SPIDER

pininfarina

1985

Owner's manual

This manual has been prepared to help you become acquainted with your Spider Pininfarina

This owner's manual contains necessary and useful information about your new PININFARINA. Please read the operating instructions contained in this manual in order to obtain the best performance from your vehicle. Much of the information is necessary for the safe operation of the vehicle. Therefore, it is to your advantage to fully understand and acquaint yourself with this information. The more you know and use the instructions in this manual, the better you will enjoy driving your vehicle.

Also contained in this manual are the maintenance operations necessary to properly mantain your vehicle. By having the scheduled maintenance performed when required, you will increase the life of your vehicle and its value. Ignoring the scheduled maintenance could result in unnecessary repairs. When service is needed look for an Authorized Dealer. He has trained personnel and proper equipment for performing the service.
This manual refers to vehicles built for different countries, therefore you will find some features that may not correspond to your own car's standard equipment.

The SPIDER PININFARINA is well known for its high degree of serviceability and reasonable operating cost. If you follow all the instruction for operation and maintenance contained in this manual, you should have many miles of safe and pleasurable driving in your SPIDER PININFARINA.

BEFORE DRIVING YOUR SPIDER PININFARINA

Spider Pininfarina

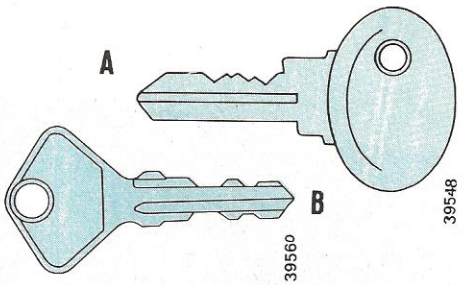
KEYS

Each vehicle is provided with two sets of keys:

A. For ignition switch

B. For doors, trunk and glove box.

The number of each key is stamped on the key; if replacements are needed, give this key number to your Dealer. Please record the key number in a sicure place.



DOORS

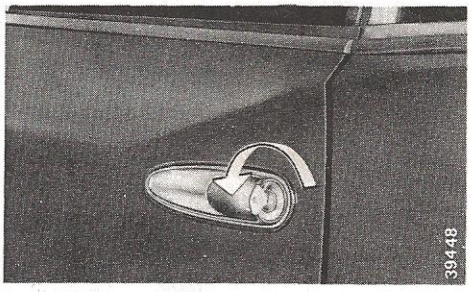
To Open from Outside

Unlock, and pull the handle

To Open from Inside

Pull up handle A

The courtesy lamp lights up upon opening either door.



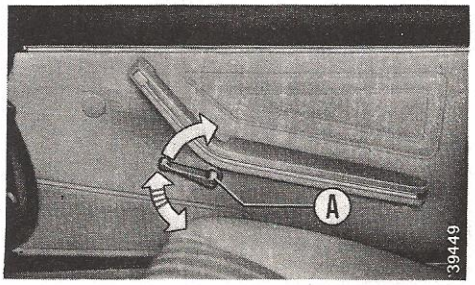
To Lock from Outside

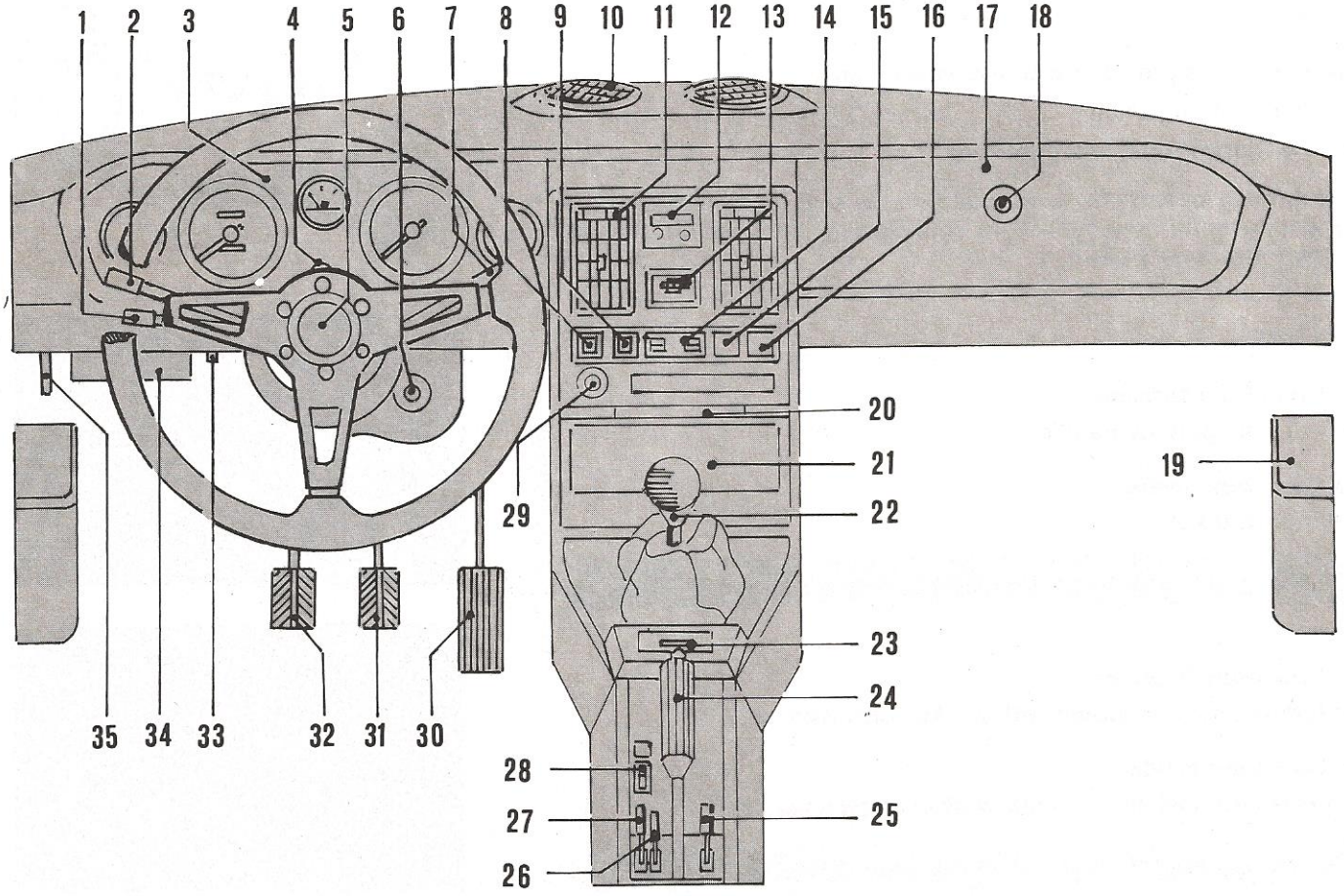
Both doors may be locked with the key provided

To Lock from Inside

Depress door lock latch handle A after closing the door

Do not depress the door lock button with the doors open.





CONTROLS AND INSTRUMENTS

1 Turn signal indicator lever
2 High/low beams dimmer lever
3 Instrument cluster
4 Parking light switch
5 Horn button
6 Steering lock ignition switch
7 Wiper/washer control lever
8 EX. GAS SENSOR indicator
9 FASTEN BELTS indicator
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15 Remote control trunk release switch
16 Hazard warning switch
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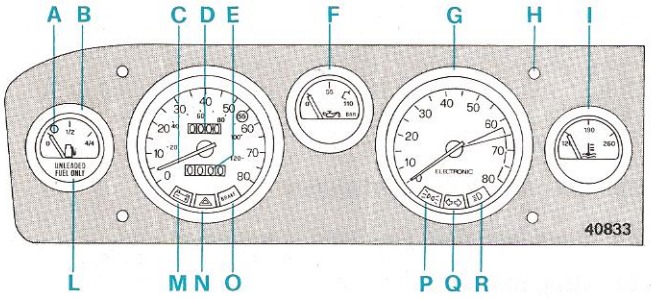
19 Storage bins
20 Courtesy light and switch
21 Blanking plate for radio installation
22 Gear shift lever
23 Ashtray
24 Handbrake lever
25 Air distribution control
26 Air temperature control
27 Air volume control
28 Heater fan control
29 Cigarette lighter
30 Accelerator pedal
31 Brake pedal
32 Clutch pedal
33 Trip recorder zeroing knob
34 Fuse box
35 Hood release lever



INSTRUMENT CLUSTER

A. **Fuel Reserve Indicator** (Yellow) - Warns that the fuel supply available in the tank is between 5 and 7.5 liters (1 1/3 Gals to 2 Gals).

B. **Fuel Gauge**

C. **Speedometer** - Marked both in MPH and KPH (kilometers per hour)

D. **Odometer**

E. **Trip Recorder** - To reset turn the knob, located underdash (L.H. side of steering column), clockwise but never with vehicle moving.

F. **Oil Pressure Gauge and Low Oil Pressure Indicator** (Red) - Normal oil pressure at 100° C is 50 to 70 lbs per sq. inch (3.5 to 5 kg/cm^2).

G. **Tachometer** - Yellow sector indicates maximum engine output. Shift to next higher gear before entering this sector. High engine speeds in this sector could be dangerous to the engine and consumes more fuel. The red sector indicates engine over-reving.

H. **Cluster Panel Mounting Knobs** (Four)

I. **Coolant Temperature Gauge** - If the pointer enters the red sector, 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 in the red sector, contact the nearest Dealer for a cooling system check.

L. **Type of Gasoline to Be Used**

M. **Battery Charge Indicator** (Red) - With ignition key at MAR indicator will light to inform driver that the bulb is operational. If indicator comes on with the engine running, have the battery recharging system checked.

N. **Hazard Warning Indicator** (Red)

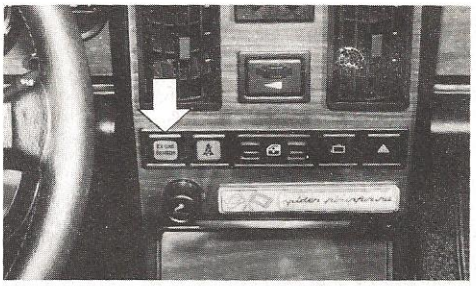
O. **Low Brake Fluid Level/Handbrake ON Indicator** (Red) - With ignition key at MAR the indicator will light up to inform the driver that the bulb is operational. In case the indicator remains ON it means either that the handbrake lever is pulled upwards (brakes applied) or that the brake fluid level is too low.

P. **Parking Lights Indicator** (Green)

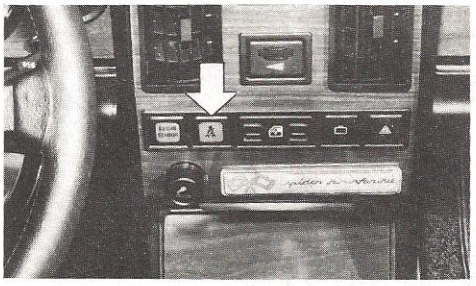
Q. **Turn Signal Indicator** (Flashes Green)

R. **High Beam Indicator** (Blue)

"EX. GAS SENSOR" Indicator (Red) - Lights up every 30 000 miles to inform driver of need to replace exhaust gas sensor (Lambda probe).



Fasten Belts Indicator (Red) **and Chime** - Both will operate for a few seconds when a starting attempt is made if driver's seat belt is unfastened.

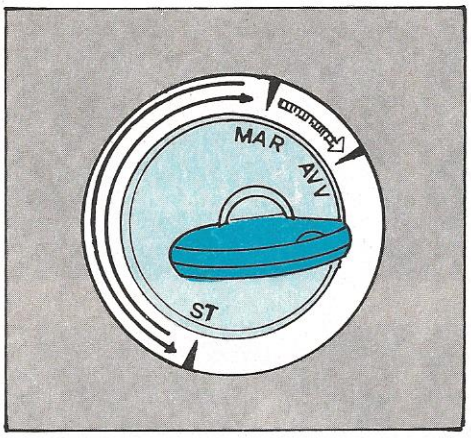


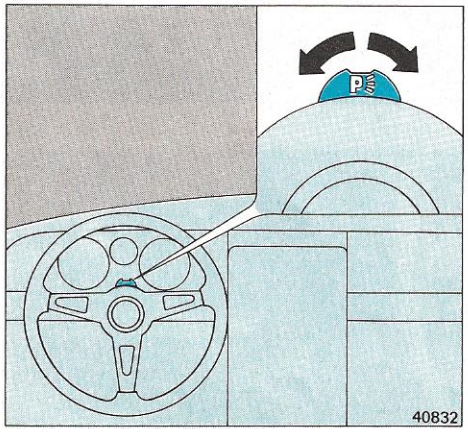
All red indicator lights should be out while driving.

Hazard Warning Switch

Can be turned on at all times (independently of ignition switch) by depressing the lens of the indicator. Flashes the front and rear turn signals simultaneously to warn of a hazard.

Turn signal and hazard warning indicators on instrument cluster will also flash simultaneously (see page 10).





Steering Lock Ignition Switch
(See page 33 for starting procedure instructions)

MAR (Run) = Engine ignition ON and accessories activated
AVV (Start) = Engine starting
ST (Stop) = Steering post anti-theft lock in; key removable

Even with key removed (position ST) the following circuits are still energized: courtesy light, horns, cigarette lighter, engine cooling fan, hazard warning and remove key chime.

Remove Key Chime - Operates when either door is open and the key is left in the ignition switch.

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

Parking Light Switch

When turned to either side, the switch circuit is open. In the center position, even with ignition key at ST, parking/warning, license plate, switch lights, instrument panel, and cigarette lighter light circuits are always completed.

The switch can be brought to either side position manually or by rocking the steering wheel.

Exterior Lighting Switch Lever

It is activated only with ignition key at MAR.

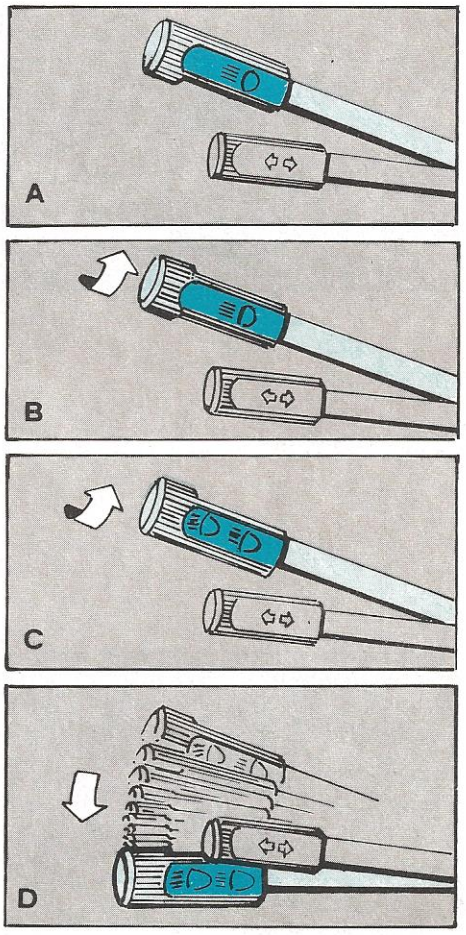
A) - *Up* - (Parking light ideogram in full view): all lights OFF.
In this condition, the lever cannot be moved downwards.

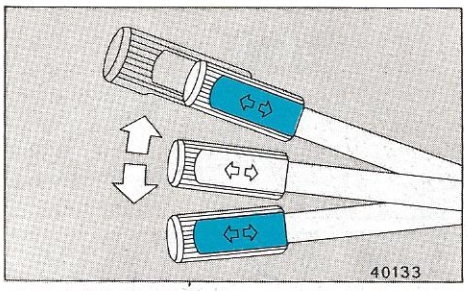
B) - *Up* - Rotate the lever 90 degrees in arrow direction. (Parking light ideogram in full view): parking lights and warning, license plate lights, switch lights, instrument cluster lights, cigarette lighter light, and trunk light are activated.
In this position, the lever cannot be moved downwards.

C) - *Up* - Rotate the lever another 90 degrees in arrow direction. (High/low beam ideogram in full view): same functions as in B plus headlight low beam.

D) - *Down* - (High/low beam ideogram in full view): same functions as in C plus headlight high beam and warning light (blue).
In this position, the lever cannot be turned.

To flash the high beam, pull the lever when in position A, B and C towards the steering wheel and release.





Turn Signal Indicators
(With ignition key at MAR)

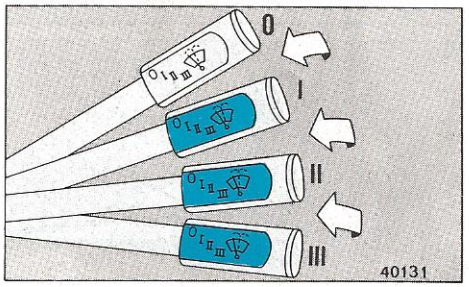
Up = Right turn
Down = Left turn

Turn signal lever will return to center (off) automatically when the steering wheel is centered after turning or can be turned off by hand. A green indicator light flashes when the turn signals are on.

Windshield Wiper/Washer Lever
(with ignition key at MAR)

Wiper

0 = Off
I = On/Off (intermittent operation)
II = Continuous operation at low speed
III = Continuous operation at high speed



Washer

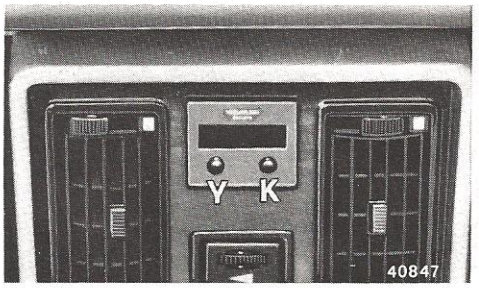
Lift the lever to operate.

When switched off, the wipers will automatically park at the base of the windshield.

Digital Clock

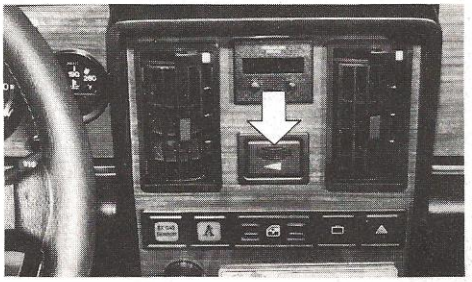
Legible with ignition key at MAR.

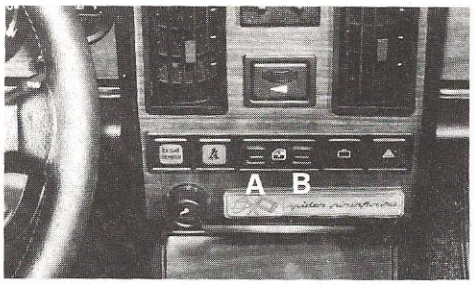
— Push button K once and time is displayed in hours. To adjust press button Y.
— Push button K twice and time is displayed in minutes. To adjust press button Y.
— Push button K thrice and time is displayed in seconds. To reset seconds press button Y. Upon releasing, seconds computation starts from zero.
— When the clock displays hours and minutes press button K to visualize minutes and seconds. To reset press button Y again.

