back - Maximum air flow

Pushed all forward - No admission
of air

Intermediate positions are used especially when outdoor temperature is low to limit the flow of cold air around heater core.

Lever F controls the amount of air flowing through windshield outlets A and into front lower area through console outlets B.

Pulled all back - Air flows through outlets A only

Pushed all forward - Air flows through outlets A and B

Outlets H are located laterally under dash and serve for admission of fresh (unheated) air only. The amount of air flow is set by lever G.

Door window ventilators are opened by pressing in catch button I and turning forward lever L.

Defrosting and Demisting

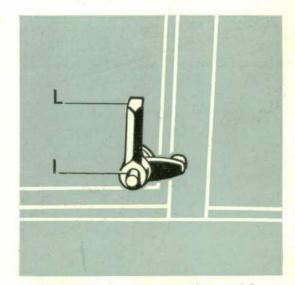
For quick defrosting of windshield, pull back completely lever **F**, push forward lever **D** and set lever **E** in an intermediate position. Turn on the heater fan by switch **C**.

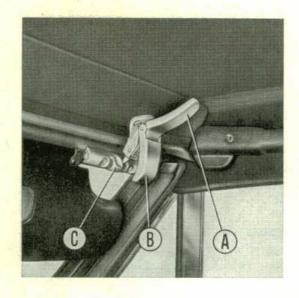


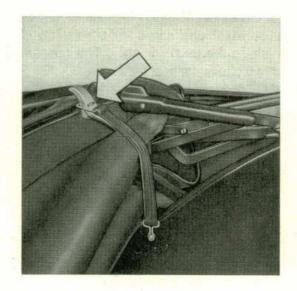
Frost Precautions

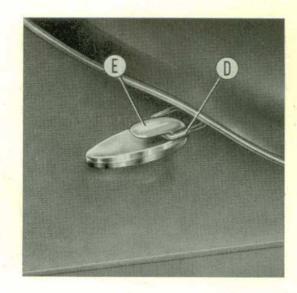
If during cold weather the car must remain inactive for some time at freezing temperatures and the cooling system is not protected with antifreeze mixture, it will be necessary while draining the radiator and jackets to empty also the heater core by shifting lever **D** all forward.

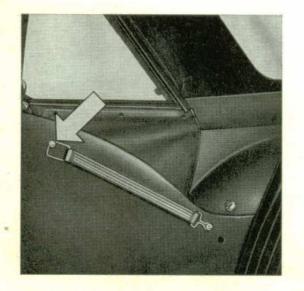
Note: If heating proves inadequate, operation of the thermostat on the line from cylinder block to radiator must be checked.







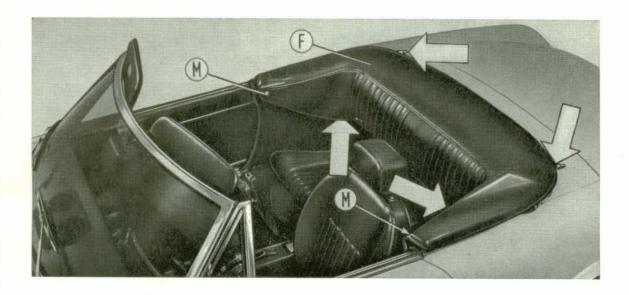




FOLD-AWAY TOP

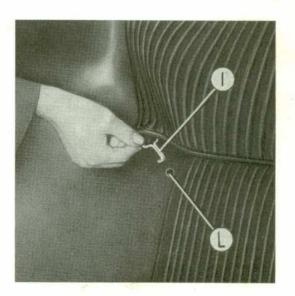
To lower the folding top, proceed as follows:

- Wind down the door windows.
- Pull down the two latch levers A and release clamps B from latches C securing the top to windshield frame.
- Push the top to the rear, making sure the back window is not pinched by the metal frame.
- Free the rubber strap from the peg on body side and strap the folded top as shown in the figure.





 Place cover F on the folded top well by fitting rear eyelets D on hooks E (page 14) then catches G in detents **H**, spring hooks **I** in holes **L** and snap on the button fasteners **M**.



STARTING THE ENGINE

Cold Starts

Proceed as follows:

- Move gearshift lever to neutral.
- Depress clutch pedal, especially in cold climates.
- Depress accelerator pedal and release. This will enable automatic choke to come into operation.
- Insert and turn ignition key clockwise to the stop, i.e. position AVV, page 8. As soon as engine is started release key which will snap back to position MAR.
- If the engine stalls, repeat starting procedure.
- Do not step on accelerator pedal until the engine is running smoothly.
- During warm-up the automatic choke will be deactivated progressively.

- Avoid sudden accelerations when engine is cold. At this stage, to reduce engine idle speed slightly depress and release the accelerator pedal.
- If the engine stalls at idling or operational checks at fast idle are required, pull throttle knob and lock in the desired position by turning clockwise.
- Do not continue with repeated starting attempts. If the engine fails to

start or stalls at idling have the fuel and ignition systems checked as soon as possible.

Flooded Engine

To deactivate the automatic choke and clear the engine of excess fuel, fully depress the accelerator pedal while cranking to start.

Throttle knob



Hot Starts

When engine is warm, start without disturbing the accelerator pedal.

In case engine is very hot, it may be necessary to fully depress accelerator pedal which should be released as soon as engine fires.

Do not repeatedly press the accelerator pedal, as each stroke actuates the accelerating pump which, by providing an excessively rich mixture, would make engine starting difficult.

STARTING THE CAR

In cold climates idle the engine for a few minutes prior to moving off: this will allow engine oil to reach operating temperature and help its circulation throughout the system.

Gearshifting positions are shown on page 8.

Should engagement of the 1st gear with car stationary prove difficult, release the clutch a few seconds and repeat the maneuver.

To engage reverse (R) the car must be stationary: from neutral, press and move lever to the right and back.

DRIVING THE CAR

Never maintain nor exceed the maximum allowed speeds and do not drive with tachometer pointer steadily on the yellow sector.

Do not travel steadily for long intervals at top speed in any gear.

All red indicator lights should be out while driving.

Do not coast downhill with the clutch pedal depressed, the transmission in neutral or the engine off, as the marginal saving in fuel consumption which may be derived from such practice does not compensate for the resulting loss in brake lining life and driving safety which is provided by the braking effect of the engine.

Remember that upon switching off the engine, the brake servo is deactivated and, therefore, braking requires more effort.

Do not allow the engine to lug, particularly when driving up steep hills, but shift down in good time to benefit from maximum engine pulling power.

Do not ride the clutch, otherwise slippage and damage will ensue.

Ensure that both the foot and hand brakes are efficient at all times. After a car wash apply the foot-brake a few times so as to restore full brake effectiveness.

Always apply the foot brake progressively. Remember that wheel locking, especially with an unladen car, will result in dangerous skidding. In case of emergency the hand brake may be used to stop the car.

On wet or slippery roads hard braking will increase the likelihood of wheel locking and consequent inevitable loss of handling control. Instead, use the engine braking effect by engaging a gear lower than would normally be required. Braking, if absolutely unavoidable, should be gentle and progressive and, in any case, simultaneous with engine braking.

On icy roads drive slowly, turn the steering wheel very gently, avoid using the brakes, change gear smoothly and do not drive with the clutch pedal depressed. If the car starts skidding release the accelerator pedal, do not brake, but steer smoothly in the direction of skid; as the car regains its course straighten the wheels and accelerate gently.

Always use tire chains or snow tires before starting a journey on ice or snow covered roads and remember that while snow chains can be fitted to the driving wheels only, studded tires should be fitted to all wheels.

When driving in mist or fog during daylight switch on the parking and tail lights: do not use the high beams.

Before turning or changing lanes, in addition to giving the correct signals glance in the mirrors to ascertain the intentions of the drivers behind you. Before cutting back into your lane after overtaking a vehicle wait until it appears in your inner mirror.

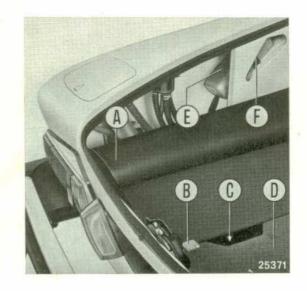
At night when meeting oncoming traffic, keep your eyes on the right side of the road rather than

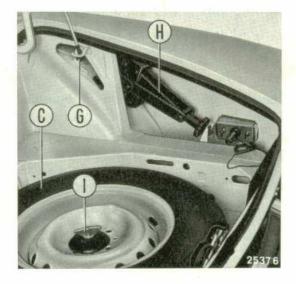
looking straight into the approaching headlights or other light sources: you will avoid being "blinded".

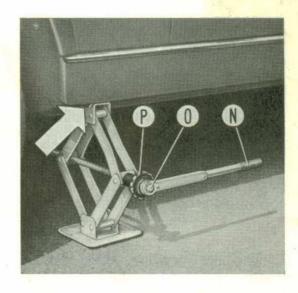
PARKING

Always apply the hand brake when parking and if on a grade, for added safety also shift into first or reverse depending on whether the car is heading up- or downhill.

When the car is left in dark areas always turn on the parking lights: lighting switch pressed halfway in at bottom.







WHEEL CHANGING

If possible, place the vehicle on level ground and lock rear wheels by the hand brake.

