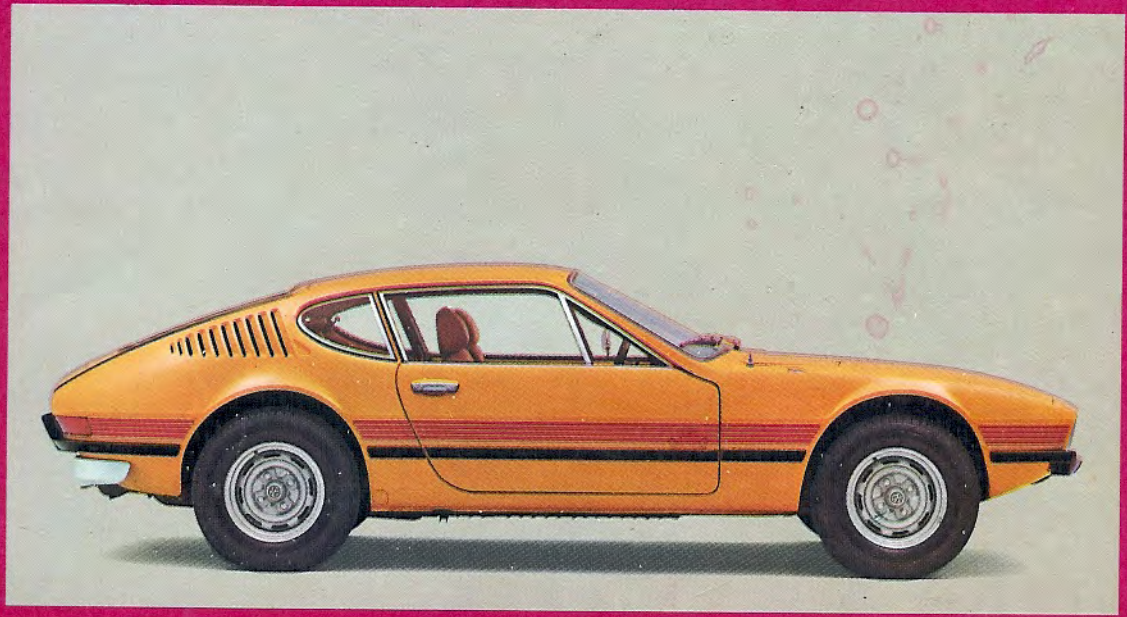
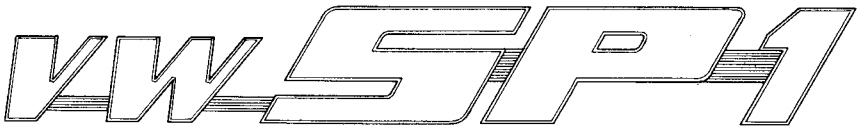
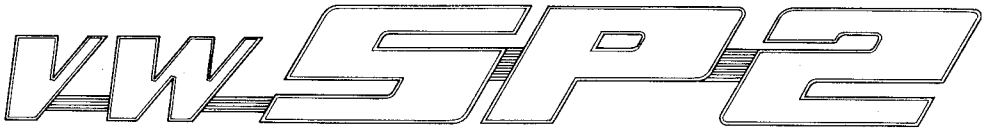
Owner's Manual

VW-SP/1 VW-SP/2







Owner's Manual

VOLKSWAGEN DO BRASIL S.A.
S. BERNARDO DO CAMPO - SP

GENERAL CONTENTS

Peinture blanche pour la VW SP2:
Dupli-Color
Acryl Auto Spray - VOLKSWAGEN
30-076
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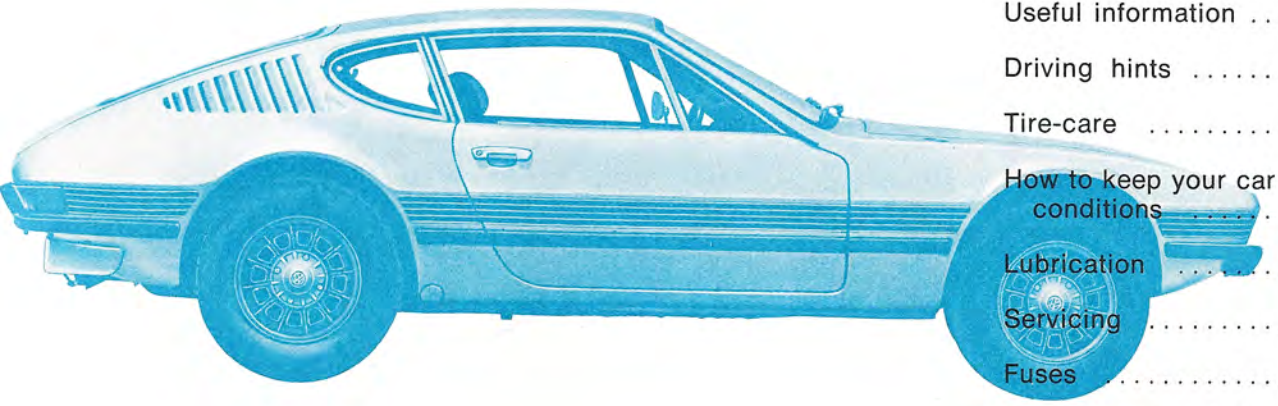


There are two models of the VW sedan coupé: the VW SP 1, with a 1600 cc. engine, and the VW SP 2, with a 1700 cc. engine.

Note
All the information printed in blue refers to the differences between the VW SP 2 and the VW SP 1.

This manual explains in detail, the correct way of driving and keeping you vehicle in perfect order, as well as describing the details of its construction.

We trust you a reliable and high-quality vehicle, able to satisfy all your demands. Now, it depends on you to keep these qualities, providing the needed care. You only have to read carefully the advice and instructions in this Manual and keep it with you all the time. Thus, you will get the most out of your car, safely and economically.

We ask you to pay special attention to the chapters concerning servicing, in which you will find instructions telling you how to keep the car in perfect conditions.

There is an extensive network of VW Agencies all over the country and throughout the world. They will able to ensure perfect care for your car. You can trust the "VW Services", for it is carried out by mechanics who are trained in our factories and who keep up-to-date with latest developments, which enables them to provide a complete repair and maintenance service.

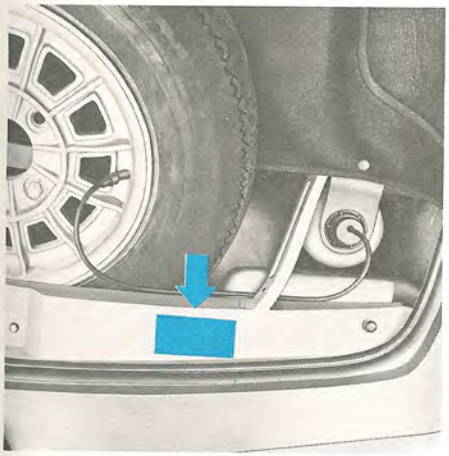
Look after you car — it deserves it. In return, you will get years and years of efficient, economic, stylish driving.

We wish you a nice trip.

VOLKSWAGEN DO BRASIL S.A.

ENGINE NO.ETC.

In the car documents you will find, among others, several identifying numbers and marks — such as the model, year of manufacture, chassis and engine numbers. These must, of course, correspond with those recorded on the car.



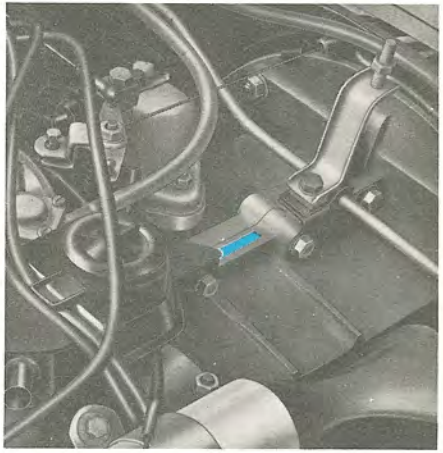
The identification plate

is attached to the left-hand side of the bonnet, near the bonnet catch.

The chassis number

is engraved on the central chassis transmission tunnel, behind the handbrake.

To check, lift up the back of the chassis tunnel covering.

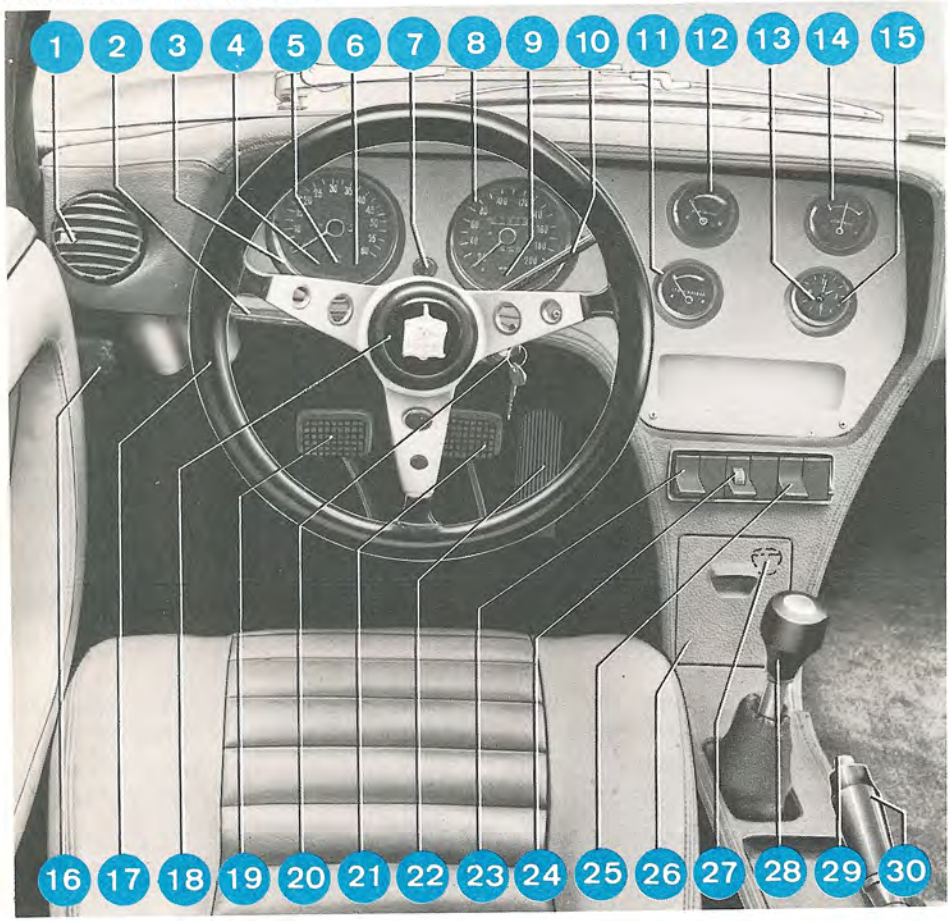


The engine number

is engraved under the air filter, on the right-hand side of the engine block.

INSTRUMENTS AND CONTROLS

Before your drive your car for the first time, you should get to know the instruments and controls.



