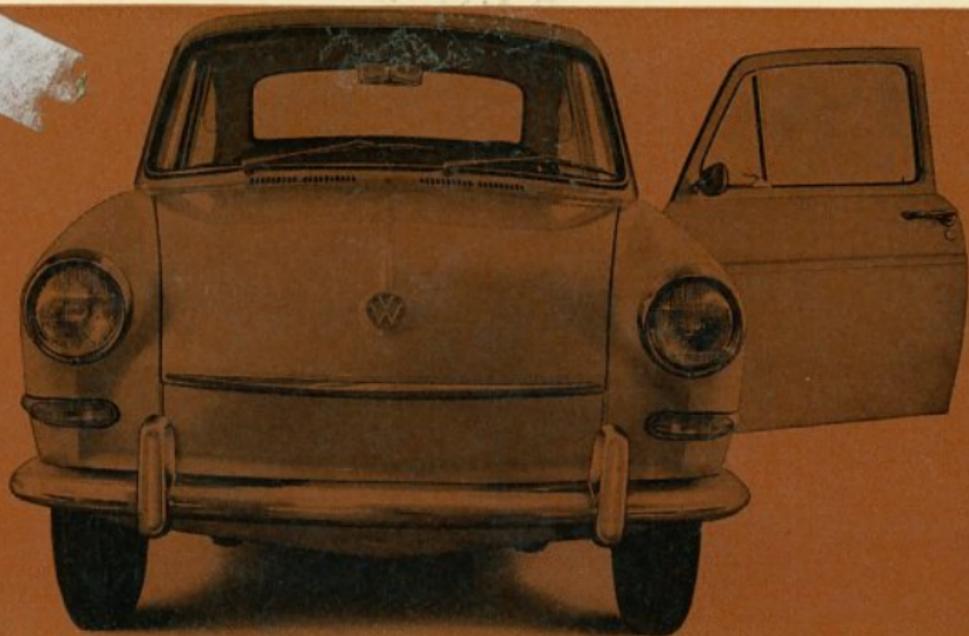


Instruction manual





Instruction manual and Service Card

VW 1600 TL — VW 1600 L — VW 1600 A — VW 1600 Squareback Sedan

August 1966

VOLKSWAGENWERK AKTIENGESELLSCHAFT

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All pictures are of the VW 1600 TL and the text is based on this vehicle. Where the controls and technical details of the VW 1600 A, the VW 1600 L and the Squareback Sedan differ considerably, attention is drawn to the difference. All special equipment such as is often required due to local regulations in various countries is not taken into account.

It is advisable . . .

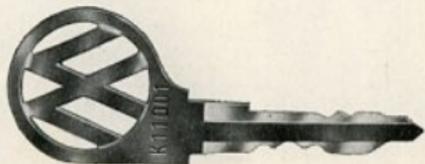
to read the first part of this instruction manual, which deals with the operation of your Volkswagen, very carefully. You will then get to know your new car quickly and will be able to start off on your first trip with complete confidence.

Everything about winter driving, tips on care of the vehicle and numerous points on carrying out small repairs and adjustments are given in the second half of this manual. This part also contains information on lubrication and maintenance and some interesting technical data.

At the back of the book is the service card, the warranty voucher and terms of warranty and a voucher for the free-of-charge maintenance service. The stamps in the squares show you that the lubrication and maintenance service have been carried out regularly by a VW Dealer.

Only one key

is required to open the door and start the engine. It is a good idea to note the number of the key on a slip of paper which is then put with the vehicle documents. If you should lose the key, you can always obtain a replacement from your VW Dealer.

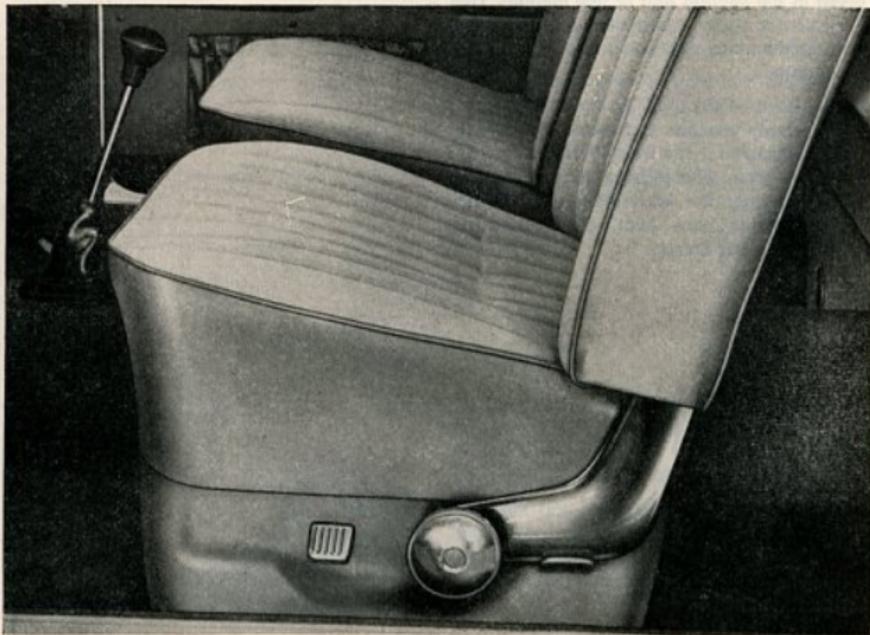


Sit down and make yourself comfortable . . .

When driving, you must be comfortable. That is why the Volkswagen has separate front seats which are built so that you can alter seat position and backrest rake to suit your requirements. This is quite simple —

just lift the lever on the side of the seat and slide the seat forward or backward.

When the seat has been moved, always ensure that the lever engages properly so that the seat cannot move while you are driving.



The backrest rake can also be set to eight different angles by turning the large knob. Try them out until you find the angle which suits you best.

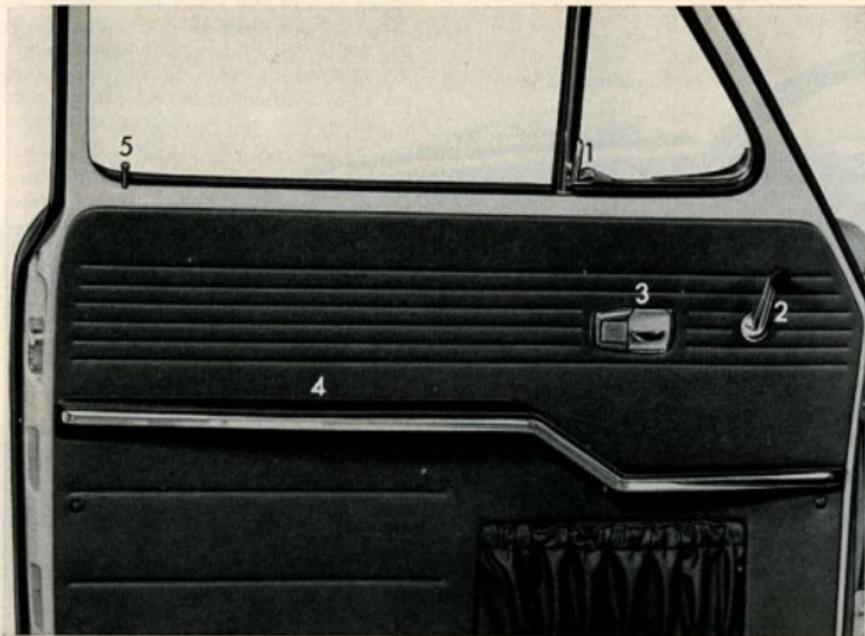
When the doors are closed, cable operated safety catches prevent the backrests from tilting forward. The VW 1600 A and the 1600 A Squareback Sedan are not fitted with these catches.

To take the seats out, press the spring on the inner runner down and slide seat to the front.

Before closing the door . . .

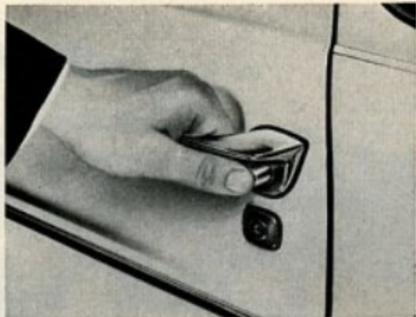
it is advisable to open a window slightly. The door will then be easier to close because the air can escape from inside the body.