Take out tool box **E** and jack **H** in trunk: release eyelets of straps **F** and **G** first.

Take out the spare wheel proceeding as follows:

- Roll up mat A.

- Free the two catches B and tilt away cover D for access to the well of spare wheel C.
- Free the spare wheel by unscrewing wing nut I.

Remove the wheel cap and slacken about one turn the four wheel fixing bolts, using the wheel wrench.

Place the jack under the car as shown, that is, at the bracket nearest the wheel to be removed.

Make sure the ground is sufficiently hard (that is, jack base does not sink during the lift action).

Fit the socket of hand lever N, on hex. shank O and start jacking up.

Note: Operation of the jack until it contacts the lift bracket under floor may also be carried out by turning handwheel **P**, welded onto the hex. shank. This applies also to lowering the car.

Keep actuating the lever up and down until the wheel to be changed clears the ground.

Back out completely the bolts and remove the wheel. Place the bolts inside the upturned wheel cap: this will prevent the threads from getting fouled with dirt, a frequent cause of difficulties at reassembly.

Fit the spare wheel seeing that the location dowels fit into two of the location holes in wheel disk.

Fit and tighten uniformly the wheel fixing bolts in criss-cross sequence.

Remove the jack hand lever and fit it back on hex. shank with socket turned the other way around. Then actuate the lever in the usual manner and lower the car.

Fully tighten the wheel bolts in criss-cross sequence and fit back the wheel cap.

Check that the newly fitted tire is inflated to the correct pressure.

Important. - Every wheel is balanced in the Factory by the addition of proper plates on rims.



When tires are replaced or refitted, the wheels must be rebalanced statically and dynamically.



JACKING UP AND TOWING

When either the front or rear end of car must be raised with a garage jack, it is necessary to fit jack head under front suspension cross rail, interposing a suitably thick (abt. 3 cm - 11/4 in.) wooden block, or rear axle bulge.

If car needs towing with a rope this must be attached to the specially provided front brackets **F** (two).



MAINTENANCE

This section includes all periodical maintenance operations essential for continued effectiveness of the car.

The lubrication, cleaning, inspection and adjustment operations recommended in relation to given mileages are listed on a General Maintenance Schedule. Reference is made to the pages where each operation is described.

The Owners Warranty and Service Book contains a free service coupon. This service should be performed at 1,500 miles.

Failure to report for service at the mileage intervals specified in the Owners Warranty and Service Book will invalidate the Manufacturer's Warranty.

Particular stress is laid on the importance of reporting to a FIAT Dealer for all the maintenance operations so marked:

For oil grades not mentioned here, see the Fill-up Data Table.

EMISSION CONTROL SYSTEMS

The maintenance operations necessary to ensure the proper functioning of the vehicle emission control systems are printed in red for immediate identification both in the General Maintenance Schedule and in the paragraphs of this section.

The engine tuneup and adjustment specifications are also listed on the E.P.A. Regulations Conformity Tag, located in the engine compartment (see pages 3 and 52).

For all these operations it is also recommended to refer to the instructions specified in the Owners Warranty and Service Book.

NOTICE

Besides the routine maintenance operations listed in the Schedule, this section describes other operations which must be performed only in special cases of defective operation of mechanical units.

GENERAL MAINTENANCE SCHEDULE

_	- 411	See pag	ge
	All operations so marked must be entrusted to the FIAT Service Network.	Ignition timing, dwell angle, idle speed settings and CO concentration: Check and adjust as required	26
	Every 300 miles or weekly See page	Fuel filter: Replace unit and check line tightness 2	28
	Engine oil: Check level	Air cleaner: Change cartridge	28
	Brake fluid reservoir: Check level	Every 12,500 miles	
	Tires: Check pressure		24
		Ignition distributor: Clean, check and change if neces-	
	Every 3,000 miles	sary the cap and rotor; change breaker contacts and	
	Battery: Check electrolyte level	condenser	26
	Windshield washer: Check level, clean, adjust 42	Ignition timing, dwell angle, idle speed settings and CO	
	Horn compressor: Lubricate		26
	Every 6,000 to 6,500 miles	Spark plugs: Change	26
		Ignition system wiring: Check condition of wires and connections; change if required	10
	Engine oil and filter: Change oil (engine warm) and filter	- F / 1 H	.0
ı	Clutch: Check and adjust	electrovalve, switches, lines and wires	7
ı	Wheel alignment: Check and adjust if necessary 36	■ Carburetor: Check throttle choke valves and control	
	Tires: Check for wear; rotate	linkages, adjust as required; check idle stop solenoid	
	Battery: Inspect posts and clamps	and wire, change if necessary	27
	Road test: Check operation of engine transmission	Fuel filter: Replace unit and check line tightness 2	
	ciutch, steering and brakes	Air cleaner: Change cartridge	8
	Body: Lubricate various items	Crankcase emission control system: Clean, wash and	
n a	r is driven in heavy traffic conditions	cneck	9
_	Ignition distributor: Check and adjust breaker contacts,	Fuel evaporative emission control system: Check com-	
•	change if necessary; check condenser, change if ne-	ponents and change as required	0
	cessary	Exhaust emission control system: Check the lines, manifolds, valves and air pump; change as required 3	4
ſ	Spark plugs: Clean and check gap; adjust or change if	■ Vacuum hoses and connections: Check condition and	1
	necessary	tightness; change as required	1

See page Air pump drive belt: Check, change as required Cooling system hoses and connections: Check tightness ■ Drive belts (alternator/water pump, air conditioner): ■ Brakes: Check for wear, inspect lines and hand brake Ball joints/steering linkage/suspension articulation rubber Front and rear suspensions: Check joints and fasteners Steering box: Check linkages and gears for play . . . Front wheel bearings: Check lubrication, and grease if Electrical system: Check lights, instruments, horn and Accessories, seat belt anchorages, heating and defrosting controls: Check for proper operation 42 Every 25,000 miles ■ Ignition distributor: Check advance mechanism and Spark control modulation device (switches and relays): Check components and change as required ■ EGR valve: Check for proper operation; clean lines from EGR valve to manifolds; check components efficiency; reset warning indicator and check efficiency; change if Transmission and axle: Change oil Starter motor and alternator: Check

Lubricant Designations

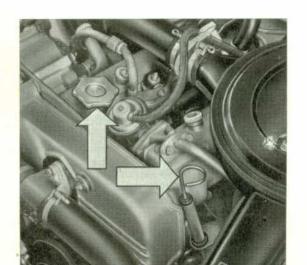
FIAT	INTERNATIONAL	
VS ⁺	Low-ash content detergent oils	
Multigrado	API Service SE, CC - to MIL-L- 46152 and the European Sequence	
W 90/M	SAE 90 EP Oil to MIL-L-2105 B	
ZC 90	SAE 90 Oil (not EP) with antiwear additives	
ост	Paraffin-base Oil containing EP additives. Viscosity 3-4 E at 50 °C	
Jota 1	Lithium-base Grease N.L.G.I. No. 1	
MR 3	Lithium-base Grease N.L.G.I. No. 3	

ENGINE

Engine Oil

Every 300 miles or weekly - With engine cold, check oil level which must always result between the Min and Max marks on dipstick, and top up if required.

Every 6,000 to 6,500 miles (*) or every six months at most Replace oil with engine well warmed up.



Oil should of course be changed also in relation to the grade used and outdoor temperature (Singlegrade or Multigrade) as shown on page 57.

(*) 3,000 miles for stop-and-go (city) or dusty area service.



Engine Oil Filter

or at every engine oil renewal - Unscrew filter from its support on crankcase, and replace.

Before fitting a new filter on the support, wet its seal with engine oil. Screw on the filter: once the seal contacts the support, tighten 3/4 turn more.

Tappet Clearance

Table 12,500 miles or whenever valve operation becomes noisy Check clearance between tappets and cams. Specified clearance, with cold engine, is .45 mm (.018 in.) for intake and .50 mm (.020 in.) for exhaust valves.

Valve Gear Timing



Always consult a FIAT Dealer whenever valve gear or timing checks become necessary.

Timing Belt

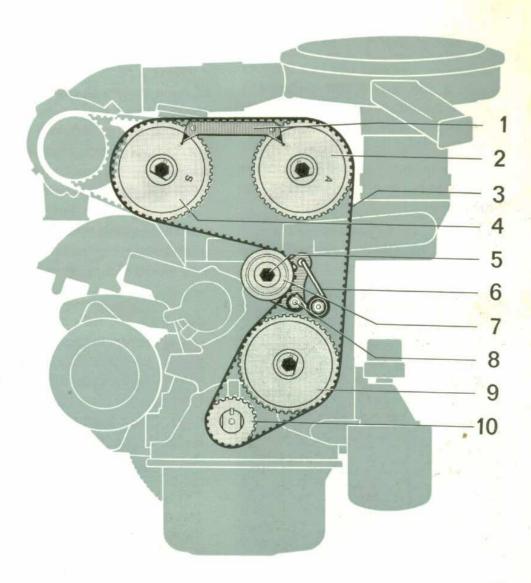
timing belt. Following belt removal or slackening, always renew the belt. Under no circumstances must the belt tension be adjusted following its initial installation.

Note: To renew the belt simply slacken the tensioner roller retaining nut. Do not interfere with the tensioner pivot screw immediately below.