1. Ventilation control
2. Indicator lever and dipswitch
3. Rev. counter
4. Ignition light (red)
5. Indicator warning light
6. Oil pressure warning light (green)
7. Trip milometer zeroing control
8. Speedometer and milometer
9. Full beam warning light (blue)
10. Windshield-wiper and - washer lever
11. Oil temperature gauge
12. Petrol gauge
13. Clock control
14. Ammeter
15. Clock
16. Bonnet (boot) release pull
17. Steering-wheel
18. Horn
19. Clutch pedal
20. Ignition key
21. Brake pedal
22. Accelerator pedal
23. Headlight and sidelight switch
24. Panel light dimmer
25. Ventilator switch
26. Ashtray
27. Cigarette lighter
28. Gear lever
29. Hand-brake release
30. Hand-brake

ACCESSORIES AND HOW TO USE THEM

A duplicate key comes with the car. With the same key you can open the doors (left and right) and switch on the ignition, freeing the steering lock. It is advisable to keep a note of the key number, with the car documents. In this way, it the keys are mislaid, it would be easier to get another copy from the VW Agency, by giving them the number of the key.

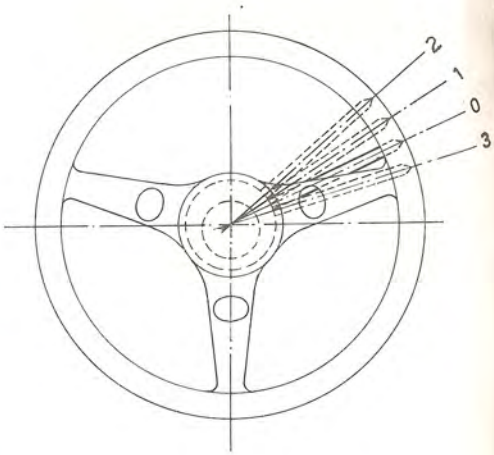
The doors can be locked from the inside or outside by means of the doorlocks (push-buttons) near the door columns, beside each side-window. The door is locked from the outside, by first pressing down the door-lock and then pressing the door-handle. As a safety-measure, the door will not lock even with the door-lock pressed down, if the door-handle is not pressed at the same time.

The doors can also be locked with the key.

The seats can be adjusted individually. They can be adjusted forwards or backwards as desired, by raising the locking-lever (which is situated beneath the seat).. The seat rises when in a forward position, and lowers in a backwards position. It is, thus, providing perfect adaptation to your size.

Once the seat is adjusted correctly, lock it by moving the lever down again, so that the seat will not move when the car is in motion.

The back rests can be regulated by means of a lever, which allows them to be inclined according to your preference.



The sun-visors protect you from frontal glare. The left-hand visor also has a document-holder on it, and the right-hand one is fitted with a mirror.

The safety-handle is on the right of the dash-board. The VW SP2 is provided with an extra safety-handle on the roof column to the right of the windshield.

The inside and outside rear-view mirrors can be adjusted according to the driver's position. You can adjust them in such a way as to obtain a clear vision of the road behind, without having to change your position. Check the position of the mirrors after adjusting the seats, and before moving off. The inside rear-view mirror, which will detach itself from the bodywork if struck with force, has an anti-dazzle device. This consists of a small lever on the lower part of the supporting bracket. The lever alters the mirror angle, thus eliminating the dazzle from following cars.

The two-speed windshield-wiper has its control on the right-hand side of the steering column, by the steering-wheel. When the lever is in position 1, the wiper blades move slowly; in position 2, they wipe the shield quickly and efficiently even in heavy rain. In position 3, the blades move slowly and at intervals of approx. 3.5-6 secs. This is useful for drizzle and mist. When switched off, the wiper blades return automatically to their original position.

The windshield-washer has its water reservoir on the left-hand side of the boot (bonnet) by the headlight block. The water is pumped onto the shield by air pressure, when the windshield-washer lever is pushed. In the 'off' position (o), when the washer is switched on, the windshield-wiper blades wipe the shield twice, thus drying the shield.

To refill the reservoir with water, the automatic valve on the spare tire and the water reservoir lid must be removed. The pressure in the spare tire is 33 lbs (2.3 atm) and the automatic valve shuts off when the pressure in the reservoir reaches about 25 lbs (1.8 atm).

The inside light is on the left of the roof between the windows. The switch on it can be in three positions:

L — up — on, even with doors shut

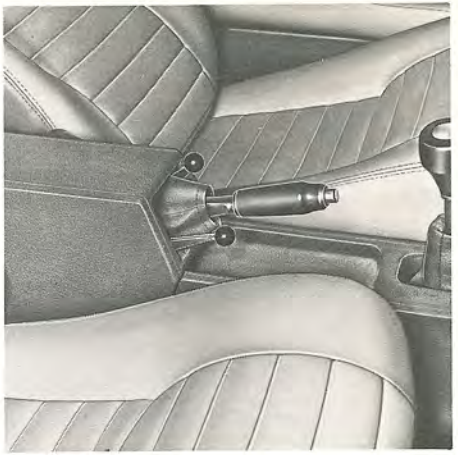
D — middle — off, even with doors open

A — down — light comes on when doors are opened.

Map-reading light. The VW SP 2 has a map-reading light on the right-hand door.

Warning lights

These are on the bottom corners of the doors. They light up when the doors are opened.



up - on; down - off

Internal ventilation. This is obtained by means of the lever on the left, by the hand-brake. There is also a two-speed ventilator, which can be turned on using the green switch on the dashboard. The pilot light comes on when the ventilator is on. The ventilator should only be switched on when the ventilator lever on the left is in the 'open' position.

The amount of air can be controlled by the levers at each end of the dashboard. If the back ventilation windows are opened too, the circulation of air within the car will be complete.

The temperature inside the car can also be controlled by opening the side windows and the deflecting windows.

The heater is controlled by the control lever on the right of the hand-brake. The degree of heating is regulated by moving the control lever up or down.

The air which has been heated by the engine passes through the longitudinal struts of the bodywork and comes out through openings near the feet, and by the windshield.

The heating effect can be increased considerably by opening the back ventilation windows slightly.

The ashtray, which is in the lower centre of the dashboard, just in front of the gear lever, can be taken out by easing it slightly upwards. The cigarette lighter to the right of the ashtray is turned on by pressing the button. It returns to its original position when it has heated up.

The ashtray compartment, is lit up together with the dashboard.

The electric clock is to the right of the speedometer on the dashboard. The hands may be set by pressing the control button, and turning.

The boot (bonnet) has a safety catch that stops it opening fully, even after the bonnet release pull (under the dashboard, to the left of the steering-wheel) has been pulled. To open the boot fully, the safety catch by the main boot catch must be freed manually.

The back boot door has an internal catch. To open it, just pull the release button which is in the boot, on the left, behind the driver's seat.

The engine cover is below the carpet and can be opened by turning the fastenings counter-clockwise and raising the back of the cover, which should pivot to the front. When it has been raised through about 35 degrees, the cover can be pulled backwards and removed.

SAFETY BELTS

In accordance with the law, your car is equipped with safety belts. These should be fitted with one belt passing over the shoulder and the other across the hips.

There are two types of buckles on the belts — the mechanical one and the magnetic one.

Mechanical buckle

To fasten, just push the metal tongue into the opening until your hear a click. Check that it is secure. To undo it, lift the flap (type a), or pull the buckle cover (type b).

Magnetic buckle

To fasten, just hook the curved part of the tongue around the curved bottom of the flap. To undo, lift the flap.

Adjustment. The belts can be adjusted at will. The flap must be kept at right-angles to the belt, and the belt is then adjusted by pulling the belt clip forwards on the belt.

Cleaning

When necessary, the safety belts can be washed with non-detergent soap, warm water, and a soft cloth or sponge. Do not use detergents.

The fire extinguisher is with the tools, in the boot. It is advisable to check the contents regularly (every 6 months) — if the gauge indicates below the green mark, the extinguisher should be re-filled. The extinguisher uses Chemical Powder and is activated by breaking the seal and pressing the upper part, pointing the jet where necessary.

Before starting the engine do not forget to check:

— **the oil level in the engine**

— **the tension of the alternator belt**

— **that there is enough petrol in the tank**

— **the brakes**

and if you are driving at night:

— **the headlights, sidelights, etc., as well as the alternator belt.**

Oil level

This should be checked when the engine has been switched off for more than five minutes, and with the car on a flat surface. The oil level must be between the two marks on the dipstick, and must never be below the lower mark. The dipstick should be wiped clean before the oil-level is checked.
If more oil is needed, remember to **use only oil recommended by the Manufacturer.** Most oils on the market nowadays contain chemical ingredients designed to improve lubrication, but remember that one oil should never be mixed with another.

Therefore we do not recommend your changing the type of oil used in the car.

Alternator belt

This drives the alternator. For a long life it should always be in perfect condition and at the right tension. It is very easy to check this: when pressed, the belt should yield about 15 mm., at most 20 mm. (a). At the same time, it should show no signs of wear.

The petrol tank holds 40 litres, enough for you to drive about 480 km./500 km. The mouth of the filler pipe, with a breather, is on the front right-hand mudguard. On the dashboard there is a petrol gauge, showing the amount of petrol in the tank. Do not allow the needle to go down to 'reserve'. Refill the tank in time, in order to save yourself trouble.

Tires

These should be looked after especially carefully. The stability of the car and the comfort of the passengers depend on their condition. If you drive carefully and keep them at the right pressure they will last longer. It is advisable to check pressures at least once a week.

The recommended pressures are:

front tires	**17 lbs (1.2 atm)**
rear tires	**22 lbs (1.5 atm)**
spare tire	**33 lbs (2.3 atm)**

Do not forget to put the valve caps on again once you have finished checking pressures.

The pressure in the spare tire must be put down to normal when it is used to substitute a punctured tire.

The brakes should always be examined before the car is driven. As an extra safety check, test them once the car is moving, gradually pressing the brake pedal to check that the system is working.

Headlights and sidelights

These should always be checked before you drive at night.

The three positions of the switch key in the centre of the dashboard, above the ashtray are:

1. off
2. half-down — sidelights, rear lights, licence-plate light and ashtray light
3. full-down — headlights, with full beam or dimmed beam (depending on the dipswitch controlled by hand), rear lights, licence-plate light and ashtray light.

The headlights can be switched on full beam or dimmed beam by means of the indicator lever, which should be pressed towards the steering-wheel.

When the indicator lever is used with the headlights switched on, an automatic relay dims the beams, regardless of the position of the lever. With the switch-key in the "off" position or intermediary position the indicator lever makes it possible to switch on the full beam as a warning signal.

Whenever the switch-key is pressed half-down or full-down the panel light comes on. By turning the dimmer switch on the centre switch-key, you can control the brightness of the panel lights.

When checking the rear lights, do not forget to check the brake-lights which should come on when the pedal is pressed, and the reversing light which comes on when the reverse gear is engaged. In both cases the ignition must be switched on.

Ignition

The same key switches on the ignition and the starter motor. As the key is turned, first it frees the steering lock, then it switches on

the ignition. The red alternator light and the green oil pressure light come on. To switch the starter motor on, turn the key a little more to the right. As soon as the engine fires, free the key in order to switch the starter motor off. A safety device makes it impossible to switch the starting motor on when the engine is running.

Therefore, if the engine does not fire at the first attempt, you must first switch off the ignition in order to switch the starter motor on again.

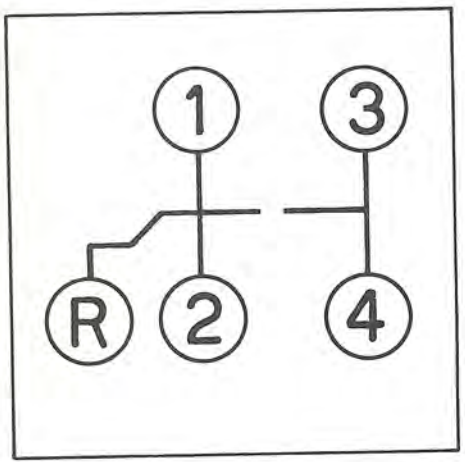
Note - Do not switch off the ignition with the car in motion.

