

IMPORTANT NOTICE TO OWNER

If you should have a problem or question concerning the servicing of your car, write or phone either your Selling Agent or your local Alfa Romeo Distributor. The name and address of the one nearest you appears in the "Guide to Service Network".

WARNING

Beware of the danger of carbon monoxide! Never run the engine in an enclosed space. The exhaust gases contain carbon monoxide, a deadly gas. Carbon monoxide is particularly dangerous as, being it colourless, odourless and tasteless, its presence is very difficult to detect. The operation and maintenance instruction contained in this handbook MUST BE CAREFULLY OBSERVED by every owner who desires to get the best from this vehicle and to ensure a long life for every component.

Owners are recommended, in their own interest, to entrust all maintenance and repair work to an AUTHORIZED ALFA ROMEO SERVICE STATION as such Stations are equipped with the proper tools and staffed by specially trained mechanics who are kept up-to-date by our technical literature.

Owners are reminded that Alfa Romeo cannot be responsible for any errors made by unauthorized service stations.

Only use GENUINE SPARE PARTS and or lubricants as recommended.

ALFA ROMEO - DIREZIONE ASSISTENZA

The data relating to weights, consumptions and speeds are approximate only; Alfa Romeo reserves the right to change without notice any features and data given in this book. Some of the equipments are optional extras. Refer to price list for a comprehensive list of optionals.

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GUARANTEE

The Supplier guarantees the products of the Factory as guaranteed by the Manufacturer (who guarantees exclusively the products of normal manufacture) as follows:

 passanger cars and derivatives; for 6 months from the date of delivery to the Customer with no mileage limit;

The guarantees does not cover tyres and non-essential accessories if made by third parties.

The guarantee covers the free repair of, or free supply and replacement of, any parts found to be unserviceable because of an acknowledged defect of materials: defects will be acknowledged after prior investigation of them and of their cause exclusively by the manufacturer's workshops or by workshops authorized by the manufacturer, and at the said workshops. Delays, if any, shall not entitle the Purchaser to receive compensation for damages, not to any extension of his rights under the guarantee.

The guarantee shall automatically lapse:

- if the products are used otherwise than in accordance with the manufacturer's instructions;
- if they are modified, repaired or dismantled, even if partially, elsewhere than in the manufacturer's workshops or workshops authorized by the manufacturer;
- if bodies of different origin which have not been previously approved by the manufacturer are fitted to the chassis.

The Purchaser shall not be entitled, in any of the cases stipulated by this article, to claim cancellation of the Contract or compensation for damages.

SERVICE COUPON BOOK

The Service Coupon Book, supplied with every vehicle, bears the conditions that govern the provision of Alfa Romeo Serv-

ices and the replacement of damaged parts during the period covered by the guarantee.

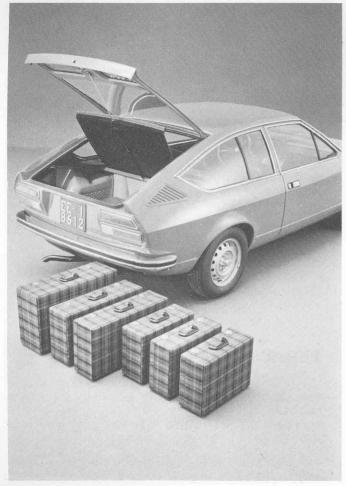
The Service Book include two coupons covering certain free maintenance during the guarantee period, and he must use these coupons on completion of the mileage as stated thereon.

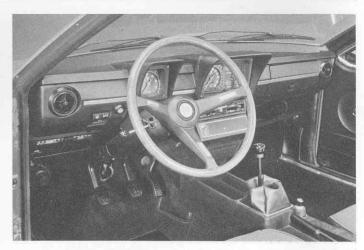


SERVICE NETWORK

The Alfa Romeo Services in Italy and abroad are listed in the Guide supplied with every vehicle. In any event rely on your Alfa Romeo Agent who display the shield with the Alfa Romeo emblem and name.

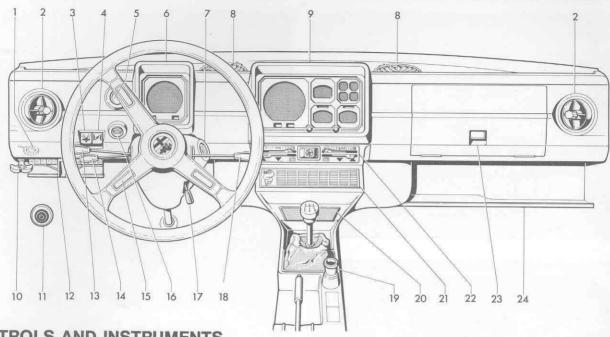
The Alfa Romeo Services in Italy are also entered in the telephone directory under «A» Alfa Romeo.







HOW TO USE YOUR CAR



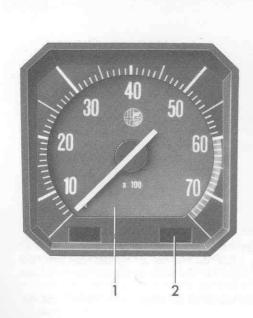
CONTROLS AND INSTRUMENTS

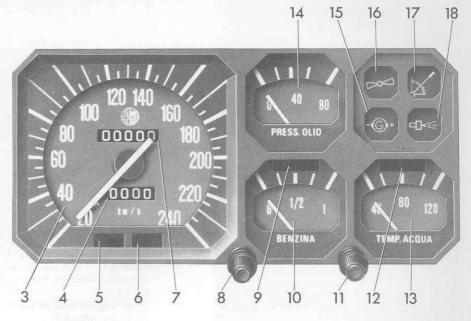
CONTROLS

- 1 Bonnet emergency release
- 2 Ram air vent
- 3 Choke
- 4 Hand throttle
- 5 Road hazard light switch (Sweden and Norway only)
- 6 Tachometer
- 7 Ignition switch and antitheft
- 8 Windscreen demisting outlet

- 9 Speedometer Indicating instruments
- 10 Bonnet catch release
- 11 Windscreen washer pump
- 12 Fusebox
- 13 Headlamp and flashing switch
- 14 Direction indicator switch
- 15 Horn
- 16 Heated rear window switch

- 17 Adjustable wheel lever
- 18 Windscreen wiper switch Screen washer electrical pump (Sweden and Norway only)
- 19 Cigarette lighter
- 20 Ash tray
- 21 Provision for radio set
- 22 Ventilation and heater control panel
- 23 Glove compartment
- 24 Parcel shelf





INSTRUMENTS

- 1 Tachometer
- 2 Direction indicator warning light
- 3 Speedometer
- 4 Trip odometer: to reset, push knob 11 and rotate it clockwise
- 5 High beam warning light
- 6 External light warning

- 7 Odometer
- 8 Dimmer for facia panel lights: to increase instrument light brilliance turn clockwise the knob.
- 9 Fuel reserve warning light
- 10 Fuel level indicator
- 11 Trip odometer reset
- 12 Coolant temperature warning light

- 13 Coolant temperature indicator
- 14 Oil pressure gauge
- 15 Alternator warning light
- 16 Blower warning light
- 17 Handbrake and low brake fluid level warning light
- 18 Choke warning light

Ignition and antitheft device key

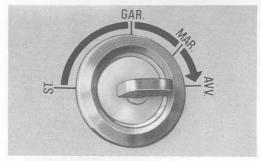
SYMBOL.....

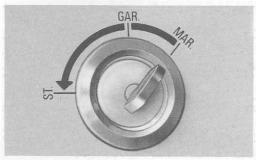


SYMBOL.....

Key to doors, boot lid







KEYS

It is a good rule to keep a record of the symbol stamped on the key handle. When ordering duplicate keys, please quote the symbol.

STARTING THE ENGINE

Insert the key in the ignition switch and turn it clockwise to "AVV" (starting). While doing this, when the key is at "MAR" position, the alternator warning light will come on. As soon as engine starts, release the key.

If the engine fails to start, the key must be returned to "GAR" and the operation repeated.

STOPPING THE ENGINE

Return the key anticlockwise to "GAR" (garage).

ANTITHEFT / STEERING LOCK

Turn the key back to ST. By withdrawing the key the steering is locked; to engage the lock properly slightly rotate the wheel in both directions.

Warning: Never withdraw the key before the car has come to a complete stop. To release the steering lock insert the key and turn it clockwise. To help, slightly rotate the wheel in both directions.

GEARSHIFT LEVER

The gear shifting diagram is shown at right.

When shifting gears, take care to depress the clutch pedal fully; this will ensure smooth operation of gearbox and save synchronizers from excessive wear

ADJUSTING THE STEERING WHEEL

The adjustable steering wheel can be set in a position to suit your preference. The adjustable range is about 80 mm (3 in.).

Position changes can be made as follows:

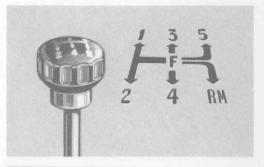
- Pull the release lever toward steering wheel
- move the steering wheel to the desired position
- lock in place the wheel by pushing the lever all the way toward the facia panel.