After renewing the belt fully retighten the nut.

Valve Gear Drive

Valve timing pointers - 2. Intake camshaft drive pulley - 3. Timing belt Exhaust camshaft/distributor drive pulley - 5. Roller retaining nut - 6. Tensioner spring - 7. Tensioner roller - 8. Tensioner retaining screw - 9. Oil pump drive pulley - 10. Crankshaft sprocket.



Ignition Distributor

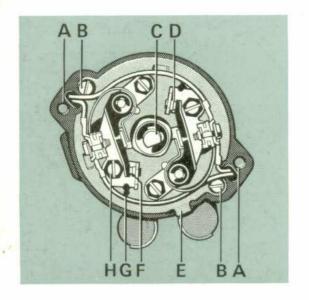
Ignition distributor with an additional pair of points to facilitate cold starting.

Turn out the two cap mounting screws from seats A, take

off rotor from shaft C.

Check breaker contact points (main and additional) and condensers: change if necessary.

Check gap **F** between additional points (.31 to .49 mm - .012-.019 in.).



If necessary adjust by slackening screw **H** then inserting the screwdriver tip in slot **G** and shifting the plate. Relock screw **H**.

Next, check also the dwell angle of main points **D** (55° at 800 to 900 rpm). If the dwell angle is not as specified re-set to required value. To do this adjust main breaker point gap proceeding as described for adjustment of additional points. Refit the cap.

After setting dwell angle, check CO concentration at exhaust pipe and fast idle speed setting (see Carburetor).

contacts and condenser. Check and if necessary adjust dwell angle (see description above)

CO concentration and idle speed settings. Clean the cap and rotor. Check for cracks, carbon deposits or erosions: change parts as required.

(*) Operations recommended when the car is driven in heavy traffic conditions or dusty areas.

tomatic advance mechanism; change parts as required.

Spark Plugs

Clean spark plugs and remove all deposits, also in the recess between central electrode por-

celain liner and body (sand blasting is recommended). Change if necessary. Check if electrode gap is as specified: .5 to .7 mm (.020 to .027 in.). Adjust if necessary.

plugs. These must be of the type specified; if their thermal rating is inappropriate engine malfunction and/or failures may occur.

Spark Control Modulation Device

components for satisfactory operation, switches and relays. Change any inefficient parts.

Ignition System Wiring

Every 12,500 miles



Check all wires for cuts, burns, chafing or perforations. Change parts as required. Terminals

must be well secure and ground connections effective.

Ignition Timing

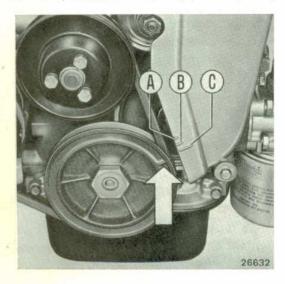


Every 12,500 miles or when camshaft(s) and/or distributor have been removed: Check ignition timing (Basic timing

at 850 rpm = 0° TDC).

Ignition timing:

 $\mathbf{A} = 10^{\circ} (Adv.)$; $\mathbf{B} = 5^{\circ} (Adv.)$; $\mathbf{C} = 0^{\circ} (TDC)$



Carburetor

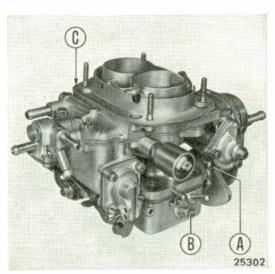
Carburetor adjustments must be performed after checking the ignition system.

Performance of the specified operations requires the necessary know-how. Always consult a FIAT Dealer when carburetor develops troubles.



Check CO concentration which with warm engine at 800 to 900 rpm shall be $.5\% \pm .2\%$.

If necessary, adjust normal idle speed by turning throttle opening adjustment screw A and idle mixture metering screw B until the above conditions



are met. To adjust fast idle speed depress also the button in engine compartment, which energizes the control electrovalve, and turn adjustment screw C, until the fast idle speed is 1550 to 1650 rpm.

While button is kept depressed, accelerate engine several times to check whether fast idle rpm has the correct value. If not, adjust again by screw C. as directed above.

Every 12,500 miles



Check fast idle for proper operation: electrovalve, switches, lines and wires; change com-

ponents as required.



control linkage for excessive play or binding: correct as required.

Check also the choke for proper operation: with engine warmed up the strangler valve in carburetor barrel must be wide open.

Check idle stop solenoid and wire; change parts as required.

Fuel Filter

the unit from fuel lines and change.

Check also lines and connections for satisfactory condition and tightness.

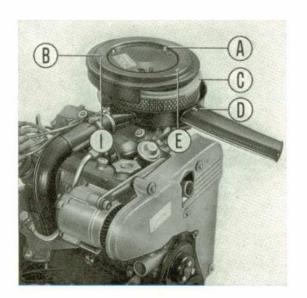
Air Cleaner

Every 12,500 miles (*) - Remove cover B by undoing nuts A and change cartridge C.

(*) When the car is used mainly in heavy traffic conditions or dusty areas change cartridge at every 6,000 to 6,500 miles interval.

Climatic Setting

The cleaner has two separate air intakes, one for unheated air admission in warm climates and one for



heated air in cold climates (when outdoor temperature is closed to 12 °C to 13 °C - 64 °F to 55 °F). Select intake position by removing and refitting the cleaner cover as follows:

Cold Climate: Line up arrow **D** with reference **I**.

Warm Climate: Line up arrow **D** with reference **E**.

EMISSION CONTROL SYSTEMS

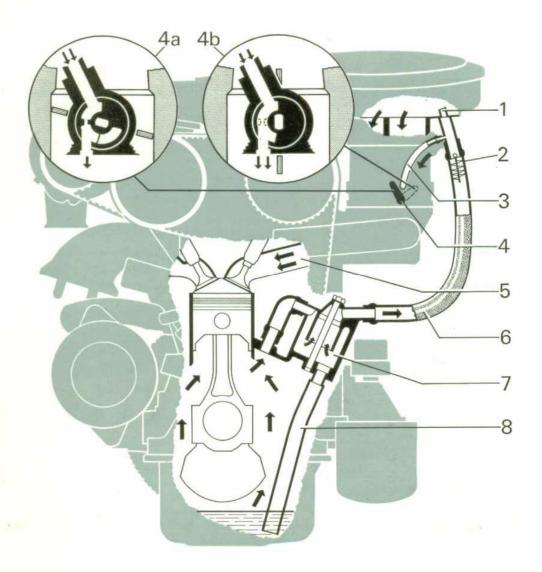
Vehicle emissions are controlled by various devices that make up the crankcase emission control system (CEC) the exhaust emission control system (EEC) and the fuel evaporative emission control system.

The maximum efficiency of the emission control systems is dependent upon the performance of the recommended maintenance.

Any modification of the emission control systems is subject to Federal laws and regulations and may incur penalties.

Crankcase Emission Control System

It is a closed system designed to prevent any emission of blow-by gases into the atmosphere.



Operation principle:

- At closed throttle (see detail 4 a) the blow-by gases are drawn into the intake manifold through the calibrated orifice of control valve incorporated in carburetor.
- At wide open throttle (see detail 4b) part of the blow-by gases is drawn into the intake manifold through the open duct of the control valve. The remainder flows directly to the "clean" side of the air cleaner.

Every 12,500 miles



Clean and wash the recirculation system, including the flame trap, using the proper solution.

Check also all lines and connections for satisfactory condition and intake manifold for proper tightness.

Emission feedback line to air cleaner Flame trap - 3. Air cleaner-to-control valve line - 4. Control valve - 4a. Control valve in engine idling condition - 4b. Control valve in engine beyond idle condition Intake manifold - 6. Sump-to-air cleaner line - 7. Cyclone liquid/vapor separator Oil drain line into sump.

Fuel Evaporative Emission Control System

The release of fuel vapors from tank and carburetor bowl into the atmosphere is prevented by a proper system through which they are conveyed to an activated carbon trap in engine compartment where they are adsorbed. During engine operation a hot air stream regenerates the activated carbon from which the gasoline vapors are extracted and conveyed to the intake manifold.

The system consists essentially of: Sealed filler cap.

Limited-filling tank.

Tank outlet line and vapor-liquid separator.

Carburetor bowl vapor vent line. Three-way valve performing the following tasks:

Slight tank pressurization.

Air inlet into tank to prevent any possible vacuum.

Safety exhaust to prevent undue overpressures in tank.

Every 12,500 miles

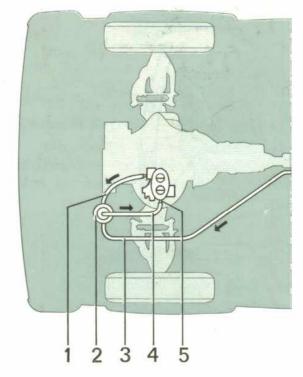


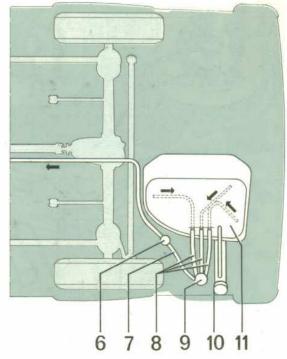
Check valves, lines and fittings for satisfactory condition and change parts as required.

Every 25,000 miles



Change the activated carbon trap.