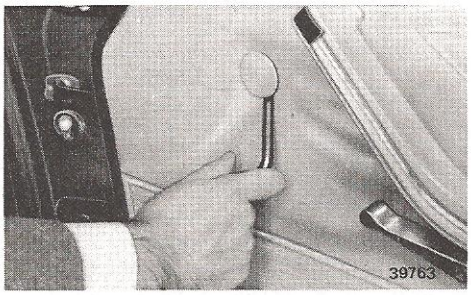


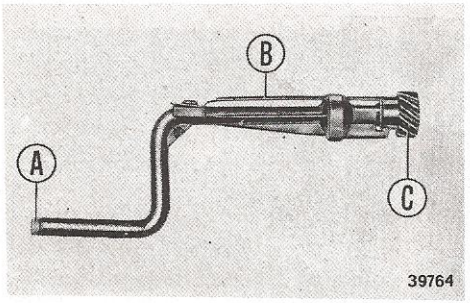
Light Dimmer

Adjusts light intensity of instrument cluster and switch panels.









Power Window Switches

With ignition key at MAR:

A = For driver's side window
B = For passenger's side window

Depress to operate the window and release to set glass position.

When leaving your car, always remove the ignition key, thus preventing possible injuries to the passengers through careless operation of the power windows.

With the power windows a regulator handle is provided, to be used in case of power window failure; the handle is in the glove box.

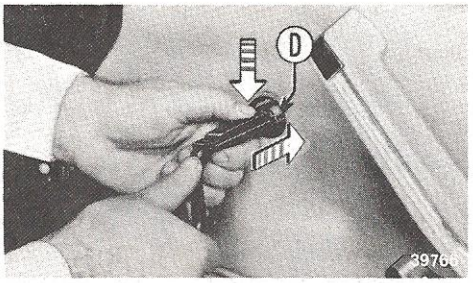
The regulator handle should be used as follows:

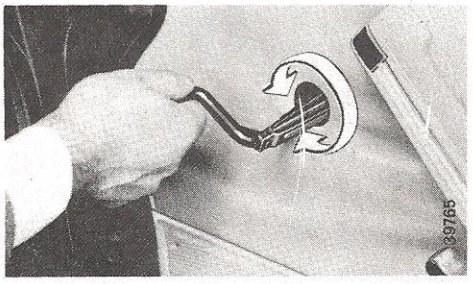
- Using end A of the handle as a lever, remove the plug in door trim pad.

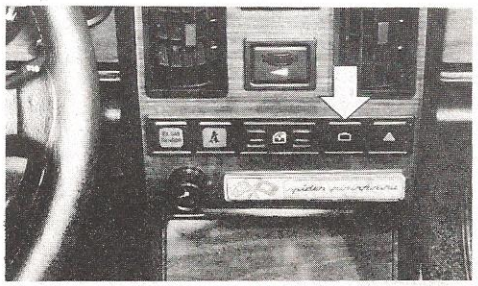
- Depress detent spring B, insert gear C into seat D so that the hole in the gear fits the control pin.
- Release the detent spring and pull the handle back to confirm it is locked in position.
- Turn the handle in either direction as necessary. Remember that the glass movement is very slow.

To disengage the handle, depress detent spring B and pull.

When winding with the handle, do not operate power window switches, since a sudden motor operation could be dangerous to the person operating the handle.

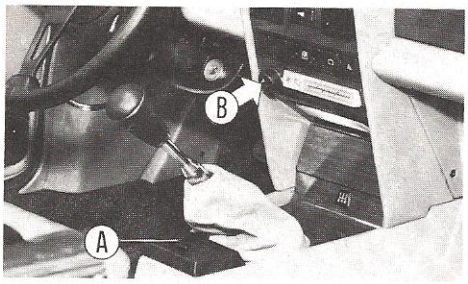


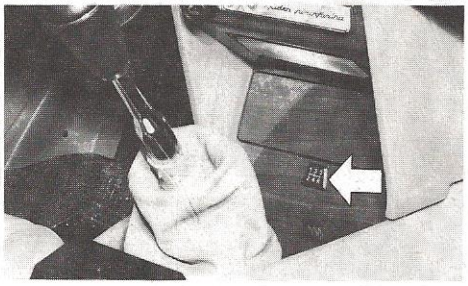




Remote Control Trunk Release Switch

The trunk remote control is ONLY operative with ignition key at MAR, and engine not running. To release the lid press the switch. Trunk lid may also be unlocked using the door key. Lock cylinder is located at the R.H. side of license plate. Rotate key counter clockwise.





Cigarette Lighter

To operate, press holder B into socket and release.
Upon reaching the required temperature (after approximately 15 seconds) holder will return to the extended position ready for use.

Ash Tray

To open, lift lid A.
To empty, remove ashtray housing from the console.

Courtesy Light

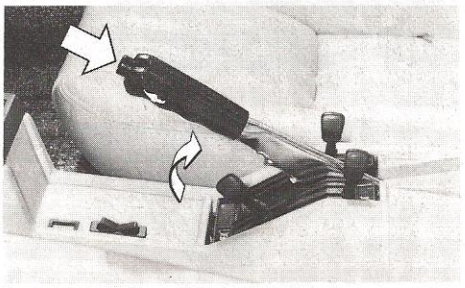
The courtesy light is mounted on the console.
The lamp is automatically turned on when either door is opened.
To switch on with doors closed, depress the L.H. side of lens.

Shift Lever

Shift lever positions are as shown.
To engage reverse (R), bring the car to a dead stop, depress the lever and move to the right and rearward.
With the car stopped, if it is hard to place gearshift lever in first gear, release clutch and then depress clutch and place lever in first gear.

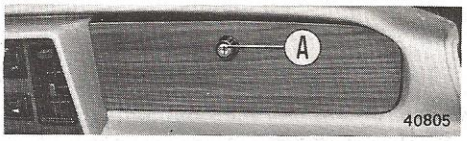
Hand Brake Lever

To apply, pull the lever firmly upwards. To release it, depress the button, lift the lever slightly then ease it fully down.
An indicator warns the driver that the handbrake is set.



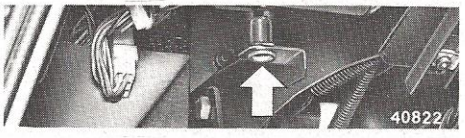
Glove Box

To open and close rotate knob A anti-clockwise.
The lid may also be locked using the door key.



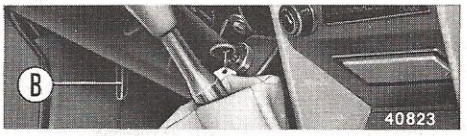
Inspection Lamp Receptacle

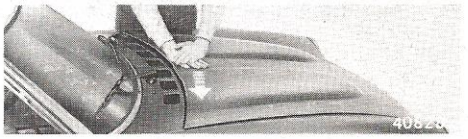
It is located underdash, driver's side.

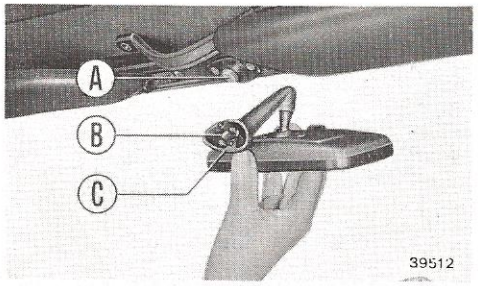


Engine Hood Latch Release Lever

Lever B is located underdash, driver's side. Pull the lever to release the hood. A spring type retainer locks the hood open. To close the hood, press it firmly down until a click is heard. In case engine hood latch release cable fails to operate, unlock through the emergency cable located near the release lever.

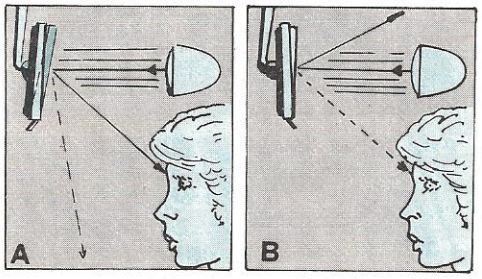






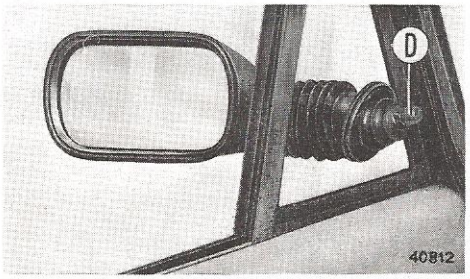
Inner Rear View Mirror

The mirror is mounted on a ball-type joint which permits adjustment in all directions.
It can also be adjusted to avoid glare from a following car. The mirror and stem are designed to disengage from the windshield upon impact.



A = Normal position
B = Anti-glare position

Should the mirror come off, engage spring B in seat A making sure the two location dowels are properly aligned with their respective seats and press on base C.



Door Mirrors

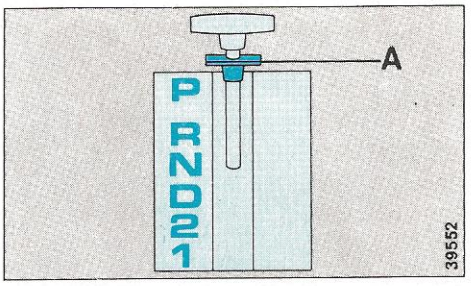
Mirror glass is adjustable through lever D. If necessary, mirror housing may be folded against the door for increased clearance.

Selector Lever (Automatic Gearbox)

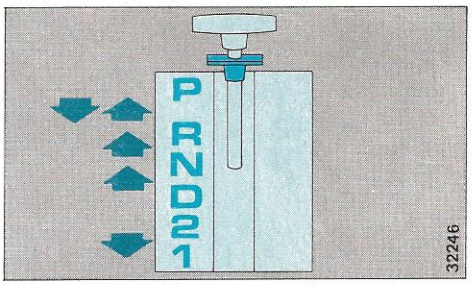
Selector lever positions are marked on the T-handled lever quadrant.

P = Park
R = Reverse
N = Neutral
D = Drive
2 = Intermediate
1 = Low

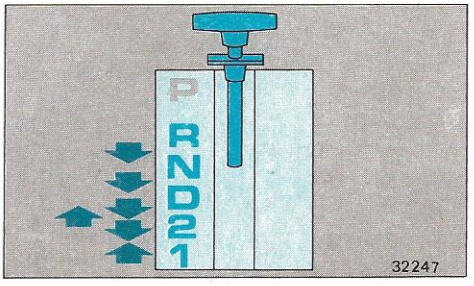
Move selector lever to the desired position.

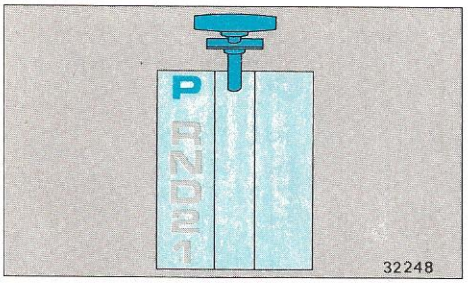


To shift from P to R, R to P, N to R or 2 to 1, lift trigger A.



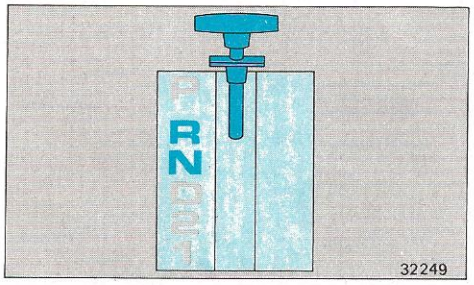
Do not operate the trigger A when shifting from R to N, N to D, D to N, D to 2, 2 to D, 1 to 2.





Park

In this position the transmission is mechanically locked but engine starting is possible. Park should not be selected when the car is in motion.
Do not exceed 4 000 r.p.m. in this position.
Use of the Park position is recommended when parking on flat and sloping ground and before servicing.
Do not engage "P" position when there is a possibility of the car being bumped by other vehicles or pushed about.

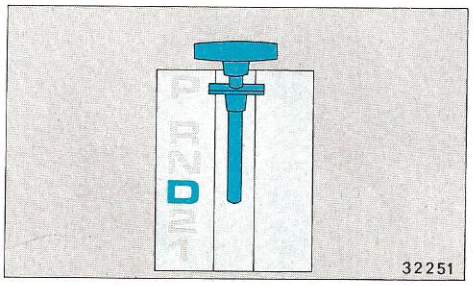


Reverse

Before selecting Reverse bring the car to a dead stop and release the accelerator pedal.

Neutral

The engine can be started in this position. However, do not exceed 4 000 r.p.m.
With neutral selected there is neither drive nor engine braking.

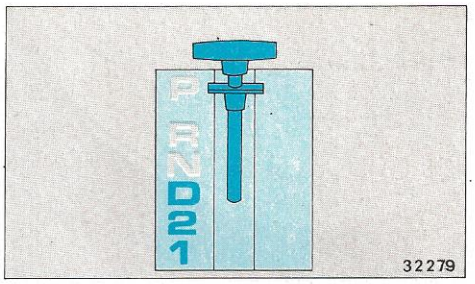


Drive

Select Drive for normal driving.
This position gives full automatic up or down shifting through all gears according to road speed and throttle position.
For quick down-shifting depress the accelerator pedal through its hard spot (kickdown position).

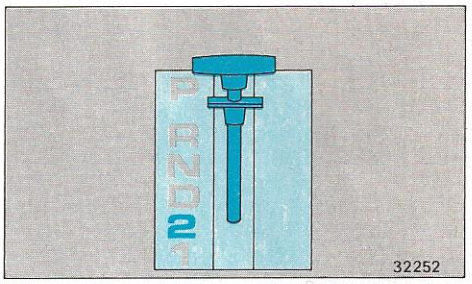
Down shifting from D to 2 and D to 1 can be obtained by means of the selector lever below 70 mph and 45 mph respectively, without depressing the accelerator pedal.

To prevent dangerous over-revving do not exceed the prescribed shifting speeds.



2 - Intermediate Gear

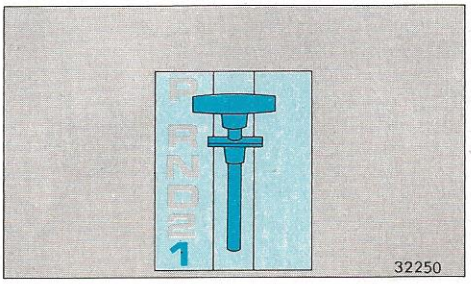
Operation is as described under D but no up-shift into third is possible. This may be advantageous when driving over hilly or difficult roads requiring consistent pull and moderate engine braking.

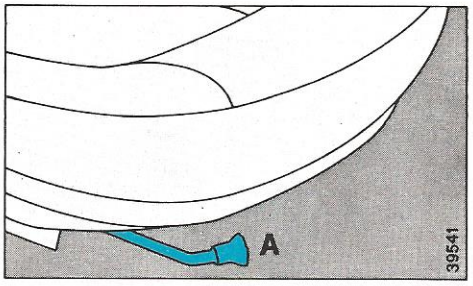


1 - Low Gear (Lock-up in First)

To be selected when driving over very steep hills, and when maximum engine braking is desired.
Upon moving the selector lever to 1 the transmission changes to, and remains in, first gear regardless of road speed or throttle position.

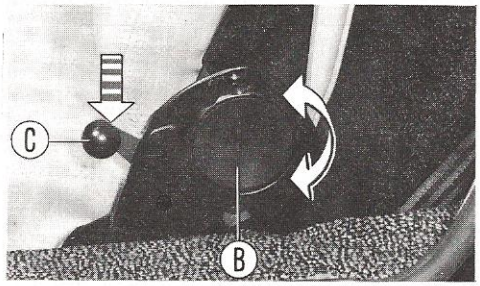
With the automatic transmission push-starting is not possible.



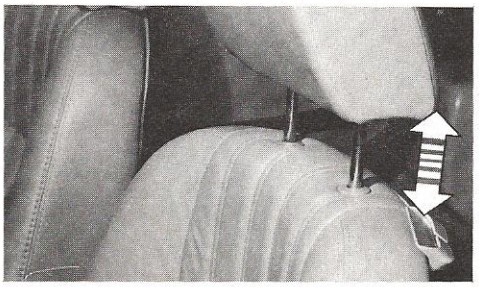


SEATS

Seats may be adjusted for leg reach after moving control lever A downwards.
Ensure that the lever engages the nearest locking notch.



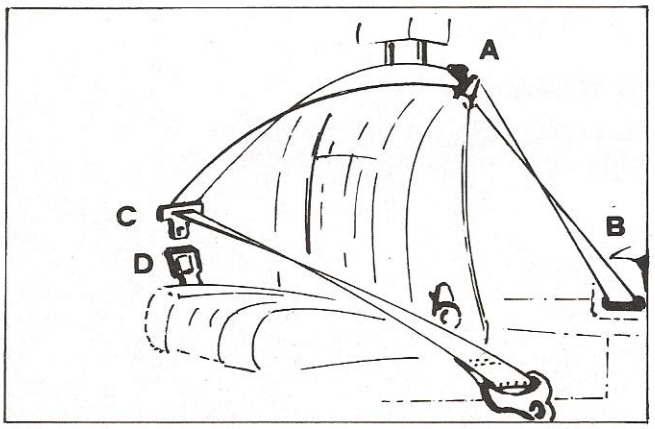
To adjust the seat back angle turn knob B.
For access to the rear parcel shelf, push down lever C and tilt the seat back.



On top of each seat back is fitted a headrest with dual adjustment: to reset height pull up or push down as necessary.

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

SEAT BELTS



Inertia Reel Seat Belts

Seat belts provided as standard original equipment are of the 3-point type.

To Fasten - Insert tongue C into the buckle until a sharp click is heard.
Belt section running out from retractor B and going through loop A automatically suits the occupant and permits ample freedom of movement while providing the necessary restraint in case of rapid decelerations or rapid webbing withdrawal.

To Unfasten - Press in button D to release the buckle. Tongue C will automatically slide out and the belt will return to the stowed position.

Notes

Make a point of wearing your seat belts at all times, even for short trips. Each belt is intended for use by an adult or child not under six years of age.

Never carry a child on your lap with the belt around the child. Adjust your seat and then fasten your belt while seating upright and well back against the seat back; make sure that the webbing is not twisted.