- 1 — Vent wing fastener
- 2 — Window crank
- 3 — Locking lever
- 4 — Armrest and door closing grip
- 5 — Safety knob for lock



The doors cannot be opened from inside with the locking lever until the safety knobs have been lifted.

When leaving the vehicle, just press the safety knob down and depress the button under the outer handle as you close the door.



The vehicle is then locked.

If the door closes on its own after the safety knob has been depressed, it will not lock itself because the safety knob springs up automatically. This is an additional safety measure to prevent you from being locked out if the door should slam to while the key is still inside the vehicle.

In front of you - the instrument panel

Even if it is not your first Volkswagen, just have a quick look at the dash and try out the various knobs and levers with the ignition switched on:

1 - Speedometer

2 - Fuel gauge

The following warning lamps are in the fuel gauge dial:

- green - parking lights
- blue - headlamp high beam
- red - generator
- green-yellow - oil pressure
- green-yellow - oil pressure
- arrow - turn signals

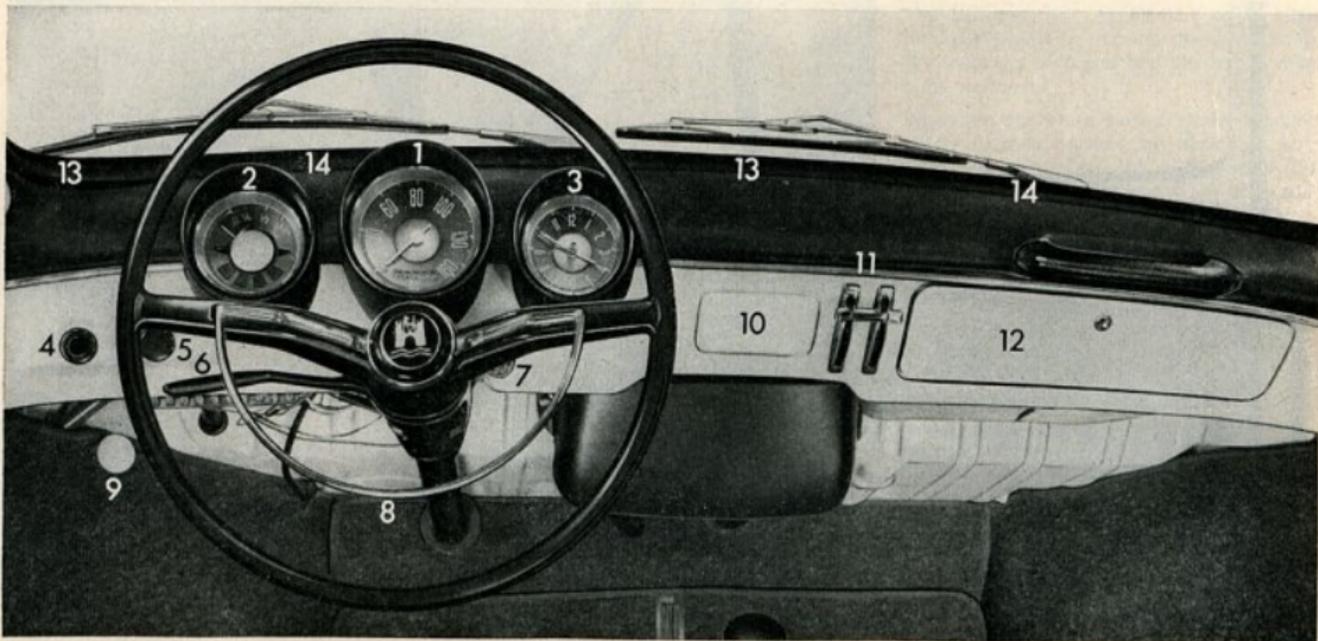
When the needle is on the mark "R" there

are about 5 liters (1 gallon) of fuel left in the tank - time to refuel at the next opportunity.

3 - Clock

The clock is electrically operated. The hands can be moved by pressing in and turning the knob in the dial center.

The VW 1600 A and VW 1600 A Squareback Sedan are not fitted with a clock.



4 — Windshield wipers and windshield washer system

The two-speed wipers are switched on by turning the switch. They park automatically when switched off. When the knob in the center of the wiper switch is pressed, the washer sprays water on to the windshield.

5 — Lighting switch

Pull the knob out to the first stop to switch on the parking, license plate and tail lights. A green warning lamp in the dial of the fuel gauge also lights up. When the knob is pulled out to the next stop, the headlamps are switched on as well.

The headlamp beams are switched up and down with a small button in the turn signal lever. A blue warning light in the fuel gauge dial shows when the headlamp high beams are switched on.

The instrument lights are switched on and the brightness controlled by turning the lighting switch.

6 — Turn signal switch

With ignition on:

- Lever up — right turn signals
- Lever down — left turn signals

The turn signals are cancelled automatically after taking a corner as soon as the steering wheel is returned to the straight ahead position.

With ignition off:

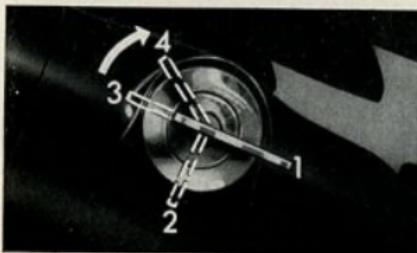
- Lever up — right parking lamp
- Lever down — left parking lamp

The VW 1600 A and the VW 1600 A Square-back Sedan are not fitted with parking lamps.

The button in the turn signal lever switches the headlamp beams up and down. When the lights are not on or only the parking lights are on, the button serves as a headlamp flasher.

7 — Steering-ignition lock

- 1 — Ignition off — steering locked
- 2 — Ignition off — steering free
- 3 — Ignition on
- 4 — Starting



Important

Remove key from lock only when vehicle is stationary.

8 — Horn ring

The VW 1600 A models have a horn lever.

9 — Knob for front hood

10 — Ashtray

To remove ashtray, press leaf spring down and pull ashtray out.

11 — Fresh air ventilation

The two outer levers control the flow of air through the vents at lower edge of windshield separately on each side of vehicle. The center lever regulates the flow of air into the front footwell.

As the levers are pressed down the flow of air increases.

12 — Glove compartment

Press the knob to open the glove compartment lid.

13 — Defroster vents

14 — Fresh air vents

Two further vents behind the dashboard admit fresh air to the front footwell.

Above the windshield . . .

15 — Sun visors

You can pull the visors out of the center mounting and swing them towards the door windows to prevent dazzle from the side.

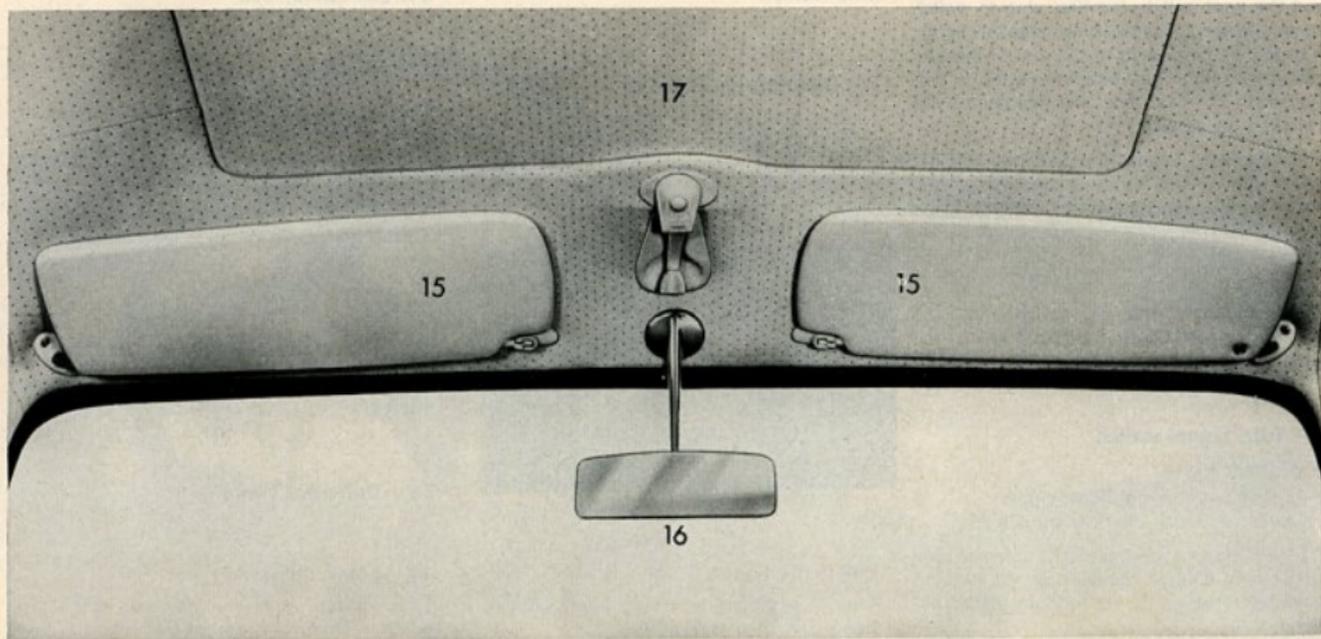
The VW 1600 A models have only one visor.