DIRECTION INDICATORS

Direction indicators are controlled by the lever shown at right. Move the lever:

- up, to signal a right turn;
- down, to signal a left turn.

The warning light on facia panel will flash on-and-off.



















LIGHT SWITCH

The external lights are controlled by the lever shown.

Flashing

Pull up the knob irrespective of the position of the switch lever. Flashing is possible even when parking lights are off.

Parking lights and number plate light

To switch them on turn the knob to the first notch toward the facia panel. The green warning light in speedometer dial will light up.

Beam and dipped lights

Turn the knob forward to the second notch:

- If the lever is up, the dipped lights come on
- If on the other hand, it is down, the beam lights and the blue warning light come on (the dipped lights also stay lit).
 The movement of the lever up and down allows the light to be dipped or returned to beam.

The lights are extinguished by turning the knob back over the notches.

SCREEN WIPER AND WASHER PUMP

The two-speed screen wiper is controlled by a switch lever which has three positions:

- Lever up: the wiper is off.
- Lever at the centre: wiper operates at normal speed.
- Lever down: wiper operates at high speed.

The screen wiper pump is activated by depressing the pedal shown at left. The wiper blades will operate automatically wiping the screen clean with the liquid sprayed. To operate the electric screen washer pump fitted to cars for export to Sweden and Norway move the screen wiper switch lever toward the wheel. Such a lever supersedes the standard pedal-operated control.

PRECAUTIONS

STARTING THE ENGINE FROM COLD

In winter

To facilitate starting, press the clutch pedal down fully and the accelerator through about one quarter of its stroke while at the same time operating the choke.

As soon as the engine fires release the ignition key, move choke knob halfway back until the engine is warm and then push it in.

In summer

It should be advisable to operate the choke even when ambient temperature is above 68°F (20°C): depress the accelerator pedal through one quarter of its stroke and turn the ignition key. When the engine has started, release the accelerator pedal; push choke in after a lapse of time not longer than 30-35 seconds.

If the engine fails to start at once, do not keep the starting motor running, but wait a few minutes and try again.

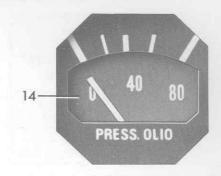
Do not accelerate the engine until it has warmed up to operating temperature.

Make sure the oil pressure shown by the gauge 14 is as prescribed.

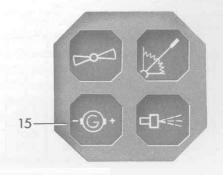
Make sure the alternator warning light 15 goes off as soon as engine speed exceeds idling.

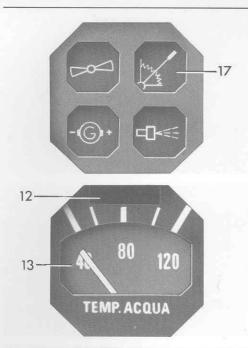
STARTING WITH HOT ENGINE

When the engine is already hot, do not use the choke. Starting will be facilitated if the accelerator is depressed about half way.



Oil pressures with hot engine				
Engine idling	minimum	5		
	minimum	35		
Engine running fast	maximum	45/50		





Temperature		Radiator	Reservoir	Total
°C	°F	nadiator	Reservoir	Total
-28	-19	800 cc.	200 cc.	1 lt.
-39	-37	1.600 cc.	400 cc.	2 Its.
-50	-58	2.400 cc.	600 cc.	3 Its.

WHILE DRIVING

Before getting away, ensure the handbrake and brake fluid level warning light 17 is off; if on, push the button at the top of handbrake lever and lower it. If the warning light still remains on, check the brake fluid level (refer to page 32).

Take care not to run the engine beyond the maximum R.P.M. shown on speedometer dial with a red area.

Check the oil pressure gauge from time to time; if the pressure should fall below specified limits, get the lubricating system checked by an Authorized Workshop.

Occasionally, check the coolant temperature indicator (13). Also check the coolant temperature warning light (12) on facia panel. Should the warning light come on, it is an indication of a trouble in the cooling system (engine overheating). In this case, stop the car and have the cooling system checked by an authorized Service Station.

Never remove radiator plug with a hot engine but wait that the liquid is cooled down to ambient temperature.

Do not coast downhill with the engine stopped; there will be no suction in the brake vacuum servo and a greater pressure will be needed with the brake pedal to obtain comparable braking effect.

WHILE PARKING

Never leave the key in the "MARCIA" position (ignition «on») to prevent battery discharge and coil damage.

WINTER PRECAUTIONS

The Alfa Romeo Coolant Mixture gives full protection against freezing down to -20°C (-5°F). In places where the temperature falls below -20°C, the antifreeze mixture can be made stronger by varying its concentration. To this end, a certain amount of mixture should be drained off the circuit and replaced with the same quantity of Alfa Romeo Concentrated Antifreeze. The quantities of antifreeze to be added to radiator and reservoir depending on the lowest anticipated temperature are as shown at left.

It is recommended that this operation should be entrusted to an authorized Service Station.

RUNNING-IN

To allow the various parts of the car, particularly the engine and the gear-box/differential unit, to settle in gradually, a running-in period is necessary, during which maximum performance must not be demanded of the car.

Starting from cold

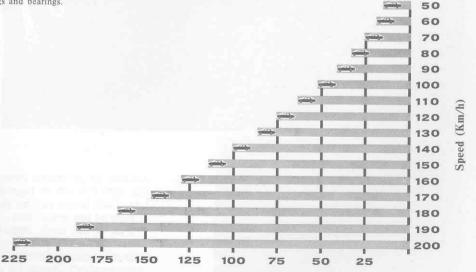
- press in choke as soon as possible;
- before driving, run engine at idle for a few minutes.

While driving

- avoid full and extended braking during the first 600 mi. (1000 km).
- do not drive at max. recommended speeds for long periods;
- never fully depress the accelerator pedal; now and then release it. Note: The same recommendations apply also in the case of engine reconditioning involving the replacement of cylinder barrels, pistons, piston rings and bearings.

MAX. ENGINE SPEED FOR THE FIRST 900 MI (1500 Km)

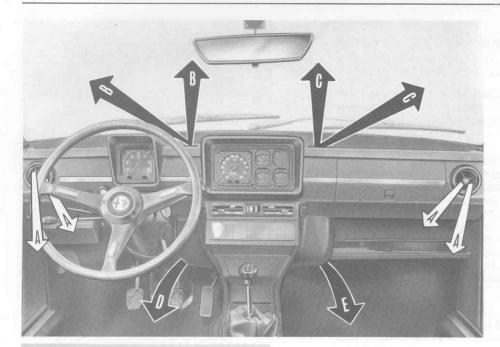
Mileage	Max. engine r.p.m.	
Up to 300 (500 km)	3500	
301 to 900 (501 to 1500 Km)		



STOPPING DISTANCE

The diagram shows stopping distance for various speeds based on ideal conditions, i.e. flat, dry, asphalt roads, good tyres, well adjusted brakes and loads properly distributed over the car.

Stopping distances (metres)

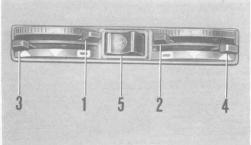


VENTILATION-DEMISTING AND HEATING

The air can be admitted to the car both through the ram ventilation outlets A and vents B,C,D,E, which also provide heating and demisting.

AIR FLOW CONTROL

The vents A at the facia sides enable to direct the flow of ram air as desired. The flow of ram air can be regulated by the knob at the centre of the vent



Amount of air intake through driver's side vents B-D and passenger's side vent C-E can be regulated separately by the levers 3 and 4 respectively. Both levers can be positioned as follows:

lever at this mark: shut

- ▼ lever at this mark: demisting, ventilation, heating. Air enters through vents B,C,D,E.
- ▲ lever at this mark: maximum demisting; air is delivered to the grilles B and C which can be rotated by hand as desired to obtain: wind-screen demisting, spot demisting, windscreen and window demisting.

TEMPERATURE CONTROL

The temperature is adjusted by the levers 1 and 2 (see page 14, bottom left):

- Lever 1: fresh/warm air blending control
- Lever 2: heater valve control

By moving the levers from inside (blue dashes) toward the outside (red dashes) the air is gradually heated as desired up to maximum heat position.

TWO-SPEED ELECTRIC BLOWER

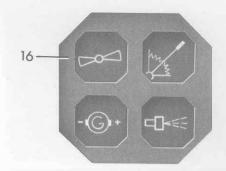
In order to produce a satisfactory flow of air into the car at low speeds, switch on the blower with the switch 5. Warning light 16 indicates that fan is operating. Light will glow brightly on high speed position.

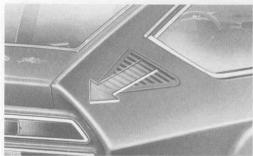
AIR DISCHARGE

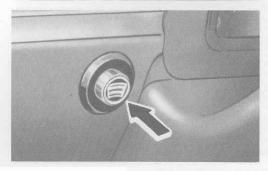
For a best ventilation, air discharge slits are provided at rear window posts.