The belt should adhere to the body and the lower half of the belt should be fastened round the hips (not the waist), otherwise there is a danger that you might slide under the belt in case of impact. Moreover, sit properly at all times while wearing the belt.

Occasionally, check the bolts for looseness and the webbing for damage. In the event of an accident any seat belt which has been subjected to a shock load should, in the interest of further safety, be replaced.

To clean the belts hand wash in warm water using a mild soap, rinse and allow to dry out of direct sunlight.

Do not use any bleach, dye or other chemicals which might weaken the webbing.

HEATING

Air Volume

Lever A controls the volume of air.
Lever up = maximum amount of air.

Air Temperature

Lever B controls the temperature of air.
Lever down = Maximum temperature of air
If the normal airflow is inadequate (i.e., when the car is stationary or travelling at low speed), it can be boosted by bringing into operation the heater fan through switch F.

— Center position = OFF
— Pressed in forward = Low speed
— Pressed in backwards = High speed

The heater fan circuit is completed when the ignition key is turned to MAR.

Maximum amount of heated air is obtained with lever A up and lever B down.

Air Distribution

Lever C controls the amount of air flowing through windshield diffusers G and console outlets H.

Lever up = air flows from windshield defrosters G
Lever down = air flows from vents G and H

Defroster outlets G are not adjustable

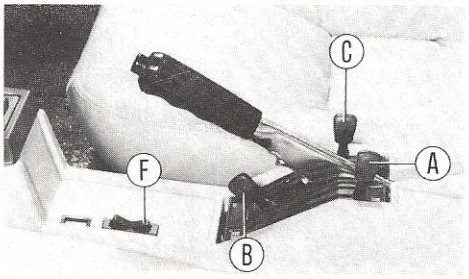
When heated air is admitted, close outlets D by moving levers E to the left.

DEMISTING AND DEFROSTING

To clear the windshield:

- Close center outlets D
- Shift levers A and C up
- Shift lever B down
- Press back of fan switch F.

Heated air will flow out of shield defroster outlets.



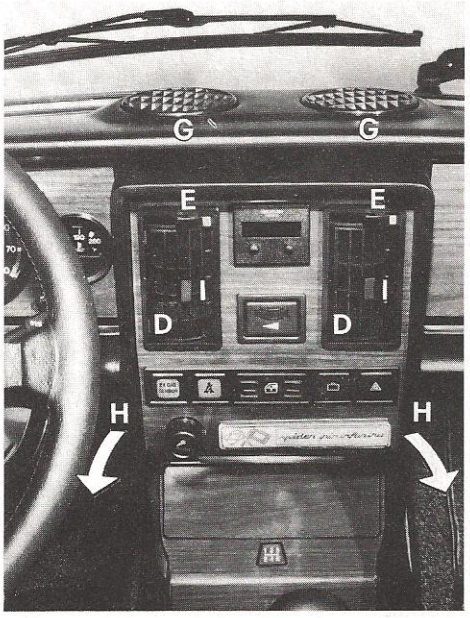
VENTILATION

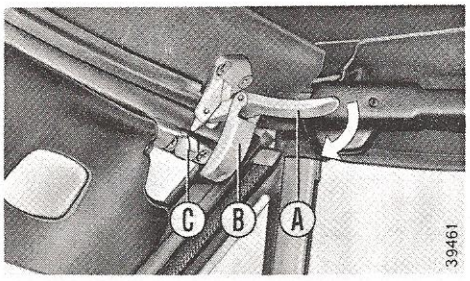
The maximum amount of fresh air is obtained when heater temperature control lever B is all the way up.

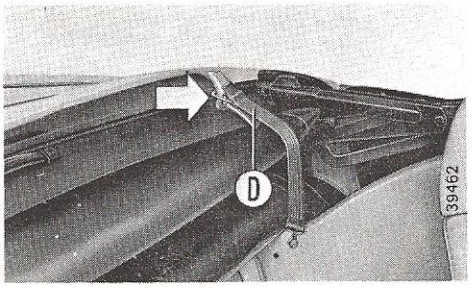
Air Distribution

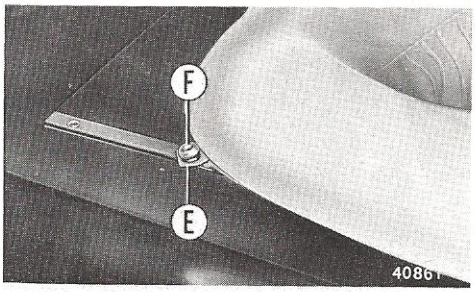
When the car is on the move fresh air is admitted through outlets G and H and center vents D.
Center vents D admit only fresh air at outside temperature. To adjust airflow vertically operate knob I.
To adjust airflow horizontally operate vent body.
Air volume can be adjusted through lever E.
Right (white dot) = Open

If a greater flow of air from outlets G and H is required, turn on the heater fan.









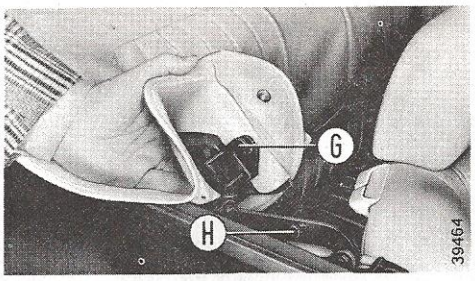
CONVERTIBLE TOP

To lower the top

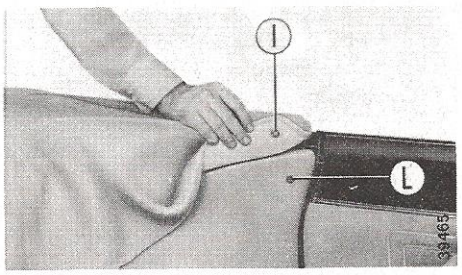
- Lower the door windows and sun visors
- Pull down the two levers "A" and release the lever hooks B from the strikers C
- Fold the top making sure that the back window is not pinched by the metal frame
- Free rubber strap D from the peg on body side and secure the folded top as shown in illustration

Place the cover over the folded top by:

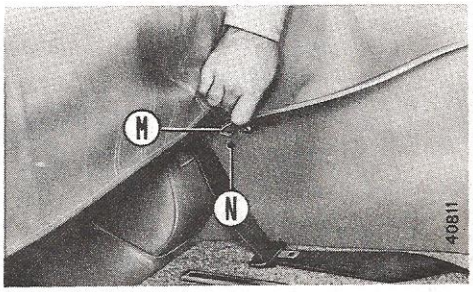
- fitting rear eyelets E to hooks F



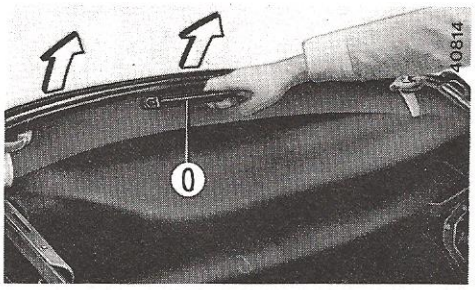
- inserting catches G on detents H,

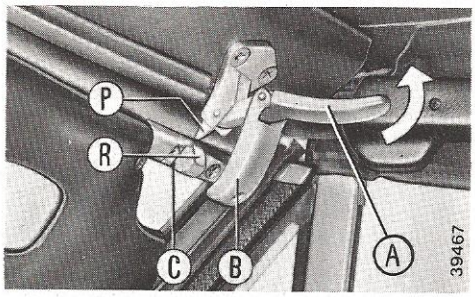


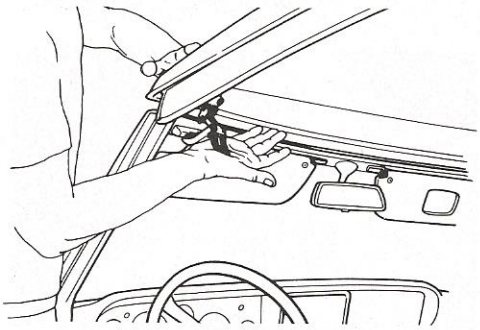
- snapping on button fasteners I to holes L,



- fitting hooks M into holes N







TO RAISE THE TOP
(operation is easier if doors are open)

- Remove the cover
- free the top from straps D (see page 28)
- raise the convertible top using the handle O

- WARNING = Do not attempt to pull down into the locking mechanism by pulling handle O

- Push locking levers A downward and hook the lever hooks B behind the strikers C

- Right and left lever locking mechanisms should be in position as shown in illustration

1. Locking the left mechanism:
   — using your left hand, push downward on the convertible top front left corner
   — using your right hand, push up the locking lever A
2. Locking the right mechanism
   — using your right hand, push downward on the convertible top front right corner
   — using your left hand, push up the locking lever A

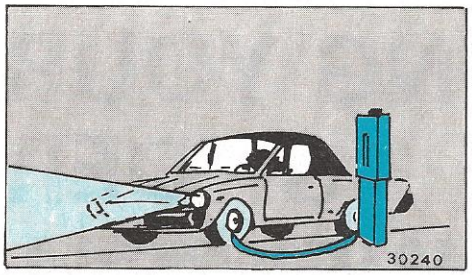
If operations 1 and 2 have been carried out correctly, the pins P will slide into the pin seats R.

DRIVING YOUR SPIDER PININFARINA

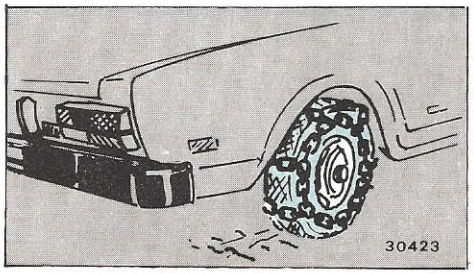
VITAL CHECKS BEFORE STARTING

Periodically and before starting on a long journey, check the levels of engine coolant, engine oil and brake fluid.

For engine oil grades and corresponding atmospheric temperature see page 104.

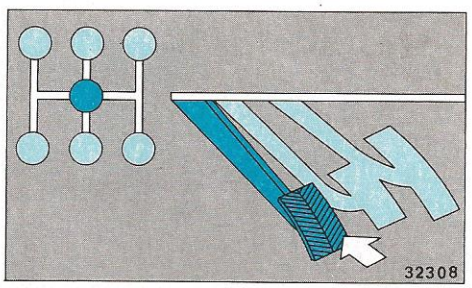


It is vitally important that tire pressures are correct (see page 105). Before you start a trip, especially if at night-time, check all lights visually.
As the winter season approaches and before travelling to a colder climate check the engine coolant for the correct anti-freeze/water strength (see page 66).



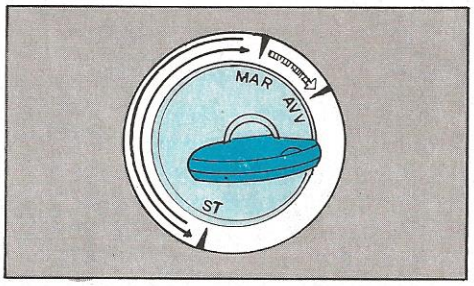
Use tire chains or studded tires before starting on a journey on ice or snow-covered roads and remember that while snow chains can be fitted to the driving wheels only, studded tires should be fitted to all wheels.
Local authorized Dealers are conversant with State and National requirements and their advice should be obtained.

STARTING THE ENGINE



Cold Starts with Manual Transmission

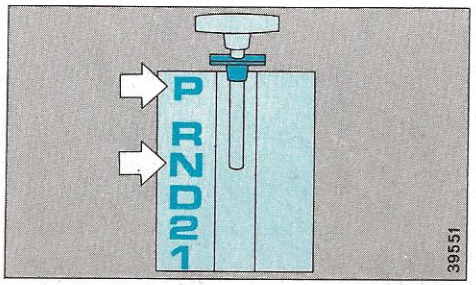
- Move gearshift lever to neutral.
- Depress clutch pedal, especially in cold climates.
- Insert and turn ignition key clockwise to its stop, position AVV. As soon as engine is started release key which will snap back to position MAR.
  Should the engine fail to start return ignition key back to ST position and repeat starting attempt.
- Do not step on accelerator pedal until the engine is running smoothly.
- Avoid sudden accelerations when engine is cold
- 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.



Cold Starts with Automatic Transmission

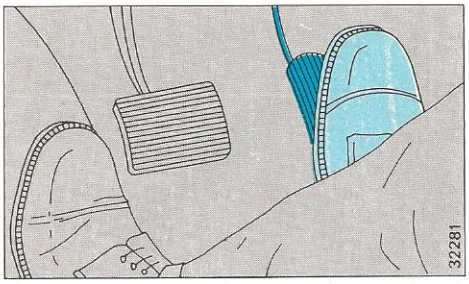
Move the selector lever to N or P. Engine starting is not possible with the selector lever in any other position.

Then proceed according to manual transmission instructions above.



Hot Starts

Turn ignition key without touching accelerator pedal.

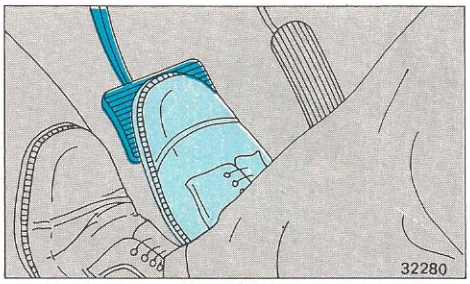


STARTING A CAR FITTED WITH AUTOMATIC TRANSMISSION

- Pull the handbrake lever upwards and depress the brake pedal.
- Move selector lever to 1, 2, D or R.
- Release the handbrake and the foot brake.
- Depress the accelerator pedal progressively. In D the car will move off in first gear and automatically shift up as speed is increased.

Under normal driving conditions use the right foot both for the accelerator and the brake pedal.

STOPPING A CAR FITTED WITH AUTOMATIC TRANSMISSION



- Release the accelerator pedal.
- Apply the brakes.

No further action is needed for short stops, as first gear will be automatically re-engaged upon moving off.
For stops of long duration move the selector lever to N and apply the handbrake.

To hold the car on a slope apply the brakes and do not depress the accelerator pedal, otherwise overheating might result.

DRIVING THE CAR

- Never maintain nor exceed the maximum allowed speeds and do not drive with tachometer pointer steadily on the yellow sector.
- 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. The marginal saving in fuel consumption 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 down shift in order to obtain the maximum engine pulling power.
- Do not ride the clutch, otherwise slippage and damage will result.
- Ensure that both the foot and hand brakes are efficient at all times. After a car wash apply the footbrake 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 possibility 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 gears 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 the skid; as the car regains its course straighten the wheels and accelerate gently.

- When driving in mist or fog during daylight, switch on the headlight low beams: do not use the high beams.
- Before turning or changing lanes, in addition to giving the correct signals glance in your mirrors to determine the locations of the cars behind you. Before moving 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.

RECOMMENDED SHIFTING SPEEDS

1st-2nd	*2nd-3rd*	*3rd-4th*	*4th-5th*
15 mph	25 mph	40 mph	45 mph

In any case the maximum speeds listed on page 103 should never be exceeded.

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 in the center position).

IN TERMS OF FUEL CONSUMPTION

Fuel consumption will be kept within reasonable limits when spark plugs are clean and electrode gap correct, and when fuel injection system, cooling system and air cleaner are in good conditions.

Conversely, fuel consumption increases when the windows are open and the tires underinflated.

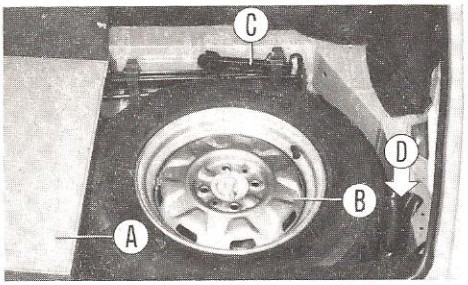
In particular:

- Avoid idling the engine unnecessarily.
- Do not step on the accelerator pedal: accelerate gently.

Never race the engine unnecessarily. Avoid sudden starts at full throttle.

- Do not hesitate to up shift whenever possible.
- When driving do not exceed maximum engine torque speed.
- Driving in traffic needs accurate judgement of the speed not only of the preceding car but also of the traffic ahead in order to anticipate sudden stops.

Switch off the engine when the car is stopped in a traffic jam.

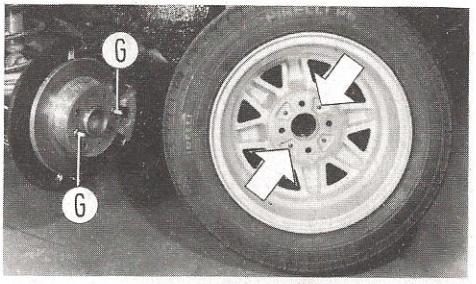


WHEEL CHANGING

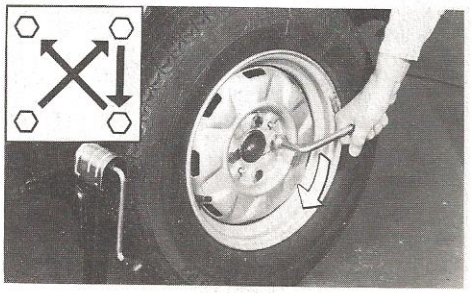
Warning

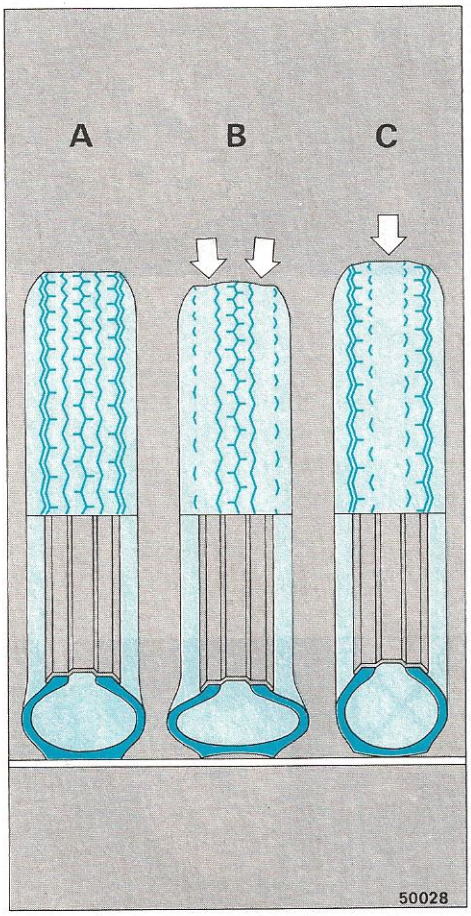
Spare tire is smaller than standard tire and it is designated for temporary use only.
Unless in emergency, this tire should be placed in its storage area, as soon as the standard tire can be replaced or repaired.
Operate your vehicle at reduced speed when using the spare tire.