Cold Starts

Before starting the engine, if it is cold, you should press the accelerator pedal to the floor once. This is necessary so that the bi-metal spring shuts the butterfly-valve on the choke. Once you have switched on the ignition you should switch on the starter immediately. Otherwise, the butterfly-valve on the choke will open too early, due to the temperature generated by the thermic spiral, wich begins to receive current through a wire connecting the choke lid to terminal 15 on the coil, as soon as the ignition is switched on.

Beware!

When switching on the engine with the car inside the garage, check that the garage doors and windows are open so that there is enough ventilation for the exhaust gases to get out. It is well worth remembering that these gases contain carbon monoxide — colorless and odourless, but extraordinarily poisonous.



Gear positions

The positions of the gears are shown in the illustration. In order to engage reverse gear, push the gear lever vertically down; next, move it left and back. Do not forget that reverse gear must only be engaged with the vehicle stationary. Do not be afraid to change gear for a lower speed and do not avoid doing so.

One more piece of advice: never use the clutch pedal as a foot-rest when driving.

A — Safety factors

Read the following information carefully, since the safety of your car and thus your own safety depend on it.

Brakes:
- — Check when moving off 16
- — Check the thickness of the brake linings regularly 39
- — Check brake-fluid level periodically 39
- — Use only original VW brake-fluid 39
- — Change the fluid and clean out the system every two years 40

Note: Brake before, not in the curve 21

Tires:
- — Never use worn, bald, cut or damaged tires
- — Check pressures weekly 16
- — Protect them from strong sunlight, petrol and oil 23

Steering:
- — There should be as little "looseness" in the system as possible 41
- — The steering should be adjusted every 5,000 km 41

Electrics:
- — Before driving at night, check the headlights (full beam and dimmed beam), side lights, etc., as well as the tension of the alternator belt ..... 15/17/22 and 34

Fire Extinguisher:
- — Check the contents periodically, according to the Manufacturer's instructions 14

Safety belt:
- — Use them, adjusting them correctly 13

B — General recommendations

Engine:
- — Do not regulate the carburettors. This should only be done by a VW Service Station 35
- — Access to the sump for oil changes is obtained through the filling tube whose mouth is on the sill of the rear boot 15/29/30
- — Do not switch off the ignition when the car is in motion 17

Doors:
- — Do not lock the doors without first taking the key from the ignition 7

Important:
- — All the above items which require servicing or adjustment should be attended to by VW Agencies. They have properly trained mechanics, special tools and equipment, and work according to factory norms.

DRIVING HINTS

Do not worry about 'running-in' — you car does not need it. Volkswagen engines have been brought to such a pitch, through factory tests, modifications and improvements, that they need no 'running-in'. From the very first moment you can drive quite normally, using each gear up to its respective speed limit as shown in the table below:

Note:
The life of your car, its performance and correct functioning, will depend basically on the way you drive it. You will get the most from your car if you follow the suggestions carefully:

Do not accelerate the engine unnecessarily, wether the car is motionless or not.

Do not force the engine by driving too slowly.

It is a mistake to think it is good for a new engine to make it work slowly, that is, with a low number of revolutions per minute. The Volkswagen engine needs air for cooling, and only gets it when the number of revolutions per minute is high enough.

Remember that it is not bad for the engine to work at a high speed, but the overload and overheat.
Do not delay engaging a lower gear on hills.

Gear	Range of use		Economic range	
	km/h	rpm	km/h	rpm
1st	0 - 31	- 4200	—	—
	0 - 36	- 4600	—	—
2nd	19 - 57	1400 - 4200	19 - 49	1400 - 3550
	20 - 67	1400 - 4600	20 - 60	1400 - 4120
3rd	33 - 90	1550 - 4200	33 - 76	1550 - 3550
	35 - 105	1550 - 4600	35 - 94	1550 - 4120
4th	52 - 149	1650 - 4430	52 - 113	1650 - 3550
	55 - 161	1650 - 4750	55 - 139	1650 - 4120

Note - The figures in blue refer to the VW SP 2 (1700 cc.)

Do not hesitate in changing to a lower gear as soon as you notice that the car is losing speed and that the speedometer needle is nearing the upper limit of the next gear down.

Accelerate gradually

Press down the accelerator pedal slowly, enough to reach the speed you want. Stamping on the accelerator pedal does not improve acceleration; it just increases petrol consumption.

How to drive economically

As soon as you have accelerated the vehicle to the desired speed, place gradually less and less pressure on the accelerator pedal, until you reach the point at which the car keeps moving at exactly the right speed. This will save you a lot of petrol when driving on motorways. For petrol economy and a reasonable speed, consult the table on the previous page.

You may know that air resistance increases proportionally to the square of the speed.

Your car offers very little air-resistance, due to the special design of its bodywork and to the fact that the underneath of the car is smooth. However, high speeds automatically mean higher petrol consumption.

Safety first

Your car has excellent roadholding qualities, great stability in curves, and extraordinary acceleration. Do not allow the feeling of security which you will feel after a few miles cause you to drive carelessly. Drive always within the limits of road-conditions, traffic density and the weather, and drive so that you can always stop in time if you have to. Be especially careful on wet surfaces, so as to avoid skids, which can happen in such conditions, even to a VW.

A golden rule — brake before, not in the curve!

Brakes

The brakes are sensitive even to a small amount of pressure on the pedal. Therefore brake carefully in order not to 'lock' the wheels. 'Locked' wheels do not increase the braking effect. Sudden braking especially on wet surfaces, always produces skidding.

Look after the brakes, check them regularly.

A special care should be taken with brakes. Check them, for a perfect functioning.

Do not drive at high speed, braking suddenly — rather, drive at a moderate speed, according to the traffic; your car can only gain from this.

And remember — brake before, not in the curve

When going down a slope, use the engine-brake, by engaging the same gear that you would use if driving it up. This saves the brakes, which should be used only for regulating speeds occasionally.

Never switch off the ignition when going down a slope.

Pay attention to the instruments

Whenever your car needs repairing, the instruments will tell you automatically.

Ammeter — shows battery loading (green) or unloading (red).

Alternator — red light

The alternator is controlled by a red light, wich comes on when the ignition is switched on, and wich goes off when the engine begins to work.

Note: if the red light comes on while you are driving, the alternator belt may have broken.

Thermometer — The normal temperature in the engine is between 80° C and 100° C. It should never exceed 130° C. (red).

Oil pressure — green light

The oil pressure is just as important as the oil level, which you should have checked previously. When the ignition is switched on, the green light comes on. It should go off as soon as the engine begins running and increases the oil pressure.

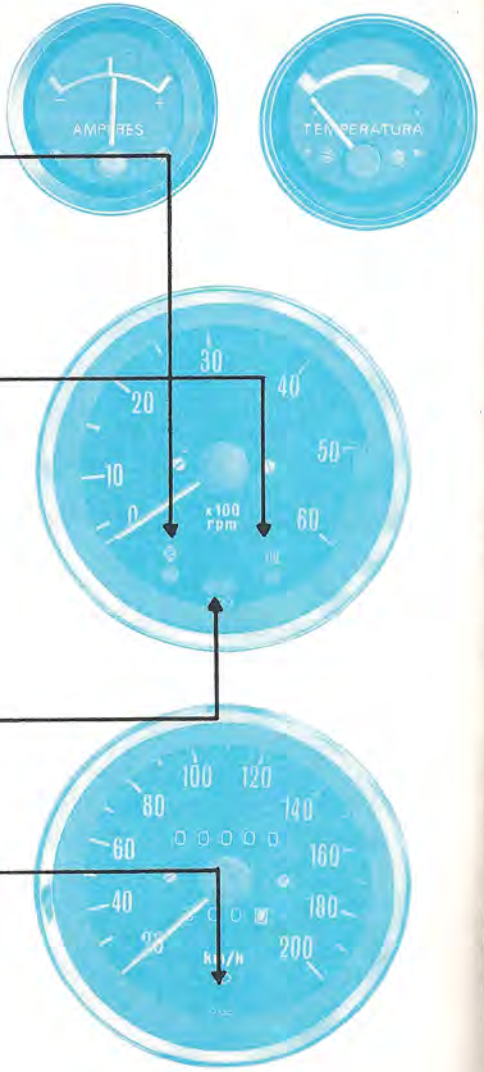
Note: if the light comes on while you are driving, the circulation of oil may have been stopped, with a consequent lack of lubrication in the engine. Stop the car immediately and check the oil level before going to a VW Agency. If the green light comes on occasionally for a few moments, with the motor warmed-up and ticking over, and if the green light goes out when you accelerate, there is no cause for worry.

Indicators — double green arrow

The indicators are not within your field of vision, but the double green arrow shows you if they are working. The indicator lever can be moved without removing the hands from the steering-wheel, and it returns to neutral automatically when the steering-wheel returns to its position.

Headlights — blue light

The full beam dazzles drivers travelling in the opposite direction. Of course you know how unpleasant and dangerous this is. So avoid using full beam except when you will not dazzle anyone. The blue light warns you when you are using the full beam. Use the light switch to dim the headlights.



TIRE CARE

Tire pressures and tire wear have already been mentioned on page 16. These are highly important but other points should not be forgotten.

The life of a tire depends largely on the way the car is driven. Excessive acceleration, sudden braking and excessive speed round bends wear tires out fast. Badly-adjusted suspension and wheels which are not balanced wear tires out quickly, too.

No not overload your car, and protect the tires from strong sunlight, petrol and oil. Recalibrate the spare tire whenever you need to use it. Well-balanced wheels make it easier to drive and prolong tire-life especially in the case of tires or air chambers which have been repaired. It is advisable to have the wheels balanced every 10.000 km; since they only get out of balance after a fairly long distance.

The spare tire and the emergency tools are in the boot. The jack is in front of the spare tire.

Note: before removing the spare tire, do not forget to disconnect the automatic valve of the windshield-washer.

Punctures

It is certainly not pleasent to have to change a wheel on the road. But it would be much easier if you follow these instructions.

1. Engage the hand-brake, and block the opposite wheel with a brick, stone or log so that the car cannot slip.

2. Place the jack into the respective fitting — on the chassis, in front of the rear wheel. Put the raising lever into the upper socket on the jack, and work it up and down until the jack-base reaches the ground. Take off the hub cap using the hook in the tool kit and the raising lever.

3. Loosen the nuts on the wheel with the hexagonal spanner, while the tire is still on the ground.

4. Lift the car.
5. Unscrew the nuts and take off the wheel and hub-cap.
6. Lift the car until the four bolt-holes of the spare wheel are roughly aligned with those on the wheel-hub.
7. After adjusting the spare wheel, with the hub-cap in place, screw one of the nuts, but without tightening it, so that the wheel can move around freely and align the other three holes perfectly with the bolts.
8. Put the other nuts on, tightening them at first only enough to get the wheel correctly aligned with the hub.
9. Tighten the nuts alternately.
10. Place the raising-lever in the lower socket on the jack. Lower the car by working the lever. Keep on working it, even when the car is on the ground. The jack should only be removed from its fitting on the chassis after this.
11. When the vehicle is on the ground, check that the nuts are tight.
Put the hub-cap back in correct position.