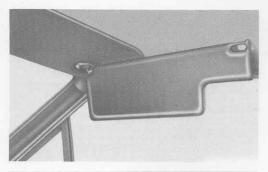
HEATED REAR WINDOW

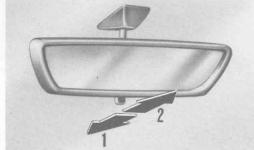
The car can be optionally provided with an electrically-heated rear window. When switched on, the electric resistance embedded in the glass will demist it. The warning light built into the switch button indicates that the heated rear window is on.













INTERIOR

SUN VISORS

The sun visors can be moved laterally after having released them from the retainers located centrally over the windscreen.

REARVIEW MIRROR

The rearview mirror has a day/night anti-dazzle device which is operated by the lever shown at left.

- 1 Normal position
- 2 Anti-dazzle position.

COURTESY LIGHTS

The switch in each light unit has three positions:

- one in the centre: lights always off
- two at the sides: lights always on or automatically operated when opening doors.

CIGARETTE LIGHTER

Insert a cigarette then push the knob in; this brings into operation an electric element which lights the cigarette and turns itself off after a few seconds.

ASH TRAYS

The front ash tray can be removed for emptying by pressing down the small metal spring.

The ash tray for rear seats is located on central tunnel; to remove the ash tray, pull it upward.

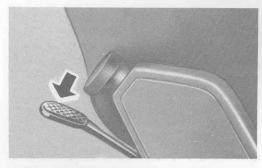




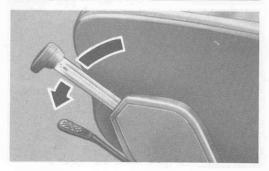


GLOVE COMPARTMENT

To open, push the knob on the lid upward.







FRONT SEATS

The positioning of the front seats is controlled by the lever shown at left; by freeing the lever the seat may be moved to the position desired.

The knob 1 controls the angle of the backrest. To facilitate access of passengers to the rear seat, the backrest may be tipped forward by releasing the lever 2.

The driver's seat is adjustable in height; withdraw the lever and move it toward the front of the car until the seat height is as desired; then, push the lever in.

To lower the seat move the lever toward the rear of the car; for lowering, it is necessary that the occupant is seated down in seat. The adjustable range is about 50 mm.

The front seats have vertically adjustable head restraints. This device is controlled by the knob at the side of backrest.

REAR SEAT

To facilitate access of passengers to the rear seat, the backrest of front seats should be tipped forward by releasing the lever on front seat (refer to preceding page).

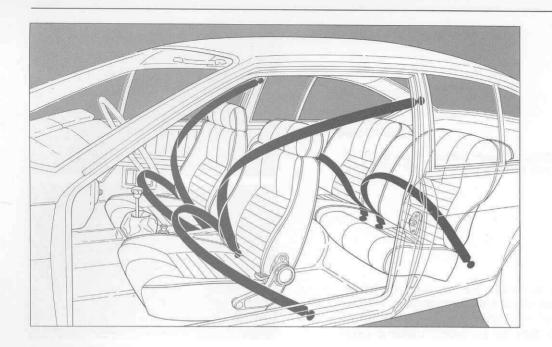
To lift or lower the rear quarter light use the handle shown at right.

Two storage bins are provided behind rear seat backrest. Put parcels, etc. in these bins rather than on the shelf under the backlight. Such a shelf in fact, when opening the boot, is raised toward the front of car.









SAFETY BELTS

Provision is made for the fitting of safety belts to front and rear seats. Suitably reinforced attachment points are located:

Front seats

- for shoulder belts: on the tunnel and on centre pillar;
- for lap belts: on the tunnel and on side rail.

All three attachment points can be used for the installation of lap and diagonal harness.

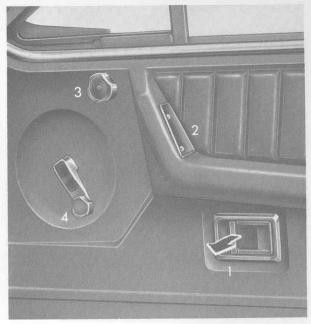
Rear seats

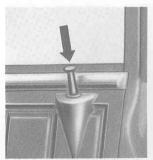
- under the seat at the sides and at the centre.

DOORS AND WINDOWS

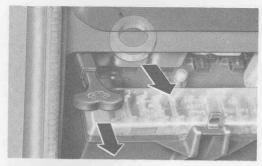
To open the door pull the lever 1 under the armrest; in the front of the armrest there is a grip 2 for pulling the door when closing from inside. The knob 3 controls the front vent window.

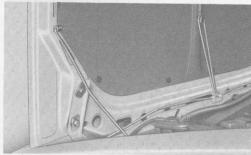
To lift or lowering the window act on the handle 4.

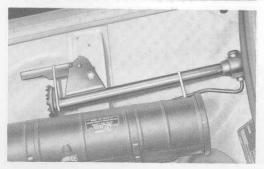




For locking the door from inside push in the button shown at right.







ENGINE BONNET

To release the catch, pull the lever under the facia panel. To release the bonnet in an emergency, pull the ring shown at the illustration. To do this easier, it is advisable to remove the fusebox cover (see page 41).

After having raised the bonnet, insert the end of support rod into the lug on bonnet as shown. Prior to close again the bonnet, withdraw the support rod from lug and secure it to the suitable retainer on wing edge inside engine compartment.

Illumination of the engine compartment is by a light fixed under the bonnet. It operates automatically when the bonnet is raised and the parking lights are on.

Jack

The jack is located at the right front of the engine compartment. After the jack has been used, it should be put in the position shown and secured with the bolt.

BOOT LID

To release the boot lid press the button shown at right; the lock utilizes the same key as the doors. The boot lid rises automatically on releasing the button. Never tamper with the lid raising device of the gas-filled, telescopic type.

The spare tyre is in the boot under the mat. The tool kit is at the right side (see illustration).

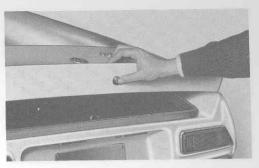
WHEEL CHANGE

Wheel removal

- Slacken wheel nuts by one turn with the wheelbrace; turn the nuts anti-clockwise to unscrew.
- Apply the handbrake. Remove jack from engine compartment.
- Raise the car by inserting the jack arm in the special socket on the underside of the body longitudinal member.
- Fully unscrew the nuts and remove the cover and the wheel.

Reinstallation

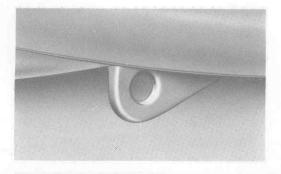
- Tighten the nuts carefully in diagonal order; turn the nuts clockwise to screw in.
- Check again tightness of nuts after lowering the jack.
- Release the handbrake.
- As soon as possible, check that the inflation pressure is as specified (refer to inside backcover).











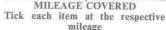
TOWING AND JACKING UP THE CAR

When taking a tow, secure the rope to the bracket at the centre of front cross-member; such a bracket serves also for jacking up the car.

When taking another vehicle in tow, secure the rope to the hole in the bracket at the right underside of boot.

MAINTENANCE

LUBRICATION AT THE FIRST (700/1,200 Km) 3100-3750 mi. (5/6,000 Km) EVERY 3750 mi. (6,000 Km) EVERY 11,250 mi (18,000 Km) 36,000





LUBRICATION SCHEDULE

450-750 mi. Have the Coupon A from the Service Coupon Book carried out.

Have the Coupon B from the Service Coupon Book carried out.

Check level of engine oil and top up if necessary.

Change engine oil (or every 6 months whichever comes first).

Change oil filter.

Check level of gearbox/differential oil and top up if necessary.

Change gearbox/differential oil.

Occasionally

Grease the linkage joints & hinges of carburettor, clutch, handbrake, doors & lids. Grease flexible shafts.

The lubricants used for the first filling, shown by the plate in the engine compartment and the table "Recommended lubricants" on inside backcover, are factory tested for meeting completely the operation requirements.

These lubricants can be used both for topping up and changing (when topping up it is recommended to use exclusively the same type of oil as already filled in the engine or main unit). In countries where the above mentioned lubricants are not available, and when absolutely necessary, it is possible to replace them with products of other leading makes provided that in accordance with the grades given in the table; in such a case, however, it is essential to renew all the lubricant in the circuit.

OIL LEVEL CHECKING

Withdraw the dipstick and clean it; then, push the dipstick all the way down into its housing to check whether oil level falls within MIN. and MAX. marks.

OIL CHANGE

At the prescribed period, change oil in the sump (engine warmed up) by proceeding as follows:

- With the engine stopped, drain off old oil thoroughly by removing the oil filler plug, the dipstick and the drain plug.
- Renew the oil filter (see below).
- Clean drain plug and refit it.
- Refill with new oil of the prescribed type (refer to inside backcover) and refit the filler plug.
- Clean the dipstick, insert it to check that oil level does not exceed the "MAX" mark. Push dipstick all the way home.

RENEWING THE OIL FILTER

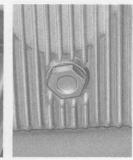
Slacken the filter from the underside of car with the suitable spanner, then remove the filter gaining access from the engine compartment. Start the new filter by hand, then tighten it securely to prevent oil leaks.