25446

1. Carburetor bowl vapor vent line - 2. Activated carbon trap - 3. Fuel tank vapor vent line - 4. Line to engine intake manifold - 5. Calibrated orifice - 6. Three-way control valve - 7. Vapor vent line - 8. Tank vapor outlets - 9. Vapor-liquid separator - 10. Sealed filler cap - 11. Fuel tank (limited-filling type).

Exhaust Emission Control System

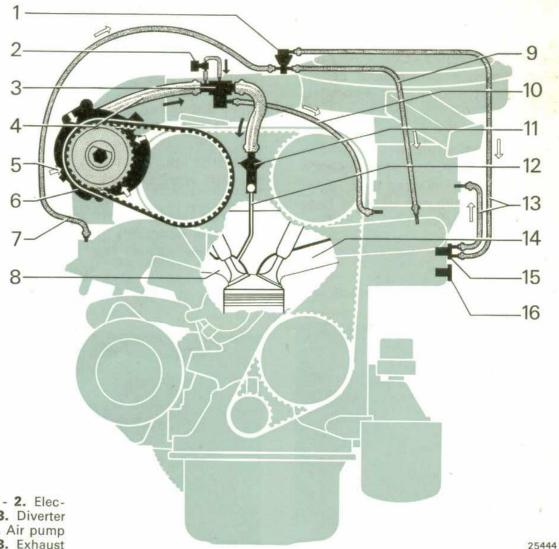
This system is designed to control noxious exhaust emissions and is based on the exhaust gas recirculation and post-combustion principles. The system also includes a specially calibrated carburetor and an ignition distributor with appropriate centrifugal advance curve. It consists essentially:

- In introducing exhaust gases into the intake manifold in order to reduce the nitrogen oxide emissions.
- In conveying air, by a pump, into the exhaust manifold so that the oxygen it contains will react with the hot gases which are burned.

control valves condition; change parts as required. Check also air injection lines condition and connection tightness. Check exhaust line/muffler joints and mounting of manifold for proper efficiency.

Exhaust gas recirculation (EGR) control valve - 2. Electrovalve (normally closed) for diverter valve - 3. Diverter valve - 4. Air distribution line - 5. Air intake - 6. Air pump - 7. Exhaust gas recirculation tapping line - 8. Exhaust manifold - 9. Exhaust gas feedback line - 10. Vacuum

tapping line, intake manifold, for diverter valve - 11. Air injection non-return valve - 12. Air injector - 13. Vacuum tapping line, carburetor, for diverter valve - 14. Intake manifold - 15. EGR valve control thermovalve. - 16. Diverter electrovalve thermostatic switch.



Air Pump Drive Belt

Every 12,500 miles - Check belt conditions and change if necessary. No adjustment is possible.

Every 25,000 miles



On completion of the mileage interval monitored by EGR indicator lighting up (see page

7) proceed as follows:

- Check manually valve spool for proper operation.
- Clean EGR valve line to manifold.
- Check control system components. lines and connectors. Change if necessary.

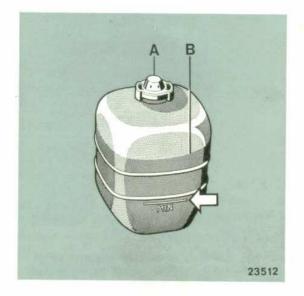
Then, reset warning system through the switch provided and change the fuse. Check EGR signal when starting the engine.

COOLING SYSTEM

Coolant Circuit

Every 300 miles or weekly - Check the water level in system expansion tank, with cold engine: level must always be abt. 7 cm (23/4 in.) above the MIN mark on tank.

When engine is very hot the level might rise noticeably: this could also happen immediately after stopping the engine.



Should the water level drop below the tank MIN mark, top up by removing expansion tank cap and pouring in the water, seeing that its level is as specified. Always use the purest possible water.

Warning: Do not remove radiator or expansion tank caps on a hot engine to avoid possibly scorching your hands; wait until engine has cooled down. Do not top up a hot engine with cold water.

To protect the cooling system and avoid the formation of rust you are advised to mix the water with 5% Fiat LPR 67 liquid or equivalent.

As this product is compatible with the recommended antifreeze there is no need to pre-flush the system.

Should more than 2 consecutive top-ups be required at short intervals, or after limited

mileages (300 miles), the system needs checking. This applies also when water temperature gage pointer stays on the red sector (see page 6).

To drain cooling system, move lever E, page 13 completely down, open the cocks on radiator lower left side (after removing the lower apron) and on cylinder block (alternator side).

Every 12,500 miles



Check system lines, hoses, plugs and seals for satisfactory tightness: change as required.

The cooling system should be cleaned and flushed at least twice a year, particularly if the water used in the system is hard or contains chlorinated compounds. This flushing becomes essential before using an antifreeze.

Antifreeze Mixture

The cooling system is filled with an antifreeze mixture effective down to — 35 °C (32 °F). In case of coolant change or topping-up FIAT recommends the use of a 50-50 mixture of water and **FIAT** Paraflu 11 (or equivalent) which allows the use of hard or chlorinated water and incorporates oxidation, corrosion, foam and scale inhibiting properties and is effective down to — 35 °C (32 °F). See Fill-up Data Table.

This mixture shall subsequently be replaced after **37,500** miles or every **two years**, whichever occurs first, thus

reducing the need for any servicing action on the cooling system.

When this mixture is used, plain water may be added only in emergencies (sudden heavy coolant losses) proceeding as follows:

- Allow engine to cool down.
- Remove the radiator and expansion tank caps.
- Pour in water slowly through radiator filler port until water overflows.
- Refit the radiator cap.
- Pour some more water in expansion tank until the level rises abt. 7 cm (2³/₄ in.) above the MIN mark.
- Refit tank cap.

After filling, run engine for a while so as to help a thorough mixing of the fluid in the system.



As soon as possible repair the fault and refill the system with the recommended coolant.

Alternator and Water Pump Drive Belt - Air Conditioner (Optional) Drive Belt

Every 12,500 miles

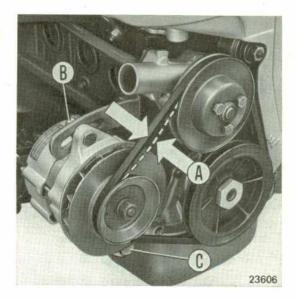


Check drive belt for proper efficiency: change if required. Check also tension which is

correct when under a pressure of about 10 kg (22 lbs.) belt sag **A** is 1 to 1.5 cm ($\frac{1}{3}$ to $\frac{1}{2}$ in.).

For alternator and water pump belt adjustments:

- Slacken nut B locking alternator on stretcher.
- Slacken nut C of alternator articulation.
- Move alternator away from engine and fully tighten the nuts. Do not overstretch the belt to prevent straining the bearings.



POWER TRAIN

Clutch

Every 6,000 to 6500 miles



Check pedal free travel and adjust: correct value is about 25 mm (1 in.).

After repeated adjustments, check clutch facings for excessive wear: replace if required.

Transmission Oil

Every 12,500 miles

Check oil level: if necessary add oil up to the opening of filler plug A.

Every 25,000 miles

Renew oil. Let drip thoroughly from plug **B** before refilling.

Front Propeller Shaft Slip Yoke

Every 25,000 miles

Inject grassofiat Jota 1 through lubricator C.



When an unusual noise is noticed, the entire propeller shaft assembly must be checked.

Special equipment and know-how are needed to do this job properly without affecting propeller shaft balance.

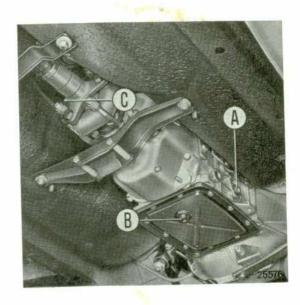
Rear Axle Oil

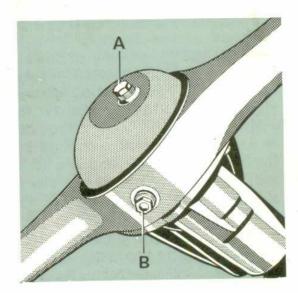
Every 12,500 miles

Check oil level; if necessary, add oil up to the opening of filler plug A.

Every 25,000 miles

Renew oil after thorough draining from plug **B**.





BRAKES

Brake system with front and rear independent circuits.

If pedal free travel has become excessive, if braking unbalance on one wheel is appreciable or if pedal sponginess is felt with consequent reduced brake effectiveness, a complete inspection of the system is needed.

Every 12,500 miles

Check that brake pads are not worn down to less than 2 mm (.08 in.).



Replace if required.

Clearance adjustments are not needed as wear takeup is automatic.

Check lines for leakages and tightness.

Any other servicing of the brake system should be performed by a FIAT Dealer.

Fluid Reservoirs

Two separate reservoirs with individual filler port (see figure), one to each circuit.

A - Front brakes

B - Rear brakes

Every 300 miles or weekly - Check level visually through container (cap removal is not necessary). If required, top up. Use exclusively DOT 3 Motor Vehicle Brake Fluid (conforming to F.M.V.S.S. No. 116).

Avoid using any other type of fluid which would irreparably damage the special rubber parts in the system.