Cleaning and protection

Keep you car clean and well looked-after — it's in your own interest. This is not only because of considerations of beauty, but also because, in this way, you will be protecting your car, bodywork and chassis, from sunlight, rain and dust.

Paintwork protection

The paintwork is covered by a protective layer of wax which helps it keep its elasticity and protects it from the weather. After repeated washes, this layer dissolves, and a new layer must be applied. We recommend WAX L.190.5 for paintwork protection. It can be found at all the VW Agencies. It should be applied after at least 3 washes, especially if these have used non-detergent soap. It is very easy to apply — just apply it with a soft cloth, let it dry for about 20 minutes and polish with a soft cloth or flannel until no more wax can be seen.
Of course the car must be thouroughly washed and dried before the protective wax is applied.

Polishing

This is necessary when, through lack of care, the paintwork has become dull and cannot be brought to its original sheen with waxes. Apply only Original Liquid L.170.5 for polishing. This contains polishing particles wich increase the glossiness of the paintwork.

Other polishing liquids generally do not produce good results on the Original Finish.

Never wash or polish the car in sunlight, or when the bodywork is still warm.

How to remove stains

It is not always possible to remove tar, oil stains, insects etc., by washing the car. It is important to remove these as soon as possible since they can damage the paintwork. After removal, the surface should be rewaxed.

Tar

It is unpleasant to see tar splashes on a car, especially if it is light in colour, after driving on a hot day on recently-capped roads. Splashes of tar attack the paintwork quickly, and then can never be removed completely. They should be removed immediately after the end of the journey. Petrol, kerosene or turpentine can be used, applied with a soft cloth.

Wash the affected parts with non-detergent soap, and then rinse with plenty of water.

Insects

In hot weather, these often stick to the bo work, headlights and windshield. They can generally be removed only ith non-detergent soap and warm water.

Trees in blossom

They frequently secrete small drops of resin etc. Cars parked below these trees become covered with small stains. It is, however, relatively easy to get them out with non-detergent soap and warm water, as long as this is done soon. In any case, it is advisable to rewax the surfaces affected afterwards.

Chromium-plated parts

After they have been dried, they should be treated with wax L. 190.5. No oily or greasy substances should be used, as these keep the dust.

Upholstery

Clean the plastic seat covers with warm water and non-detergent soap. Never use petrol (no matter what grade) or thinner.

Windows

Rub the windows with a soft, clean cloth. The windshield-wipers can be pulled forward when you are cleaning the windshield. If the windows are very dirty, use alcohol or ammonia and warm water.

The small amount of time spent on lubrication will pay for itself time and again.

With constant lubrication your car will produce better performance and trouble-free driving. Care over lubrication means a safer car and a car that is cheap to run for a long time.

Good lubrication is obtained by followin the instructions in the Servicing Plan outlined later.

Do not forget to lubricate all parts on time — on page 59 you will find a table with the distance travelled and the parts needing lubrication.

Use the 'Servicing Booklet', as you will be able to get your car lubricated properly by our VW Agencies.

The work will be done by specially-trained mechanics, using best-quality lubricants and in the shortest time.

Oil changes

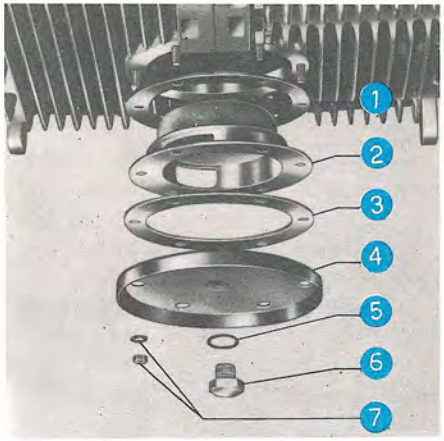
The oil must be changed at the right schedule, even when the best oils are used.

Old oil in the engine means quicker wear of parts.

Important: for cars used in specially difficult conditions — stopping often, or on dirt roads, the oil should be changed more often than indicated. Old oil is taken from the sump when still warm, by simply unscrewing the oil drain plug.

Next replace it on the sump taking care not to tighten it too much.

The sump should be re-filled with 2.5 litres of detergent H.D. oil, corresponding to the specifications of the A.P.I., type S.D. It is not necessary to wash the engine.



1. seal
2. oil pump filter
3. seal
4. filter lid
5. washer
6. oil drain plug
7. hexagonal nut with lock-washer

The oil pump filter

Keeps back impurities, and must be cleaned from time to time in accordance with the Lubrication Plan. The seals should always be changed when the oil pump filter is dismantled.

Recommended Oils

The engine must always be lubricated, from the very first, with **detergent oil, corresponding to A.P.I. specifications, type S.D.**

Detergent oils contain chemical products which are highly efficient, especially against corrosion and sedimentation.

These products not only reduce sedimentation, but also dilute and keep them in suspension in the oil, so that they are not harmful to the engine. So, impurities can be eliminated, with the old oil, when the oil is changed. After a relatively short time, detergent oils take on a dark colour, which is quite normal. It is unnecessary to change the oil before the suggested schedule if the engine is not made to work in abnormal conditions.

The use of additives to first-class detergent oil is not recommended.

Choice of oil

This may be left to your personal preference.

Important: our Agencies can help you in your choice of oil. Oils are tested and analysed in our Laboratories, and can be recommended for use in Volkswagen engines.

The degree of fluidity of oils is measured by the level of viscosity according to S.A.E. norms. In our climate, oils of a viscosity of S.A.E. 30 are recommended. These oils are appropriate for regions in which the average annual temperature is above 0° C.

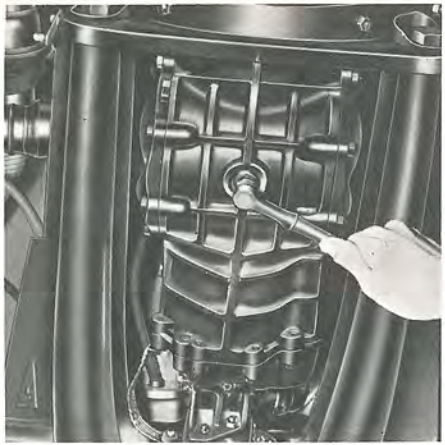
Note: for regions where the average annual temperature is above 30° C, multiviscous H.D. oil is recommended.

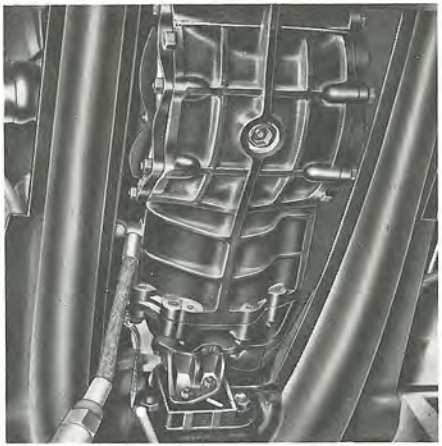
Distributor

Ask your VW Agent to check at the prescribed schedules the amount of lubricant on the points and, if necessary to grease them.

Beware — if you do this yourself, avoid putting too much grease.

Every 5,000 km. 1 drop of oil should be put on the camshaft hole felt, after the rotor has been taken off.





Transmission and differential

The transmission and differential gears of your car are together in one housing and lubricated with gear oil. Unscrew the drain plug in order to remove the oil, while the transmission is still hot.

Refill with 2.5 litres of gear oil (S.A.E. 90), API — GL 5 or MIL-L-2105B.

The magnetic drain plug should be cleaned according to the Lubrication Plan.

Important: Only S.A.E. 90 oil should be used; other oils can cause serious damage.

The oil-level check should be carried out according to the Lubrication Plan.

The oil-level should be slightly below the lip of the filling hole.

Important:

In your own interest, change your oil at VW Agencies, so that only approved oils which have been recommended by our Laboratory will be used.

Chassis

Perfect lubrication of the front-axle bearing is only possible with the car lifted in such a way that there is no weight on the wheels.

Use only lithium-based grease

Before lubricating, clean the grease-nipples in order to stop impurities getting in. Press the grease gun nozzle to the grease-nipple and fill until the fresh grease begins to come out at the side.

The number and position of the lubrication points are mentioned in the Service Plan (Lubrication) in this Manual.

In all servicing, the protection caps on the self-lubricating tips of the drag-links and the caps of the articulation tips of the suspension arms must be checked. Damaged caps must be changed.

If the vehicle is often used on dusty or muddy roads, we suggest that the front axle should be lubricated more often than prescribed in the Plan.

It is advisable to clean and lubricate the coating of the brake-cables as well as the accelerator and clutch cables, once a year.

Front-wheel roller bearings

These are greased when mounted. The hub nut protectors should not be greased.

Use only lithium-based grease

The roller bearings should be re-greased every 50.000 km. For this purpose, the wheel-hubs must be dismantled. When re-assembling, the roller bearing gap must be adjusted correctly.

In accordance with the Servicing Plan the front-wheel roller bearing gap should be checked and re-adjusted every 5,000 km. This should be done by a VW Agent, so as to avoid damaging the roller bearings, since this job demands special knowledge and tools.

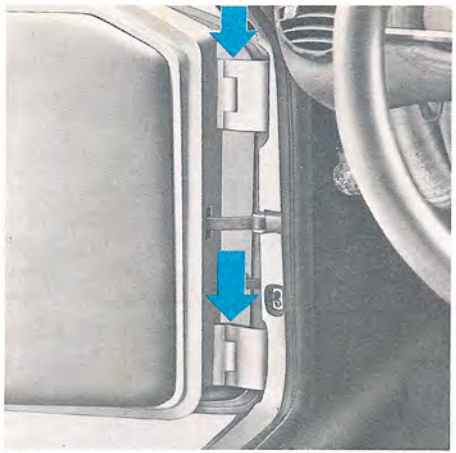
Gear Lever

If the gear lever needs lubricating, it must be taken out of the car. In order to do this, unscrew the two hexagonal nuts fixing the ball-joint housing to the central chassis tunnel and withdraw the complete set (gear lever, ball-joint housing and spring).

The surface of the ball-joint and the gear lever recess should be lubricated with universal lubricating grease. When re-assembling the gear-lever section, ensure that the corner of the catch-plate points right und upwards. Next, check that all the gears are working properly.

Doors and locks

The door-catches and -latches should be lightly greased, and the



hinges should be oiled. First, it is necessary to clean all dirt and dust off the lubrification points.

This should be done at least as often as the regular lubrication servicing.

Powdered graphite is used for the lock-cylinders. Just blow a little inside, and turn the key a few times.

Seats

The guide-rails should be lubricated on all moving surfaces, upper and lower. Only a small amount of grease is needed. Before greasing, the rails should be cleaned with a cloth. The seats can be removed by freeing the lever, undoing the spring and pushing them forwards. When they are replaced, the spring must be hooked into place again.

Volkswagen do Brasil offers you an extensive network of Agencies which have competent, properly-trained staff, with all necessary special tools and equipment. In any region the VW sign reminds you that you belong to the great community of Volkswagen owners.

There, you will get quick and efficient help and advice.

However, you may find yourself unable to get to a VW Agency.

In that case, this summary of general servicing for your car will help you considerably. In any case, whenever possible, it would be advisable to go to one of our VW Agencies. They will spare no pains to take care of your car. In this way you will save money, and avoid disappointments and wasting of your time.

Cleaning the air-filter

The filter purifies the air, removing dust and other impurities.