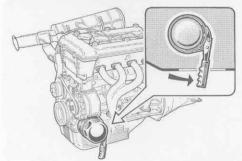
CHECKING AND CHANGING GEARBOX/DIFFERENTIAL OIL

To check gearbox/differential oil level at the prescribed intervals, remove filler plug 1; oil level should be at the edge of filler orifice. To change oil proceed as follows:

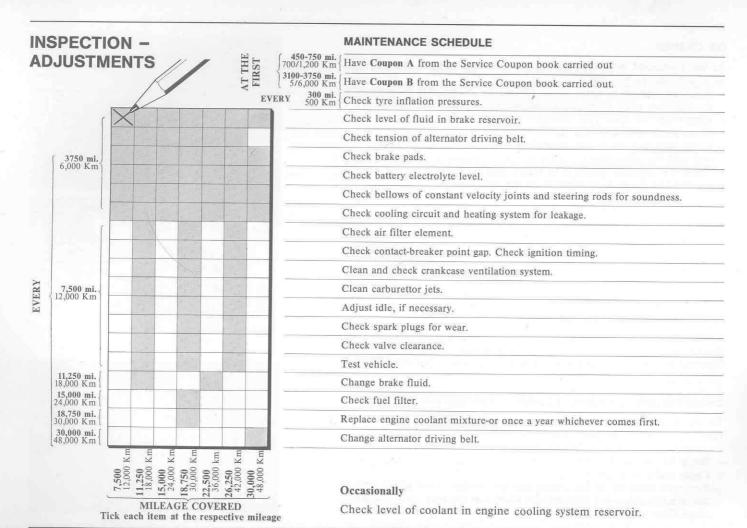
- Drain off old oil by removing drain plug 2 and filler plug 1;
- Clean drain plug and refit it;
- Replenish with oil of the prescribed type (refer to inside backcover) through filler plug 1. Check that oil level is at the edge of filler orifice; clean filler plug and fit it.











AIR FILTER

Cleaning the filter element

- Loosen the straps fastening the filter housing to the make manifold.
- Raise the rear end of filter housing, slacken the wingnut and withdraw the element.
- Clean the element carefully from inside with low pressure compressed air.
- Refit the element and the end cover taking gare to properly position the gasket; re-tighten the wingnut.
- Fit the filter housing to the intake manifold making sure the gasket is correctly seated; engage the straps and tighten them in place.

Summer/winter adjustment

The control, operated by hand, has two positions:

- upward (posit. I) pre-heated air in winter.
- downward (posit. E) cold air in summer.

ALTERNATOR AND WATER PUMP DRIVE BELT

Belt tension adjustment

The tension is correct when on pressing the belt down the amount of play is approximately $\frac{1}{2}$ in. (10-15 mm.).

To tighten the belt unscrew the nuts 1 and 2 on the adjusting arm and bolt 3. Move the alternator outwards to increase belt tension and retighten nut 2; re-check the belt tension.

Tighten bolt 3 and nut 1.

Changing the belt

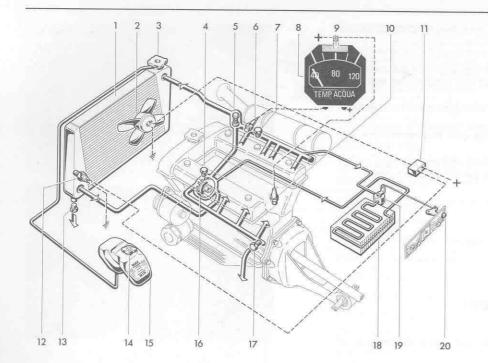
Slacken nut 2, bolt 3 and nut 1.

Move the alternator inward and remove the old belt. Fit the new belt to the three pulleys and move the alternator outward until belt tension is as specified. Then, securely tighten nut 2 and check belt tension; tighten bolt 3 and nut 1.









COOLING SYSTEM

- 1 Radiator
- 2 Electric fan
- 3 Radiator filler cap
- 4 Air bleed screw on pump
- 5 Thermostatic valve
- 6 Water thermometer sender
- 7 Air bleed screw on manifold
- 8 Coolant thermometer
- 9 Coolant temperature warning light
- 10 Thermal switch for coolant temperature warning light
- 11 Electric fan relay
- 12 Electric fan thermal switch
- 13 Radiator drain plug
- 14 Tank filler plug
- 15 Header tank
- 16 Pump
- 17 Cylinder block drain plug
- 18 Heater
- 19 Heater valve
- 20 Temperature control lever

The cooling circuit is of the sealed type with a header tank. The coolant, kept in circulation by pump 16, cools down the engine then flows to the thermostatic valve 5. Hence, according to the temperature, the coolant is sucked by the pump either from the thermostatic valve or the outlet line

of the radiator 1. At the prescribed intervals, or once a year whichever comes first, get the Alfa Romeo coolant mixture renewed. This operation, or the strengthening of the mixture required by an ambient temperature lower than -20° C (refer to page 12) should be entrusted to an authorized Service Station.

Occasionally, check level of coolant in the tank: this should be done exclusively with a cold engine as with a hot engine the level may increase remarkably, even after stopping the engine.

The level of mixture in the tank should never fall below the minimum nor exceed the maximum level.



To top up, add (to the tank only) Alfa Romeo Coolant Mixture drawn from suitable containers available by Alfa Romeo Service Stations.

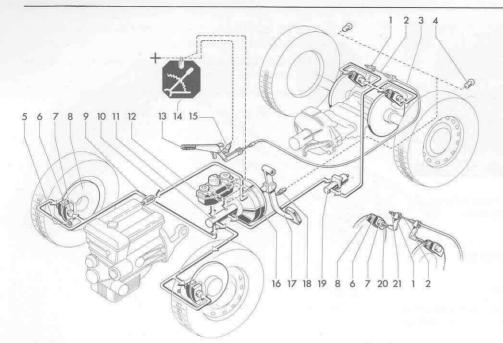
DRAINING AND REPLENISHING THE SYSTEM

(refer to the illustration on page 30).

Never remove radiator cap with a hot engine

- Remove filler cap 3 from radiator and the air bleed screw
 7 from manifold; turn on the heater valve 19 by shifting the lever 20 to red marks.
- Remove filler plug 14 from tank 15 and detach tank-toradiator adapter; let liquid drain off.
- Unscrew the radiator drain plug 13, remove the drain plug 17 from crankcase and let liquid drain off.
 Reinstall drain plugs 13 and 17.
- Reconnect the pipe from tank 15 to the radiator.
- Open the air bleed screw 4 on pump.
- Pour coolant mixture through filler port until coolant escapes from bleed screw 4; then close this screw and again add coolant until it escapes from screw 7 on manifold.

- With the bleed screw 7 opened start the engine and keep it running for a few seconds in order to bleed air completely.
- Close the bleed screw 7 and add mixture to radiator filler port until full.
- Add mixture also to tank until "MAX" level is reached.
- Put caps on tank and radiator filler ports.



BRAKE SYSTEM

- 1 Handbrake pad operating lever
- 2 Handbrake cable
- 3 Handbrake cable sheath
- 4 Stop light bulb
- 5 Air bleed screw
- 6 Friction pads
- 7 Pistons
- 8 Discs
- 9 Check valve on vacuum port
- 10 Vacuum pipe
- 11 Tandem master cylinder
- 12 Fluid reservoir with tell-tale switches
- 13 Handbrake lever
- 14 Handbrake and low brake fluid level warning light
- 15 Switch for handbrake warning light
- 16 Vacuum servo
- 17 Pedal
- 18 Stop light switch
- 19 Pressure regulator
- 20 Handbrake pad push rods
- 21 Adjuster

The brake unit consists of a dual hydraulic braking system.

separate circuits, front and rear, is servo assisted.

The valve (19) inserted in the rear brake circuit, regulates the pressure between front and rear brakes to provide balanced braking action.

Warning: the pressure regulator must never be tampered with.

The handbrake warning light (14) on facia panel will also alert you if the level of brake fluid in the reservoirs fall below the minimum. If the warning light comes on, check first whether the parking brake is completely released.

In case the warning light is still on, stop the car and check the brake fluid level in the reservoirs; if it is too low, check the relevant circuit for possible failure.

The handbrake is mechanically operated. It is correctly adjusted when the wheels become locked as the lever (13) is drawn through four/six notches.

Important warning - In case of accident or damage to the chassis check that the brake vacuum servo is undamaged, since even slight superficial body damage may seriously impair the functioning of the brakes.

BRAKE FLUID RESERVOIR

Care should be taken to prevent the level of fluid in the reservoir from falling below the maximum level by more than a quarter.

Renew the brake fluid at the prescribed periods.

For renewal or topping up, it is absolutely essential to use only the specified fluid drawn from freshly opened sealed containers.

When adding fluid, leave the strainer in place so as to filter the fluid.

CLEANING INSTRUCTIONS

Flushing the circuit

Should flushing of the brake circuit be required, use exclusively fluid of the specified type.

Caution - Compressed air or alcohol must on no account be used to dry a flushed system.