If you have a flat tire move the car off the road, turn on the hazard warning lights and use other warning devices to warn other drivers. Do not allow passengers to remain in car when jacked up. Do not use jack to support car while working underneath car. When changing wheel, make sure car is on firm, level ground. Apply handbrake.
Remove cover A from trunk. Take out spare wheel B, jack C, and tool bag D.
Loosen the wheel bolts about one turn using the tool provided in the bag.
There are four jacking sockets (two on each side) underneath the floor pan. These are the only place where the car can be jacked. Insert the jack lever into the socket all the way.
Turn the handle on the jack to raise the car until the wheel is clear of the ground.



Remove the bolts and wheel. Keep bolts in a clean place to prevent the threads from getting dirty. Dirty bolts can cause difficulties during installation of the wheel.
Mount the spare wheel and align pegs G with holes in wheel disk. Install wheel bolts and tighten lightly.
Lower the car and fully tighten the bolts in a diagonal sequence as shown.
Make sure the tire is properly inflated (see page 105).
Before storing the jack, fold back the lever and turn the handle until the lever locks against the base of the jack.
This will prevent rattling during driving. Place the removed tire, jack, and tool bag in the trunk.
Following tire repair or replacement the complete wheel should again be balanced.





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Tires

Maintain the correct inflation pressures by checking with a reliable gauge.
In hot climates, do not reduce pressure as this would only increase tire temperature.
The recommended tire pressures are given on page 105.

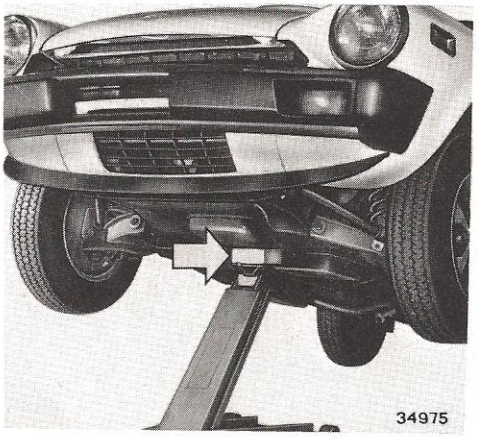
A - Correct inflation: Even tire wear.
B - Under-inflation: Excessive wear on the tire shoulders.
C - Over-inflation: Increased wear on the center of the tread.

Check pressure when tires are cold.

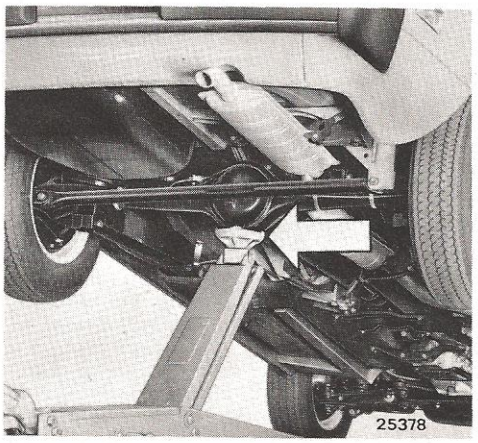
The minimum safe tire tread depth is $^{3}/_{64}$ in (1 mm).
If your tires are provided with tread wear indicators, replace tires as soon as the wear indicators are visible.
Also check sidewalls for cuts and uneven wear. Special equipment is available to Dealers, which enables them to diagnose the cause of excessive tire wear.

Do not reposition tires or road wheels in a criss-cross fashion.

JACKING



To raise the front end of the car, jack up at front suspension cross rail, inserting a suitably thick abt. 1 $^{1}/_{4}$ in (3 cm) wooden block.



To raise the rear end of the car jack up at rear axle bulge.

TOWING INSTRUCTIONS

GENERAL

This section contains the recommended towing procedure which will help insure damage-free towing.

Therefore, in the event your vehicle requires towing, this section should be made readily available to tow truck personnel.

IMPORTANT SAFETY NOTICE

Proper towing is important for the safe, reliable operation of the vehicle.

The procedure recommended and described under this section is the effective method of performing towing operations.

It is important to read the various warnings in this section in order to minimize the risk of personal injury to service personnel and to avoid procedures which may damage the vehicle or render it unsafe.

The instructions contained here are not meant to be all inclusive.

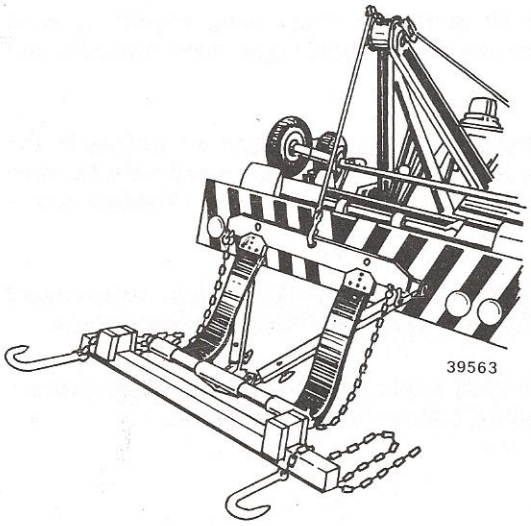
PININFARINA could not possibly know, evaluate and advise the reader of all conceivable methods of towing or the possible hazardous consequences of each method.

Consequently we have not undertaken any such broad evaluation.

Accordingly, anyone who uses a towing procedure not recommended by PININFARINA must first be thoroughly convinced that neither personal safety nor vehicle safety will be jeopardized by the selected towing method.

GENERAL TOWING INSTRUCTIONS

- Vehicle must not be towed at a speed exceeding 30 mph or for more than a 30 mile distance.
  - — If the vehicle is to be towed over the specified distance or if the transmission or the differential is damaged the vehicle must be towed with the rear driving wheels raised off the ground.
- The transmission must be placed in the neutral position and the parking brake released.
- Insure adequate clearance between the towed vehicle and ground.
  - — Raised wheels should rotate freely
  - — Raised wheels should be a minimum of 4" from the ground
  - — Over rough terrain, an 8" clearance must be maintained between brake disks and the ground.
  - — Increased clearance can be achieved by removing the wheels from the lifted end of the vehicle or by using a wheel dolly.
- When locked vehicles must be towed and the ignition key is not available, the vehicle must be moved without damaging the steering column anti-theft lock.
- When installing towing equipment, do not damage lights, bumpers or painted surfaces of vehicle.
- Avoid "panic" or "fast" stops during towing because the vehicle may ride up the sling belts, and result in contact between the rear of the wrecker and vehicle.
- Do not allow passengers to ride in towed vehicle.
- Do not allow the fuel tank to support any of the vehicle's weight during towing.
- Follow all state and local laws regarding such items as warning signals, night illumination, speed etc.
- The safety of the operator and all others in the vicinity of the wrecker or the towed vehicle must be considered at all times during a towing operation.
- Use a safety chain system completely independent of the primary lifting and towing attachments.
- Use silicone lubricant on sling straps to prevent damage to rubber strip on bumpers.



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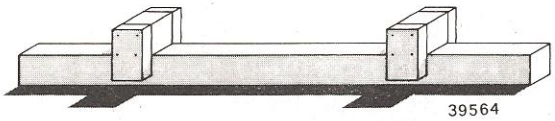

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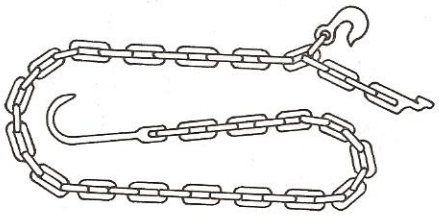

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STANDARD TOWING EQUIPMENT

The towing procedure illustrated in this section was performed with conventional "sling-type" equipment, which is a commonly used piece of lifting and towing equipment.

The most widely used and recommended towing equipment is illustrated.

Tow trucks should be equipped with:

— A towing sling

— J-hooks, grab hook chains, T-hooks

— Safety chains (not shown)

— A 4 × 4 × 60" wooden crossbeam

— A pair of spacer blocks

FRONT TOW

Attach tow chains to outboard ends of lower control arms.
Position 4 × 4 against tires with spacer blocks under stabilizer bar frame mounts.
Position tow bar against 4 × 4.
Attach safety chains to lower control arms.

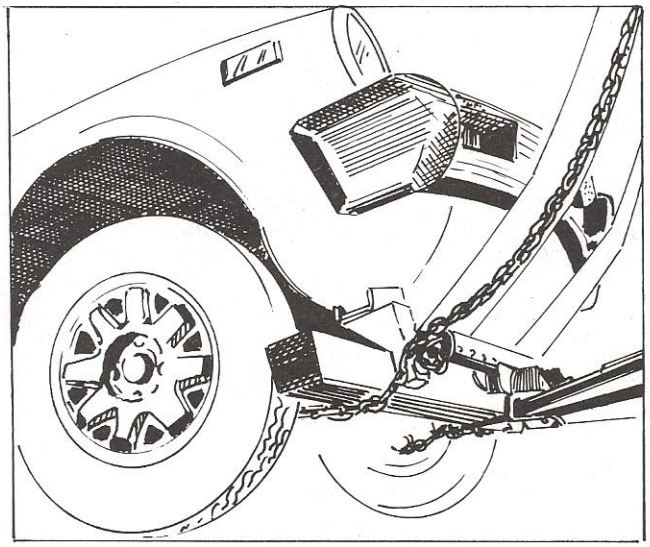
Caution - Spacer blocks must not lift against stabilizer bar or adjacent gravel shield.

Extreme care must be exercised in the positioning of the auxiliary lumber.

Note - For vehicles equipped with automatic transmission, if the vehicle is to be towed over a long distance or if the transmission is defective the vehicle must be towed with the drive shaft removed.

REAR TOW

Not recommended with conventional sling-type equipment.



MAINTENANCE AND SERVICE

SERVICE

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 the General Maintenance Schedule. Reference is made to the pages where each operation is described.

Failures, other than those resulting from defects in material or workmanship, which arise solely as a result of owner abuse and/or lack of proper maintenance are not covered by warranty.

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. and California Regulations Conformity Tag, located in the engine compartment.

GENERAL MAINTENANCE

■ ■ We recommend that all operations so marked be entrusted to Dealers.

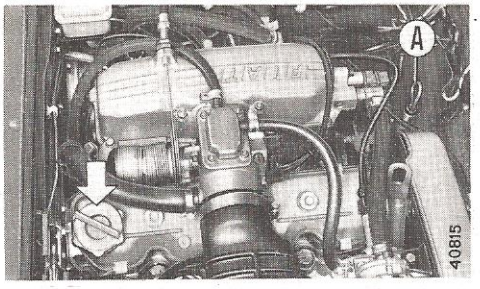
	See page	Every 15 000 miles	Every 30 000 miles
■ Valve clearance: *Check and adjust if nec.*	54	●	
■ Air cleaner: *Replace filtering element*	55	● *	●
■ Spark plugs: *Change*	56	● *	●
■ Alternator and water pump drive belt: *Check tension and wear, adjust or replace if necessary*	56	● *	●
■ Oxygen sensor (Lambda probe): *Renew*	62		●
■ Brakes: *Check state of wear of linings, check lines and handbrake efficiency; adjust or replace, if nec.*	69	●	
■ Suspensions and steering: *Check components*	73	●	
■ Wheel bearings: *Check lubrication*	73	●	
■ Clutch: *Check pedal free travel and adjust if nec.*	70	●	
■ Transmission (manual and automatic) and axle: *Change oil*	72		●
Body: *Lubricate door locks and hinges*	76	●	

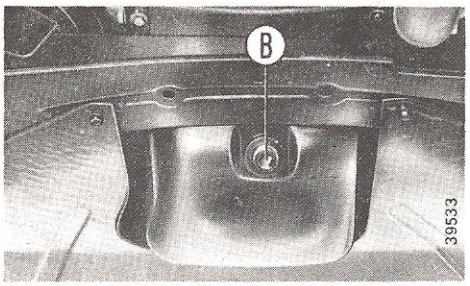
* These operations are not obligatory but only recommended when the car is used frequently in unusual traffic conditions or on sandy and dusty roads.

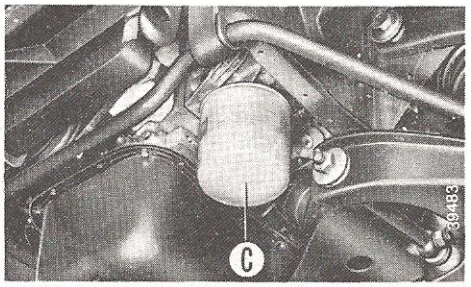
SPECIAL MAINTENANCE

	See page	Every 500 miles or weekly	Every 3 000 miles	Every 7 500 miles
Engine oil: *Check level*	54	●		
■ Engine oil and filter: *Change*	54			●
* Cooling system: *Check coolant level*	66	●		
Brakes: *Check brake pads*	69			●
Automatic transmission (where fitted): *Check fluid level*	71		●	
Tires: *Check pressure*	105	●		

* The mixture should **be replaced after 45 000 miles or every two years**, whichever occurs first.







Engine Oil Level Checking

Check level when the engine is cold and the car standing on level ground.

Withdraw dipstick A, wipe it dry, replace it and again withdraw it.

The correct level is between "MIN" and "MAX" marks on dipstick. If necessary, oil should be added through filler opening.

Sump capacity from "MIN" to "MAX" marks of dipstick is 1.14 Qts approx (1 kg).

Engine Oil Changing

Engine oil changing should be done at most every 6 months.

Change the oil when the engine is warm.

To drain the sump, remove oil filler dipstick A, and sump drain plug B.

Oil changing depends on the type of fluid used (single grade or multigrade) and prevailing climati temperatu re (See FILL-UP data table).

Oil Filter Replacing

While changing the oil, also replace filter C.
Unscrew the filter from the base and discard.
When fitting a replacement, coat the rubber seal with engine oil.

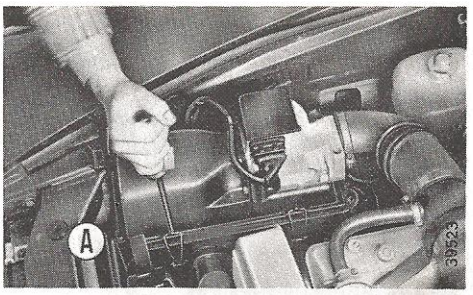
Tappet C.earance Check'ng

The correct valve clearance, with engine cold is .016 to .019 in (.41 to .49 mm) for intake valves and .018 to .021 in (.46 to .54 mm) for exhaust valves.

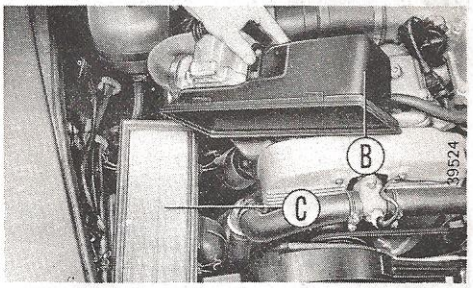
Air Cleaner

To gain access to filtering element:

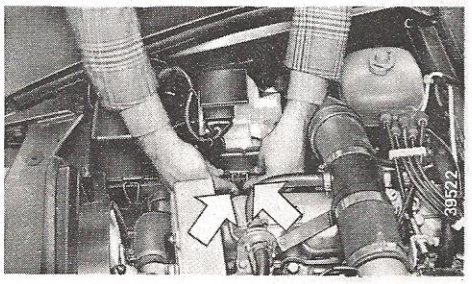
- Release fasteners A using a screwdriver.



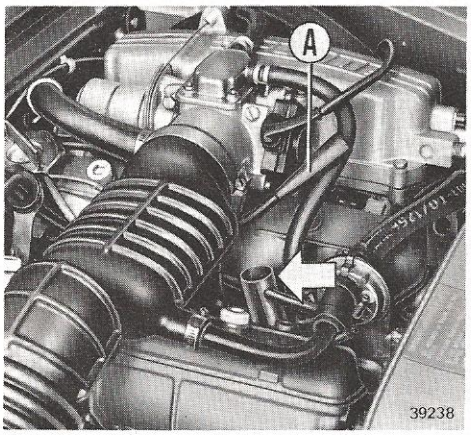
- Remove cover B.



Replace filtering element C. refit cover B and secure with fasteners A.



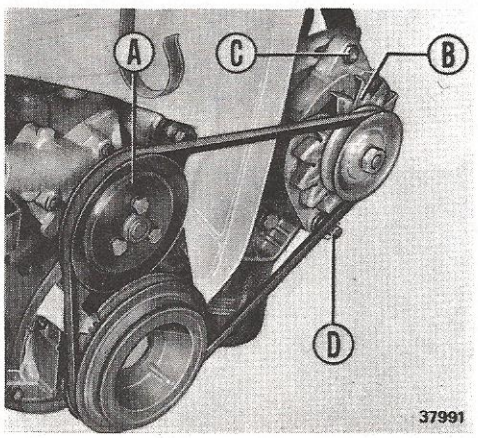
Reinstall fasteners by pressing on curved section.



Spark Plugs

To remove the plugs first detach high tension leads A then use only wrench provided (see arrow) in the tool kit.

When replacing the plugs, make sure the new ones are of the specified type: if their heat range is wrong, engine malfunction and/or failures may occur.



Belt Driving Alternator B and Water Pump A

Belt sag should not exceed $^1/_2$ in (1.5 cm) when a pressure of 22 lbs (10 kg) is applied.

To adjust tension of belt proceed as follows:

- Slacken nuts C and D and move alternator outwards, then retighten the nuts.

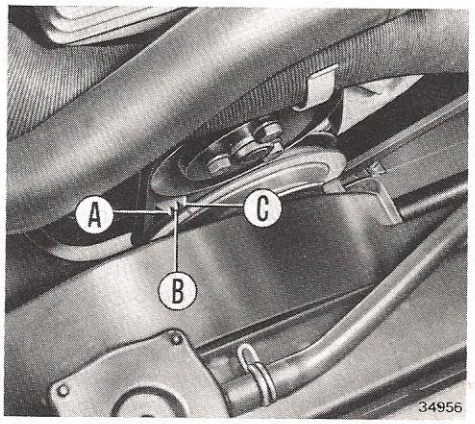
Do not exceed the tension since this would result in abnormal stress on the bearings.

Ignition Timing

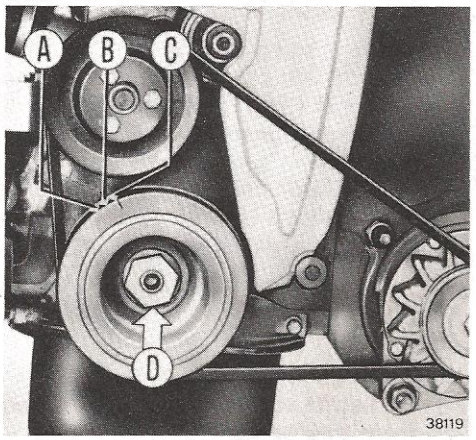
Spark advance is set in the factory and no further adjustment is required during the life of the vehicle.