It is thus important to give it the attention it deserves, especially in very dusty regions. A dirty filter reduces performance and life of an engine, and increases petrol consumption. The air filter of the oil-bath type must be cleaned every time the oil is changed. Remove the filter, and the dirty oil in the bottom, clean and fill up to the mark with the same oil as that used in the engine, that is S.A.E. 30 oil.

Next, clean the filter element with kerosene or other solvent and leave to dry.

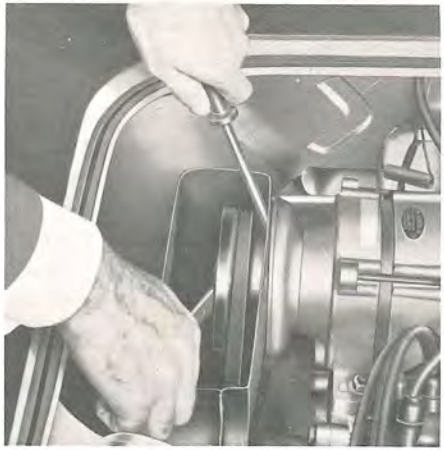
If you often drive on dusty roads you should protect the engine from premature wear by cleaning the air filter more often. On dusty dirt roads, it is advisable to clean the air filter daily.

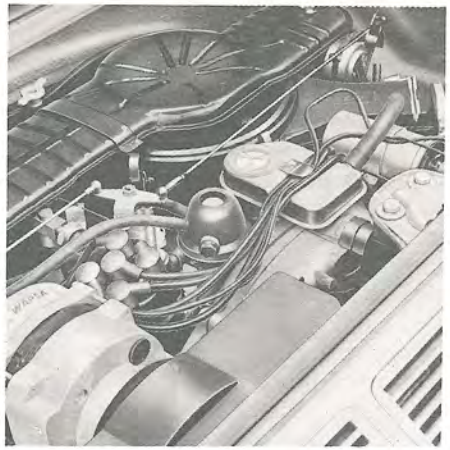
Alternator belt tension

The belt's function and correct tension have been mentioned on page 15.

To adjust the belt, it is necessary to take off the nut and half the alternator pulley — when tightening or loosening the nut, introduce a screwdriver into the bottom half of the pulley, supporting in on the upper notch on the alternator housing. The tension can be adjusted by taking out or putting in the washers between the alternator pulley-halves.

When taking out the washers, the tension is increased; when putting them in, the belt is loosened. It is a mistake to tighten or loosen the belt excessively. As new belts tend





to stretch a little, tension should be checked after 50 or 100 km.

Petrol pump filter

The pump filter separates the impurities and water occasionally found in petrol.

Periodical cleanings during servicing avoid frequent dismantling and cleaning of the carburettor.

Cleaning is carried out as follows:

1. Disconnect the petrol input tube at the pump.
2. Unscrew the hexagonal plug.
3. Take out the filter mesh and clean with petrol.
4. Dry well, and replace mesh.
5. Replace plug with seal, ensuring that the seal is perfect.

Note: We do not recommend the use of petrol additives.

Carburettor adjustment

The carburettors are tested at the factory with top-grade petrol and then adjusted on the car. Each one has an electro-magnetic valve which does not allow petrol to pass when the ignition is switched off.

No alterations should be made, such as changing the calibres for different-sized ones, since these alterations affect the normal working conditions of the engine.

Correct adjustment of the carburettors, even slow-running adjustments require special test equipment as well as specialized knowledge and experience. That is why the job should be left to a VW Agent.

Adjusting valve gaps

The following instructions should only be carried out by you in case of absolute necessity, when you cannot get to a VW Agent.

The inlet and exhaust valve gaps should be 0,10 mm./0.15 mm., with the engine cold and the garage temperature normal. As the engine heats up, the valve gap increases.

Therefore, the valve gap should only be adjusted when the engine is cold.

The cylinders are numbered 1 to 4, with the numbers stamped on the covers. Adjustment is best carried out following the cylinder number: 1, 2, 3 and 4. The piston of the cylinder whose valves are being adjusted should be at the highest point it reaches in its cycle of compression. If you begin the adjustment with cylinder n.º 1 you must turn the crankshaft counter-clockwise, using the pulley, until both valves are shut and until the ignition point mark on the pulley is levelled with the mark on the engine block. Loosen the lock-nuts on the regulating screws on the rockers. After adjusting the valve gaps, using a 0,10 mm spacer, tighten the lock-nut up and check the gap again. The other valve gaps are adjusted in the same way, turning the crankshaft through 180 degrees counter-clockwise each time.

Distributor adjustment

A badly-adjusted distributor can cause a lot of trouble — poor performance, excessive petrol consumption and even damage to the engine.

Therefore this adjustment should be carried out by VW Agencies.

Adjusting the Points

Take off the distributor head, rotor and sealing disk. Turn the distributor camshaft by turning the engine over — until the cam lifts the points head completely; loosen the screw holding down the body of the points and adjust the gap to 0,40 mm, moving the body with a screwdriver; next, tighten the hold-

ing screw up again; if the points are burnt or worn, clean them with a special file, or, better still, change them.

Grease the cam-follower very lightly.

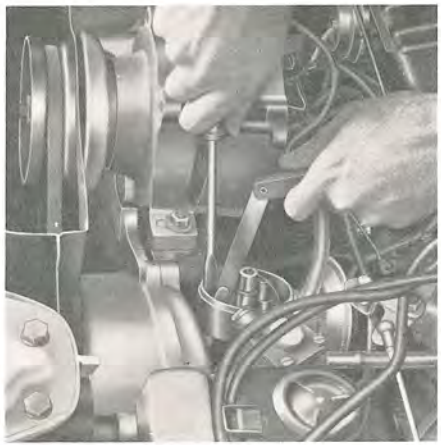
The distributor head should be kept clean, both inside and outside so as to avoid surface currents and shortcircuits.

After each adjustment of the points the ignition point must be checked.

Adjusting ignition point (timing)

The crankshaft pulley has four marks on it — from left to right 0°; 7,5°; 10°; and 12.5° before the highest point reached by the piston.

The 7.5°/10° APMA mark on the pulley should be levelled with the line on the right-hand side of the indicator, when the distributor rotor allows current to pass to cylinder n.° 1. The rotor should then be levelled with the corresponding mark on the distributor housing.



To achieve this, turn the rotor clockwise. After unscrewing the clamping screw on the distributor bracket, turn the distributor clockwise until the points-contacts close and check the distribution.

Next turn the distributor slowly counter-clockwise, until the make-and-break contacts begin to open again.

This movement can be seen clearly, since there is a spark at this

point. However, it is advisable to use a bulb to get the moment of ignition (timing) correct. A 12 v. bulb can be connected between terminal 1 on the coil and 'earth' for this purpose.

The bulb will light up whenever the contact is broken by the 4 cams on the distributor camshaft.

After adjusting the timing, re-tighten the clamping screw on the distributor bracket, and re-assemble the sealing disk, rotor and distributor head.

Check also the connections of the vacuum-supply tube between the left-hand carburettor and the distributor.

Checking spark-plugs

Remove the spark plug and examine closely: the appearance of the electrodes and insulation will give you enough information about spark plug condition and engine-tuning.

Dark grey — good carburation, spark plug in good order.

Black — mixture is too rich.

Light grey — mixture is too poor.

Covered in oil: spark plug is not working, piston rings are not sealing properly.

To clean the spark plugs use a brush and a chip of wood, which can be blown out afterwards. The spark plug insulators must be kept clean and dry, in order to avoid surface currents and short-circuits. Check the electrode gap (0.6-0.8 mm.) and if necessary, adjust by bending the top electrode of the body of the plug. Do not forget to replace the sealing washers on the spark plugs. Plugs should last, on average, 15,000 km.

Brakes — Checking and adjusting

The brakes are hydraulic, with a double circuit, acting directly on the four wheels, one for the front (disk-brakes) and one for the rear (drum).

The linings should be inspected every 5,000 km. They should be no thinner than 2 mm on the disk-brakes and 2.5 mm. on the drum brakes. The rear-wheel linings are checked by looking through the inspection holes on the brake plate.

At the same time, all connnections and tubes should be checked for damages and leaks. Damaged tubes must be changed.

Note — As a safety measure, it is advisable to check brake-linings on disk-brakes every 2,500 km.

Adjustment of the rear brake-shoes can be made when the gap between the shoe and the drum is too great.

This can be noticed when the brake pedal goes down a long way before braking effect is noticed.

The shoes of the disk-brakes adjust themselves automatically after each use of the brake pedal.

If you press the brake pedal right down and feel no resistance except that of the spring, there is air in the hydraulic brake tubing and the system must be bled.

The brake-fluid reservoir is in the boot, on the left-hand side of the front panel. It should de 3/4 full.

Only Original VW fluid should be used.

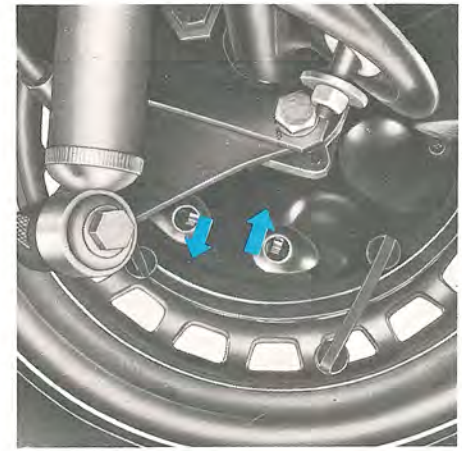
Before re-filling or checking the level, clean the area around the filler cap.

Do not spill brake-fluid as it attacks the paintwork.

Adjusting hydraulic brakes — rear wheels

The brake shoes are adjusted individually through the holes in the brake plate. To adjust the shoes let off the handbrake.

Before and after adjusting, press the brake pedal down hard in order to centralize the brake shoes and make them sit properly in the drum.



To adjust, proceed as follows:

1. Lift the wheel, and take the cover off the hole in the brake plate.

2. Using a screwdriver as a lever, turn the face-wheel in the direction of the arrow, until the shoe-lining touches the drum lightly. Turn the face-wheel back three or four cogs, until the wheel is free to move.

3. Repeat the operation with the other face-wheel, turning it in the opposite direction.

4. Adjust the brake of the other wheel in the same way.

Bleeding the hydraulic brake

Before bleeding, check the amount of fluid in the reservoir.

It is advisable that two people bleed the system: one working at the wheels, the other working the brake pedal.

Proceed as follows:

1. Remove the protection cap on the bleeding-screw and fit a rubber tube for bleeding.

2. The free end of the tube should be dipped into a glass half-full of Original VW brake-fluid. The glass should be higher than the bleeding-screw.

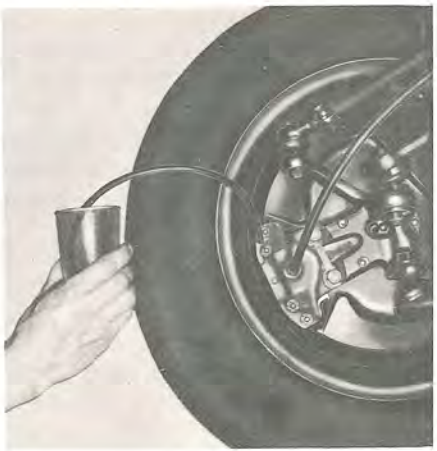
3. The pedal should be pressed and released several times until it offers resistance. Keep the pedal in this position; free the bleeding screw about half a turn, keeping it open until the pedal goes right down, and then tighten the screw. Repeat until no more bubbles come out of the bleeding-tube.