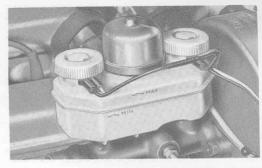
Cleaning the outside

To clean the outside of brake assemblies use suitable detergents mixed with hot water; then thoroughly dry all components with compressed air. Never use gasoline, trichloroethylene or similar solvents.

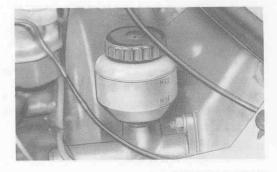
When cleaning the underside of the car, it is advisable to mask off the brakes to avoid damaging the brake components.

CLUTCH FLUID RESERVOIR

Occasionally check level of fluid in clutch reservoir. It should be between MIN, and MAX, marks.



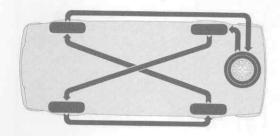


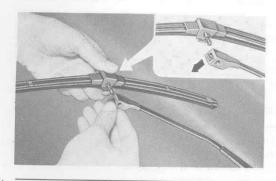












WHEELS

TYRES

For inflation pressures refer to inside backcover.

1) Correct

The tyre gives optimum performance, the tread works over its entire width, thus ensuring uniform tyre wear and long life.

2) Too low

The tyre will overheat, the sides of the tread will wear quickly and the tyre plies will tend to separate.

3) Too high

Riding comfort will be reduced, and the tyre will suffer from excessive wear in the centre of the tread and vulnerability to knocks.

CHANGING OVER

To ensure even and uniform tyre wear and long tyre life, front and rear wheels and the spare should be changed over regularly and accordingly to the diagram shown. After changing over inflate tyres as specified; refer to inside backcover.

BALANCING

Each wheel, complete with its tyre, is statically and dynamically balanced at the factory. Whenever a tyre is changed, the wheel must be rebalanced. It should be remembered that unbalanced wheels cause unstable steering, abnormal steering gear wear and uneven tyre wear.

BODY MAINTENANCE

CHANGING SCREEN WIPER BLADES

To withdraw the blade, lower the small lever at the arm end. To refit the blade insert the pin into the support until the lock engages.

SCREEN WASHER LIQUID

Occasionally, check level of liquid in screen washer container and replenish if necessary.

In winter, never add water.



WASHING THE CAR

The body should be washed frequently, depending on the use of the car, the environmental conditions and the state of the roads.

Avoid washing the car in the sun and proceed as follows:

- first flush the car all over with jets of water to remove the dust:
- prepare a solution of suitable detergent in water (2% in weight);
- with the solution and a sponge wipe down the whole body;
- rinse throughly with plenty of water;
- dry with compressed air, if possible, then with chamois leather.

Grease, oil and tar stains may be removed from the paintwork by applying petrol to the stained area, and then rubbing it with a dry cloth.

POLISHING

To put fresh gloss on the paintwork, polish once or twice a year with a suitable polish.

Do not use petrol or solvents on rubber mouldings and weatherstrips. When refuelling or lubricating, be careful not to splash petrol or brake fluid on the paintwork.

CLEANING THE WINDOWS

Use only a very soft cloth or chamois leather for cleaning the windscreen and windows. If the panes are very dirty, use windscreen washer fluid or water mixed with alcohol.

UPHOLSTERY

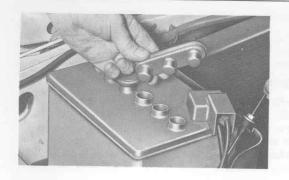
Periodically dust the inside upholstery using a vacuum cleaner if possible.

To remove oil and grease stains, use diluted ammonia on the cloth parts and neutral soap on the leatherette. Use trichloroethylene or neutral soap to remove stains from the carpets.

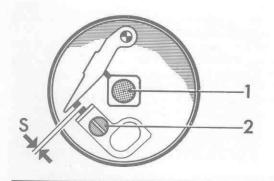
LAYING THE CAR UP

If the car will be left unused for any length of time the following protective steps should be taken:

- Empty the fuel tank, the fuel pump and the carburettor float chamber;
- clean the fuel filter;
- inject a little engine oil into the cylinders through the spark plug holes and rotate the cankshaft by hand several times in order to spread a film of oil over the cylinder walls;
- remove the battery, store it away from frost, and recharge it once a month; never allow it to become fully discharged or plate sulfation will result;
- jack up the car, clean the tyres and slightly deflate them; if tyres are removed, dust them internally (and their tubes) with talcum powder; store them in a dark and airy but dry place;
- dust the car with a dust sheet. To avoid serious damage to the paintwork, do not use polyvinyl-type tarpaulins.







ELECTRICAL EQUIPMENT

BATTERY

The battery water level should be more than 3/16" (4-5 mm) above the plates. When filling up the battery, use only distilled water; never add acid. Make sure that terminals are tight and are sufficiently coated with pure vaseline.

Furthermore, the following should be born in mind:

- When recharging the battery, completely disconnect it from the system.
- When electric weldings are carried out on car, disconnect battery making sure the positive terminal is properly insulated. The engine must be stopped.
- Never reverse the battery polarity or the diodes will be damaged.

ALTERNATOR

The alternator requires some special cares.

- It should not be tempered with.
- Never disconnect the battery terminal of alternator-to-battery cable while the engine is running.
 Avoid overloading the alternator bearings (refer to page 29).
- It is recommended to entrust any inspection or repair work to Authorized Workshops.

SPARK PLUGS

The only maintenance required is occasional cleaning with a brush of the central and earth electrodes.

No routine adjustment is necessary of the gap between the electrode and points.

Spark plug make and type are LODGE 2HL.

The spark plugs should be tightened when cold to a torque of 18-25.3 lb-ft (2.5-3.5 kgm); lubricate the threads with graphite grease before fitting.

IGNITION DISTRIBUTOR

At the prescribed intervals: check with a feeler gauge the contact-breaker point for proper gap. Adjust by means of screw 2 if necessary.

 $S = \begin{cases} .0118 \text{ to } .0157 \text{ in. } (.30-.40 \text{ mm}) \text{ for BOSCH distributor} \\ .0165 \text{ to } .0189 \text{ in. } (.42-.48 \text{ mm}) \text{ for MARELLI distributor} \end{cases}$

Occasionally, soak the felt I with oil.

HEADLAMP BEAM SETTING

The pattern shown refers to cars for export to R.H. rule of road countries; for L.H. rule of road, the pattern is exactly opposite, i.e. upper area slanting from left to right.

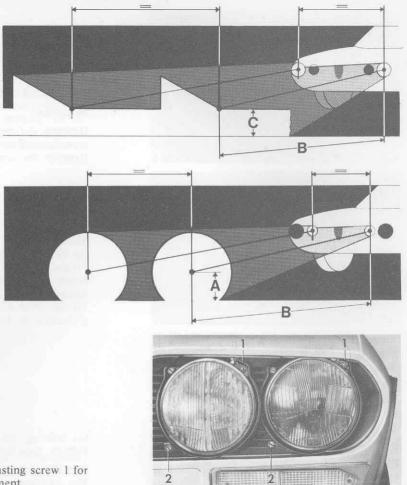
The headlamp beam setting should be checked against the figures indicated in the diagram, with the car unladen, on a level surface and an absolutely vertical screen.

To align the inner high beams mask out the outer lamps.

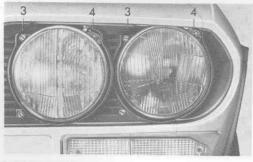
A = 45 cm = 17.7 in.

B = 10 metres = 33 ft.

C = 45 cm. = 17.7 in.



Should beam setting require correction, act on the adjusting screw 1 for horizontal adjustment and screw 2 for vertical adjustment.







REPLACING BULBS

Headlamps

Unscrew the securing screw 3 and free the fastener 4 from adjusting screw seat. Take care not to disturb the adjusting screw setting. Remove the headlamp by tilting it upward.

Take the rubber protection off the headlamp, release the retainers securing the bulbs and remove the bulb.

Fit the new bulb to the headlamp and secure it in place with the retainers. Never touch with the fingers the glass of the halogen bulbs. Always remove possible fingerprints with alcohol before fitting the bulbs. Fit the feed wire connector to the bulb socket and re-install rubber protection to headlamp.

On refitting, take care that lamp dowel seats properly in the housing bottom, then tighten screw 3 and fit fastener 4 to adjusting screw seat.

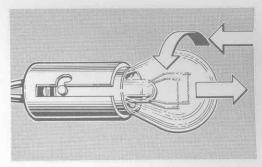
The illustration shows the removal of the headlamps at right side. The headlamps at the left are symmetrical. Note: the bulbs of front direction indicators and parking lights, side direction indicators, tail stop and parking lights, tail direction indicators, reverse light and number plate light have bayonet-type mounts. To remove the bulbs, it is therefore necessary to press the bulb in, rotate it anti-clockwise and then withdraw it. For fitment, reverse the order of removal.

Front direction indicators and parking lights

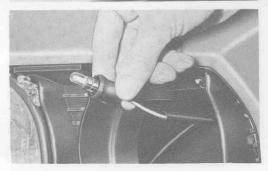
Slacken the lens attaching screws and remove the lens. Renew the bulb and refit lens.