Ignition timing must be checked only if the ignition distributor is removed. To adjust proceed as follows:

- Engage top gear for vehicles fitted with manual transmission and move vehicle until cylinder No. 1 is in compression stroke and the mark on the crankshaft pulley is aligned with fixed timing mark A indicating 10° B.T.D.C.



Ignition timing
A = 10° (Adv); B = 5° (Adv); C = 0° (T.D.C.)



- For vehicles fitted with automatic transmission, use a suitable wrench to adjust nut D securing crankshaft pulley until above conditions are obtained.

- Remove distributor cap and turn shaft manually until rotor is positioned against contact for firing of cylinder No. 1.
- Without moving distributor shaft, insert distributor in its seat and secure.
- Connect leads going to coil.
- Install cap and check that the leads are correctly connected to spark plugs.
- Connect the rev. counter and the stroboscopic lamp to the engine using spark plug lead for cylinder No. 1 (*).
- Start the engine and check ignition timing with the stroboscopic lamp.

  Ignition timing should be 10° B.T.D.C. at 800 to 850 rpm for vehicles fitted with manual transmission and 10° B.T.D.C. at 700 to 750 rpm for vehicles with automatic transmission.
- If distributor calibration is not correct, loosen and rotate manually until correct calibration is obtained, then tighten it.

(*) If distributor removal is not required, proceed from this point.

EMISSION CONTROL SYSTEMS

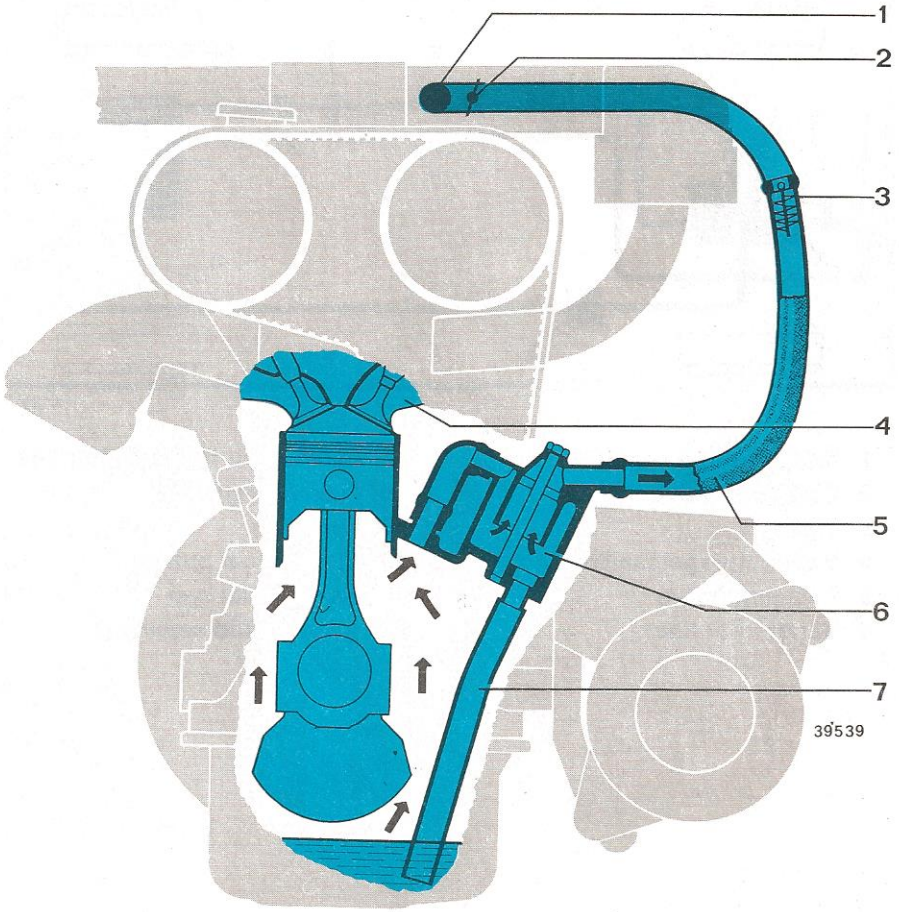
Vehicle emissions are controlled by various devices that make up the crankcase emission control system, the exhaust emission control system and the fuel emission control system.

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

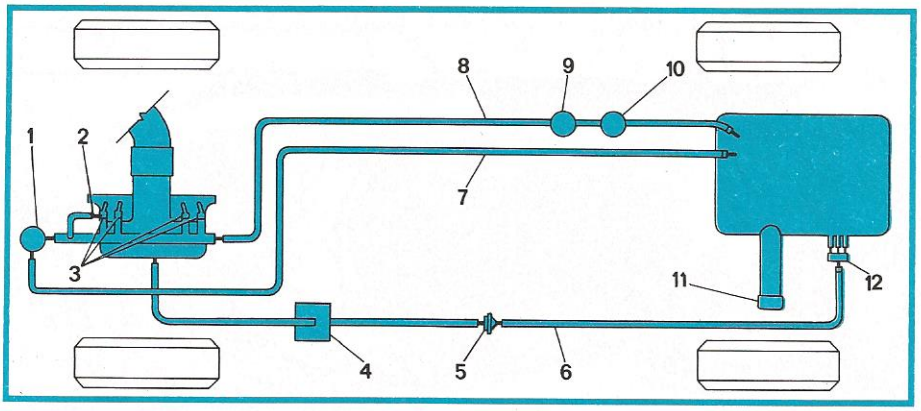
Crankcase Emission Control System

This is a closed system designed to prevent any emission of blow-by gases and oil vapors into the atmosphere.

These gases and vapors are piped to an orifice upstream of the throttle plate and are then drawn into the engine when throttle plate is open.



1 Emission feedback port
2 Throttle plate
3 Flame trap
4 Intake manifold
5 Sump-to-air cleaner line
6 Cyclonic trap
7 Oil drain line into sump



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1 Fuel pressure regulator
2 Cold start valve
3 Injectors
4 Vapor storage canister
5 Two-way valve
6 Vapor vent line
7 Excess fuel recirculation line
8 Fuel delivery line
9 Fuel filter
10 Electric fuel pump
11 Sealed filler cap
12 Vapor-liquid separator

Fuel Evaporative Emission Control System

The fuel evaporative emission control system is designed to prevent air pollution caused by evaporative losses from the fuel system.

The fuel vapors from the fuel tank flow into the activated charcoal carbon canister where they are adsorbed and stored when the engine is not operating.

When the engine is running, the fuel vapors retained in the carbon canister are purged through a line which conveys them to intake manifold.

The system consists essentially of:

- Sealed filler cap
- Limited-filling tank
- Vapor-liquid separator
- Two-way valve
- Vapor vent line
- Carbon canister
- Purge line

FUEL INJECTION SYSTEM

General

This is an electronically controlled intermittent low pressure injection system.

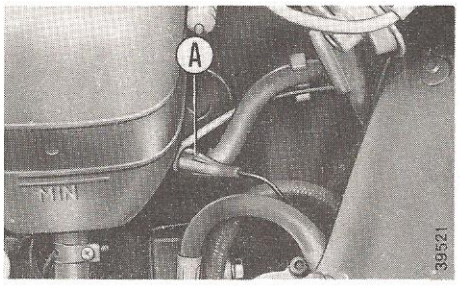
The fuel is injected upstream of the intake valves by means of solenoid injectors. Fuel is supplied at constant pressure. Flow is controlled by means of variation in the opening time of the injectors.

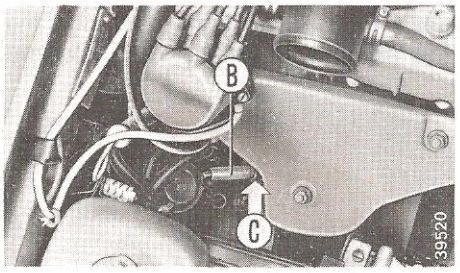
The main factor controlling fuel flow is the direct measurement of drawn air by a special sending unit which transmits the most important information for fuel metering to the electronic control unit.

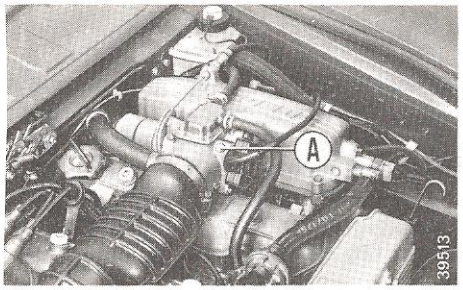
The system is also provided with a certain number of measuring sensors which provide the electronic control unit with the information required to optimize the composition of the mixture in all engine operating conditions.

Exhaust Gas Emission Control

For the control of exhaust emissions, the injection system is fitted with an oxygen sensor (Lambda probe) which measures the oxygen content of the exhaust gases and transmits any adjustment of the air-fuel mixture to the control unit. It is thus possible with the aid of a catalytic converter fitted to the exhaust pipe, to reduce to a minimum the harmful residues contained in the exhaust gases.







Oxygen Sensor (Lambda Probe)
An indicator on instrument panel lights up on completion of 30 000 miles (see page 9) signifying that the sensor must be replaced.
To renew sensor proceed as follows:

- Disconnect probe cable A
- Release protection cap and back off probe B from its seat C on exhaust manifold
- Fit new probe lubricating threaded part with anti-seize, anti-rust grease. Caution: Be careful not to get grease on probe. This will contaminate the probe and it will have to be replaced.
- Reconnect cable A
- Unseal indicator (under-dash, driver's side) and zero it by turning the screw provided.
- Re-seal the indicator.

Idling Speed
Any adjustment to idling speed must be carried out with a warm engine, with hand brake applied and with gearshift lever in neutral position for manual version and in D (Drive) position for automatic version.
The engine is warm when the radiator electric cooling fan has been activated at least twice.
To adjust idle the electric fan must be off.
To adjust turn bypass screw A.
Idling speed is 850 ± 50 rpm for manual transmission and 750 ± 50 rpm for automatic transmission.

Idle CO setting
CO emissions at idle are set at the factory and adjustment screw is sealed. No additional adjustment is required when tuning up the engine during the useful life of the vehicle.

Automatic altitude compensation
The barometric pressure at all altitudes of vehicle operation, is detected by a barometric sensor which supplies the corresponding electric signals to the electronic control unit where a correction of the fuel injection time is processed.

ELECTRONIC FUEL INJECTION DIAGRAM

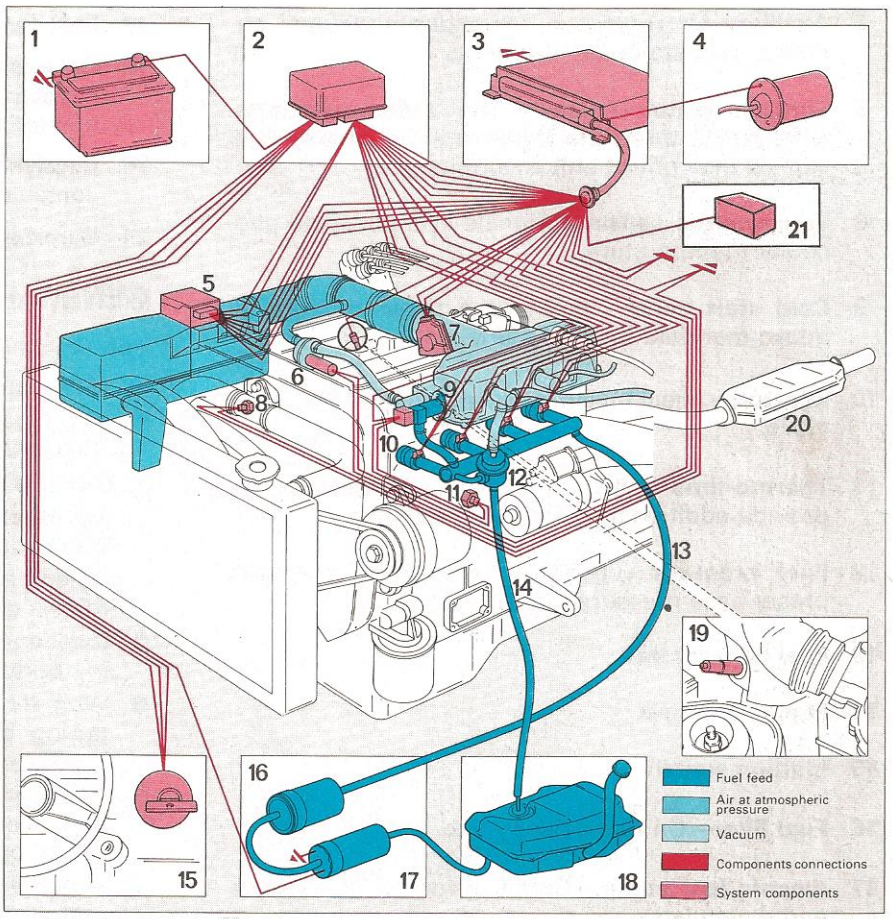
1 **Battery**

2 **Relay set** - Supplies power to the control unit and fuel pump.

3 **Electronic control unit** - Reads all inputs regarding air flow, coolant temperature, cylinder head temperature, throttle plate position, starting phase as well as engine rpm and computes injector open time. It consists of a box with multiple-pin connector harness.

4 **Coil** - Also provides the electronic control unit with engine rpm and injection point.

5 **Air flow sensor** - Measures amount of air drawn into engine and transmits corresponding signal for fuel requirements. Energises the fuel pump.



6 **Auxiliary air regulator** - Provides additional air during cold starts and warm-up.

7 **Throttle plate switch** - The switch indicates whether the throttle is at idle or at full throttle and signals the control unit accordingly.

8 **Temperature sensor** - Signals cylinder head and coolant temperature.

9 **Cold start valve** - Provides a richer mixture in intake manifold for cold starts.

10 **Injectors** - Inject fuel in intake manifold near intake valve.

11 **Thermo-time switch** - Operates cold start valve to provide additional fuel for cold starting.

12 **Fuel pressure regulator** - Maintains constant preset base pressure in fuel system.

13 **Fuel delivery line**

14 **Fuel return line**

15 **Ignition switch**

16 **Fuel filter** - On fuel delivery line.

17 **Electric fuel pump** - Supplies fuel to the system and recirculates.

18 **Fuel tank**

19 **Oxygen sensor (or Lambda sensor)** - Signals exhaust gas oxygen content to control unit and allows immediate corrections to air/fuel mixture.

20 **Catalytic converter** - Reduces harmful residues contained in exhaust gases to a minimum.

21 **Barometric sensor**

GENERAL HINTS

You are advised to take the following precautions:

- Make sure battery leads are properly connected.
- Never connect or disconnect control unit terminal with ignition on.
- Never disconnect the battery with engine running.
- Do not crank the engine with a battery charger and battery leads disconnected.
- When charging the battery disconnect battery terminals of car.
- Disconnect the electronic control unit when welding body panels.
- With temperature above 176 °F (80 °C) (such as during bodywork repairs) remove the electronic control unit.
- If the car is to remain out of use for some time add engine oil to the fuel tank in the percentage of 10% of fuel content.
- Never remove or insert control unit harness connector with ignition switched on.

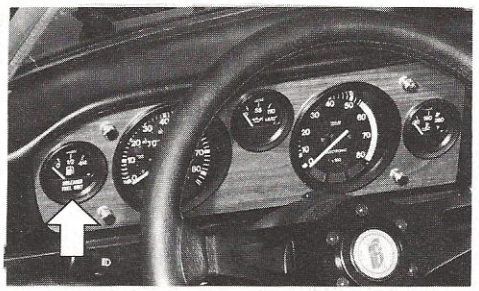
Fuel Refilling

WARNING

Strictly adhere to the label on instrument panel and on filler cap.

UNLEADED FUEL ONLY

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



Coolant Circuit

With engine cold, check coolant level in expansion tank which should be $2^3/_4$ in (7 cm) above the MIN mark on tank.

When engine is hot or immediately after stopping the level might rise noticeably.

On hot engine, do not unscrew radiator and expansion tank caps: you may get scorched.

Do not refill with cold water if level is too low.

Should more than 2 consecutive top-ups be required at short intervals, or after limited mileages (500 miles), the system needs checking. This applies also when coolant temperature gauge pointer stays on the red sector (see page 10).

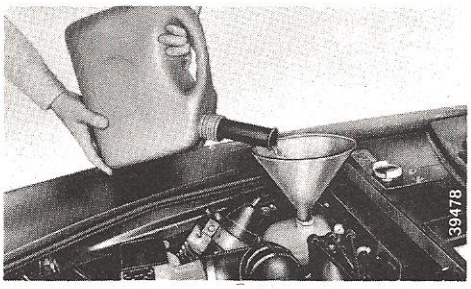
Antifreeze Mixture

The cooling system is filled with an antifreeze mixture effective down to −31° F (−35° C). In case of coolant change or topping-up Pininfarina recommends the use of a 50-50 mixture of water and antifreeze fluid, which allows the use of hard or chlorinated water and incorporates oxidation, corrosion, foam and scale inhibiting properties and is effective down to −31° F (−35° C). See Fill-up Data Table.

This mixture should **be replaced after 45 000 miles or every two years,** whichever occurs first, thus reducing the need for any servicing on the cooling system.

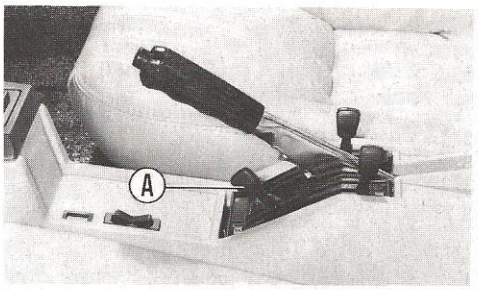
When this mixture is used, plain water may be added only in emergencies (sudden heavy coolant losses).

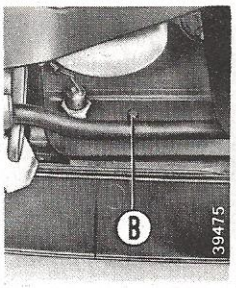
As soon as possible repair the fault and refill the system with the recommended coolant.

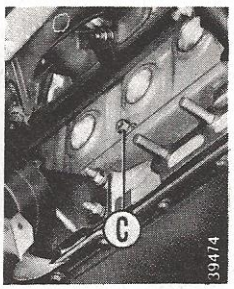


To Drain the Cooling System

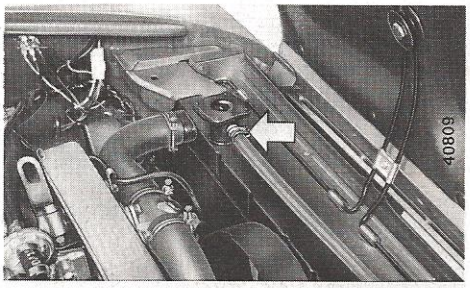
- Push heater temperature control lever A forwards.
- Remove radiator and expansion tank caps.