4. Take off the rubber tube and replace protection cap.

5. Repeat the operation on the other wheels. If necessary, top up the reservoir.

6. After bleeding all four wheels, leave the car at rest for half an hour and bleed again, as above.

As brake-fluid is hydroscopic, it should be changed and the system renewed with fresh brake-fluid every 2 years. This should be done by VW Agents as it requires special tools and knowledge.



Adjusting hand-brake

1. Lift both back wheels.

2. Press the brake-lever cover so that the adjustment nuts are visible below the side-cut.

3. Take off the bottom part of the chassis-tunnel cover. Tighten the adjustment nuts of the brake cable until the back wheels still turn freely when the brake lever is off.

4. Put the hand-brake on. With the first click it should not be possible to turn the back wheels by hand. Lock the adjustment nuts with the lock-nuts.

Steering

There should always be as little looseness as possible in the steering. The steering-wheel should always 'straighten up' automatically after a curve. With the wheels pointing straight ahead there should be no more looseness than 20mm, measured on the circumference of the steering-wheel, when it is moved with one finger each way until slight resistance is met.

The Servicing Plan suggests steering adjustment every 5,000 km. **This job can only be done by a VW Agent, since it requires special knowledge and tools and must be done according to factory instructions.**

Wheel alignment

The front wheels of the car, on the ground and unloaded should converge between 2 and 4,5mm. This can only be checked and measured with special equipment. Poor alignment entails poor road-holding, excessive and irregular tire-wear.

Locks

Door locks do not need periodic checks. However, if the door sticks or vibrates it is easy to regulate the locking-plate

1. Check if the three locking-plate bolts are tight. Tighten if necessary. The locking-plate should be adjusted so that the doors fits perfectly into its jamb in the bodywork.

2. If the door sticks, the upper part of the locking-plate is probably too far in. Loosen the three bolts and pull the locking-plate out slightly, then retighten the bolts.

3. If the door does not shut properly but stops at the first click (safety stage), this is because the upper part of the locking-plate is too far out. Adjust by putting it in slightly.

4. If the door dips slightly when opened, the locking-plate is too high. Lower it slightly.

5. If the locking-plate is too low, the door is pressed down when it shuts, but does not stay shut. Adjust the locking-plate by moving it up slightly.

6. If the door vibrates although the locking-plate is well-adjusted, there is too great a gap between the lock and the plate-wedge. This must be fitted under with a 0.5-1.0 mm. strip.

Battery:

Charged	29° Be - specific gravity 1.250
Half-charged	23° Be - specific gravity 1.190
Discharged	13° Be - specific gravity 1.100

Checking the battery

Good starting depends on keeping the battery in good order.

Therefore it must be checked regularly and looked after carefully. Check the specific gravity with a densimeter (hydrometer). The specific gravity of the solution increases as the battery is charged. The hydrometer float-gauge floats higher according to the charge. The solution density can be measured on the Beaumé scale, or according to specific gravity.

The solution should always be up to the mark on the battery plates. If some solution has been lost due to evaporation, replace with distilled water.

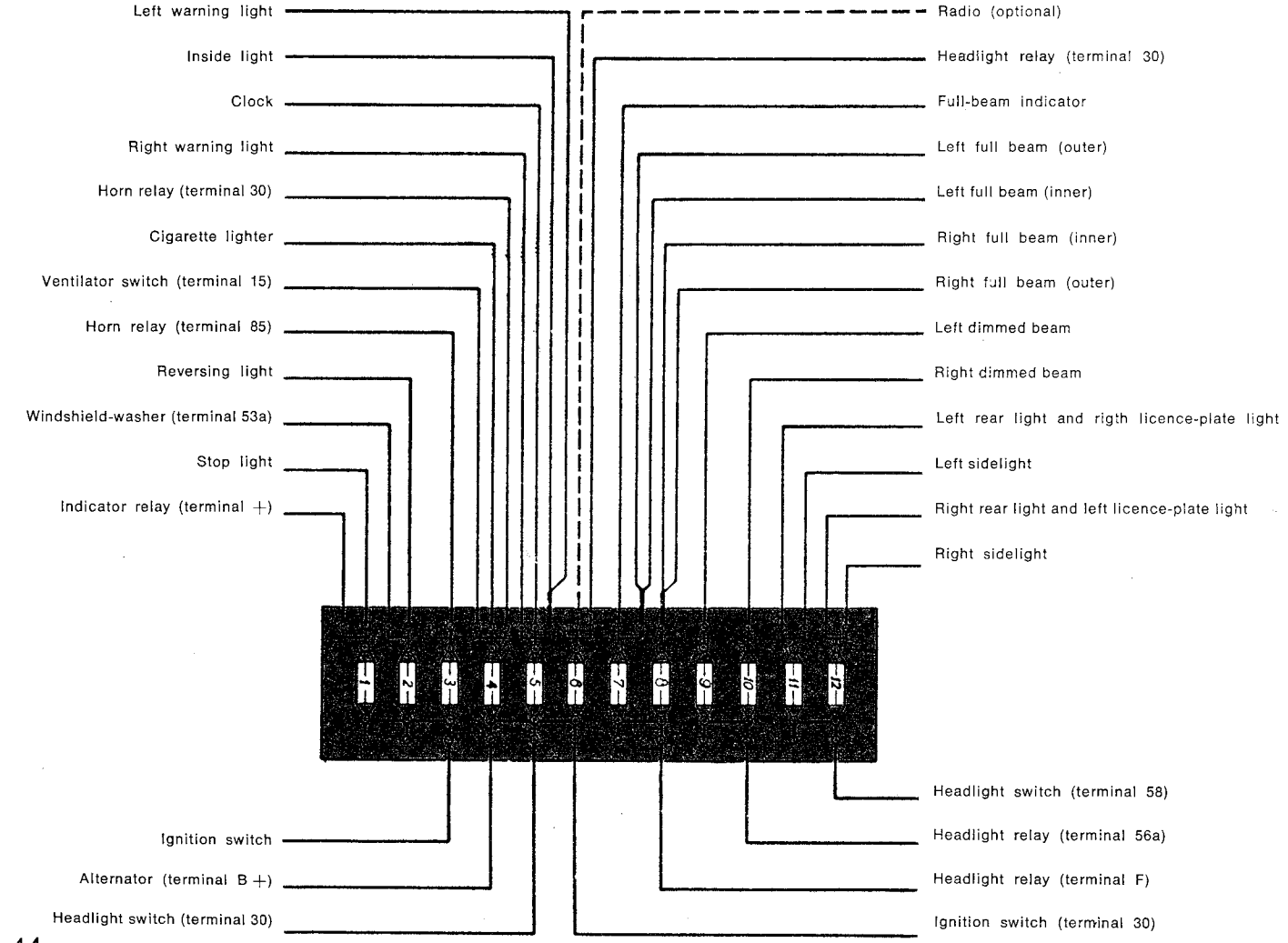
Solution is to be added only if some has been spilled. Next, check, and if necessary correct the density. Clean the battery terminals with a clean cloth, and if they are heavily corroded, with terminal-cleaning solution (or a solution of bicarbonate of sodium). Grease the terminals with anti-corrosive grease or vaseline. The cable leading to "earth" must always be well-connected to the car body.

Replacing fuses

The fuse-box, with transparent lid, is below the dashboard, on the left of the steering-column. Fuse no. 6 is of 25 amperes (blue) and nos. 2 and 4 are of 16 amps (red). The rest are of 8 amps (white).

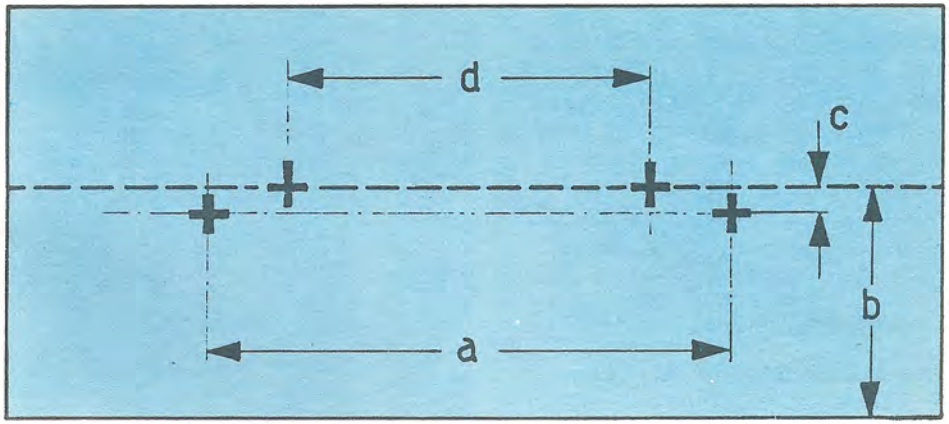
If a fuse burns out it is not enough just to replace it. The cause of the short-circuit or overloading must be found. Never use burnt-out fuses repaired with silver foil or wire, since serious damage may be done to other parts of the electrical system. It is advisable to keep a few spare fuses (8, 16 and 25 amps.).

ELECTRICAL DIAGRAM



Headlights

The car is fitted with double headlights, so that when the dimmed lights are on, only the outer lights come on, while when the full beam is on, all 4 lights come on.
The bulbs of all 4 headlights are the same, and therefore interchangeable. So, if the dimmed-beam filament of one of the outer lights burns out, you can replace it with one of the inner light bulbs. The halogen lamps of the outer headlights have a double filament and the inner lights have a single filament.



Measurements:
a) 1061 mm.
b) distance between headlight centre and ground
c) 50 mm (distance between upper limit and centre of light).
d) 738 mm.

Headlight adjustment

If you have no headlight adjustment equipment, follow these instructions:

1. Park the car on an even surface, 5 metres away from a wall.
   The tire-pressures should be correct, the boot empty and the driver's seat should have a 70 kg weight in it.
2. Mark the wall as in the diagram.
3. The centre of the car should coincide with the centre of the wall-markings.
4. Remove the headlight surrounding by taking out the two fixing screws.
5. The outer headlights are regulated on dimmed beam, and the inner lights on full beam.
6. Lights are adjusted by the regulating screws which are on the front of the headlights.
7. Full beam and dimmed beam should be regulated separately covering other headlights while operating.

A — **Outer headlights**

These are regulated on dimmed beam, the edge of the light on the left of the cross should follow the horizontal line joining the outer crosses. To the right of the cross, the edge should rise at an angle of about 15°, and the angle should point at the centre of the cross.

B — **Inner headlights**

These are adjusted on full beam. The centre of each beam should coincide with the centre of each inner cross.

Adjustment

Vertical

Turning the upper adjustment screw:

clockwise - the beam is lowered
counter-clockwise - the beam is raised

Horizontal

Turning the lower left-hand screw:

clockwise - beam moves left
counter-clockwise - beam moves right.

Left and right refer to the position as seen by the driver.

Changing headlights bulbs

To change the bulbs, remove the protective cover on the bottom of the light. Remove the socket and protective cap, then free the two lamp clips. Place new lamp in positions in reverse order checking that the bulb in clean and well fitted. You must avoid to touch the glass of the new headlight bulb.