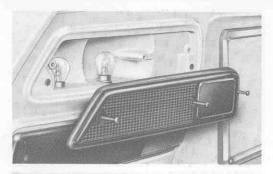
Side direction indicators

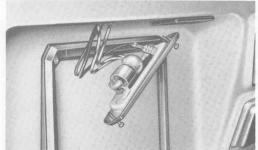
Remove the outer headlamp (refer to preceding page). From inside, snap the bulb socket off the lens; renew the bulb and refit the socket to the lens. Re-install the headlamp.















Tail direction indicators, parking and stop lights

Slacken the screws securing the lens and renew the bulb. Refit lens.

Number plate lights

Illumination of number plate (and of inside of luggage boot when parking lights are on) is by two bulbs located in two separate housings. To renew the bulb, slacken the housing attaching screws and remove housing. Then, refit it.

Engine compartment light

Remove bulb and change it.

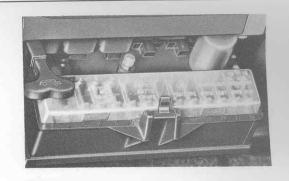
Courtesy lights

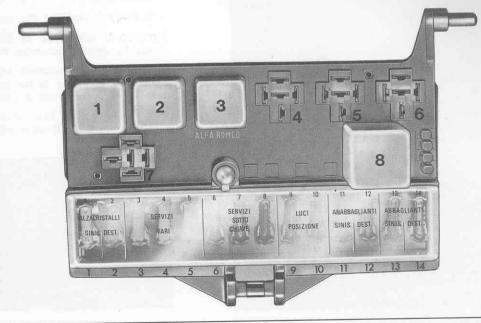
Snap off the light unit. Replace the bulb.

FUSEBOX

To open the box apply pressure downward.

Fuses are located under a transparent cover. On opening the cover a light will come on (when the engine is running or the ignition switch is in "ON" position) to facilitate inspection and tracing of blown fuses. Four spare fuses are provided at the right side of fusebox: one is rated 25 Amp. (brown), one 16 Amp. (green) and two 8 Amp. (black).





In one-unit with the fusebox there are: at the front, in addition to fuses, the direction indicators relay (location 8), heated rear window relay (location 3), blower relay (location 2), and horn relay (location 1).







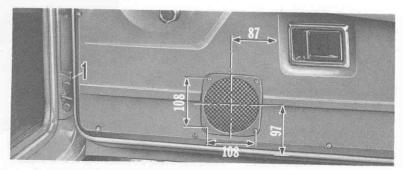
RADIO INSTALLATION

Provision is made for the installation of the radio equipment.

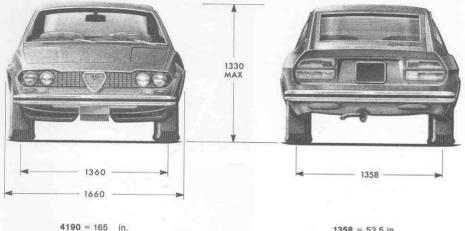
- The location is:
- in the console for the radio set;in the facia panel at the instrument cluster for the speaker.

Provision is also made for fitting additional speakers. Such speakers should be installed according to the following directions:

- at the sides of backshelf: remove the trim panels and cut openings in them according to the outline marked on panels themselves, fit speakers and re-install the trim panels.
- at the doors: drill holes through the trim panel according to the dimensions shown. Remove rubber plug l and pass wires through hole in door.



GENERAL DATA



2400 = 95 in. 1660 = 65 in. 1360 = 53.6 in. 1358 = 53.5 in, 1330 = 52.4 in, 970 = 38.2 in, 820 = 32.3 in,



SPECIFICATION

ENGINE

Number and layout	of				
cylinders		-	100		4 in line
Bore and stroke .		183	0.0	mm	80 x 88.5
				in.	3.15×3.48
Total displacement	97	1.70	1.0	cc	1779
				cu. in	n. 109
Max. power	5	SAL	3	BHP	140
(at 5,500 r.p.m.)	5	SAE	3	BHP	122

CHASSIS

Min. turning circle	W S	31	12	mm	10000
				3	2 ft 9 in.
Number of seats .		14	4		4
Tyres	(3)	34	82	185/70	HR 14
Kerb weight (full tan	k)		(4)	kg	1050
				lb.	2315
Boot capacity		(2)	*	dm ³	370
				cu. ft.	13
Towing gross weight		×	*:	kg	800
				Ibs	1760

PERFORMANCE (with 41: 10 final drive)

tt.	ı		RUNN num sp		ı	
1st	2nd	3rd	4th	5th	Rev.	
28	46	68	89	121	36	mph
45	74	109	143	195	58	kph

The maximum speeds indicated should not be exceeded or mechanical damage may result. The performances given are related to the use of the vehicle in normal travelling conditions in Central Europe.

VALVE TIMING

intake valves	Opening	(before TDC)	41° 20
	Closing	(after BDC)	60° 20
exhaust valves	Opening	(before BDC)	62° 40
	Closing	(after TDC)	25° 40

VALVE CLEARANCE (cold engine)

Intake: .0187-.0197 in. - (.475-.500 mm)
Exhaust: .0206-.0216 in. - (.525-.550 mm)

IGNITION ADVANCE

Static: 6°/8° BTCD (mark F) **Maximum:** 35°/38° at 5100 r.p.m. (M mark)

CARBURETTOR SETTING

Setting	Dellorto* DHLA 40 F	Weber* 40 DCOE 72/73	
Main jet	1.45	1.35	
Main air metering jet	2.10	2.10	
Idling jet	0.55	0.55	
Idling air metering jet	2.20	F 17	
Choke jet	0.70	0.65 F 5	
Accelerator pump jet	0.33 (radial metering)	0.35 (horizontal)	
Venturi	32	32	

^{*} These carburettors are alternative equipment. Only Weber carburettors are fitted to cars for export to Sweden and Norway.

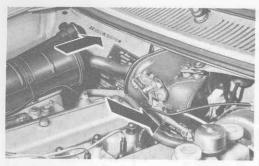
TRANSMISSION RATIOS

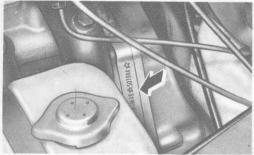
(41:10 final drive)

Speed	Gearbox	Overall
1st	3.30 : 1	13.53 : 1
2nd	2.00 : 1	8.20 : 1
3rd	1.37 : 1	5.62 : 1
4th	1.04 : 1	4.26 : 1
5th	0.83 : 1	3.40 : 1
REV.	2.62 : 1	10.74 : 1

FRONT WHEEL TOE OUT

Toe-out as measured on a 14.4 in. (365 mm) dia circle: 0.08 in. (2 mm) (with car under static load).







IDENTIFICATION

Identification plates or metal stamping are located as follows:

On bulkhead panel

Chassis serial no. (metal stamped); Identification plate (car model & type approval number).

On crankcase (exhaust side)

Engine no. (metal stamped on rear cover joining flange).

Inside luggage boot lid

Finish plate (paint type & make).

On contacting the Factory or a Member of our Service Organization please state: car model, chassis no., registration date, distance covered and car's purchase data.

WIRING DIAGRAM

ELECTRICAL EQUIPMENT ITEMS

- 1 Engine compartment light switch
- 2 Engine compartment light bulb 5 W
- 3 Distributor
- 4 Coil
- 5 Thermal switch for coolant temperature tell tale
- 6 Coolant thermometer sender
- 7 Oil pressure gauge sender
- 8 Starting motor
- 9 Electric fan
- 10 Thermal switch for electric fan
- 11 Alternator
- 12 Battery 12 V 60 Ah
- 13 Low brake fluid level tell-tale switch
- 14 Voltage regulator
- 15 Junction boxes and connectors
- 16 Horns
- 17 Front direction indicators bulb 21 W
- 18 Front parking lights bulb 5 W
- 19 Headlamp low beam bulb 55 W halogen
- 20 Headlamp high beam bulb 55 W halogen
- 21 Side direction indicator bulb 4 W
- 22 Windscreen wiper (two speed)
- 23 Instrument light bulb 1.2 W
- 24 High beam warning light bulb 1.2 W
- 25 Parking light warning bulb 1.2 W
- 26 Fuel reserve warning light bulb 1.2 W
- 27 Coolant temperature tell tale bulb 1.2 W
- 28 Alternator warning light bulb 1.2 W
- 29 Choke warning light bulb 1.2 W
- 30 Blower warning light bulb 1.2 W
- 31 Handbrake and low brake fluid level tell-tale bulb 1.2 W
- 32 Direction indicator warning light bulb 1.2 W
- 33 Heated rear window switch
- 34 Heated rear window pushbutton warning light bulb 1.2 W
- 35 Road hazard light tell-tale (in pushbutton) 1.2 W (Sweden and Norway only)
- 36 Road hazard light switch (Sweden and Norway only)
- 37 Screen washer pump (Sweden and Norway only)
- 38 Choke warning light switch
- 39 Stop light switch