Bleeding

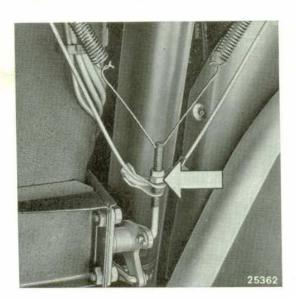


Bleeding is a delicate operation requiring the necessary know-how and should only be needed

when air has entered either one or both brake circuits (line disconnection, fluid drainage, etc.). This is indicated through pedal sponginess and reduced braking effectiveness.

Hand Brake

hand lever stroke is excessively long, adjust the control cable by the appropriate tensioner.



SUSPENSION AND STEERING

Front Suspension Steering Articulation Caps

Every 12,500 miles or whenever underbody inspections are carried out, check the condition of ball joint rubber caps.



If they are damaged, replace. The new caps should be packed with **grassofiat MR 3** prior

to their installation.

At the same time inspect ball joints for excessive play. If evidence of looseness exists, replace the ball joint. Proper joint maintenance is essential for car safety.

Front and Rear Suspensions

Every 12,500 miles



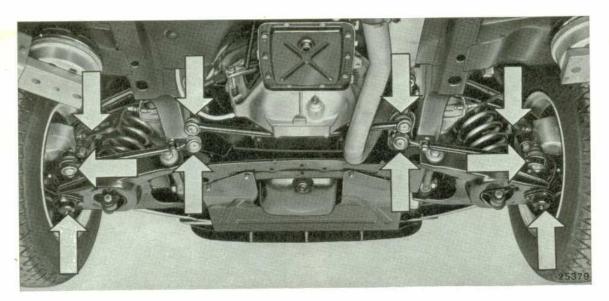
Check rubber mounts for proper efficiency and fasteners for tightness.

Steering Box

Every 12,500 miles



Check and if necessary adjust the steering gear lash and box seal tightness.



Front Wheel Bearings

Every 12,500 miles



Adjust bearings and lubricate with grassofiat MR 3.

WHEELS AND TIRES

Wheel Alignment

sooner if irregular wear of tires is noticed, check toe-in and camber and adjust as required.

See page 47.

Tires

Every 300 miles or weekly

Check pressure with a gage (see page 57) not forgetting the spare wheel.

Make-sure pressure is exactly the same in each pair of tires. In hot climates, do not reduce pressure as this would only increase tire temperature.

Every 6,000 to 6,500 miles

Check each tire for wear.

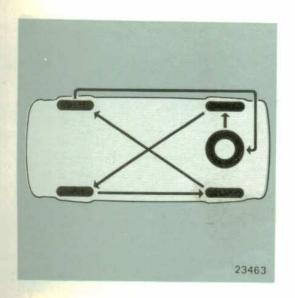
Rubber lugs are provided in tread grooves to serve as visual wear indicators: when tire is worn down to their level it should be replaced.

To equalize tire wear rotate the wheels in criss-cross fashion, as shown (*).



Wheels must be balanced after tire replacements.

(*) When service is severe (high speeds, rough roads, etc.) the tire rotation interval should be halved.



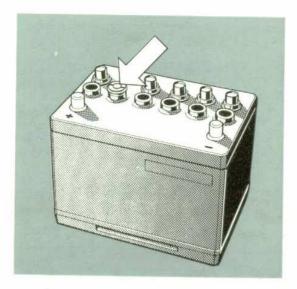
ELECTRICAL SYSTEM

Battery

Located in trunk.

Some cars are provided with a battery having an indicator (Delco Eye see Figure) which glows to warn that electrolyte level in ist cell is low: in this case, check level in all cells and top up with **distilled water** as required.

When liquid additions are needed, add distilled water (battery cold), never electrolyte fluid (which contains sulphuric acid) as only water evaporates from the battery in service, **never** the acid.



Every 3,000 miles or monthly - With battery at rest and cold, check the electrolyte level.

In hot climates, check the level more often.

Every 6,000 to 6,500 miles

Check posts and clamps for tightness and cleanliness.

Except in particular service conditions the battery does not require any periodical recharge.

As your car is fitted with electronic devices never run the engine - even for a very short while - with battery disconnected from the alternator or wrongly connected (positive ground) otherwise serious damage will result.

Alternator

Every 25,000 miles



Clean slip rings carefully with a dry cloth. Replace the complete brush holders.

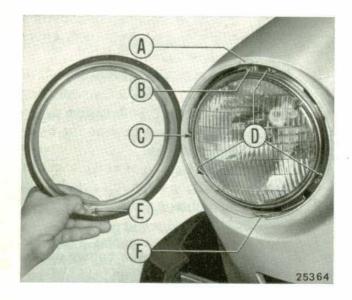
Starter

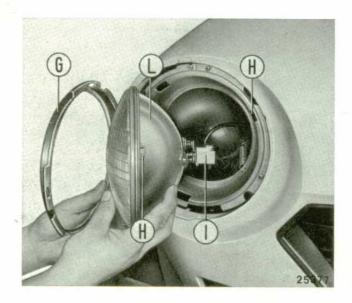
Every 25,000 miles



Clean and check commutator and brushes. Replace brushes, if necessary. Lubricate the drive

unit spiral splines with oliofiat VS 10 W, the shaft journals with engine oil and steel buffer ring with grassofiat MR 3.





Lights

Every 12,500 miles

Check all exterior lights for proper efficiency (for headlight alignment adjustments proceed as specified in applicable SAE standards). Check also interior lights, instrument lights and horns.

Caution: Replace blown bulbs exclusively with bulbs of the same type and wattage. Weaker bulbs will diminish visibility whereas stronger bulbs will draw a greater amount of current and overwork the alternator, resulting in progressive battery discharge. For bulb specifications see page 48.

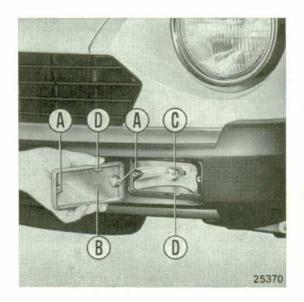
Headlights

- A Frame location dowel
- B Beams vertical adjustment screw
- C Beams horizontal adjustment screw
- D Screws to be slackened to permit counterclockwise rotation and removal of headlight retainment ring
- E Frame mounting screw

- F Hole for screw E
- G Headlight unit retainment ring
- H Dowel and seat, optical unit location
- Terminal socket
- L Headlight unit

Front Parking and Turn Signal Lamps

- A Lens mounting screws
- B Lens
- C Bayonet-coupled bulb, double filament
- Positioning tabs



Rear Turn Signal, Tail, Stop and Back-up Lamps with Reflex Reflector

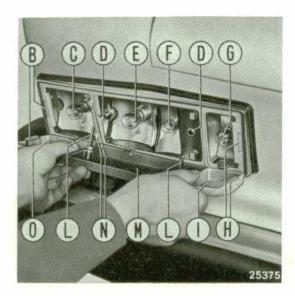
- A Lens fixing knurled nuts-accessible from inside trunk
- B Lug, and relevant seat, for lens O fastening
- C Bayonet-coupled bulb, turn signal lights
- D Holes for screws L
- Bayonet-coupled bulb, stop lights
- Bayonet-coupled bulb, tail lights
- G Bayonet-coupled bulb, back-up lights

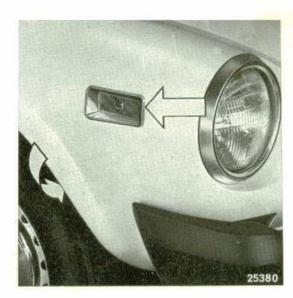
- H Lugs, and relevant seats, for backup light lens fastening
- Back-up light lens
- L Screws for nuts A
- M Lens, tail and stop lights, with reflex reflector
- Nuts, fixing lens O
- O Lens, turn signal lights

the lugs in their seats and then apply the lens.

Note: To assemble the lenses, first insert







Side Marker Lamps

The front bulb holders are accessible from inside fenders and the rear bulb holders from inside the trunk. Both the bulb holders and bulbs are of the bayonet-coupled type.

Courtesy Lamp

- A Spring plates (two) unit mounting
- **B** Switch
- C Bulb, pressure mounted
- D Lens and body unit

Hazard Switch Light

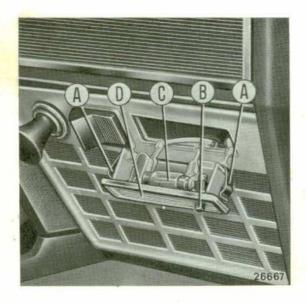
Free spring retainers A to remove switch from panel

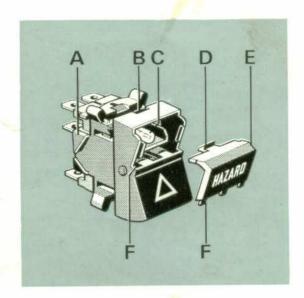
- B Slot for spring retainer D
- C Plug-in type bulb
- D Lens spring retainer
- E Lens (removed)
- F Lugs and slots for lens E

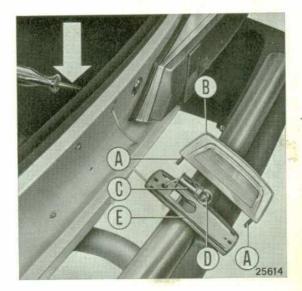
License Plate Lamps

To withdraw bulb holder remove retaining nuts from inside the trunk.