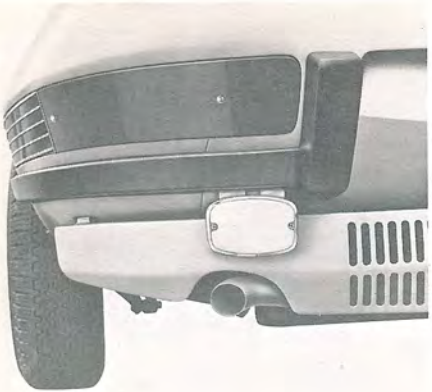
Attention: do not try to clean the reflector with a cloth or waste of cotton. The mirror surface is produced by evaporating aluminium in a vacuum and is extremely sensitive. On no account should it be rubbed. If it must be cleaned, apply a jet of compressed air.

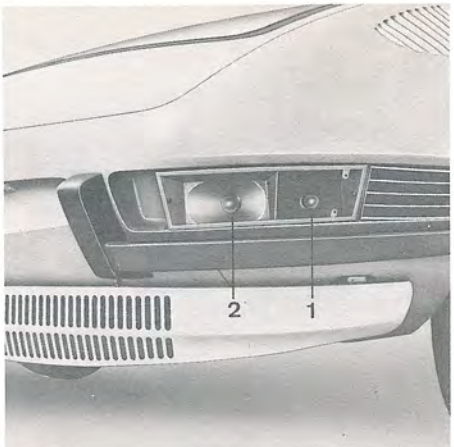
Changing sidelight bulbs

To get at these, remove the headlight surrounding and pull the outer lamp out of its seat. Take the socket with the lamp out of the lower part of the headlight. The headlights are fixed by pressure, to their supports, by means of three screws fitted in plastic bushes. When re-assembling in reverse order, align the three screws with the plastic bushes and press the light back in with your hand — never with any tool.

Chaning front indicator bulbs

Remove the two fixing screws and plastic. Change bulb. When re-assembling, check that the rubber lining is perfectly aligned, so that water does not get in.





1 - indicator lamp

2 - rear light and stop lamp

Changing reversing-light bulb

Just remove the two lamp-cover screws.

Changing control lamps (oil, alternator, panel light, indicators)

These lamps are found below the dashboard, and easily removeable from their sockets.

Changing rear-light bulbs

Unscrew the two screws holding the plastic in, and remove. Before reassembling, check the bulbs. When putting in the twin-pole bulb (rear light/stop light) the fixing pin nearest the glass should be at the bottom.

Changing licence-plate bulbs

Remove the plastic surrounding by unscrewing the two fixing screws. The contact spring should provide good contact and be clean.

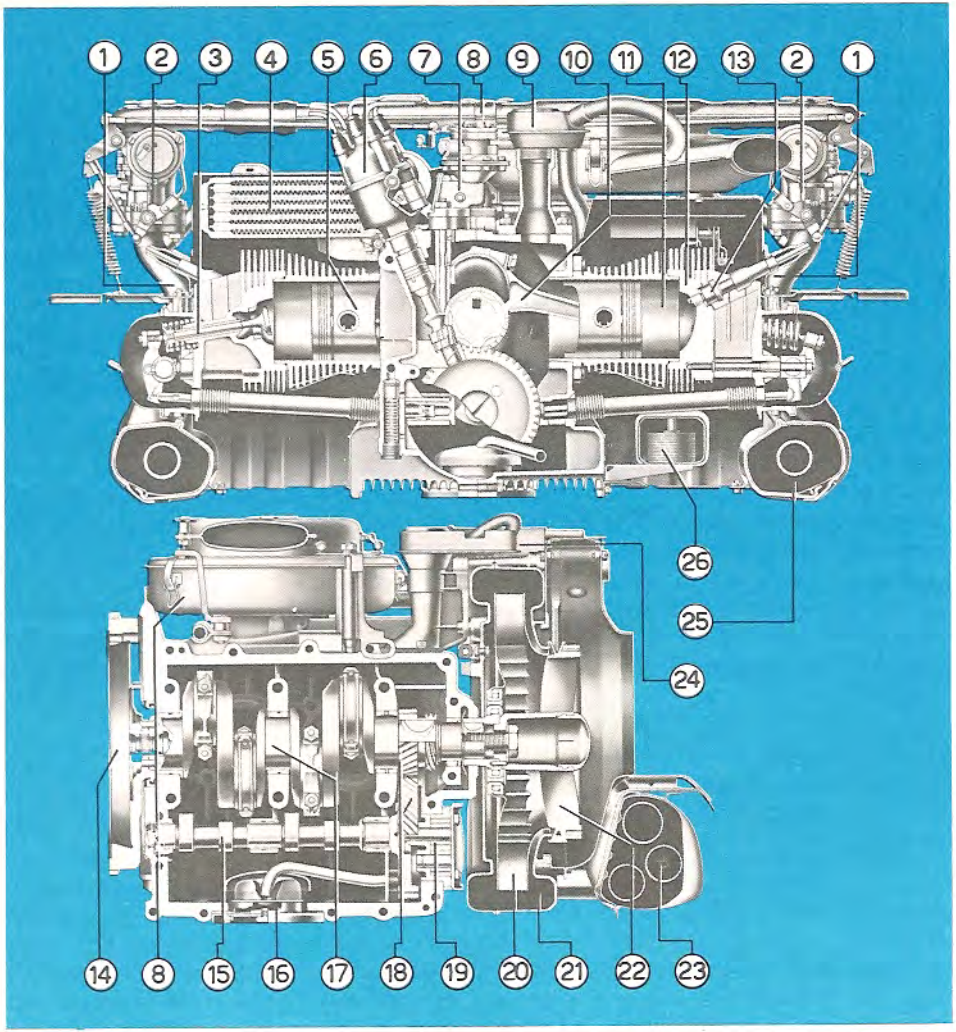
Engine

The engine is rear-mounted, and held by four bolts to the transmission housing, which is in turn held by rubber pads to the forked end of the chassis. The cylinders are horizontally-opposed, two by two. Each pair has in common an alloy cylinder head. The valves in the cylinder heads are controlled by tappets and rockers. The short, vibration-free crankshaft has specially-tempered pivots and gudgeons. It turns, supported by four gudgeons, and works the camshaft by means of helical gears. The connecting-rods have bushings of lead-bronze, and the pistons are made of cast alloy with steel reinforcement.

The mixture of air and petrol is made by two carburettors, one for each pair of cylinders with downdraught jets and acceleration pumps. The forced lubrication oil pump is controlled by the camshaft and forces the oil through the oil-cooler. The air-cooling of the engine is by means of a fan mounted on the extension of the crankshaft, and which is coupled to a pulley which drives a belt which drives the alternator. Air drawn in by the fan is forced by deflecting-plates so as to reach all sides of the cylinders which, in turn, have cooling fins. A thermostat controls the flow of air around the engine.

Chassis

The chassis is of pressed steel. The central chassis tunnel is welded together, ending in a fork frame on which the engine and transmission are mounted. The central chassis tunnel contains: the gear box connecting rod, hand-brake cables, fuel pipings, as well as clutch cable, accelerator butterfly-valve and internal heating system.



1. Inlet tube
2. Carburettor
3. Valve
4. Oil-cooler
5. Piston
6. Distributor
7. Petrol pump
8. Air filter
9. Sump ventilation tube
10. Connecting rod
11. Cylinder
12. Cylinder head
13. Spark plug
14. Flywheel
15. Camshaft
16. Oil pump filter
17. Crankshaft
18. Camshaft gearing
19. Oil pump
20. Fan
21. Fan housing
22. Crankshaft pulley
23. Muffler
24. Ignition coil
25. Air-heating chamber
26. Thermostat

16 oil pump filter
5 petrol pump filter

Front axle

The front axle, which is bolted to the head of the chassis, is composed of two steel tubes firmly held together, on which are the torsion bars and the suspension arms for the front wheels. These have independent suspension, so that their arms form parallelograms, which makes driving easier on all types of road.

The steering-box, with worm-screw and cog, is connected to the front wheels by the drag-link and steering rods.

Transmission and rear axle

The engine is connected to the gear box by the clutch. This is of the single dry disk type. In the same housing there are the gearwheels for the four forward gears and one reverse gear, and the differential. All forward gears are synchro-mesh. The gearwheels for these gears are helical and therefore smooth and silent.

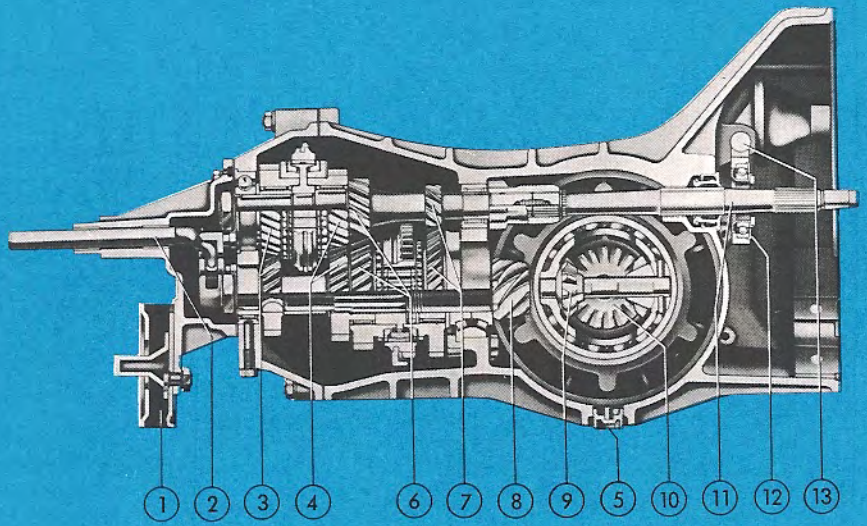
The crown and pinion are conical gears with spiral cogs. The half-shafts are connected to the differential planetary cogs by means of articulation wedges.

The rear axle is of the oscillating type, with independent suspension (cylindrical, adjustable torsion bars).

The front suspension stabilizer and rear compensating bar ensure stability when negotiating curves.

Shock-absorbers

Telescopic double-action shock-absorbers at front and rear absorb vibrations and oscillations. The steering shock-absorber absorbs vibrations transmitted to the steering-wheel.



1. Rubber-and-metal front pad
2. Selecting forks lever
3. 4th gear cogwheels
4. 3rd gear cogwheels
5. Magnetic oil-drain plug
6. 2nd gear cogwheels
7. 1st gear cogwheels
8. Pinion
9. Satellite cogs
10. Planetary cogs
11. Main shaft
12. Clutch collar
13. Clutch fork axle

Brakes

The car is equipped with double-circuit hydraulic brakes, one circuit being for the front (disk) brakes and the other for the rear (drum) brakes acting directly on all four wheels. The hand-brake acts mechanically on the rear wheels, and is controlled by means of cables which are weather-proofed by special coatings.

Bodywork

The bodywork is made of steel plates welded together electrically, and bolted to the chassis.

The door-windows can be opened by winders.

The rear windows can be opened and put in various positions, using the fastenings.

The windows and ventilation system make it possible to ventilate the vehicle perfectly without draughts. The seats and back-rests can be adjusted so as to suit the occupant's size. The back-rests can be totally reclined.

To open the boot, just pull the release button on the left, under the dashboard. The spare wheel, jack, fire extinguisher and tools are in the boot.

The luggage compartment is behind the seats; access is obtained by opening the rear door.

Internal heating

Air which has been heated by passing through the engine, passes through the longitudinal struts of the bodywork, coming out at openings by the feet and the windshield. The driver can adjust the heating even when the car is in motion.