16 — Rear view mirrors

Inner and outer mirrors are ball joint mounted so that they can be set to give clear vision to the rear at all times.

17 — Sliding roof

For safety reasons, the sliding roof crank should always be in the recess. When closing the roof, turn the crank as far as it will go then turn it back slightly until it can be folded into the recess.



In the footwell and between front seats . . .

- 18 — Clutch pedal
- 19 — Brake pedal
- 20 — Accelerator pedal
- 21 — Gearshift lever

22 — Handbrake

To release the handbrake, pull the lever up slightly first and press the locking knob.

23 — Heating control levers

- Lever up — heat on
- Lever down — heat off

The heating will be more effective if you open one of the vent wings slightly when the heating is on because the fan can then force the warm air into the body interior more easily.

24 — Heater control slides in front footwell

The flow of warm air into the front footwell can be controlled separately on each side.

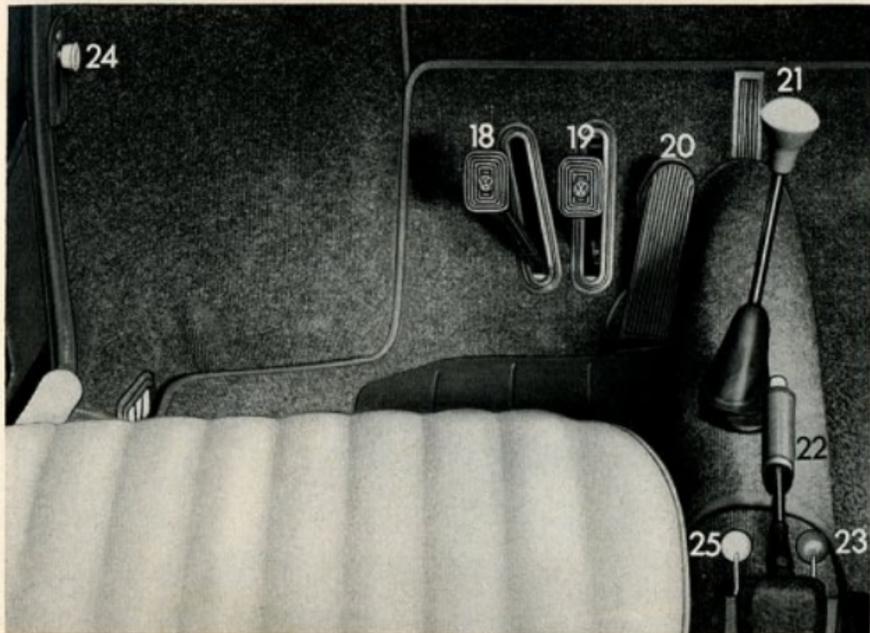
On the VW 1600 A and VW 1600 L the slides themselves must be moved.

25 — Control lever for heating in rear footwell

This lever controls the flow of warm air into the rear footwell when the heating is on.

- Lever up — flaps open
- Lever down — flaps closed

At low temperatures it is advisable to leave the rear outlets closed when first moving off. This increases the flow of air to the windshield and also helps to prevent steaming up when the air humidity is high. As soon as the windshield is clear, the rear footwell outlets should be opened so that the interior of the body heats up as quickly and uniformly as possible.



Behind you . . .

26 — Flexible window

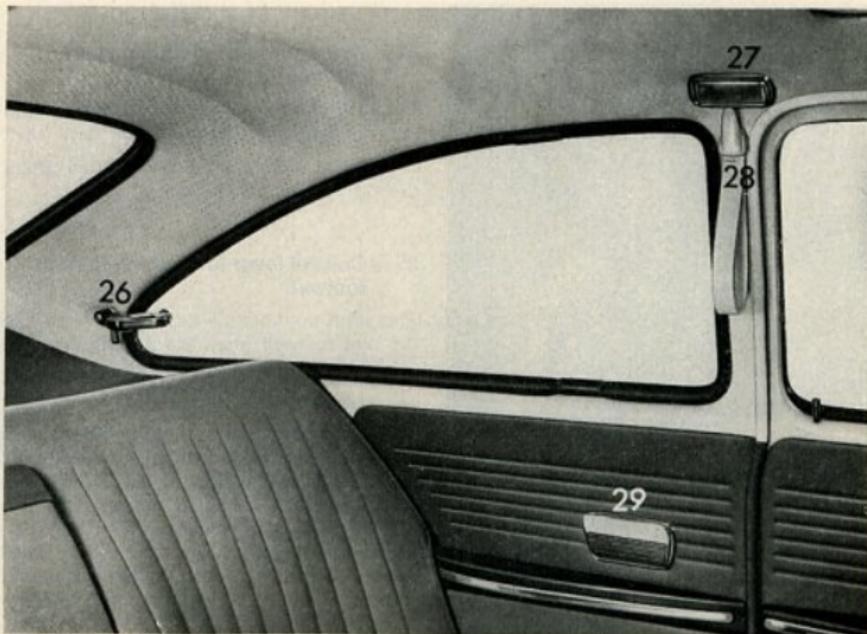
They are only fitted on the VW 1600 TL and the VW 1600 L Squareback Sedan

27 — Interior lighting

The light has a built-in switch which is operated by pressing on the side of the lens.

There are three positions:

- Lamp in center position — light comes on when a door is opened
- Lamp pressed in on right — light on
- Lamp pressed in on left — light off.

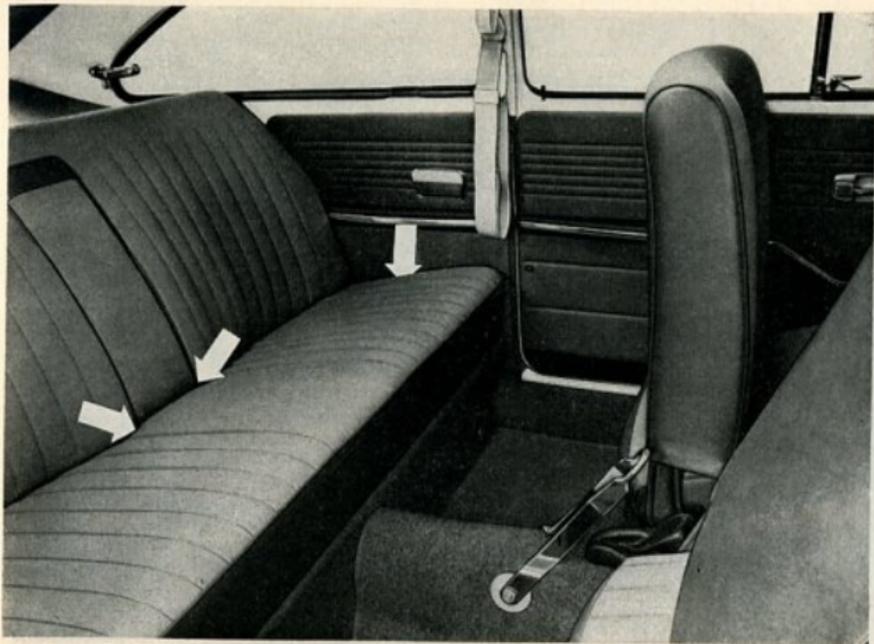


28 — Assist straps and coat hooks

29 — Ashtrays

The rear ashtrays on the VW 1600 Fastback Sedan, the VW 1600 L and the VW 1600 L Squareback Sedan are removed by opening them and lifting them out of housing at the bottom first. To insert, hook the ashtray onto the leaf spring at the top first and then pressing in at the bottom.

The VW 1600 A and VW 1600 A Squareback Sedan have only one ashtray at the rear. To remove this ashtray, press it down slightly. To insert, slide it into the housing simultaneously at top and bottom.