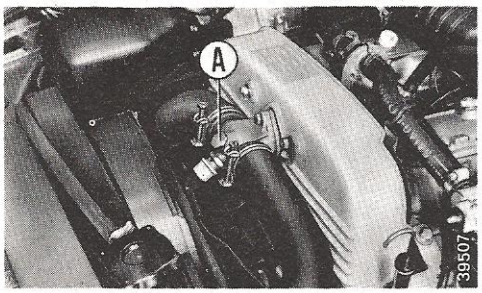


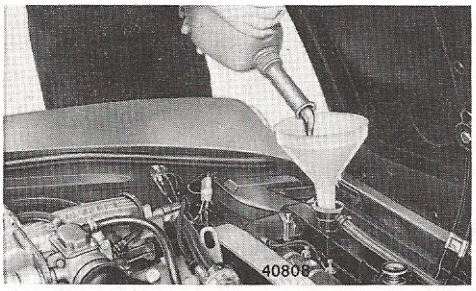


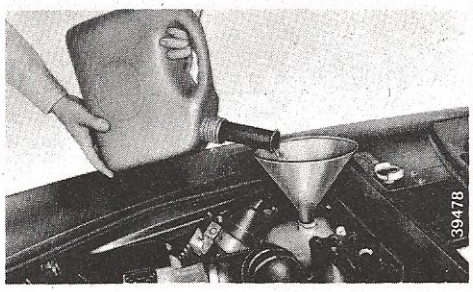
- Open valve B on radiator lower side and valve C on cylinder block.



- Remove expansion tank line.







To Fill the Cooling System

- Refit expansion tank line.
- Close the two valves.
- Remove bleeder screw A.
- Pour the coolant slowly into radiator until the radiator neck is full.
- Fill the expansion tank up to the mark.
- Close radiator cap, expansion tank cap and bleeder screw A.
- Start the engine and accelerate to bring about water circulation in the radiator.
- Switch off the engine and bleed the system through bleed screw A. When the coolant is free from bubbles retighten the screw.
- Finally, recheck the coolant level with engine cold.

Brakes

Inspection of fluid level in reservoir can be carried out without removing the cap. The level of the fluid should never be allowed to drop below the 2-section partition line.

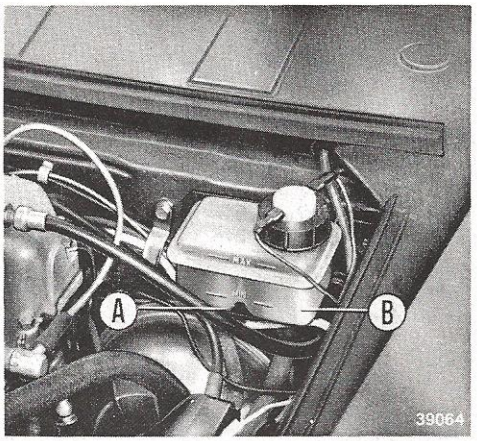
Periodically, check indicator light (see page 10) efficiency by depressing the reservoir cap with ignition key at MAR.

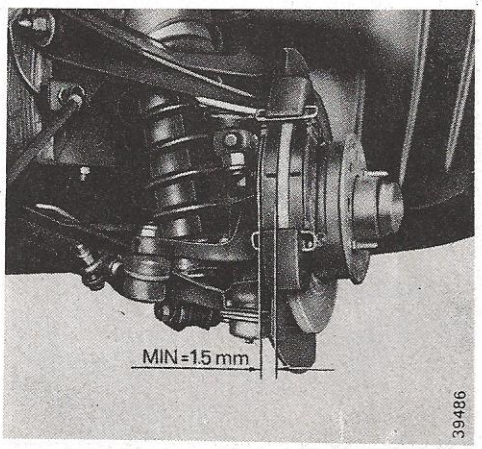
A - Front brake reservoir section.

B - Rear brake reservoir section.

When topping up use exclusively DOT 3 Motor Vehicle Brake Fluid (to F.M.V.S.S. No. 116). Different fluids may damage the rubber seals beyond repair.

Do not allow the brake fluid to drip on paint finish since it may be corrosive.



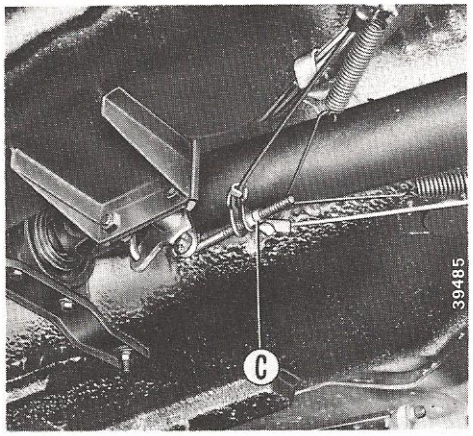


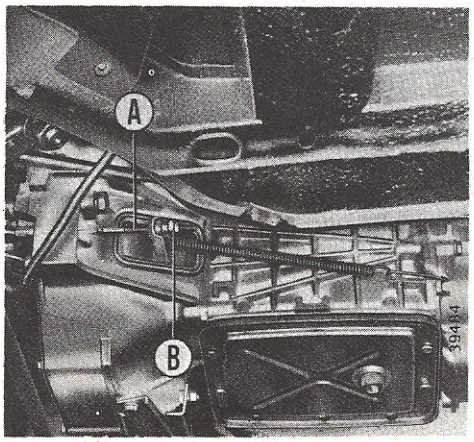
When friction pads housed in caliper have worn down to a thickness of approx. $^{1}/_{16}$ in (1.5 mm) they need replacing.

Brake lining wear take-up is automatic.

Check lines for leakages and tightness.

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





Hand brake

The wheels should be locked when the hand brake lever is applied three or four notches from the fully-off position.

If hand brake lever travel is excessive or the hand brake operates inefficiently adjust travel by means of tensioner nut C.

Clutch

Clutch pedal free travel is $^{63}/_{64}$ in (25 mm) approx. If necessary, adjust cable A through tensioner B.

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

Automatic Transmission

When checking the fluid level be careful of the following:

- The gearbox should be at the normal operating temperature.
- The car should be on level ground.
- The handbrake should be set and position "N" selected.
- The engine should be at normal idle.
- Wipe the dipstick using a lint-free rag.

The fluid level must be between MIN and MAX marks on stick A.

If necessary, top up to MAX mark, through filler hole blanked by dipstick, using oil for automatic transmission (see page 104).

Do not exceed "max" mark.

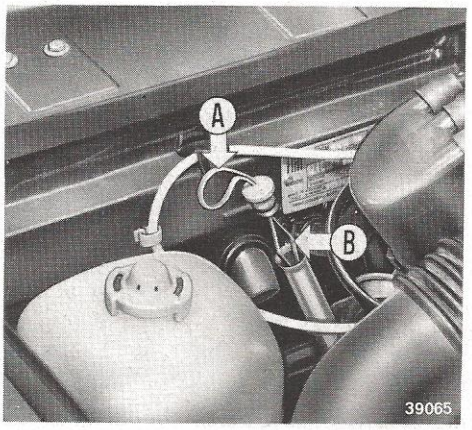
If fluid level is proved to be too high or too low it is not sufficient to take out excess fluid or top up fluid, but we recommend to bring the car to the nearest Dealer.

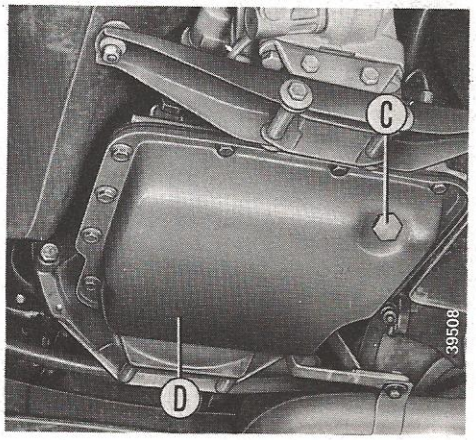
To replace the fluid, remove plug C. Refill through B.

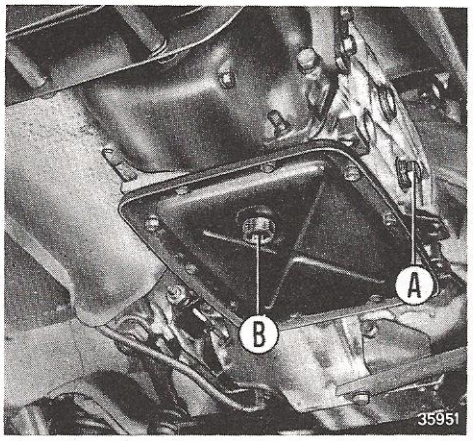
Should the fluid be very dirty, also remove sump D, replace the filter and associated gasket.

Replace the fluid at the prescribed mileage or every two years.

Do not run the engine nor tow the car prior to filling the automatic transmission.

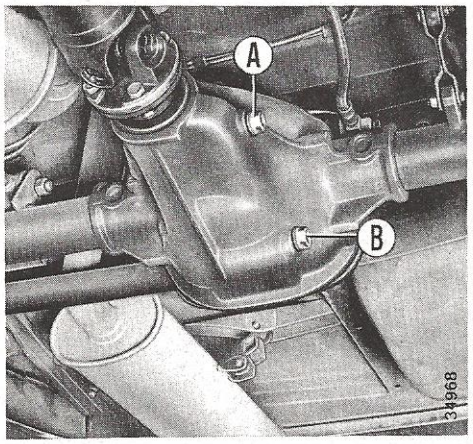






Manual Transmission Oil

The correct level is up to the opening of filler plug A.
Replace the oil with engine warm.
When replacing the oil, let it drain thoroughly from plug B before refilling.
See "Fill-up" data table for oil grade.

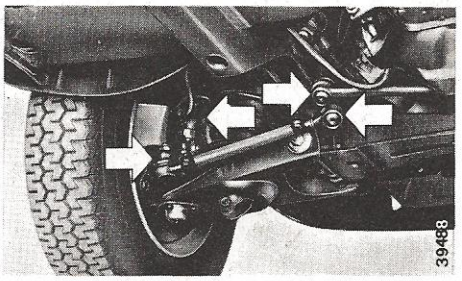


Axle Oil

To replace the oil, remove plug B and let oil drain thoroughly.
To refill, remove plug A and pour in oil up to the opening of filler plug.
See "Fill-up" data table for grade.

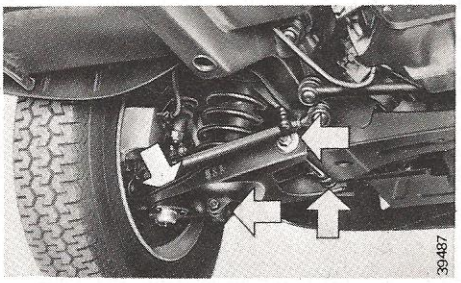
Front Wheel Bearings

At the mileage prescribed or whenever underbody inspections are carried out, check front wheel bearings for play and noise, and, if necessary, lubricate with **Lithium base grease** (see page 104).



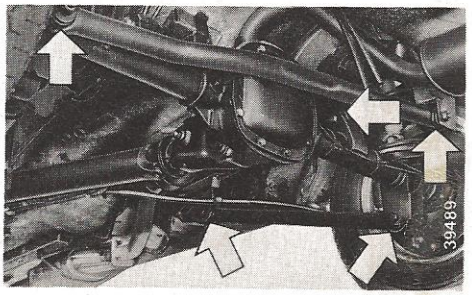
Front Suspension/Steering Articulation Boots and Caps

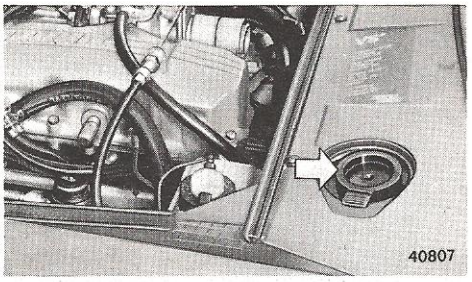
At the mileage prescribed or whenever underbody inspections are carried out, check the condition of ball joint rubber boots.
When renewing the boots, pack the new boots with **Lithium base grease** (see pag. 104).



Front and Rear Suspensions

At the mileage prescribed or whenever underbody inspections are carried out check rubber mounts for proper efficiency.



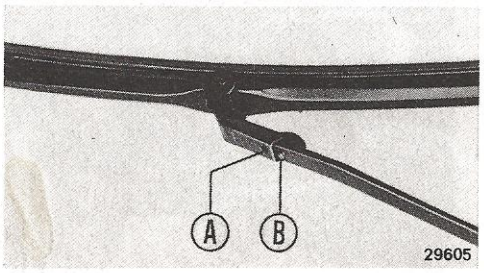


Windshield Washer

The windshield washer container is under the front cowl. Check level frequently and replenish as necessary. If the nozzles fail to operate clean the orifice by means of a pin.

To assist in cleaning the glass it is recommended that a windshield washer fluid be added to the washer bottle (see page 105).

Should nozzle adjustment be necessary turn both the body and side nozzle with a screwdriver until the jet strikes the top of the swept area of the shield.

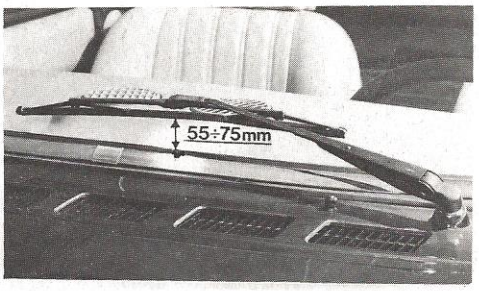


Windshield Wiper

To remove a blade:

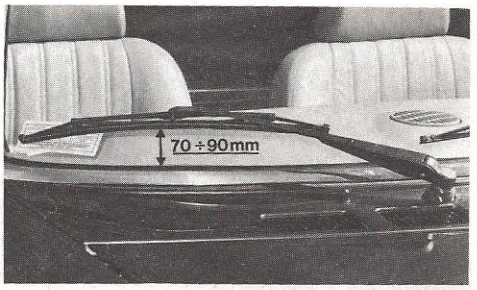
- Swing the wiper arm clear of the glass.
- Release blade carrier A from peg B by freeing the clip in the center and lift off the blade assembly.

To clean the rubber blade use alcohol.

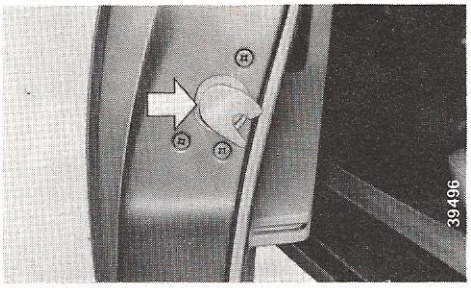


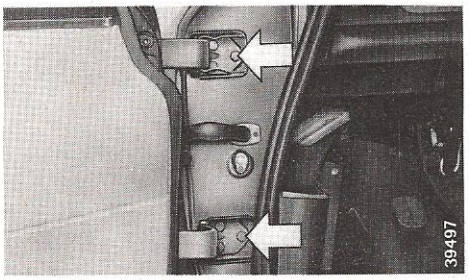
When adjusting wiper arms position on windshield ensure that the distance from windshield base to wiper arm fulcrum is:

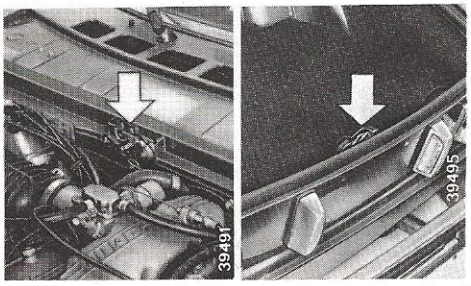
- driver's side = 2.17 to 2.95 in (55 to 75 mm)



- passenger's side = 2.76 to 3.54 in (70 to 90 mm)







Body Lubrication

Lubricate the following items as required using the recommended products:

- Door lock cylinders with **graphite powder**.
- Door locks.
- In cold climates it is recommended to squirt in 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 cylinder proves difficult, simply warm up the key.
- Door hinges and limiters, and seat back release control with **engine oil**.
- Trunk lid and engine hood catches and hinges with **petroleum jelly**.
- Seat guide rails with **Lithium base grease** to N.L.G.I. No. 1.

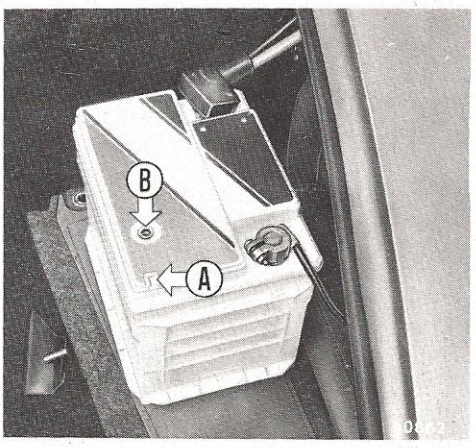
Battery

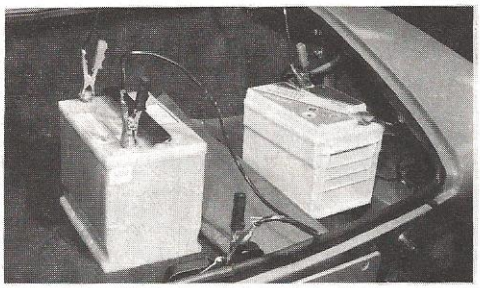
It is located in trunk, R.H. side.
This battery never needs water.
There are no filler caps in the cover. The battery is sealed, except for a small vent hole in the cover, which allows the gases produced to escape.
The vent requires keeping the battery in an upright position to prevent electrolyte leakage.
Tipping the battery beyond a 45° angle in any direction can allow a small amount of electrolyte to leak out the vent hole.

WARNING - All lead-calcium batteries generate hydrogen gas which is highly flammable.
If ignited by a spark or flame, the gas may explode violently, causing spraying of acid, fragmentation of the battery and possible severe personal injuries. In case of contact with acid, flush immediately with water.

State of Charge

A special hydrometer is built into the cover of the battery to show at a glance the battery state of charge.
If the hydrometer is dark, with center green dot, the battery is charged enough. Any starting difficulty is probably in the starter motor or starting system.
If the hydrometer is dark and the green dot does not appear, jump start with boost battery can be made and battery charging should be performed.





Jump Starting with Boost Battery

Both booster and discharged battery should be treated carefully when using jumper cables.
Follow exactly the procedure outlined below, being careful not to cause sparks.