Ventilation

The air-inlet for ventilation is in front of the windshield. The air passes through the ventilation box and comes out at the openings by the windshield, on the dashboard, and near the doors, depending on the position of the ventilation distribuition controls. There is a two-speed fan, controlled by the green switch on the dashboard, which gives excellent ventilation, even with the vehicle stationary.

TECHNICAL CHARACTERISTICS

Engine

Type	internal combustion, 4 cylinders, 4-stroke, flat, rear-mounted
Cylinders	
Disposition	horizontally-opposed, two by two
Bore	85,5 mm/88 mm
Piston stroke	69.0 mm
Capacity	1.584 cc/1.678 cc
Compression ratio	7.2:1/7,5:1
Valves	in cylinder head
Valve gaps	0.10/0.15 mm inlet, 0.10/0.15 mm exaust — adjusted when engine is cold
Maximum power	54 hp at 4.200 rpm (DIN) 65 hp at 4.600 rpm 65 hp at 4.600 rpm (SAE) 75 hp at 5.000 rpm
Maximum torque	11kpm at 2.600 rpm (DIN) 12,1 kpm at 3.000 rpm 12 kpm at 3.000 rpm (SAE) 13.0 kpm at 3.400 rpm
Lubrication	pressure, with pump and oil-cooler
Sump capacity	2.4 litres of oil
Petrol feed	mechanical petrol pump
Carburettor	2, Solex type, with downdraught jets. 32/34 PDSIT with acceleration pump
Cooling	air, by means of a fan
Battery	12 volts, 42 Ah
Starter motor	electric, 12 volts, 0.8 hp
Alternator	with regulator, 14 volts, 35 amps maximum

Ignition distribution	with automatic advance (vacuum and centrifuge)
Ignition sequence	1, 4, 3, 2
Timing adjustment	10° before top dead centre
Points contact gap	0.4 mm
Spark plugs	14 mm thread
Plug gap	0.6 - 0.8 mm

Clutch

Type	single dry disk
Pedal looseness	10 - 20 mm

Rear-axle transmission

Conical gears with spiral cogs to the differential, and oscillating half-shafts.

Gear box	4 forward speeds, synchro-mesh for forward gears, and 1 reverse	
Transmission ratio	1st	1:3.80
	2nd	1:2.06
	3rd	1:1.32
	4th	1:0.89
	Reverse	1:3.88
Differential transmission ratio	1:4.125/ 1:3.875	

Chassis

Front suspension	2 torsion bars with stabilizer

Rear suspension	2 cylindrical torsion bars with compensating bar
Shock-absorbers	telescopic, double-action, front and rear
Steering, on sector axle	with hydraulic shock-absorber
No. of turns of steering – wheel from one lock to the other	2.7
Minimum turning circle (diameter)	about 11.25 metres
Wheels	size 5.5 J 14 (perforated steel disk) 5 1/2 x 14 (magnesium-alloy) 5 1/2 J x 14 (magnesium-alloy)
Tires	185 SR 14
Tire-pressures with full load	front 17 lbs (1.2 atm) rear 22 lbs (1.5 atm)
Spare-tire pressure	33 lbs (2.3 atm)
Distance between axles	2.400 mm
Distance between wheels	front 1,342 mm rear 1,380 mm
Convergence (unloaded)	2 to 4.5 mm

Brakes

Main brakes	hydraulic, double-circuit } rear-drum one all four wheels } front-disk
Hand-brake	mechanical, acting on rear wheels

Weights and measures

Length	4,212 mm
Width	1,610 mm
Height	1,158 mm

Distance between chassis and ground	149 mm
Net weight with spare wheel and other accessories	890 kgs
Load	245 kgs
Gross weight	1135 kgs
Gross weight	
— on front axle	500 kgs
— on rear axle	670 kgs

Performance

Maximum speed (cf DIN 70020)	149 km/h / 161 km/h
Hill-climbing ability (measured with half permissible load)	
in 1st gear	47.1% / 48.4%
2nd	24.6% / 24.9%
3rd	14.6% / 14.9%
4th	8.3% / 8.5%
Reverse	48.2% / 49.4%

Capacities

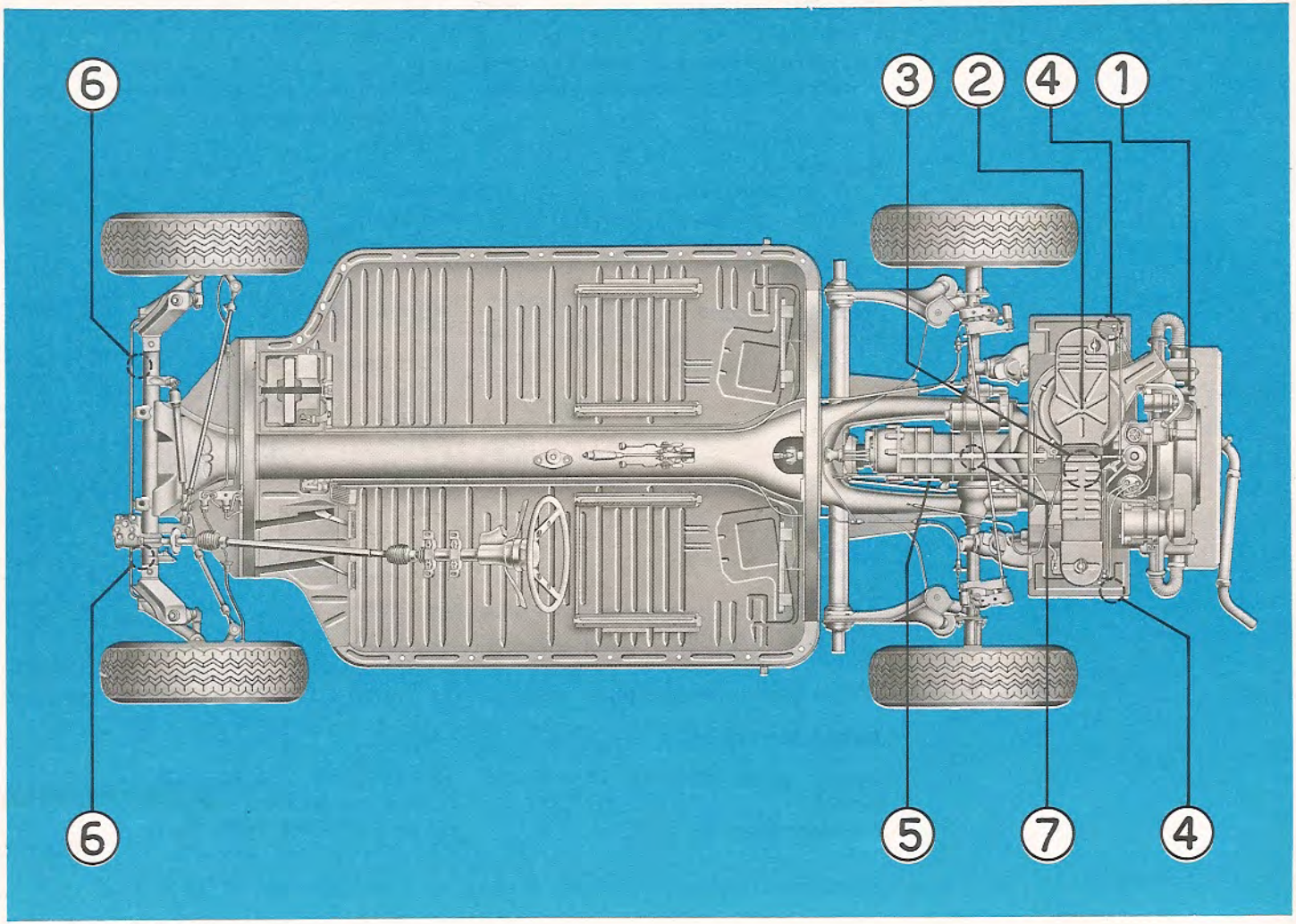
Petrol tank	40 litres
Sump	2.5 litres
Air filter	0.4 litres
Transmission (oil change)	2.5 litres
Steering (grease)	160 cc
Brake fluid	0.45 litres

8.0

Petrol and oil

Petrol consumption (cf DIN 70030)	12 km/litre / 12.5 km/litre
Petrol	type A for 1600 cc / type B for 1700 cc
Oil consumption	up to 1 litre for 1,000 km

Note - Technical data printed in blue refers only to the VW SP 2 (1700 cc.)


6
3
2
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1
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4

SERVICING PLAN

After the first 1,000 km	After the first 5,000 km	After the first 10,000 km	N.°	SERVICING LUBRICATION	Every
			1 & 2	Engine and air filter: check oil level, top up if necessary.	1,000 km
			2	Air filter: clean, and change oil. (1)	5,000 km
			3	Engine: change oil and clean pump filter. (2)	
			4	Lubricate carburettor (moving parts).	
				Lubricate door-hinges and bonnet-hinge.	
			5	Transmission: check oil level, top up if necessary.	
			6	Front axle: lubricate suspension arms. (3)	10,000 km
			7	Transmission: clean magnetic oil drain plug. Change oil.	15,000 km
			7	Transmission: clean magnetic oil drain plug.	

Notes :

(1) In very dusty areas, clean and change oil DAILY.
(2) After driving on dirt roads, town driving with frequent stops, it is advisable to change oil more often.
(3) If the vehicle is often driven on bad roads, (dust and mud) it is advisable to lubricate the front axle more often.

SERVICING PLAN — GENERAL

After the first 1,000 km	After the first 5,000 km	After the first 10,000 km	NECESSARY SERVICING	Every
			Check tightness of bolts and nuts of bodywork, engine, transmission, suspension, front axle and steering. Change all cotter pins and locking plates removed.	
		X	Check alternator belt; adjust tension; change if necessary.	5,000 km
		X	Clean petrol pump filter.	
		X	Clean distributor points. Check grease of points fibre, lubricate sparingly if necessary. Lubricate distributor camshaft (One drop).	
			Check points contact gap and timing; re-adjust if necessary, with engine cold.	
		X	Check valve gaps; regulate if necessary, with engine cold. X	
			Clean and test spark plugs, re-adjust contact gap if necessary. Measure cylinder compression.	
		X	Check muffler for damages.	
			Check engine and transmission for leaks.	
			Check clutch pedal looseness, adjust, if necessary.	
			Check steering adjustment, adjust if necessary.	
			Examine sealing caps on suspension arms articulation tips and on steering drag-link tips. Change, if necessary.	
		X	Check front-wheel roller bearing looseness; tightness of steering drag-links and convergence of front wheels. Tighten and adjust, if necessary.	
			Check tires for wear. Recalibrate.	
			Check all tubes and connections of brake system for damage or leaks. Check functioning of brakes, including handbrake. Adjust, if necessary. Check brake-fluid level; top up if necessary.	
			Check brake linings through inspection holes (see note on page 39.).	
			Check that shock-absorbers are in place and that they are working properly.	
			Examine battery, measure solution density, add distilled water if necessary. Clean and grease terminals.	
			Check stop-lights, reversing light, control (warning) light, horn, windshield-washer and -wipers, direction indicators, headlight alignment.	
			Check that doors shut properly, adjust if necessary.	
			Test-drive; check heating and ventilation, repair if necessary. Check slow-running with engine warm.	
			Change grease on front-wheel hubs, as in instructions.	50,000 km

VOLKSWAGEN DO BRASIL S.A.
SÃO BERNARDO DO CAMPO - SP