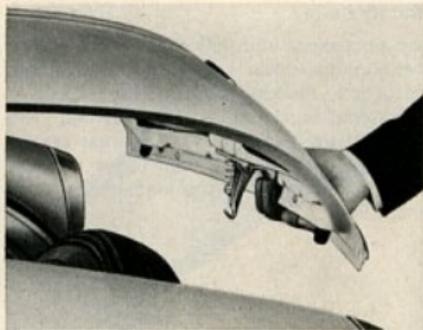
Safety belts

are obtainable from any VW workshop. The belts for the driver and front passenger are secured to the lock pillar and on the side of the frame tunnel in the rear footwell. The belts for the passengers at the rear are attached on the left and right under the seat and in the center of the luggage compartment floor.

**Now let us
have a look . . .**

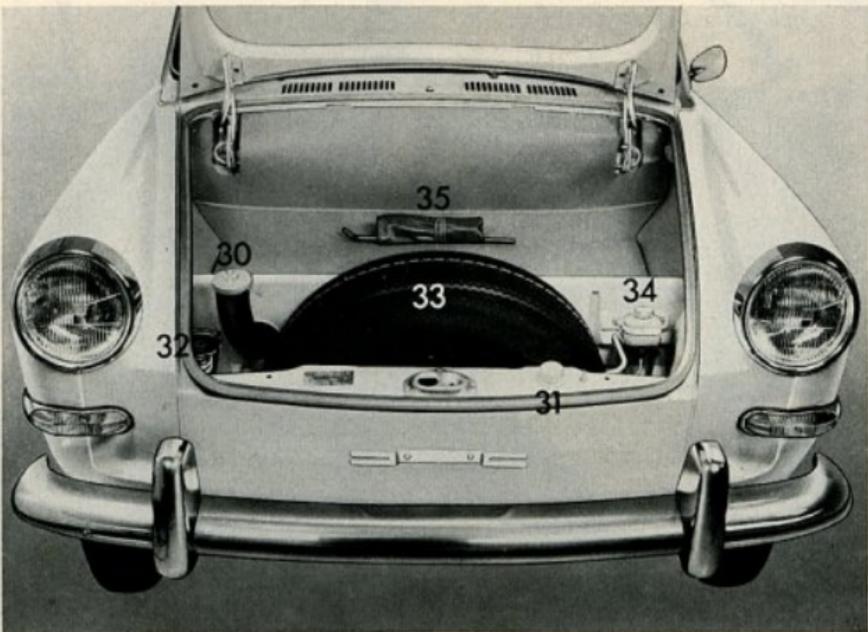
... in the front luggage compartment

Whether you are taking a lot of luggage with you or not, please load the front luggage compartment first, using the heaviest pieces of luggage if possible. A good distribution of load means good roadholding so take advantage of the possibilities offered by the Volkswagen with its two luggage compartments.



The knob which opens the front hood is on the left under the dash board. The hood springs up slightly first under spring pressure and can be opened fully when the safety hook near the lock has been pressed upward.

To close the hood press it down firmly until you hear a click. Never try to close the hood by pressing at the side, always press it in the center near the lock.



30 — Fuel tank filler

The tank holds 40 liters (10.6 US gallons, 8.8 Imp gallons). The choice of fuel is left entirely to you. The Volkswagen will run satisfactorily on all normal commercial fuels which fulfil the octane requirements of the engine (90 octane).

If regular fuels with adequate anti-knock qualities are not available, premium fuels should be used or mixed with the regular fuel.

31 — Container for windshield washer

The container can be filled with water until it overflows. There is always room for sufficient air to operate the washer. The correct air pressure is 2.5 kg/cm² (35 psi).

It is advisable to add a cleaning solution to the water as clear water alone is usually not adequate to ensure that the windshield is cleaned quickly and properly. If enough of this cleaning agent is put in, it also acts as an anti-freeze solution in the winter. Details of the mixing proportions are given in the list of cleaning materials on page 27.

Methylated spirits can also be used as anti-freeze agent. In this case a mixture of 1 part meths to 3 parts water will protect the water from freezing down to about - 12° C (10° F).

32 — Jack

How you operate the jack is described together with wheel changing on page 30.

33 — Spare wheel

Have the air pressure in the spare wheel checked from time to time. Inflate it to the highest pressure you will normally require. It is then easier to lower the pressure when fitting the wheel than to inflate to the pressure required.

34 — Brake fluid reservoir

The container must be at least three quarters full. If this is not so, have your VW Dealer check the brake system.

35 — Tools

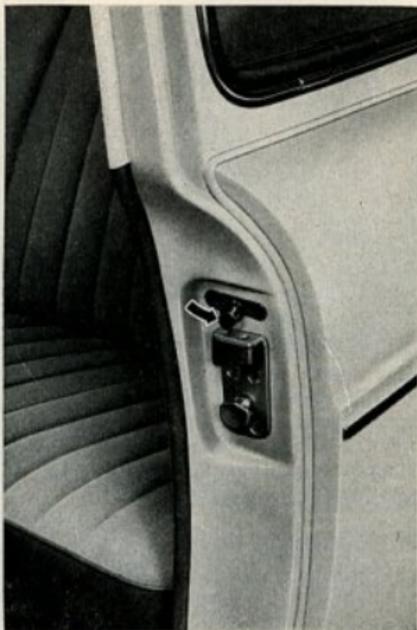
In the tool bag you will find

- 1 wheel cap remover
- 1 pair of combination pliers
- 1 screwdriver with reversible blade for slotted and Phillips screws
- 1 open-end wrench 8 mm and 13 mm
- 1 wheel bolt socket wrench
- 1 spark plug socket wrench with bar
- 1 bar for jack and wheel bolt wrench
- 1 13 mm socket (only on vehicles with 1.5 liter engine)

... and under the rear hood

which is opened with the lever in the lock pillar of the left door. Here is another large luggage compartment which is illuminated on the VW 1600 TL. The lamp only lights up when the vehicle lights are on and goes out when the hood is closed.

To get to the engine, roll back the floor covering and lift lid. The lid can be held up by hooking the left handle into a bracket on the upper edge of the body opening or taken out completely.



The rear compartment of the Squareback Sedan . . .

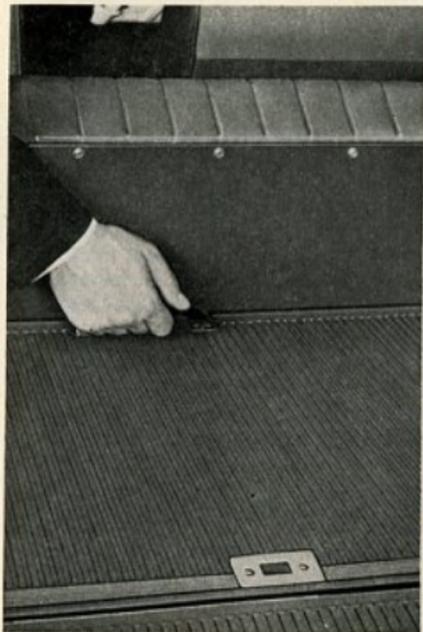
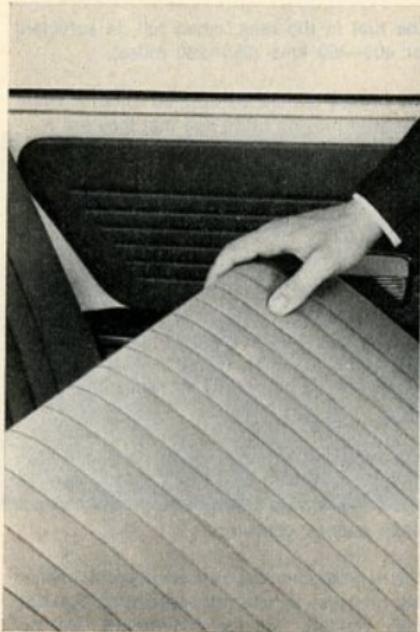
is accessible through the rear door which is opened by pressing the knob under the license plate. Then grasp the edge of the door underneath the lock and lift the door up until it is held in the fully open position by the torsion springs.

Try not to let the door fly up on its own as this may strain the hinges.

To close the door, swing it down firmly. Make sure that it is properly closed.

The load surface can be increased by more than half its size by tipping the rear seat forward. To do this, raise the seat cushion and fold the backrest forward with the handle.

When the seat has been tipped forward, the seat cushion and backrest are held together by two retaining pins. In the normal position a retaining device automatically prevents the backrest from tilting forward.