- Set parking brake and place transmission in "neutral" ("Parking" for automatic transmission).
- Turn off lights and any electrical loads.
- Attach one end of one jumper cable to positive terminal of the **booster battery** and the other end of same cable to positive terminal of **discharged battery**.
- Do not permit vehicles to touch each other.
- Attach one end of the remaining negative cable to the negative terminal of the **booster battery** and the other end to ground at least 12 inches (300 mm) from the battery of the vehicle being started.

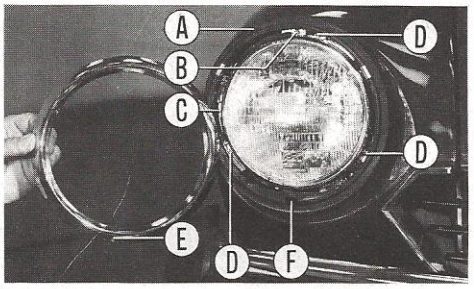
Do not connect directly to the negative post of the dead battery.

WARNING - Any procedure other than the above could result in:

1) Personal injury caused by electrolyte squirting out of the battery vent.
2) Personal injury or property damage due to battery explosion.
3) Damage to the charging system of the booster vehicle or of the immobilized vehicle.

REPLACING THE BULBS

Headlight Sealed Beam Unit Replacement



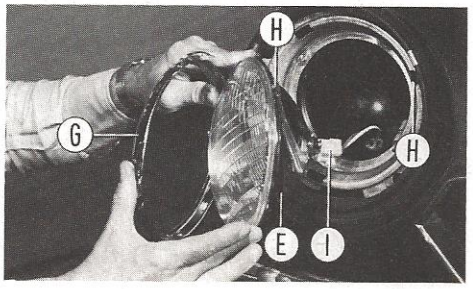
To Remove

- Loosen the retaining ring screw E and unhook from A.
- Loosen screws D, turn headlight unit counter-clockwise and remove it.
- Disconnect terminal I.

To Refit

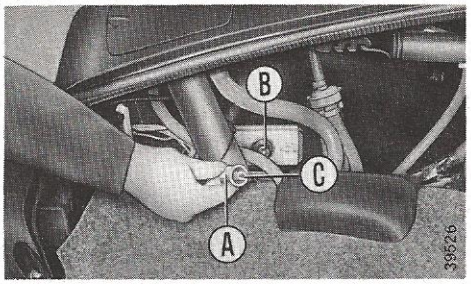
- Center headlight unit on body by aligning locating dowel H with slot H.
- Turn the unit clockwise and retighten screws D.
- Refit retaining ring G by tightening screw E in hole F.

Headlight Alignment



For aiming the headlights, screw B (vertically) and C (horizontally) are readily accessible after removing retaining ring G.

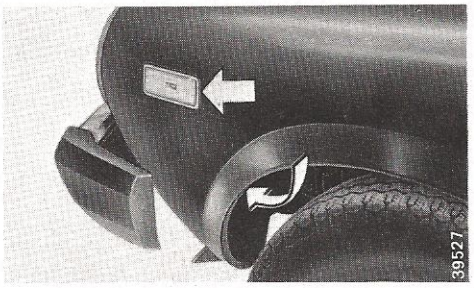
Caution: Replace blown bulbs with bulbs of the same type and wattage only. Weaker bulbs will diminish visibility whereas stronger bulbs will draw a greater amount of current and overwork the alternator, resulting in progressive battery discharge. For bulb specifications see page 102.



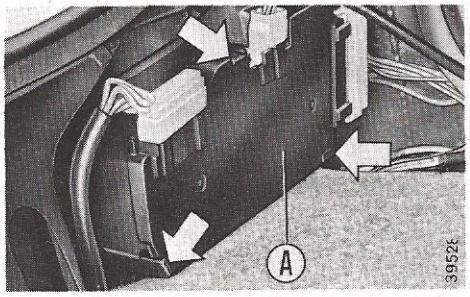
Side Marker Lamps

The rear bulb holders are accessible from inside the trunk.

To remove the bulb, disconnect bulb holder A from seat B by turning counter-clockwise.
Bulb C is of the plug-in type.

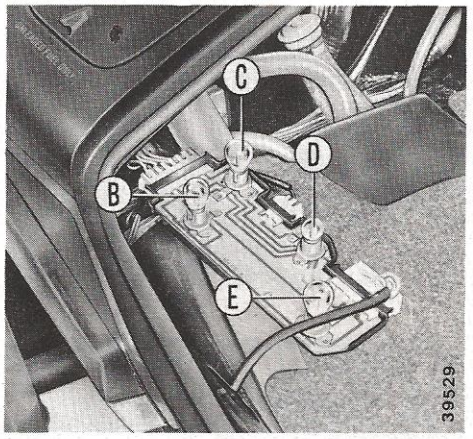


Front bulbs are accessible from inside fenders.
To remove or refit follow the procedure given for the rear bulbs.



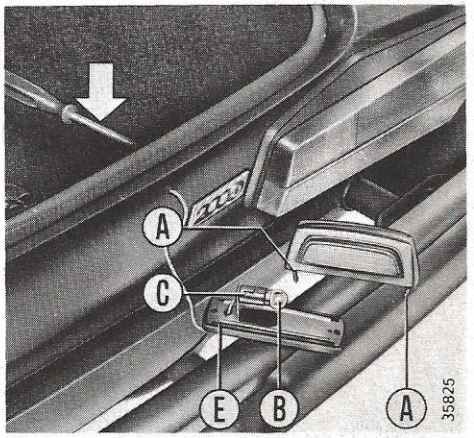
Rear Turn Signal, Stop and Back-up Lamps

The bulbs are accessible from inside trunk after removing panel A.
To remove the panel free it from the lugs (arrows).



The bulbs are of the bayonet type.

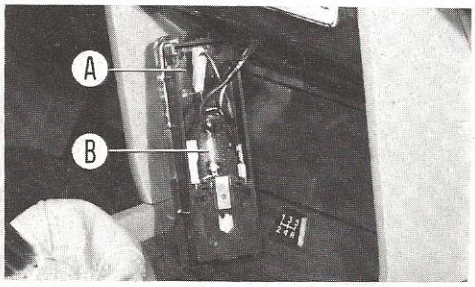
B Turn signal light
C Stop light
D Tail light
E Back-up light

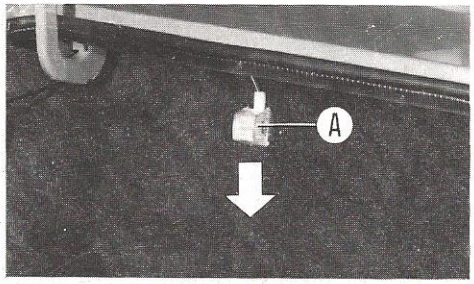


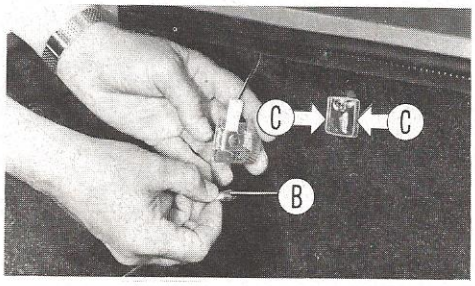
License Plate Lamps

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

A Body retaining screws
B Bulb
C Bulb holder
E Gasket







Courtesy Light

The plug-in type festoon bulb B (5 W) can be reached by removing unit A.
To take out the unit pry off with a screwdriver.

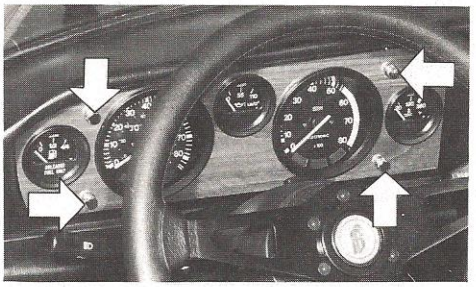
Trunk Light

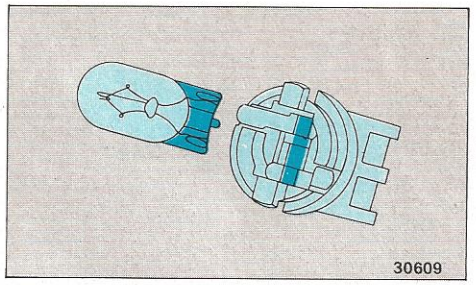
To gain access to the bulb press down lens A;

— Refit bulb B with the transparent portion facing the lens.
— Refit body A sliding it over guides C.

Cluster and Indicator Lights

The bulbs may be reached after removing the instrument cluster secured by four retaining screws.
Wedge-coupled bulbs holders are of the bayonet-coupled type.

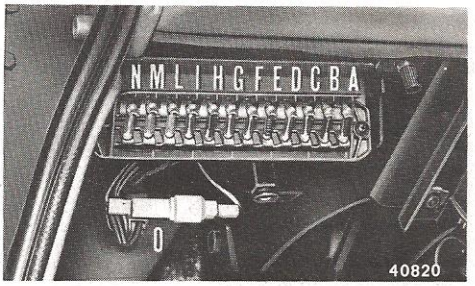




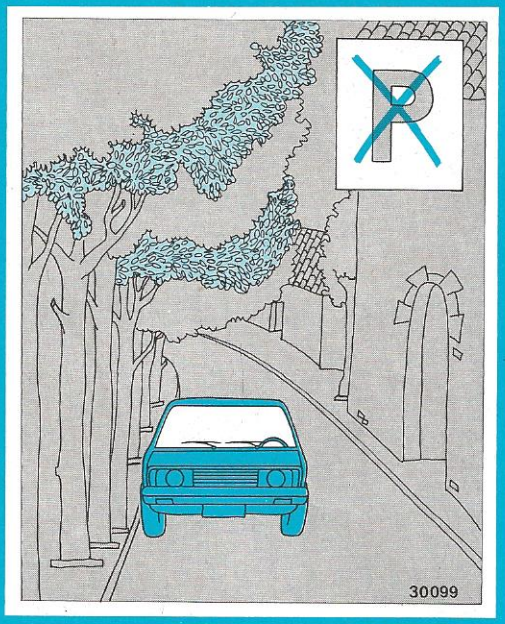
Fuses

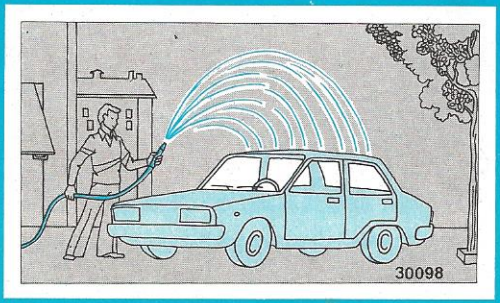
Fuses are housed in a centralized connection box, beneath the dash, on the driver's side – One fuse is also provided, in separate holder, near the fuse box.

— To gain access to fuses remove box cover.
— Protected circuits are listed on page 100.



EXTERIOR AND INTERIOR CARE AND CLEANING





Body Paint Finish

The paintwork, in addition to serving a decorative function, also covers and protects the metal.

Therefore, any abrasion or deep scratches that expose the sheet metal should be retouched immediately to avoid pitting by rust.

This retouching should always be done with original products (see paint identification plate).

Washing the car is the most important part of normal paint maintenance.

The frequency of washing depends not only on the frequency of use, but also on the nature of the car surroundings: washing should be more frequent in more polluted areas, or if the car is often parked under trees which produce harmful resins.

A correct wash should be done as follows: First the car should be hosed with water at low pressure and sponged down with a light (2 - 4%) detergent solution. Rinse the sponge frequently. Rinse the car with a spray of water to carry away the loosened dirt, then dry with an air jet or chamois leather.

Be particularly careful to dry the less visible areas, such as the door frames, hood and headlight housings, where standing water can collect more easily. Similarly, avoid putting the car in a closed space immediately after washing, so that air circulation can help evaporate any trapped water.

Do not wash the car after it has been parked in the sun, or if the hood is still hot, as this could adversely affect the brilliancy of the paint.

The occasional use of a silicone car wax will give the paintwork extra protection and keep it shiny. If the paintwork becomes cloudy due to smog accumulation, a slightly abrasive light wax polish can be used.

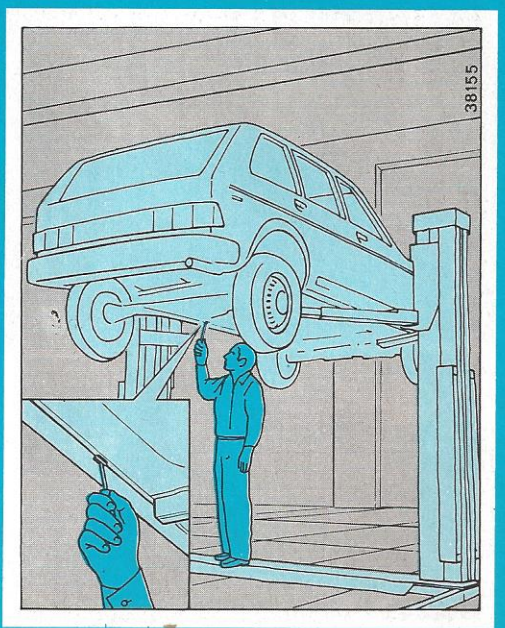
Body Underside

The less accessible areas of the underside and frame box sections have already been treated to ensure long protection.

Regular check-ups should be made on the car. The aim of these is to survey the soundness of the body and mechanical components, as well as to repair any damage. Particular attention should be paid during check-ups to the drainage holes in the underbody box frames and door frame undersides. These holes serve to drain any water that may accumulate while driving the car in the rain or while washing it, and so should be kept clear.

In harsh environmental conditions, periodic supplementary protective treatments to the box sections and door interiors are recommended.

These treatments must be done with special products and techniques, and so should be left to experts. They should be done at least every two years, and, in more severe cases, annually, preferably at the beginning of winter.



Car Interior

The maintenance of the passenger compartment is no less important than that of the exterior. The same care should be devoted to it.

Check that there is no standing water under the mats or floor lining, as this could cause rusting. Dust the seats and cloth parts with a brush or vacuum cleaner.

To remove grease spots use petroleum ether or light gasoline, apply talc and brush off.

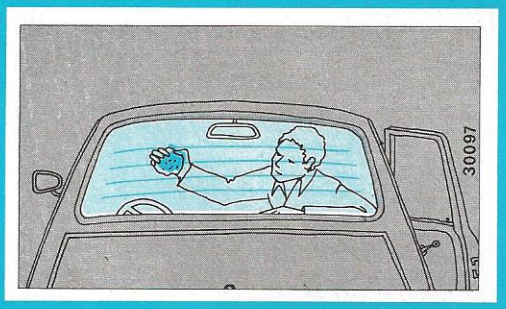
To clean leather upholstery use saddle soap to preserve the finish.

To clean seats in imitation leather, use a damp sponge and a neutral or mild soap. Rinse several times with a clean damp sponge.

Windows

To ensure perfect visibility, windows should be cleaned with a good quality glass cleaner and then wiped dry. Always use a clean cloth to avoid scratching the glass.

To clean the inside of the windshield, where stubborn grease deposits are apt to be found, use sulphur ether as a solvent.

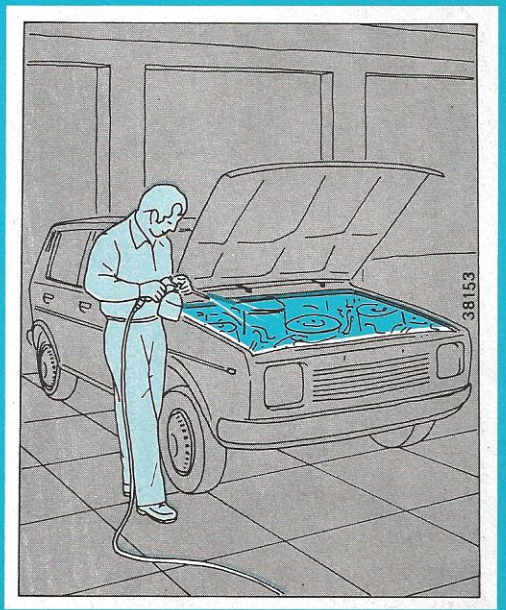


Engine Compartment

The engine compartment should be well washed at the end of every winter to avoid damage caused by salt on the roads.

Chromium Trim

Chromium parts should be coated occasionally with car chrome preservant to protect them from atmospheric agents.



Cleaning Plastic Parts

Exterior plastic parts should be washed in the same way as the car itself. If traces of dirt remain, use special plastic cleaners, following the manufacturer's instructions. Interior plastic parts can be cleaned in the same way. Do not use paint cleaners.

Cleaning the Convertible Top

To properly clean the convertible top, use the following procedure:

- Do not perform cleaning procedure in direct sunlight.
- Thoroughly wet down the entire vehicle with water.
  — Keep vehicle wet through entire cleaning operation.

Caution: Make sure soap and cleaners do not run onto a dry body finish since it may cause streaks or stains if allowed to dry.

- Apply a mild foaming cleaner to the entire top.

— Use a Lestoil and Fantastic mixture with clean warm water in a 2 to 1 ratio.

For example:
— 1 pint Lestoil
— $^1/_2$ pint Fantastic
— $^1/_2$ gallon clean water

- Scrub the top with a small medium-soft bristle brush adding water, as necessary, until the cleanser forms a soapy consistency.
- Remove the first accumulated dirt from the top with a cloth (towel) or sponge before it can be rubbed back into the fabric top.
- Apply a fresh mixture of cleanser and clean water to top. Scrub top with brush until the top is clean.
- Thoroughly rinse the top with clean water to remove all traces of cleanser.

If any dirt spots are still on the top, apply Lestoil directly to the **wet** top, utilizing the same scrub brush and a final rinsing with clean water.

Leaving the Car in the Garage

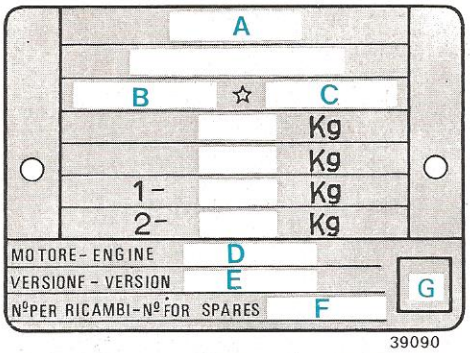
A car left in the garage is subject to damage by humidity, which is generally greater in a closed space than in the open air.
Parking the car in the garage while wet or covered with snow will increase humidity through slow evaporation. In such cases the car should be dried. Do not store large quantities of water in the garage. Make sure that the garage has windows or other openings to ensure adequate ventilation.