- A Body retaining screws
- B Body and lens
- C Bulb holder
- D Bayonet-coupled bulb
- E Gasket



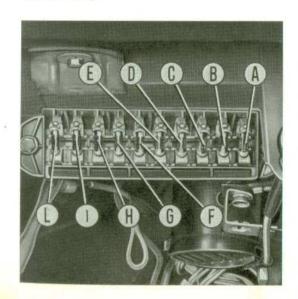




Fuses

Nine '8-Amp fuses and one 25 Amp fuse, contained in a box located under instrument panel to the left of steering post. Cover is of the snap-on type. Two 3 Amp fuse, one 8 Amp fuse and one 16 Amp fuse in separate holders.

Before replacing a blown fuse trace the cause and remedy accordingly. **Unprotected circuits** - Ignition, starting, ignition coil, battery charge indicator and relay (regulation section excluded), starter relay, engine fan relay winding and headlight high beam relay.



Protected Circuits

- A (25 Amps)
 Electropneumatic horns
 Engine fan motor
- B (8 Amps)
 Windshield wiper
 Heater fan motor
 Windshield washer pump
- C (8 Amps) Left headlight high beam High beam indicator
- D (8 Amps) Right headlight high beam
- E (8 Amps) Right headlight low beam
- F (8 Amps) Left headlight low beam
- G (8 Amps)
 Front left parking lamp
 Parking and tail lights indicator
 Rear right tail light
 Front left/rear right side marker lamps
 License plate lamp (left)
 Cigar lighter housing indicator
 Trunk light
 Instrument cluster lights
 Ideogram illumination optical fibers
 light source
 Vehicular hazard warning signal switch
 light
- H (8 Amps)
 Front right parking lamp
 Rear left tail light
 Front right/rear left side marker lamps
 License plate lamp (right)
- (8 Amps)
 Turn signal lights and indicator

Stop lights Oil pressure gage and insufficient pressure indicator Engine water temperature gage Fuel gage, with reserve indicator Engine tachometer Brake system effectiveness and hand brake-ON indicator Back-up lights Fast idle electrovalve Fasten belts indicator and relay for buzzer Delay circuit for fasten seat belts indicator and buzzer Idle stop solenoid Electrovalve for diverter valve Relay winding of electrovalve for diverter valve EGR indicator relay winding EGR warning system (25,000 miles) EGR indicator (25,000 miles)

- L (8 Amps) Voltage regulator Alternator field winding
- In separate holder (3 Amps)
 Remove key and fasten belts buzzer
- In separate holder (3 Amps)
 EGR indicator reset device (25,000 miles)
- In separate holder (16 Amps)
 Cigar lighter
 Quartz cristal clock
 Courtesy light
 Hazard warning and indicator
 Inspection lamp receptacle
- In separate holder (8 Amps) Fuel pump and relay

MISCELLANEA

Road Test

Every 6,000 to 6,500 miles



Run an overall check on road for proper operation of engine, transmission, clutch, steering

gear, brakes, etc. Should abnormal noise and/or vibration be noticed make sure all relevant fasteners to body are well secure.

Body

Every 6,000 to 6,500 miles

Lubricate as required the following items, using the recommended products:

Door lock cylinders with graphite powder.

Door locks through the specially provided hole (near lock) blanked by a plastic plug, door hinges and limiter, and seat reclinable backrest control with **engine oil.**

Window venti-pane joints and hinges with glycerine.

Trunk lid, engine hood catches, and fuel filler lid hinges with petroleum jelly.

Seat guide rails with grassofiat Jota 1.

All these operations and intervals may vary as they are dependent upon car service severity (extremely cold climates, bumpy and dusty roads, prolonged exposure to atmospheric agents, etc.).

Every 12,500 miles

Seat Belts: Check webbings for satisfactory condition, smooth running in and out of retractors and efficiency of anchor points. See page 11 for further notes.

Defroster and Heater: Check fan for proper operation. Check controls,

air outlets and ideograms for efficiency (see page 13).

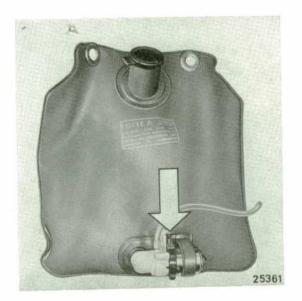
Windshield Washer

Every 3,000 miles

Check level in bottle on engine compartment right side.

In case of incorrect jet aiming: Clean the jet squirt hole accurately (by a needle). Check also electric pump terminals.

To re-aim the jets: Turn with a screwdriver the complete body and then the lateral pin so as to direct the water squirt to top of wiper sweep arc.



Windshield Wiper

Every 12,500 miles - Check for proper efficiency.

To remove a wiper blade, tilt out the arm, free the blade mount **A** from its lock dowel **B** on arm and extract the blade upwards.

Electropneumatic Horns

Every 3,000 miles

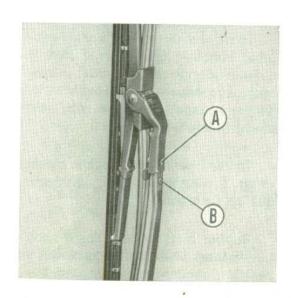
Pour a few drops of **oliofiat OCT** in the oiler on compressor after lifting its cap.

Tool Kit

The tool box contains:

Wrench, socket, spark plugs.
Wrench, socket, double end, 8 x 10 mm.
Wrench, double end, 8 x 10 mm.
Wrench, double end, 13 x 17 mm.
Screwdriver, double tipped.
Punch, straight.
Wrench, wheel bolts.

A jack with control lever is also supplied with the tool kit.







BODY CARE

Exterior

Wash the bodywork frequently with cold or lukewarm water. Sponge down using a good quality car shampoo - **Fiat LDC** or equivalent. Never use household soap or detergent, otherwise the paintwork may be adversely affected.

If a hose is used avoid directing it at full force against the body. Rinse thoroughly and dry off with a clean chamois leather.

Do not wash your car in the sunshine, especially in hot climates or when the hood is still hot.

When cleaning the windshield raise the wipers clear, and do not force them sideways.

An occasional light polish with an approved silicone car polish will give

the paintwork extra protection. Also remove any stain promptly.

Grease and tar should be removed using a clean and soft kerosene- or gasoline-moistened cloth. Subsequently, apply a fresh coat of polish.

To clean the glazing use a good quality spray type window polish - **Fiat DP1** or equivalent-and wipe dry with water-absorbing paper.

Chromium-plate and any other bright decorative metal parts are best cleaned with either cold or tepid water, or any reputable make of car chrome cleaner.

To preserve the rubber seals of doors, hood and trunk use silicone grease. This will also prevent squeaking, particularly during the cold season.

Interior

Dust the interior, preferably using a vacuum cleaner.

To remove grease spots from cloth lining use a good brand of stain remover (petroleum ether or light gasoline) apply talc liberally, allow to soak and brush off.

To remove dirt from the seats or any other imitation leather-lined part use a damp sponge and a neutral or bland soap. Subsequently, rinse with a clean damp sponge and dry off using chamois leather.

Textile fiber mats should be cleaned using a moistened cloth with good quality detergent.

Rubber mats or floor lining should be washed with a damp cloth and neutral detergent or water and soap.

PROLONGED INACTIVITY

If the car is to remain inactive over long periods it is advisable to carry out the following operations:

- Store the car in a covered, dry and ventilated place.
- Ensure that the handbrake is released.
- Do not empty the cooling system; in cold climates, if necessary, replace the water with a reliable high grade antifreeze mixture.
- Check the tire inflation pressures periodically.
- Re-charge the battery about every six weeks.

- Switch off any electrical loads and remove the ignition key.
- Protect the finish with a coat of good silicone wax.
- Coat all bright metal parts with a reputable make of car chrome preservant.
- Remove the wiper blades to prevent the rubber material from deteriorating.
- Protect the car using a non-plastics car cover.

If the car is to be left in the open spray the underside and the entire engine compartment with an approved engine preservant, **Fiat PROTV** or equivalent. Do not spray a hot engine.

Before starting a sprayed engine open the hood and wait for at least ten minutes.

Prior to using the car following a prolonged period of inactivity perform the following operations:

- Remove the chrome preservant from all bright metal parts.
- Wash the car.
- Recharge the battery.
- Renew the engine oil.
- Refit the wiper blades.
- Check the tire inflation pressures (including that of the spare wheel).

SPECIFICATIONS

ENGINE

Type	132 A1.040.5
Number of cylinders, in line	4
Bore and stroke (3	84 x 79.2 mm .31 x 3.12 in.)
Total piston displacement . (1	1756 cc 07.13 cu. in.)
Compression ratio	8 to 1
Maximum power (SAE net)	86 HP

Valve Gear

O. H. V. Twin O. H. camshafts driven by toothed timing belt with tensioner.

toothed	CHILL	illy	Di	215	VV	1111	tensioner.
I-A-I	Op	ens	s:	B.7	Γ. D	.C.	50
Intake	Cle	ose	s:	A.I	3.0	D.C.	53°
Exhaust	Op	ens	s :	B.E	3.0	O.C.	530
Exnaust	Clo	ose	s:	Α.	Γ. Ε).C.	50
Tappet cl ment, fo						t -	.80 mm (.031 in.)
Final tapp ment, co					1	clea	rance adjust-
Intake					(*)		.45 mm
							(.018 in.)
Exhaust			٠			*	.50 mm
							(.020 in.)