- 40 Windscreen washer switch, foot operated
- 41 Blower motor (two speed)
- 42 Blower motor switch
- 43 Cigarette lighter
- 44 Handbrake warning light switch
- 45 Ignition and starting switch
- 46 Windscreen wiper motor switch Electric screen washer pump switch (Sweden and Norway only)
- 47 Horn control switch
- 48 Direction indicator switch
- 49 Parking lights, headlamps and flashing switch
- 50 Fusebox
- 51 Electric screen washer pump connector (optional)
- 52 Direction indicator flasher
- 53 Heated rear window relay
- 54 Blower relay
- 55 Horn relay
- 56 Fusebox light bulb 4 W
- 57 Fusebox light switch (usually open)
- 58 Courtesy light microswitch on door jambs
- 59 Courtesy light toggle switch in light unit
- 60 Courtesy light bulbs 5 W
- 61 Heated rear window
- 62 Reversing light switch
- 63 Fuel level sender
- 64 Rear direction indicators bulb 21 W
- 65 Rear parking and stop lights bulb 5/21 W
- 66 Reversing lights bulb 21 W
- 67 Number plate light bulbs 5 W

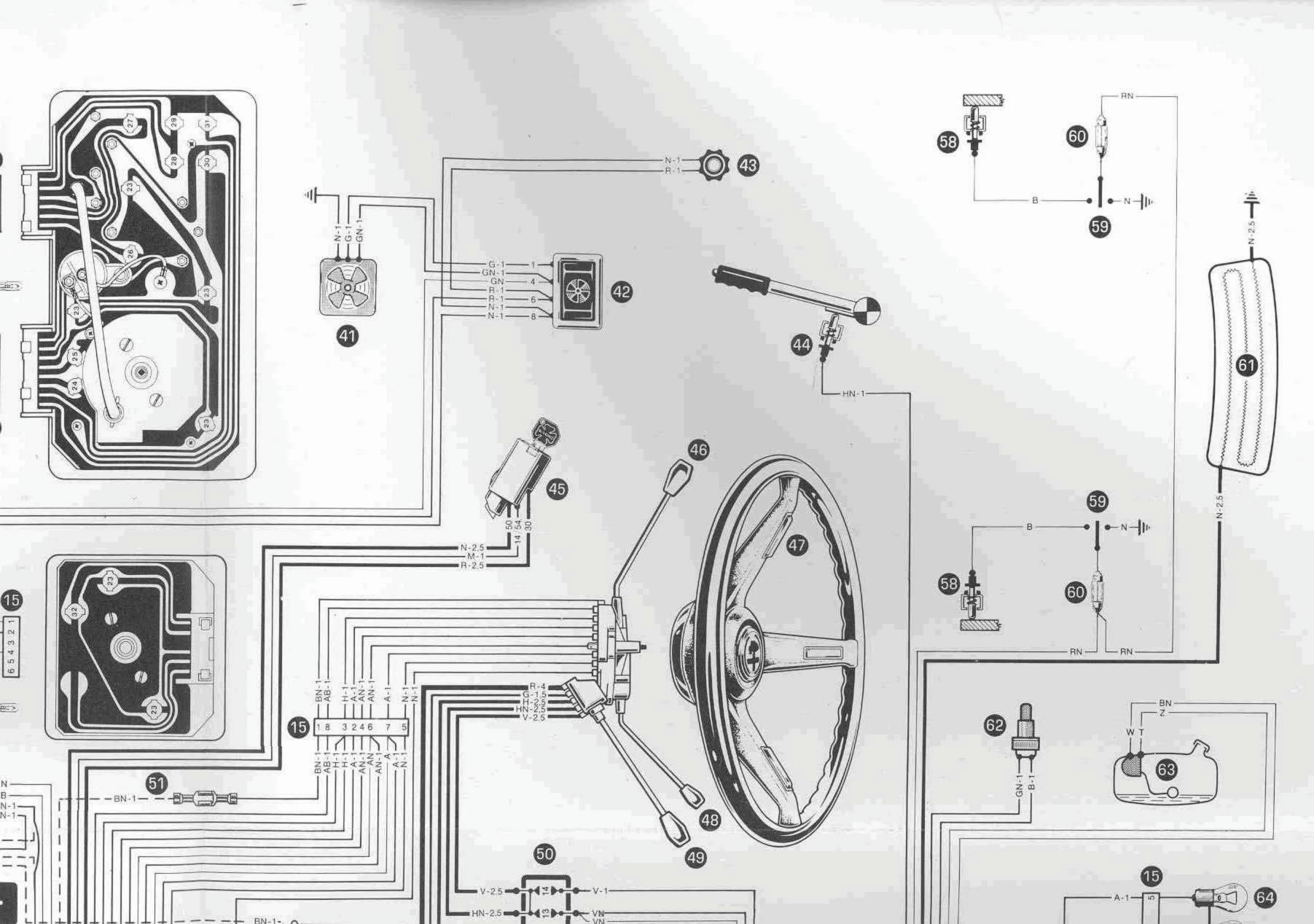
CABLE COLOUR CODE

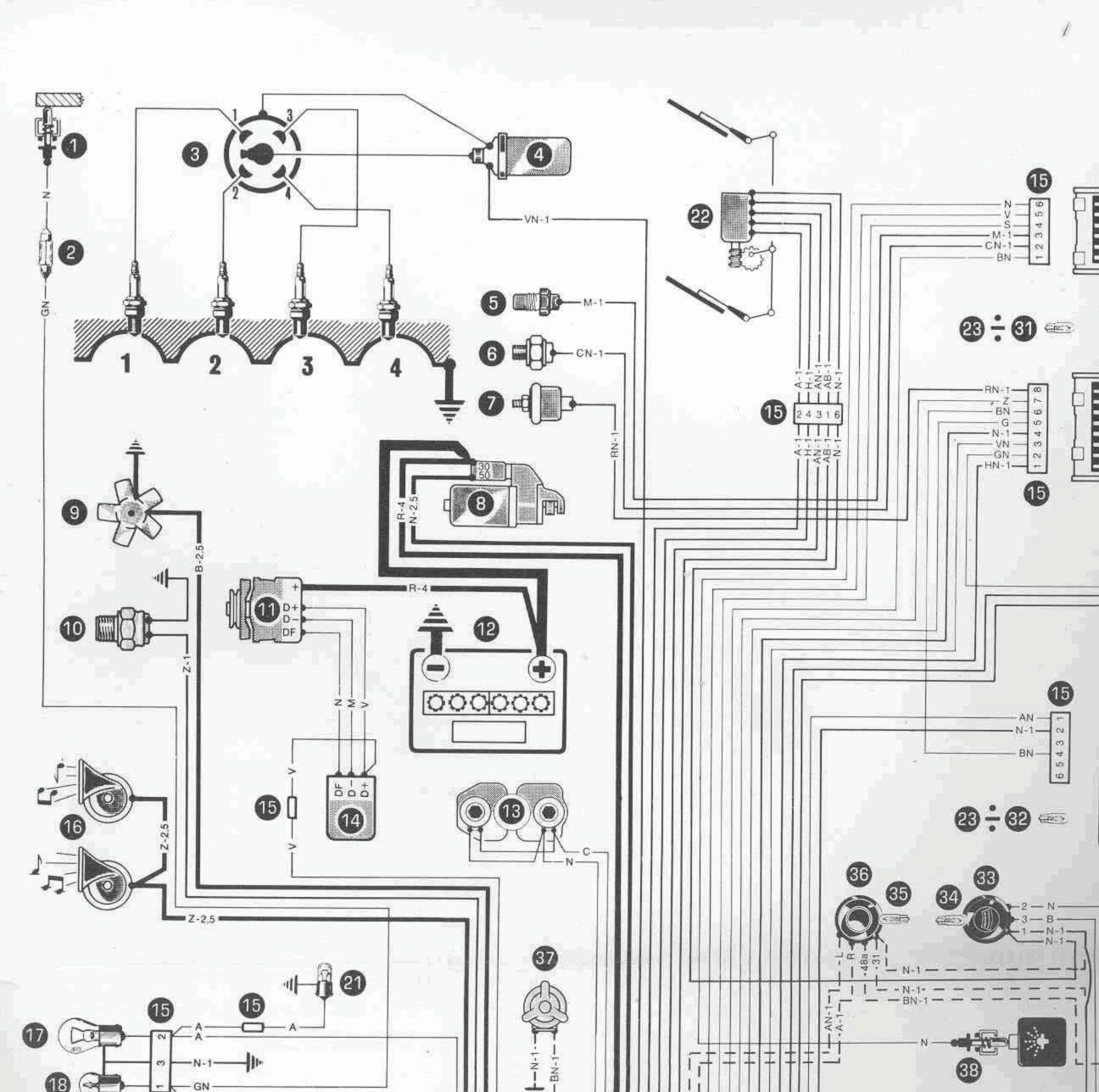
A	blue	R	red	CN	orange/black
B	white	S	pink		vellow/black
C	orange	V	green	HN	grey/black
G	yellow	Z	violet		red/black
H	grey	AB	blue/white	VN	green/black
M	brown	AN	blue/black		THE STREET STREET