Prolonged Inactivity

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

- Clean and protect the painted areas with silicone wax. Coat the bright metal parts with a standard chrome preservant.
- Store the car in a covered, dry and ventilated place.
- Ensure that the parking brake is released.
- Disconnect the battery terminals.
- Remove the wiper blades and coat with talc.
- Open the door windows slightly.
- Protect the car using a non-plastic car cover. This should not be waterproof.
- Check the tire inflation pressure periodically.
- Check the battery charge every $1^1/_2$ month. When necessary, use a slow 24 hr. charge.
- Do not empty the cooling system.

SPECIFICATIONS



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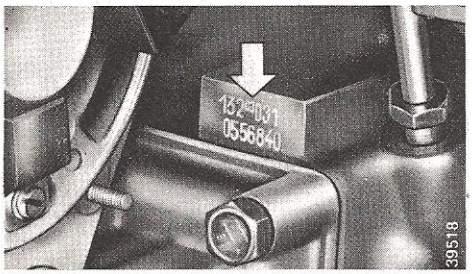

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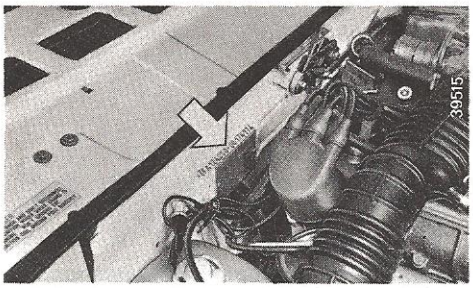
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IDENTIFICATION DATA

Manufacturer's Plate

A Name of manufacturer

B Manufacturer's code and type of vehicle

C Vehicle identification number

D Engine type

E Body type

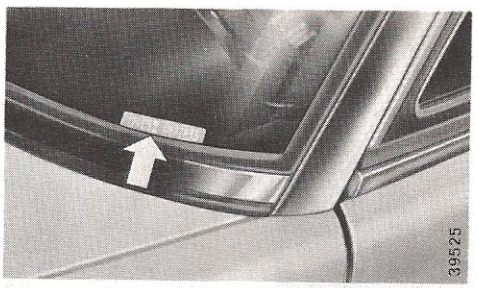
F Number for spares

G Space reserved for Diesel vehicles

Engine Type (132 C3.031) and Identification Number - Punched on crankcase, left engine mount.

Chassis Type (124.DS0) and Identification Number - Punched on engine compartment (permanent structure) right side.

F.M.V. Safety Standard 115 Tag - The type of vehicle and chassis number, located on top of the dashboard between instrument cluster and windshield.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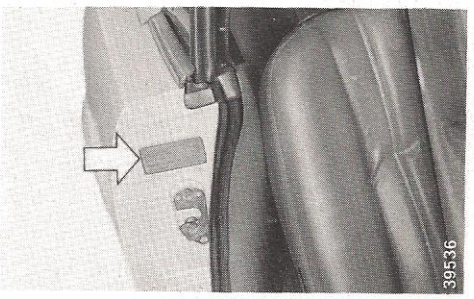
F.M.V. Safety Standard 110 Tag - Tire data and car capacity, located on right door pillar.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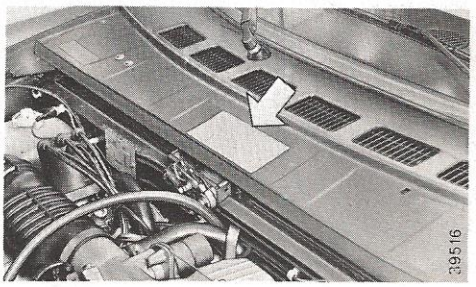
EPA and California Regulations Conformity Label - Air pollution and control specifications for correct fuel system tune-up.
It is located on engine compartment (permanent structure).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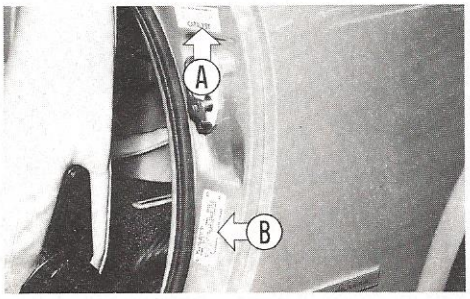
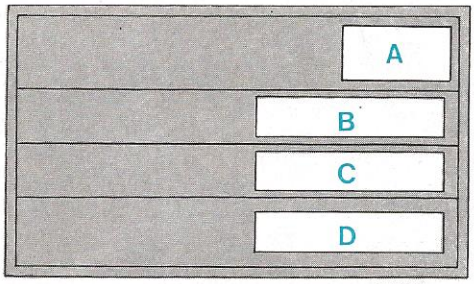


A - Vehicle Emission Control Information Label - Located on left door pillar.

B - 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.

Decal "CALIFORNIA EXHAUST EMISSION STANDARDS" to section 43200, California Health Safety Code, on RH side of windshield.



Paint Specification Label: Affixed to the inside of the trunk lid:

A Paint make
B Color name
C Pininfarina color code
D Color code (touch-ups and repainting)

ENGINE

Type	132 C3.031
No. of cylinders	Four, in-line
Bore x stroke	3.31 x 3.54 in (84 x 90 mm)
Displacement	121.74 cu.in. (1 995 cm^3)
Compression ratio	8.2 to 1
Maximum power (SAE net)	102 HP
— at	5 500 rpm
Maximum torque (ft. lbs.)	110
— at	3 000 rpm

Valve gear

Valve position		Overhead
Operation		Twin overhead camshafts
Drive		Toothed belt
Intake	Opens	5° B.T.D.C.
	Closes	53° A.B.D.C.
Exhaust	Opens	53° B.B.D.C.
	Closes	5° A.T.D.C.

Tappet clearance

— for timing check	.031 in (0.80 mm)
— Normal (cold)	
Intake	.016 to .019 in (0.41 to 0.49 mm)
Exhaust	.018 to .021 in (0.46 to 0.54 mm)

Fuel System

Electronically controlled fuel injection. 4-injectors, one per cylinder plus one auxiliary valve for cold starting, all supplied at constant pressure.

Gasoline flow governed by variation in opening time of injectors.

An air measuring instrument is used for flow variation (air flow sensor).

Electric sensors optimise the mixture in all engine operating conditions by supplying information to the electronic control unit.

Air cleaner with paper cartridge is installed before the air flow sensor.

Lubrication System

Forced circulation by gear pump and pressure limiting valve.
Full-flow cartridge oil filter.

Cooling System

Radiator and expansion tank.
Water circulated by centrifugal pump.
Controlled-bypass thermostat on cylinder head outlet duct.
Fan, driven by electric motor, with engagement controlled by thermostatic switch on radiator. Cut-in temperature: abt. 90 °C (194 °F).

Ignition System

Firing order	1-3-4-2
Basic ignition timing at 800 to 850 rpm (700 to 750 rpm with automatic transmission)	10° ± 1.5° B.T.D.C.
Automatic advance	18° ± 2°

Spark Plugs

Type	CHAMPION RN 9 Y
Thread size	14 x 1.25 mm
Gap	.027 to .031 in (.7 to .8 mm)

BRAKES

Service

Hydraulically operated by pedal through vacuum servo and tandem master cylinder.
Disc type, with floating caliper and one cylinder to each wheel.
Independent front and rear circuits.
Proportioning valve in rear circuit for car load and deceleration rate variation compensations.
Device for automatic wear take-up.

Parking

Mechanical, operating on rear brakes.

DRIVE TRAIN

Clutch

Single plate, dry, with disc spring, mechanically controlled, automatic wear take-up.
Pedal free travel 0.98 in (25 mm).

Manual Transmission

Five forward speeds (all synchronized) and reverse.
Gear ratios to 1:

1st	2nd	3rd	4th	5th	Reverse
3.667	2.100	1.361	1	.881	3.526

Automatic Transmission

(Optional)
G.M. hydraulic torque converter-gearbox unit.
Transmission ratios:

First	2.40 to 1
Second	1.48 to 1
Third	1 to 1
Reverse	1.92 to 1

Drive Shaft

Tubular drive 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

Final drive hypoid gear ratio	3.90 (10/39)
— with automatic transmission	3.58 (12/43)

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 transverse. Coil springs, hydraulic double-acting 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	16.4 (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 joints.
Hydraulic, double-acting damper on relay support.

Turning circle	34 ft 2 in. (10.4 m)
Front wheel camber, measured at rim	.00 to .24 in. (0 to 6 mm) or 30′ ± 30′
Front wheel toe-in, measured at rim	.118 to .079 in. (3 ± 2 mm)

The above data apply to cars laden to the equivalent of 2 adults (300 lbs) plus 130 lbs of luggage.

Wheels and Tires

Disk wheels, ventilated, with rim size	5 J - 13″ H2 or $5^1/_2$ J - 14″H2
Radial-ply tires, size	165 SR - 13″ or 185/60 - HR14″
Spare wheel, rim size	5 J - 13″
Spare tire, size	165 SR - 13″

ELECTRICAL SYSTEM

Voltage ..... 12 Volts

Alternator

Continuous current rating ..... 65 Amps
Incorporated current rectifiers.
Automatic voltage regulator.
Cut-in speed at starting of engine (with users off).

Battery

With grounded negative; capacity at
20-hr discharge rate ..... 55 Ah
Cold (−18 °C) high-discharge test current 255 Amps

Starter

Power rating ..... 1.3 kW
Direct engagement by solenoid and free-wheeling pinion.

Heater Fan Motor

Power rating ..... 20 W

Engine Radiator Fan Motor

Power rating ..... 110 W

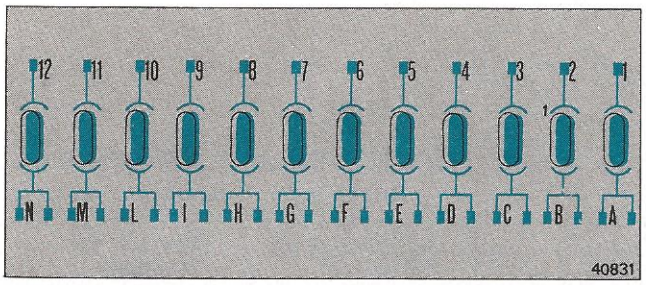
Windshield Wiper Motor

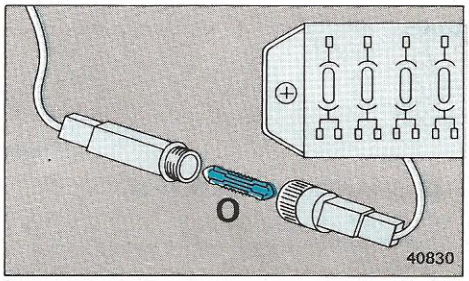
Power rating ..... 28 W

Fuses

Ten 8-Amp, two 16-Amp fuses and one 16-Amp, fuse in separate holder.

Fuses	*Protected Circuits*
A (16 Amps)	Power windows
B (8 Amps)	Trunk opener solenoid Cigarette lighter
C (8 Amps)	LH headlight hi-beam Hi-beam indicator
D (8 Amps)	RH headlight hi-beam
E (8 Amps)	LH headlight lo-beam
F (8 Amps)	RH headlight lo-beam
G (8 Amps)	LH rear marker light LH tail light LH license light RH front marker light RH front parking light





Fuses	*Protected Circuits*
H (8 Amps)	RH rear marker light RH tail light RH license light Trunk light LH front marker light LH front parking light Instrument cluster lights Lights-on indicator Digital clock dimmer circuit Cigarette lighter light
I (8 Amps)	Digital clock memory circuit Courtesy light Accessory socket Hazard lights Seatbelt chime
L (8 Amps)	Horns Cooling fan motor
M (8 Amps)	Stop lights Switch lights light source Fuel gauge and warning indicator

Fuses	*Protected Circuits*
	Brake indicator Oil pressure gauge and warning indicator Tachometer Coolant temperature gauge Turn lights Trunk opener switch "Exaust gas sensor" indicator Seatbelt indicator Seatbelt timer Back-up lights Seatbelt relay coil Power antenna motor provisions
N (8 Amps)	Windshield wiper/washer circuit Lambda sensor switch unit Heater fan Digital clock display circuit
In Separate White Holder (16 Amps fuse)	Fuel injection Fuel pump
Unprotected circuits:	Alternator, ignition, starting, battery charge indicator

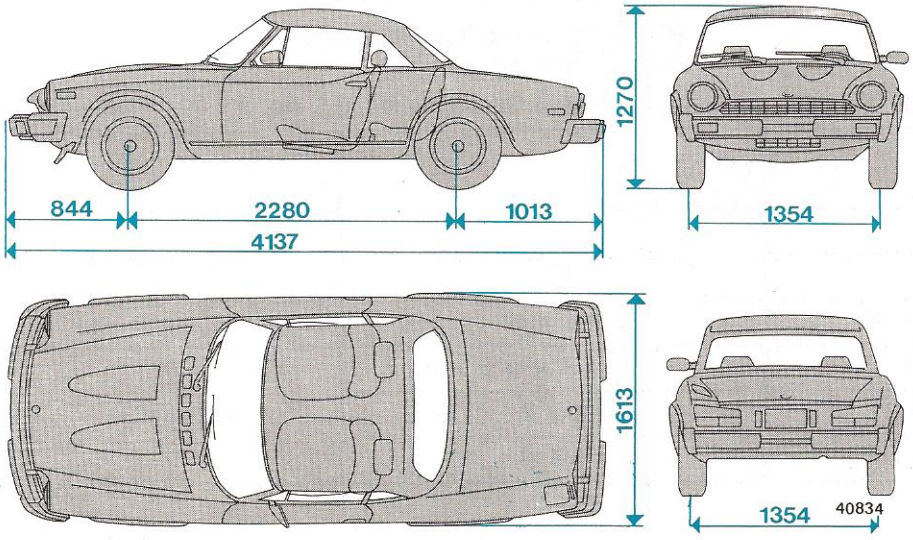
Bulbs

Location	SAE Standard	Std. Part No.
Headlights (high and low beams)	"Sealed Beam" headlight unit 4002	
Front lamps		
turn signal	No. 1034-(32 cp)	12 V-5/21 W
parking	1/41461/90	14144690
Rear lamps		
turn signal	No. 1063 (32 cp)	12 V-21 W
back-up	1/41460/90	14148190
stop		
Rear lamps		
tail	No. 67 (4 cp)	10857790
license plate	1/41459/90	
Courtesy light	—	12 V-5 W 10863090
Ideogram illumination optical fiber light source	—	12 V-3 W 14143990
"EX. GAS SENSOR" indicator		
Selected gear indicator light (aut. transmission)		
Turn signal indicator	No. 158 (2 cp)	14145890 or 14143990
Headlight high beam indicator		
Battery charge indicator		
Insufficient oil pressure indicator		
Fuel reserve indicator		
Parking and tail lamps indicator		
Instruments cluster lights		
Fasten belts indicator		
Hazard warning signal indicator		
Low brake fluid level and hand brake ON indicator		
Side marker lights		
Hazard warning signal switch light	—	12 V-1.2 W 14143790
Trunk lamp	—	12 V-4 W 14142390
Cigarette lighter housing indicator		

MAIN DIMENSIONS

in.	33.2	39.9	50.0	53.3	63.5	89.7	162.9
mm	844	1 013	1 270	1 354	1 613	2 280	4 137

Overall height is measured with unladen car.



PERFORMANCE

Speeds

Maximum speeds after break-in, fully laden

	Manual Transm.	Auto-Transm.
1st gear	29	47
2nd gear	50	76
3rd gear	76	104
4th gear	104	—
5th gear, over	107	—

Gradeability

Maximum grades climbable, fully laden

	%	%
1st gear	53	45
2nd gear	26	25
3rd gear	16	17
4th gear	11	—
5th gear	9,5	—

WEIGHTS

Curb weight	manual	2 360 lbs
	automatic	2 400 lbs

Vehicle load capacity (total 430 lbs):
2 adults (300 lbs) + 130 lbs of luggage

Gross weight (fully laden)	manual	2 790 lbs
	automatic	2 830 lbs
Designated seating capacity		2 persons
Occupant distribution		2 in front

RECOMMENDED LUBRICANTS AND FLUIDS

	INTERNATIONAL DESIGNATION
ENGINE (see table below)	**Low-ash Detergent Oils** - Api Service SE - CC to MIL-L-46152, and above CCMC Sequence
MANUAL TRANSMISSION	**SAE 80 W/90 Oil** (not EP) with anti-wear additives
AUTOMATIC TRANSMISSION	**A.T.F. - DEXRON II Type**
REAL AXLE STEERING BOX	**SAE 80 W/90 EP OIL** to MIL-L-2105 C requirements
BRAKE	**DOT 3 Motor Vehicle Brake-Fluid** to F.M.V.S.S. No. 116
FRONT WHEEL BEARINGS-BALL JOINTS	**Lithium-base Grease** to N.L.G.I. No. 3

ENGINE OIL

OUTDOOR TEMPERATURE		SAE VISCOSITY GRADES	MULTIGRADE OIL
F°	C°		
below 5°	below – 15°	SAE 10 W	—
5° to 32°	– 15° to 0°	SAE 20 W	SAE 15 W 40
32° to 95°	0° to 35°	SAE 30	
above 95°	above 35°	SAE 40	

Do not mix oils of different brands or grades.

FILL-UP DATA

	U.S. units	kg	dm³ (lt)	
Fuel tank	10.6 Gals	—	40.1	Unleaded gasoline with octane rating of at least 91 (Research Method)
Radiator, engine and heating system	$8^1/_2$ Qts	—	8	Antifreeze mixture (see page 66)
Engine sump and filter (1)	$4^1/_4$ Qts	3.75	4.125	Low-ash content detergent oils-API Service SE to MIL-L-46152 and above the CCMC European Sequence. See Table on page 104.
(1) The amount indicated is the requirement for periodical oil changes.				
Manual transmission	$1^3/_4$ Qts	1.50	1.65	SAE 80 W/90 oil containing special antiwear additives
Automatic transmission	3 Qts	2.5	2.80	A.T.F. - Dexron II type fluid
Rear axle	$1^2/_5$ Qts	1.20	1.30	SAE 80 W/90 EP oil
Steering box	$^2/_5$ Pt	.19	.215	
Hydraulic brake circuits	$^1/_3$ Pt	.38	.380	DOT 3 Motor Vehicle Brake Fluid to F.M.V.S.S. No. 116

	Temperature	Solvent in bottle	
Windshield washer	above 32° F (0° C) down to 14° F (–10° C) below 14° F (–10° C)	3% 50% 100%	Pure water plus high quality windshield washer solvent

TIRE PRESSURE

Front and rear ..... 28 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.

INDEX

INDEX

Important - All conversions are in U.S. units. They are given merely for Owners' convenience and, though the closest approximation is sought, are normally rounded off for practical reasons. **It must therefore be understood that in case of any discrepancy the metric units are the only valid reference.**