Lubrication System

Forced circulation by gear pump.

Pressure limiter valve on delivery circuit.

Normal lubrication pressure at rated engine rpm and oil temperature

4.5 to 6 kg/cm² (64 to 85.3 psi)

Full-flow cartridge oil filter.

Fuel System

Vertical dual-barrel downdraft WEBER 32 ADFA 2 carburetor with differential opening of secondary throttle, automatic butterfly valve choke and accelerating pump. Idle stop device (comes into operation when engine is switched off).

A vacuum bellows controls the partial opening of the 1st barrel throttle from the idling position (fast idle operation setting adjustment).

Fuel filter and pressure regulator in the feed line from pump to carburetor.

Paper cartridge air cleaner with silencer.

Carburetor feed by electric pump. A switch actuated by oil pressure prevents pump operation when engine is stopped with ignition key in lock switch.

Emission Control Systems

Engine feed system provided with fuel recirculation (closed circuit) and evaporative emission control system.

Crankcase emission control (CEC) system (closed circuit) by recirculation of blow-by gases and oil vapors.

Exhaust emission control system (reduces air pollution from the exhaust by gas recirculation and post-combustion process) separate from the CEC system.

Cooling System

Radiator and translucent expansion tank.

Water circulated by centrifugal pump.

Thermostat with controlled by-pass on cylinder head water outlet duct.

Four-blade fan driven by electric motor controlled by thermostatic switch on radiator: cut-in temperature about 90° C.

Ignition System

Firing order 1-3-4-2	
Basic ignition timing at	
850 rpm 0° (TDC)	
Automatic advance 36°	
Dwell angle, for distributor	
contacts gap check (at 850 \pm 50 rpm) 55 $^{\circ}$	
Breaker additional points gap	
.3149 mm (.012019 in.)	
CHAMPION N 7 Y or	
Spark plugs AC DELCO 41 - 2 XLS or	
MARELLI CW 78LP	
Thread size 14 x 1.25 mm	
Gap .57 mm (.020027 in.)	

POWER TRAIN

Clutch

Single plate, dry, with disk engagement spring, mechanically controlled.

Pedal free travel . . abt. 25 mm (1 in.)

Transmission

Five forward speeds (all synchronized) and reverse.

- Gear ratios to 1:

1st	2nd	3rd	4th	5th	Reverse
3.667	2.1	1.361	1	0.881	3.526

Propeller Shaft

Tubular propeller shaft in two sections, with rubber mounted central pillow block. Front section connected to transmission by flexible joint and slip yoke. The second section is connected to the first and to rear axle by universal joints.

Rear Axle

BRAKES

Service

Hydraulic disk brakes, of the floating caliper type, on all wheels, with one cylinder to each wheel, pedal operated through vacuum servo and dual master cylinder. Independent front and rear circuits.

Proportioning valve in rear circuit for car load and deceleration rate variation compensations.

Device for automatic take-up of friction pad clearance as wear progresses.

Parking

Mechanical, operating on rear wheel brake pads.

SUSPENSIONS

Front

Independent wheels, by swinging arms, with coil springs and hydraulic, double-acting telescopic shock absorbers. Stabilizer bar. Sealed-for-life articulations.

Rear

By rigid axle anchored to body through 5 reaction rods - 4 longitudinal and 1 trans-

versal. Coil springs, hydraulic doubleacting telescopic shock absorbers. Asymmetric wheel motions stabilized by elastic mounts of reaction rods.

STEERING AND WHEELS

Steering

Standard L.H.D. Control: worm screw and roller, ratio 1/16.4. Steering shaft in three sections, incorporating two universal joints; breakaway mount.
Independent and symmetric track rods to each wheel, with central link rod. Sealed-for-life articulations.
Hydraulic, double-acting damper on relay support.
Turning circle 10.4 m (34 ft 2 in.)
Front wheel camber, measur-
ed at rim 0 to 6 mm (.00 to .24 in.) or 30' ± 30'
Front wheel toe-in, measured at rim
The above data apply to cars laden to the equivalent of 2 adults (300 lbs) plus 130 lbs of luggage.

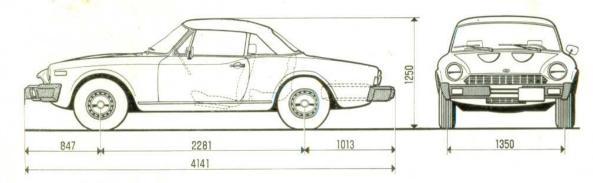
Wheels and Tires

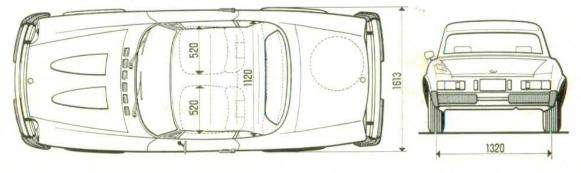
Disk w								
rim	size						*	5 J x 13"
Option	nal:	light	-8	lloy	W	hee	els.	
Radial	-ply	tire	s,	size				165 SR-13"
			-				or	165 HR-13"

ELECTRICAL SYSTEM	Bulbs		
Voltage	Location	SAE Standard	FIAT Std. Part No.
Alternator	Headlights (high and low beams) Front lamps	« Sealed Beam »	headlight unit 7031
Continuous current rating . 44 Amps Incorporated current rectifiers. Automatic voltage regulator.	turn signal	-	Norm. 1/41460/90
Cut-in speed at starting of engine (with users off).	turn signal	No. 1073 (32 cp)	Norm. 1/41469/90
Battery	Front lamps parking		
With grounded negative; capacity at 20-hr discharge rate 60 Amp. hr. Cold (—18°C) high-discharge	Rear lamps	No. 67 (4 cp)	Norm. 1/41459/90
test current 255 Amp.	Courtesy lamp	_	12V-5W
Starter	Ideogram illumination optical fiber		Norm. 1/08630/90
Power rating 1.3 kW	light source	_	12V-5W
Direct engagement by solenoid and free- wheeling pinion.	Turn signal indicator		Norm. 1/41441/90
Heater Fan Motor	Fuel reserve indicator		
Power rating 20 W	Parking and tail lights indicator	-	
Engine Radiator Fan Motor	Fasten belts indicator	No. 158 (2 cp)	Norm. 1/41458/90 or Norm. 1/41439/90
Power rating 110 W	dicator		01 140111. 1/41435/30
Windshield Wiper Motor	brake ON indicator		
Power rating 28 W	Side marker lights		
Fuses	Vehicular hazard warning signal switch light	_	12V-1.2W Norm. 1/41437/90
Ten 8-Amp. fuses, one 25-Amp. one 16-Amp. fuses and two 3-Amp. fuse.	Trunk lamp	_	12V-4W Norm. 1/41423/90

MAIN DIMENSIONS

mm	520	847	1013	1120	1250	1320	1350	1613	2281	4141
in.	20.5	33.4	39.9	44	49.2	52	53.2	63.5	89.7	163





Overall height is measured with unladen car. Trunk volume: 180 cu. dm (6.4 cu. ft).

PERFORMANCE

Speeds

5th gear, over 105

Gradeability

Maxin	num	gr	ad	es	C	lim	ba	ble	,	fu	lly	laden
1st	gear			. 1								50%
2nd	gear									24		25%
3rd	gear											15%
4th	gear									- 24		10%
												8%

WEIGHTS

Fiat 124 Sport Spider

Catalytic Converter Version

The previous section should be consulted for all items not covered in this section

IDENTIFICATION DATA

Engine Type 132 A1.031.5

■ E.P.A. and California Regulations Conformity Tag

Engine family 132 C.C. air pollution control specifications for correct engine tuneups and adjustments.

OPERATION

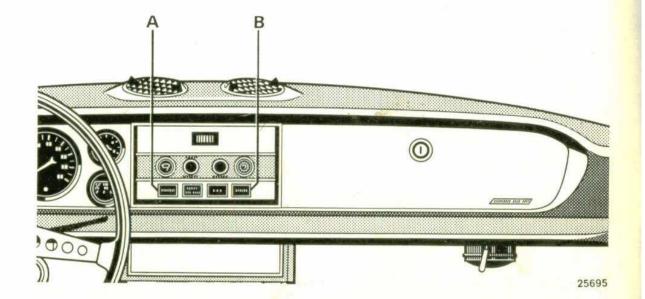
A) « CATALYST » Indicator (Red -Steady)

Lights up on completion of 25,000 Miles when the catalytic converter must be replaced. To check indicator efficiency turn ignition key to MAR: indicator shall light up and must go out when engine is running.

(Red) (Red)

On starting:

Lights up turning the ignition key to MAR and must go out after a little while. Should the indicator fail to operate as above, it denotes system malfunction (burned lamp, defective thermocouple connection).



Running:

Always OFF. An ON condition (intermittent) warns of a fault in the system. Rev down the engine before the light, increasing in frequency, becomes steady.

Turn immediately to a FIAT Dealer for assistance if the indicator does not go out or if the above condition occurs frequently.