Before moving off, check . . .

the fuel, the brakes, the lights and, at regular intervals, the oil level in the engine and the tire inflation pressures.

The fuel in the tank, when full, is sufficient for 400–450 kms (250–280 miles).

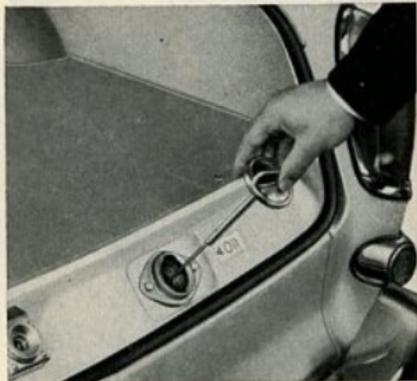
The brakes should be applied once or twice just after moving off to see that they are working properly.

The lights include headlamps, rear lights, license plate light, turn signals and brake lights.

The turn signals and brake lights must be checked with the ignition on. If a turn signal is defective, the warning lamps in the fuel gauge dial flash much quicker than usual. The brake lights only work when the brake pedal is depressed.

The oil level should be between the two marks on the dipstick and must never be below the lower mark. Wipe the dipstick clean before checking.

The vehicle must be on a level surface when the oil level is checked otherwise the dipstick reading will be inaccurate. Do not



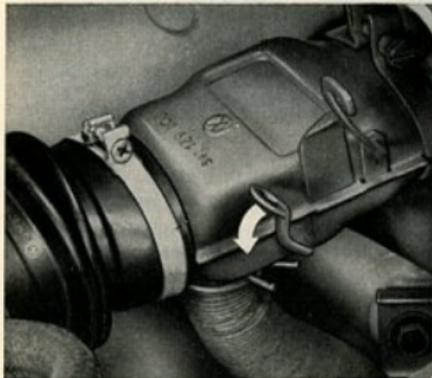
check the oil immediately after stopping the vehicle. Wait at least 5 minutes to give the oil in the engine time to drain down into the bottom of the crankcase.

Try to always use the same brand of gasoline engine HD oil. Further details about the viscosity of the oil to be used are given on page 41.

Tire pressures

| Sedan | front | rear |
|----------------------------------|------------------------------------|------------------------------------|
| with 1 or 2 occupants | 1.1 kg/cm ² (16 psi) | 1.7 kg/cm ² (24 psi) |
| fully loaded | 1.2 kg/cm ² (17 psi) | 1.8 kg/cm ² (26 psi) |
| Squareback Sedan (375 kg) | | |
| with half permissible load | 1.2 kg/cm ² (17 psi) | 1.8 kg/cm ² (26 psi) |
| with full load | 1.2 kg/cm ² (17 psi) | 2.6 kg/cm ² (37 psi) |
| Squareback Sedan (465 kg) | | |
| with half permissible load | 1.2 kg/cm ² (17 psi) | 1.8 kg/cm ² (26 psi) |
| with full load | 1.2 kg/cm ² (17 psi) | 3.0 kg/cm ² (43 psi) |

For long, high speed motorway trips the tire pressures should be increased by 0.2 kg/cm² (3 psi) at front and rear.



Two more important points:

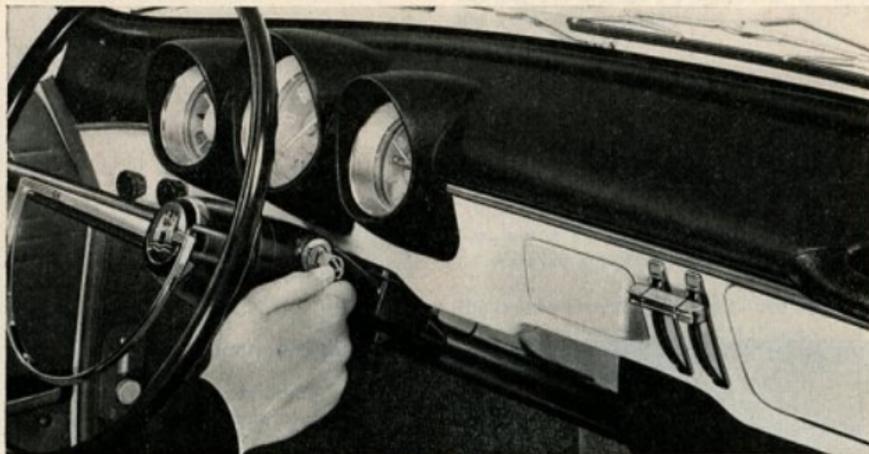
1 — The carburetor of your Volkswagen should draw in preheated air at temperatures below + 10° C (50° F). This helps to keep down fuel consumption in cold weather and prevent the carburetor icing which sometimes occurs when air humidity is high.

The weighted flap in the air cleaner intake pipe must be free to move in the winter and the cool seasons. If the average temperature is above + 10° C, the flap must be fixed open by jamming the lever under the ridge on the intake pipe.

2 — If the vehicle is used mainly in very dusty conditions, the oil bath air cleaner must be checked frequently, even daily if necessary.

How this is done is described on pages 44 and 45.

Starting the engine . . .



Before turning the ignition key, make sure that the gear shift lever is in neutral.

At temperatures above freezing point or when the engine is still warm, depress the accelerator pedal slowly while operating the starter. When the engine is very warm, depress pedal fully but do not "pump" it.

At temperatures below freezing point or when engine is cold, depress the accelerator pedal fully once and then release it so that the automatic choke can work. Then switch ignition on and start immediately. Disclutch so that the starter only has to turn the engine.

As soon as the engine starts, release the ignition key so that the starter is switched off.

Do not try to warm the engine up by letting it idle with the vehicle stationary — drive off straight away.

Do not race the engine while it is still cold. If the engine does not start the first time or stalls at any time, the ignition will have to be switched off and then on again because there is a non-repeat lock in the switch which prevents the starter from being operated when the engine is running and thus being damaged.

The warning lights in the fuel gauge dial which come on when the ignition is switched on, go out when the engine starts:

The red warning light for the generator shows thus that the generator is working. If this light comes on when you are driving, the generator has stopped charging. You can drive on but try to get the vehicle into a workshop as soon as possible because the battery will soon run down.

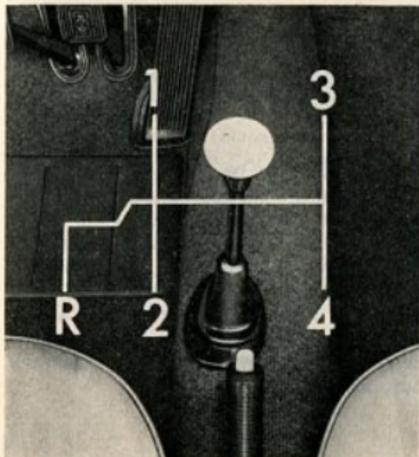
If the green warning light for the oil pressure comes on while driving, stop at once because the flow of lubricating oil in the engine may have ceased. Check the oil level first. Should the cause of the trouble be elsewhere, you are advised to get expert assistance.

Be careful when running the engine in confined spaces. Ensure that there is ample ventilation so that the poisonous exhaust gases can escape.

... it runs ... and runs ... and runs

You can drive your Volkswagen at full speed from the first day. There are, however, certain permissible speed ranges for the various gears:

| Engine | 1st gear | 2nd gear | 3rd gear | 4th gear |
|-----------|----------|----------|----------|----------|
| 1.6 liter | kph 0-30 | 10-60 | 30-90 | 45-135 |
| | mph 0-18 | 6-37 | 18-56 | 28-84 |
| 1.5 liter | 0-25 | 10-55 | 30-90 | 45-125 |
| | 0-15 | 6-34 | 18-56 | 28-78 |



When a particular traffic situation makes it essential to move rapidly, you can accelerate up to 70 kph (43 mph) in 2nd gear and up to 100 kph (62 mph) in 3rd gear for brief periods only. Bear in mind, however, that full throttle acceleration puts fuel consumption up considerably. It is more economical to drive smoothly and keep the top speed fairly constant. Very fast, racy-sporty driving, alternating between full throttle and hard braking will mean more frequent visits to a gas station not to mention increased tire and brake lining wear.