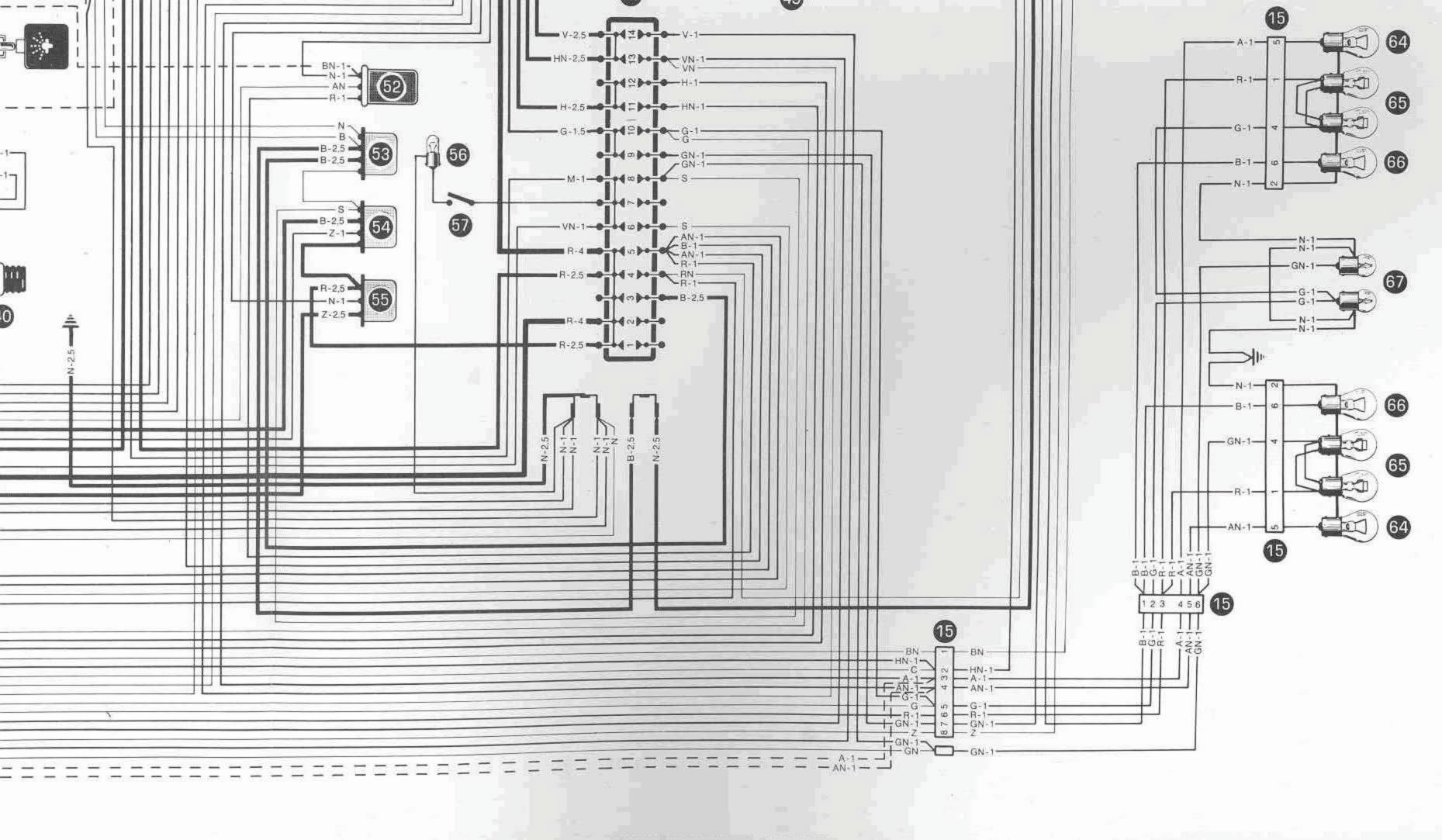
M brown AN blue/black
N black BN white/black

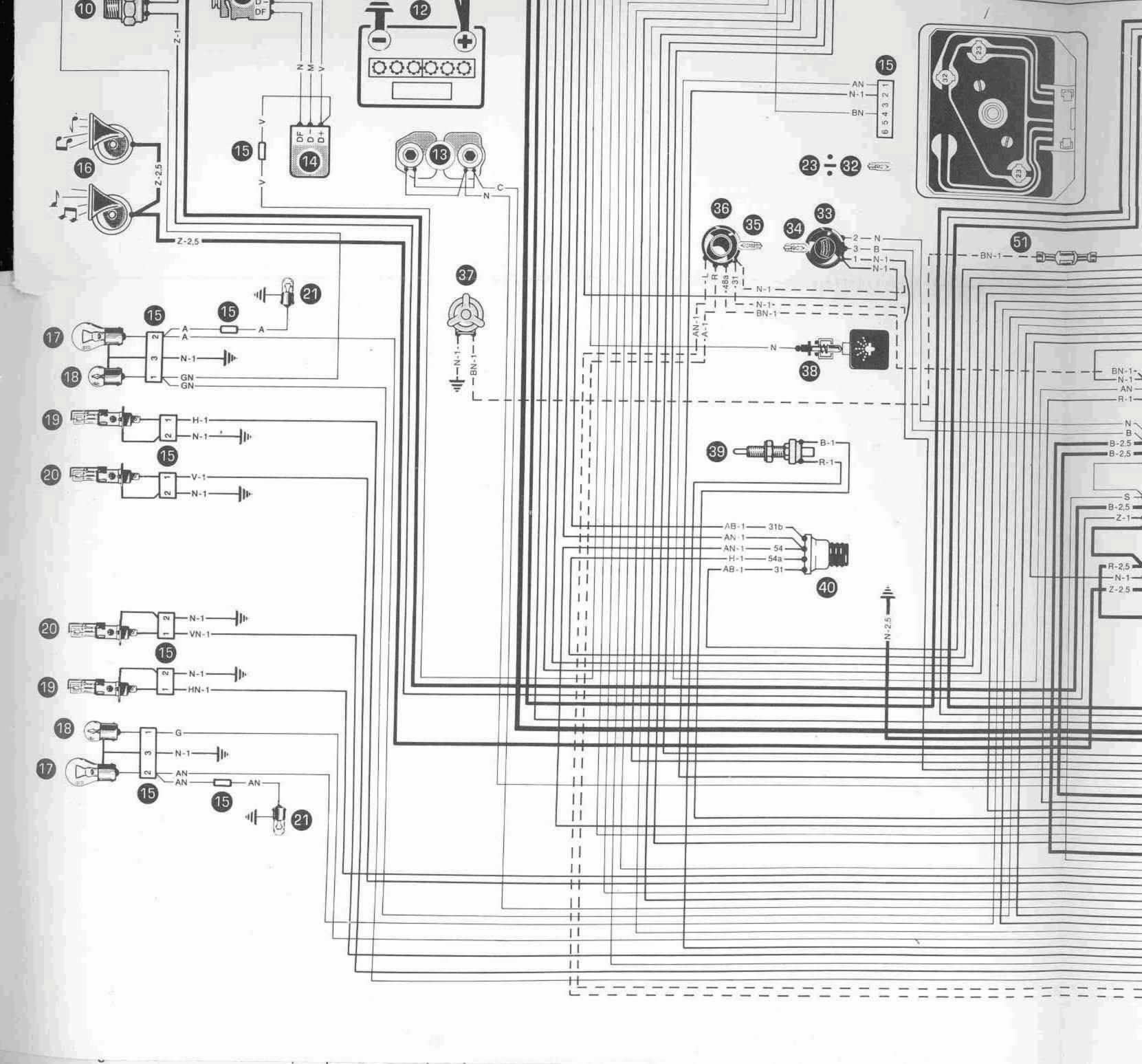
N.B. Wires shown by dashed lines apply to cars for export to Sweden and Norway only.

The figure following the colour code on the diagram shows the wire gauge in mm². Where not shown the wire gauge is 0.5 mm².









the second section		Commercial	equivalents	
PART	Grade	AGIP	Shell	
Engine	SAE 10 W/50 API SE	AGIP Sint 2000 SAE 10 W/50	SHELL Super Motor Oil 10 W/50	
Gearbox/differential unit	SAE 90 API GL-5	AGIP F.1 Rotra MP SAE 90	SHELLSpirax90HD	
Front wheel bearings	NLGI 2/3	AGIP F. 1 Grease 33 FD	SHELL Retinax AX	

NLGI - National Lubricating Grease Institute

TYRE	S	
Inflation pressure (Under all cor		old
185/70 HR 14	front	rear
CONTINENTAL GOOD YEAR	24.1 psi (1.72 (kg/cm)	25.6 psi (1.8 (kg/cm)

CAPACITIES						
	Imp.	Metric	OIL	Imp.	Metric	
Cooling system			Engine (sump and filter):			
Alfa Romeo coolant mixture	1.8 gals	8 It.	when full*	5.8 qts	5.850 kg	
Fuel			danger level	3.3 qts	3.360 kg	
	11 Q nale	54 lt.	Gearbox/differential unit	2.5 qts	2.570 kg	
Tank capacity		8 It.	* This quantity is that needed for reg- ular changing.			
For best engine performance the use of premium grade fuel is advised.			The total amount of oil in the circuit (sump, filter and passages) is	6.2 qts	6.265 kg	

under «lubrication» on page 26.

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