If repeated key- or push-starting attempts cause the "SLOW DOWN" indicator to come on. stop immediately and allow the engine to cool down. This to avoid damaging the catalytic converter.

WARNING

Fuel Refilling

Strictly adhere to the label on glove compartment lid and on filler cap.

UNLEADED FUEL ONL

Leaded fuel will damage the catalytic converter beyond repair. Always refill at Service Stations which carry unleaded fuel (small pump nozzle).

MAINTENANCE

Catalytic Converter cars need special maintenance service on Exhaust Emission Control system.

See specifications on E.P.A. and California Regulations Conformity Tag (page 50).

Performance of the specified operations requires the necessary know-how and special equipment. Always consult a FIAT Dealer at given mileages.

Every 12,500 Miles

Carburetor: (*)

Check idle speeds and CO concentration and adjust if necessary

Idle stop:

Check solenoid, inhibitor switch and tacho switch and change if necessary

Every 25,000 Miles

Catalytic Converter:

Change

25,000 Miles Recorder: Reset and check components; change if necessary

Catalytic Converter Tem-

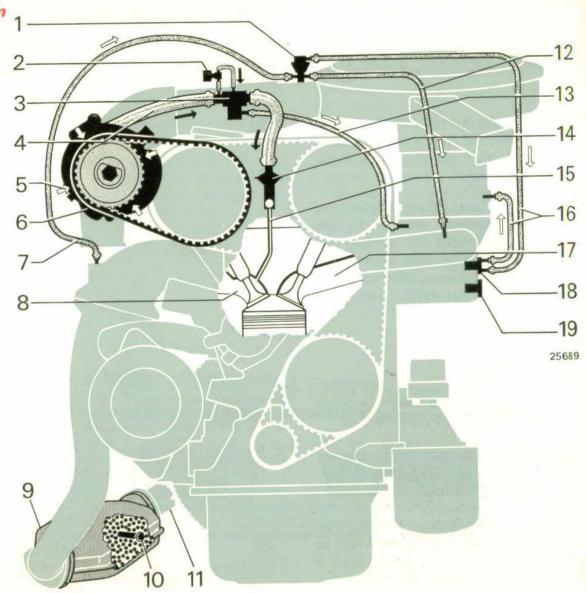
perature Control System: Check and change if necessary

(*) If the car is used mainly in heavy traffic conditions or dusty areas, these operations should be performed twice as frequently.

Exhaust Emission Control System

A catalytic converter has been added to further oxidize the hot gases during post-combustion process.

1. Exhaust gas recirculation (EGR) control valve - 2. Electrovalve, normally closed, for diverter valve - 3. Diverter valve - 4. Air distribution line - 5. Air intake - 6. Air pump - 7. Exhaust gas recirculation tapping line - 8. Exhaust manifold - 9. Catalytic converter - 10. Catalytic converter thermocouple - 11. Exhaust pipe - 12. Exhaust gas feedback line - 13. Vacuum tapping line, intake manifold, for diverter valve - 14. Air injection non-return valve - 15. Air injector - 16. Vacuum tapping line, carburetor, EGR valve - 17. Intake manifold - 18. EGR thermovalve - 19. Electrovalve 2 thermostatic switch.



Carburetor

Every 12,500 Miles (*)

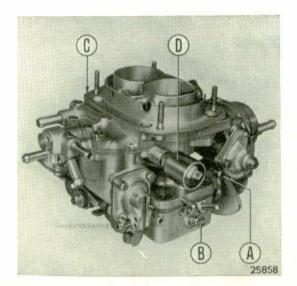


With engine warm, check ignition timing and dwell angle (point-type distributor only)

and adjust if necessary.

Check idle speed and CO concentration:

- Pinch off the air injection hose to the exhaust manifold, between diverter and non-return valve, using lock-on pliers.



- The readings should be according to E.P.A. and California Regulations Conformity Tag (3% ± .5% CO at 800 to 850 RPM). If not, adjust throttle opening screw A and idle mixture metering screw B until the correct conditions are obtained.
- After setting, remove the pliers. Idle speed will increase by 50 RPM. Do not further adjust the setting so obtained.

Check fast idle speed:

- Operate fast idle switch (in the engine compartment) which energizes throttle opening electrovalve and adjust fast idle screw C to obtain 1,550 to 1,650 RPM (See E.P.A. and California Regulations Conformity Tag).

Idle Stop

Every 12,500 Miles



Check solenoid D, inhibitor switch and tacho switch for proper operation.

Change parts if necessary.

(*) If the car is used mainly in heavy traffic conditions or dusty areas, these operations should be performed twice as frequently.

Check all wires for cuts, burns, chafing or perforations.

Change parts as required.

Terminals must be well secure and ground connections effective.

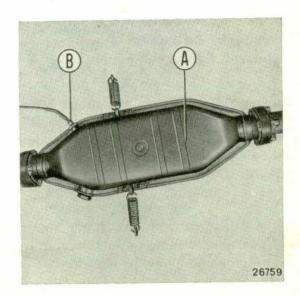
Catalytic Converter

Every 25,000 Miles



« CATALYST » Indicator ON. Disconnect the catalytic converter A from exhaust pipes

and replace it.



25,000 Miles Recorder - EGR and Catalytic Converter

After EGR system servicing and Catalytic Converter replacement, reset the recorder by rotating the switch provided and change the fuse.

Check relevant indicators for proper operation.

Any defective part must be replaced.

Catalytic Converter Temperature Control System

Turn ignition switch to MAR and check SLOW DOWN indicator and relevant thermocouple B for proper operation. The SLOW DOWN light must come on and go out after 2 to 5 seconds.

Any deviation from the above mode of operation denotes a malfunction in the system. Check terminal connections and change parts as required.

SPECIFICATIONS

ENGINE

Max. power - SAE net 83 HP

Fuel System

Carburetor: WEBER 32 ADFA 5, idle stop device coming into operation when ignition is switched off and in case of abrupt decelerations (accelerator pedal released beyond 2,600 to 2,650 RPM).

ELECTRICAL SYSTEM

« CATALYST » indicator controlled by EGR indicator relay
Idle stop solenoid controlled by tacho switch and inhibitor switch.

Fuses

Fuse I also protects:

- Catalytic converter control system
- Tacho switch
- « CATALYST » indicator
- « SLOW DOWN » indicator
- Idle stop solenoid.

Bulbs

«SLOW DOWN» indicator: 12V,3W - No. 158 (2 cp) - 1/41439/90

« CATALYST » indicator: 12V,3W - No. 158 (2 cp) - 1/41439/90

FILL-UP DATA

FILL-UP DATA

	lt ·	kg	U.S. units	
Fuel tank	43	-	11 ² / ₅ Gals	Leaded or unleaded gasolines with octane rating of at least 91 (Research Method) CC cars; gasoline unleaded
Radiator, cylinder jackets and heating system	8	_	81/2 Qts	Antifreeze mixture (1)
Engine sump and filter (2) .	3.75	3.5	4 Qts	Low-ash content detergent oils-AP Service SE, CC - to MIL-L-46152 and the European Sequence. See Table below
Transmission	1.65	1.50	13/4 Qts	SAE 90 oil (not EP) containing special antiwear additives
Rear axle	1.30	1.20	12/5 Qts] a.s. a.s
Steering box	.215	.195	2/5 Pt	SAE 90 EP oil
Hydraulic brake { Front Rear	.175 .205	.175 .205	1/ ₃ Pt 2/ ₅ Pt	DOT 3 Motor Vehicle Brake Fluid to F.M.V.S.S. No. 116
		Tempera	ture	Solvent in bottle Pure water plus
Windshield washer	above 0° C (32° F) down to —10° C (14° F) below —10° C (14° F)			3% high quality 50% windshield 100% washer solvent

Out	door temperature	oliofiat Single-grade	oliofiat Muniqueda
Minimun	n below —15°C (5°F)	VS+ 10 W (SAE 10 W)	
Minimun (5° F to	n between —15° and 0° C 32° F)	VS+ 20 W (SAE 20 W)	10 W - 30
Minimum	Max. up to 35°C (95°F)	VS+ 30 (SAE 30)	20.10. 40
above 0°C (32° F)	Max. over 35° C (95° F)	VS+ 40 (SAE 40)	20 W - 40

Do not mix oils of different brands or grades.

- (1) FIAT recommends the use of a 50-50 mixture of water and Fiat Paraflu 11 fluid (See Page 33).
- (²) Total capacity of sump, filter and lines is 4.35 kg $(5^{1}/_{5} \text{ Ots})$. The amount indicated is the requirement for periodical oil changes.

Tire Pressure

Front and rear 26 psi

Note: To obtain the required safety in car performance strictly adhere to the pressure rating given. Tire inflation pressure should be checked with cold tires.

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Gonoras	_	
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The descriptions and illustrations appearing in this Manual are not binding. FIAT, therefore, reserves the right-while retaining the basic features of the Models herein described and illustrated—to make at any time, and without necessarily bringing this Manual up to-date, any alteration to units, parts or accessories deemed expedient for any technical, manufacturing or commercial reason. FIAT G. A. - Direzione Commerciale - Assistenza Tecnica - 10134 TORINO (Italia) - C.so E. Giambone, 33 2nd Edition - Print No. 603.05.226 - X - 1975 - 5000 - Printed in Italy - Tip. Torinese S.p.A. - Torino