You can drive very economically between: 10 and 35 kph in 2nd gear (6 and 22 mph) 30 and 55 kph in 3rd gear (18 and 34 mph) 45 and 100 kph in 4th gear (28 and 62 mph)

Just a few words about the clutch while we are on the subject of driving. The clutch is a very hard worked part of the vehicle. A good driver slips the clutch as little as possible when moving off and changing gear. He always depresses the clutch fully when changing gear, he changes down into the appropriate gear in queues and city traffic instead of slipping the clutch and never uses the clutch pedal as a "rest" for his left foot.

Shift into reverse gear only when the vehicle is standing still. Reverse gear is fitted with a lock so that it cannot be engaged unintentionally. To engage reverse, press the lever down, move it over to the left and pull it back to the stop.

Volkswagen automobiles have first class brakes which can stop the vehicles in the shortest possible distance. But do not forget that the braking distance increases very rapidly as the speed increases. At 100 kph for example it is four times longer than at 50 kph. Apply the brakes in good time whenever possible but do not use too much force, locked wheels increase the braking distance.

Water reduces the tire adhesion and the coefficient of friction of the brake linings but we cannot do anything about this. You can, however, take care when driving, remain at a safe distance behind preceding vehicle particularly when roads are wet and slippery. Safety first is the motto.

That just about covers the operation of the car and how to drive it properly. The following pages deal with tips for winter driving, breakdowns and all there is worth knowing about the lubrication and maintenance of the vehicle.

When it snows and freezes . . .

Your car has two features which you will appreciate in the winter: Air cooling and heating. You can leave your car out in the bitter cold without fear — the aircooled engine will always start readily and supply warm air for the interior of the body.

Do not, under any circumstances, try to influence the heating of the vehicle by covering up the slots behind the rear window or in the rear fenders. These slots must always be clear so that air can flow in to the carburetor and to the engine cooling fan.

The brakes may freeze up in the winter if water gets into the drums due to splashing or condensation so leave the car in 1st or reverse gear when parking it and do not apply the handbrake.

When parking on steep hills, turn the front wheels against the kerb as well to stop the vehicle rolling away. If there is no kerbstone, it may be advisable to place a stone or wedge under a wheel.

Tires with badly worn treads are very dangerous particularly in the winter so ensure that they are replaced in good time.

M + S tires with special heavy treads give good roadholding in snow and slush. They can be fitted to all four wheels but never use them on the front wheels only.

Better still are M + S tires with spikes which increase the safety margin even on hard snow or ice. These tires should always be fitted on all four wheels. The maximum speed for a vehicle fitted with M + S and M + S spiked tires is 130 kph (80 mph).

The specific characteristics of winter tires can be improved by raising the tire pressures to 0.2 kg/cm² (3psi) above the normal operating pressure for the tire concerned.

This inflation pressure then covers the recommended pressure increase of 3 psi for fast highway driving. M + S tires with spikes should be run at moderate speeds when new in order to give the spikes time to settle.

In general, winter tires only have real advantages when conditions on the road are really wintry. For safety reasons, it is not advisable to drive a vehicle fitted with any type of winter tire at top speed. You cannot expect a winter tire to have the same degree of adhesion on dry, wet or snow-free roads as a normal tire. Furthermore, under these conditions M + S tires wear rapidly, particularly at high speeds.

When M + S ice tires are fitted, it may be necessary to fit clips on the lower torsion arms of the front axle to prevent the tires from rubbing on the wheel housing on full lock.

Snow chains can be fitted to normal and winter tires on the rear wheels only. Only thin chains which do not stand clear of the tire tread and inner side wall more than 15 mm including tensioner, are suitable. When driving over long stretches of road which are free of snow, the chains should be removed. They serve no useful purpose here but merely damage the tires and wear out quickly.

Engine oil of SAE 30 grade will tend to thicken at temperatures around freezing point and may cause difficult starting. As soon as winter temperatures are expected, change over in good time to a thinner grade of engine oil. Details of the various oils to be used are given on page 41.

If you only drive mainly short distances and in city traffic in the winter we recommend that you have the engine oil changed at 2500 km (1500 mile) intervals. Should you only drive a few hundred miles a month under these conditions, it is advisable to have the oil changed every 6 to 8 weeks. At other times these additional changes are unnecessary and uneconomical.

In countries with arctic climates and temperatures below about -25°C (-13°F) the engine oil should be changed every 1250 km (750 miles).

Transmission oils of SAE 90 grade can generally be used all the year round. Only in countries with arctic climates is it necessary to use the thinner SAE 80 transmission oil.

The battery not only tends to drop in capacity as the temperature drops, it also has to work much harder in the cold weather. Quite apart from the higher current consumption when starting and using the lights more often, there are numerous other electrical items used mainly in the winter, such as heated rear windows and heater boosters. A really cold battery which may in any case not be fully charged has only a fraction of the capacity that a battery at normal temperature has and this is fatal when trying to start a cold engine. Particularly if the car is only driven short distances and in city traffic, the battery should therefore be charged from an external source from time to time.

The spark plugs should not have excessively large gaps especially in the winter. The gap is normally 0.7 mm (.028") but when the weather is very cold the gap can be temporarily reduced to 0.4–0.5 mm (.016–0.20") to facilitate starting.

The chassis is exposed to very arduous conditions particularly in the winter. The steadily increasing use of chemicals to de-ice the roads produces solutions which attack even the most durable paintwork after a time. The underside of the Volkswagen is sprayed with a wax-based compound to protect it from these influences. It is advisable to examine the protective film at the beginning of the winter and have it repaired by respraying so that the full protective effect is retained. Do not apply oily anti-corrosion compounds to the wax-coated surface.

Door locks can freeze up in winter if water gets into the lock when washing the vehicle so do not aim the water jet directly at the locks. It is a good idea to cover the keyholes up beforehand. A frozen lock can be opened by warming the key well before inserting it. An anti-freeze solution or glycerine should then be squirted into the lock cylinder as soon as possible.

It is a good idea to carry a shovel or a short-handled spade in the car to clear away snow if you get stuck. A small hand brush for sweeping snow off the vehicle and a plastic scraper for the windshield are also useful.

A clean, smart car looks better

We have provided your vehicle with paintwork which is not only extremely durable and has a very high gloss but which also has a long service life. This has been achieved by special chemical treatment of the body metal and the use of a four layer synthetic resin paint technique.

But even the finest paint requires a certain amount of care. This is easy to appreciate if you consider for a moment the influences to which the paint is exposed. Sunlight, rain, industrial fumes, soot, dirt and dust are constantly working on and attacking the paintwork.

In the winter all parts of the vehicle are subjected to even more severe climatic conditions and the effect of aggressive salt solutions. It is advisable to clean and wax the vehicle more frequently in this period. Every VW Dealership has stocks of car cleaning materials. These materials have been tested by us and found to give the best results. The order numbers of these materials are given on pages 25 to 27.

Wash the new vehicle frequently with clear water particularly in the first two or three months as this will help to harden the paintwork. Use a soft sponge or hose brush for the body, a long handled brush for the wheels and plenty of water. Spray the body panels and wheels with a fine soft spray first to loosen the dirt, then start at the top and wash downwards. Rinse the sponge out frequently to avoid scratching the paint.

Later on, the vehicle should always be washed when it is dirty. The longer the dirt is left on the paint, the greater is the risk of it damaging the glossy finish. The dirt particles can have a chemical effect on the paint surface or they can cause scratches if rubbed into the paint. If the dirt cannot be removed with clear water, a suitable shampoo can be added to the water. Afterwards, rinse all traces of the shampoo off well with clear water and then leather the vehicle dry to avoid water spots.

Waxing should be carried out for the first time after about 8 to 10 weeks. Waxing is a means of putting back into the paint certain substances which keep it flexible and are lost in the course of time due to weathering and washing particularly when you use a detergent. The wax coating seals the pores of the paint and makes it water-repellent.

The paint should be re-waxed when water remains in large patches on the surface and does not form beads and roll off. Regular waxing will ensure that the paint retains its original high gloss for a long time.

Another way of waxing the paint is to use a wash-and-wax solution. This is easier than waxing in the normal way. Just wash the vehicle first then put the wash-and-wax solution in a bucket of water and apply it to the paintwork. All that remains is to leather off the paint until it is dry. This type of wax will only protect the paint adequately if it is used every time the vehicle is washed and the interval between washes is not more than two or three weeks.

Polishing should only be done when the paint has lost its gloss due to weathering or lack of proper care and the gloss can no longer be restored by waxing in the normal way. After treatment with polish, wax the paint thoroughly to retain the gloss which has been obtained.

Never wash, wax or polish the car in the sunshine.

Before waxing and polishing, the vehicle must be washed and dried thoroughly.

Tar spots tend to penetrate into the paint in a very short time. They should be removed as soon as possible, preferably with a tar remover. Afterwards, the area concerned should be washed with a solution of shampoo and water and rinsed well to remove all traces of tar remover.

Insects tend to stick on the front of the vehicle and on the windshield in the summertime. These should also be washed off the paint as soon as possible. When really dried on, the insects can be removed with an insect remover. The paintwork should also be washed, rinsed and leathered off afterwards.

Parking under trees. Vehicles which are parked under certain trees in the summer are often found to be covered with sticky spots. These spots can be taken off easily with a shampoo if the treatment is not delayed too long. It is advisable to wax the paint afterwards.

Chrome parts should be treated with a chrome cleaner or polish. To give lasting protection in the winter, the chrome parts can be coated with one of the patent chrome protection compounds which form a hard film. The best way to apply these compounds is by spraying. The film can be removed by washing with kerosene, then washing with shampoo and rinsing to remove all traces.

The windows can be cleaned with a sponge and clear water. Always use a special clean leather to dry the windows. This leather must not be used on the paintwork in any circumstances as most paint cleaners and polishes contain ingredients which will cause unpleasant streaks to appear on the windshield when it rains, even if only the smallest trace is present. These streaks can only be removed with a good windshield cleaner. Do not forget the wiper blades.

The windshield wiper blades should be taken off from time to time and cleaned with a hard brush and methylated spirits or a strong detergent solution. During long dry periods particularly they tend to get clogged with tar splashes, oil and insects. New blades should be fitted once a year.

Car care materials for the Volkswagen

| | Material | Package and quantity | VW Part No. | Properties | How to use |
|--|------------------|----------------------|-------------|--|--|
| Vehicle washing | Shampoo | Tin 150 cc | 000 096 111 | Washes effortlessly and thoroughly. Does not harm paint. | Put 1-2 beakers of shampoo in a bucket. Squirt strong jet of water in or stir well. Wash vehicle with foam, rinse with clear water and leather off. |
| | Shampoo | Tin 150 cc | 000 096 112 | | |
| | Sponge | 17 x 11 x 5.5 cm | 000 096 151 | — | |
| Paint waxing | Wax | Tin 150 cc | 000 096 011 | Protects paint from weather. Keeps it flexible and durable. | Apply thinly to clean, dry paintwork with cotton or spray gun 000 096 064. Rub gently until paint shines again. |
| | Wax | Tin 1000 cc | 000 096 012 | | |
| | Wash/wax | Tin 150 cc | 000 096 121 | Washes and waxes in one operation. Protects paint from weather for a limited period. | |
| | Wash/wax | Tin 250 cc | 000 096 122 | | |
| Paint polishing | Paint care | Tube 210 grams | 000 096 021 | Cleans, polishes and protects paint and brings gloss back again | Apply to clean dry paintwork, small areas at a time. Allow it to dry then rub with cotton until paint shines brilliantly. Do not polish in the sunshine. |
| | Paint polish | Tin 250 cc | 000 096 001 | Freshens up paint which has lost gloss | Soak cotton with polish and apply to clean dry paintwork, small areas at a time. Remove remains with clean cotton and rub briefly. |
| | Paint polish | Tin 1000 cc | 000 096 002 | | |
| | Polishing cotton | Bag 200 grams | 000 096 161 | — | — |
| Removal of tar spots from paint and chrome | Tar remover | Tin 150 cc | 000 096 051 | Softens and removes tar and asphalt spots | Soak cotton with tar remover and dab it on the spots. Allow it to work for a short time then wipe tar off. |
| | Tar remover | Tin 250 cc | 000 096 052 | | |

| | Material | Package and quantity | VW Part No. | Properties | How to use |
|--|------------------------|-------------------------|-------------|---|---|
| Removal of insects from paint and chrome | Insect remover | Tube 80 grams | 000 096 081 | Removes insects from paint and glass | Dampen area to be cleaned, apply insect remover by moistening cotton, let it work for a short time and rub with cotton. Do not let it dry. Rinse area well with clear water. |
| Care and cleaning of chrome parts | Chrome cleaner | Tube 80 grams | 000 096 061 | Cleans, polishes and protects chromed parts | Apply thinly to clean chrome surface and polish with soft cloth. |
| | Liquid film for chrome | Bottle 500 cc | 000 096 063 | Forms a durable, transparent film on the chrome | Apply evenly to dry chrome. Spray on where possible (with spray gun 000 096 064). |
| | Spray gun | — | 000 096 064 | — | Used to apply liquid chrome protective film. Can be used for spraying other liquids. |
| | Chrome grease | Tube 80 grams | 000 096 067 | Cleans and protects chrome parts | Apply thick or thin coat (according to time of year) with a soft cloth. Renew coating every time vehicle is washed. |
| Cleaning windshield | Window cleaner | Bottle 200 cc | 000 096 105 | Added to water in washer it removes stubborn dirt, silicone and grease from windshield. Can be used as anti-freeze to keep washer in action in winter. Can also be used neat to remove ice from windshield. | As windshield cleaner: in the summer, add about 1/10 of contents of bottle or 1 sachet to water in washer. |
| | Window cleaner | Sachet approx. 35 cc | 000 096 101 | | As anti-freeze: At temperatures down to -15° C add entire contents of bottle to water in washer. When not so cold, reduce amount. The contents of one sachet give protection down to -2° C. |

The cloth upholstery should be cleaned with a vacuum cleaner or a fairly hard brush. Spots can usually be removed with a lukewarm soap solution. Grease and oil spots can be treated with spot remover. Do not pour the liquid on to the material as this will cause marks. Dampen a clean, plain cloth with the cleaner and remove the spot by rubbing with a circular movement and working inwards.

The leatherette parts of the headlining, side trim panels and seats can be cleaned best with a soft cloth or brush. When very dirty, use a lukewarm soap solution or a dry foam cleaner. If the seat surfaces and front of backrests are covered with leatherette as well, only use a dry foam cleaner because the material used for these parts is air-permeable and liquid cleaners would penetrate into the textile backing straightaway.

Grease or paint spots should be wiped off before they dry when possible. Once dry, they can be removed by rubbing carefully with a cloth moistened with benzine or methylated spirits. Shoe polish marks can be removed with turpentine but be careful because this will damage the dust repellent surface of the leatherette if allowed to work on it too long. Do not use trichlorethylene or paint thinner for cleaning purposes. After cleaning, rub the material dry with a soft cloth. So-called preservatives are not suitable for leatherette because they do not soak into the material and merely collect dust and make clothing dirty.

Airing the body. If the vehicle is left in the garage for long periods, the garage and car doors must be opened from time to time to prevent the formation of mould and damp stains inside the vehicle.

Doors and windows weatherstrips must be undamaged and supple to ensure that they seal properly. To retain the original flexibility of the rubber, coat the weatherstrips with talcum powder occasionally.

The tires. In addition to checking pressures regularly and driving carefully, the following points should be remembered in connection with tires:

- 1 – Check tires for damage occasionally and remove foreign bodies.
- 2 – Keep oil and gasoline away from the tires.
- 3 – Try not to expose tires to strong sunshine for long periods.
- 4 – Replace missing valve dust caps as soon as possible.

Tires should be replaced when the tread depth is only 1 mm all round and on full tread width because this is the absolute limit for safe usage. We advise you however not to let the tires wear down to this extent as tires with treads in this condition cannot grip the road surface properly when driving at high speeds on wet roads. If you notice that the tires are wearing unevenly, get advice from your VW workshop.

For smooth running at high speeds and long tire life it is essential that the wheels are balanced statically and dynamically. The wheels are balanced at the factory but as they can get out of balance after being in use for some time due to natural tire wear, the wheels should be balanced again every 10000 km (6000 miles). Furthermore, a wheel should always be balanced again when a tire has been repaired. This also applies to balanced wheels when a tire has lost pressure due to a faulty valve.

Just in case . . .

you have to deal with a small defect or a breakdown yourself one of these days we have included some information on the next few pages which should help you.

All other repairs should always be carried out by one of our service stations. The service organization of the VW factory offers you a wide-spread network of authorized workshops staffed by skilled mechanics and equipped with all the special tools and appliances required. Whenever you see the familiar VW sign on the roadside you can be sure of expert advice and quick efficient assistance.

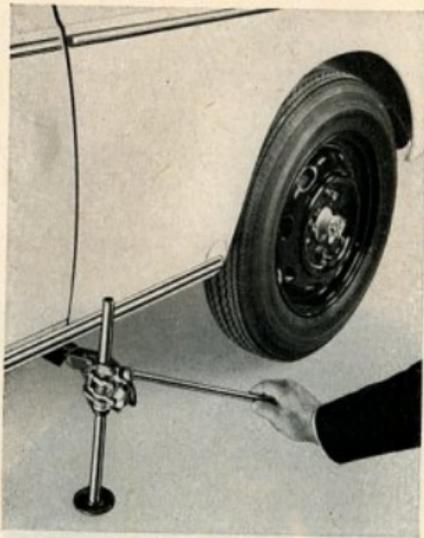
Wheel changing

Apply the hand brake.

Remove wheel cap with puller and jack bar by hooking the puller into the holes in the edge of the cap and levering against the wheel rim with the jack bar.

Loosen all wheel bolts about one turn with socket wrench and bar.

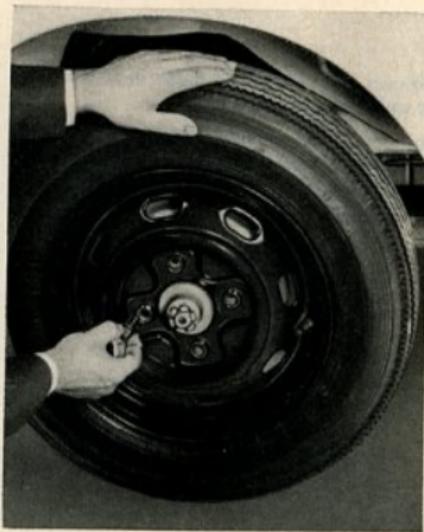




Insert jack into square hole under the body and push the jack tube down until it touches the ground.

Place bar in upper link of jack and raise vehicle.

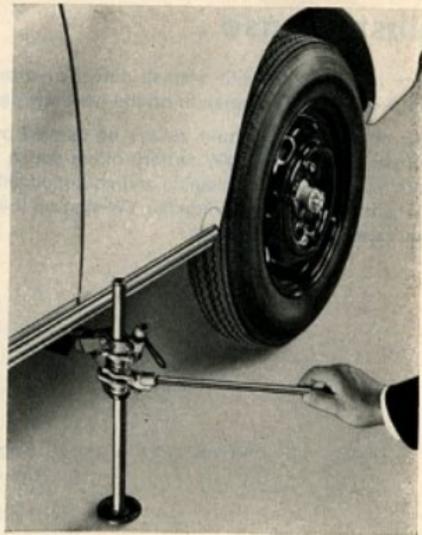
Unscrew wheel bolts and take wheel off. Place spare wheel against drum and raise or lower vehicle as necessary until the holes in the wheel are roughly in line with the threaded holes.



Insert one bolt and tighten it until the wheel can be swung round to align the other holes with the holes in the brake drum.

Insert remaining bolts

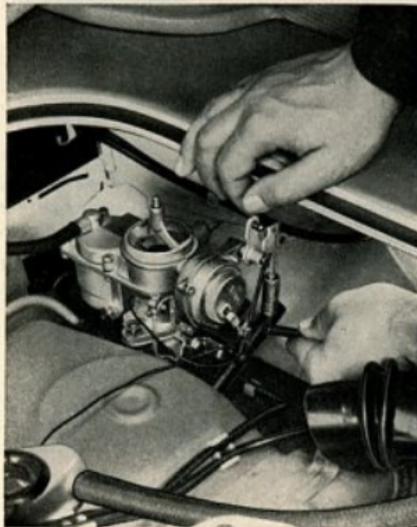
Tighten bolts until the wheel, centered by the spherical shape of the bolt heads, contacts evenly all round.



Place bar in lower link and lower the vehicle.

Tighten the wheel bolts evenly and diagonally.

Install wheel caps by giving them a smart blow with the hand.



0.7 mm
(.028")



Removing and installing spark plugs

On vehicles with the 1.6 liter engine, remove air cleaner and unhook return springs from carburetor pull rods.

Pull connector off and screw plug out with socket wrench and bar.

Dirty plugs should be cleaned with a sand blaster but in an emergency the carbon can be removed with a chip of wood. Please do not use a wire brush. The plugs should also be clean and dry on the outside as well, in order to avoid shorting and tracking. The gap be set by bending the ground electrode. The gap should normally be 0.7 mm (.028") but when the weather is very cold the gap can temporarily be reduced to 0.4–0.5 mm (.016–.020") to facilitate starting.

Take care not to crossthread the plugs when inserting them and tighten them firmly but do not overtighten. New plugs should be fitted every 20000 km (12000 miles).

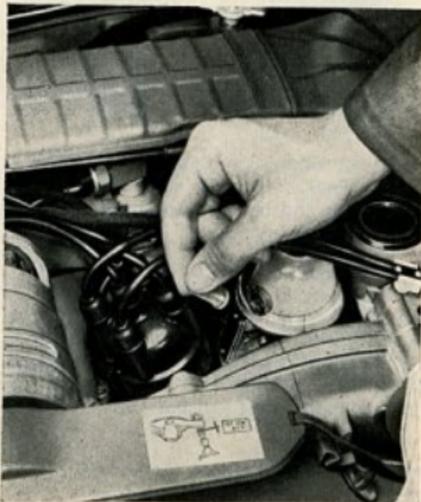
Cleaning fuel pump filter

Pull suction line off pump and seal it.

Remove plug and take filter out.

Wash filter in clean benzine and blow it out.

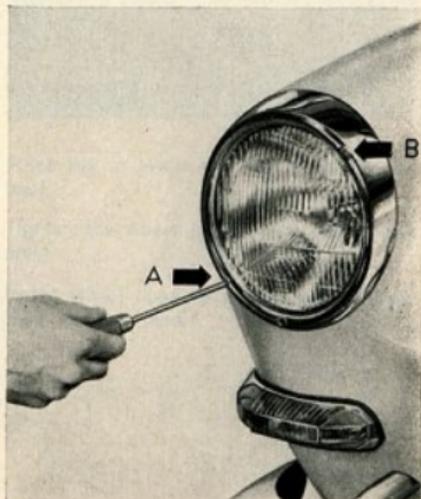
When installing the filter, ensure that the washer for the plug is located properly.



Aiming the headlights

If a headlight aiming device is not available, proceed as follows:

Position the vehicle on level ground 5 m (16 ft. 5 in.) in front of a dark wall which will serve as a screen. The tire pressures must be correct. The rear seat of the Sedan and the driver's seat of the Squareback Sedan must be loaded with one person or a weight of 70 kg (154 lbs.).



A - Horizontal aim

B - Vertical aim

Draw two crosses on the wall as shown in the sketch. The longitudinal center line of the vehicle must be aligned exactly between the two crosses on the screen.

Aim the headlights individually by turning the two slotted screws in the headlight rim with the beams dimmed. Cover up the second headlight.

The headlights are correctly aimed when the light-dark border line is horizontal on the adjusting line to the left of the cross and the angle on light-dark border line is exactly on the center of the cross.

Bulb replacement

Headlight Bulb

Loosen the Phillips screw at the bottom of the headlight rim and take out the lens and reflector unit.

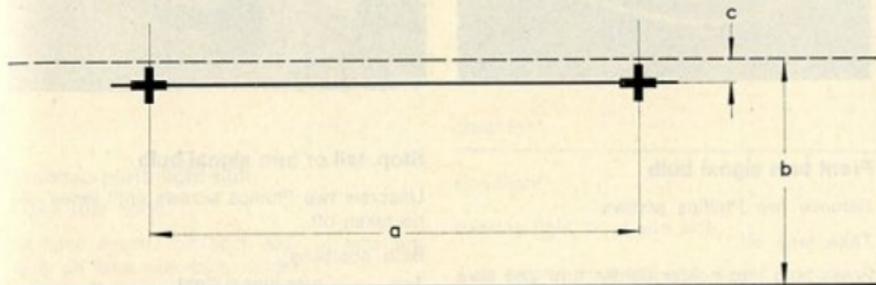
Pull the connector off the bulb base. Turn the cap to the left and take it off.

Install new bulb. The lug in the lamp holder must engage in the notch provided in the reflector.

Do not touch the bulb glass with the bare fingers.

Insert the cap so that the contact strip is located on the base of the parking light bulb.

Check headlight adjustment.



a - 1260 mm (49.6")

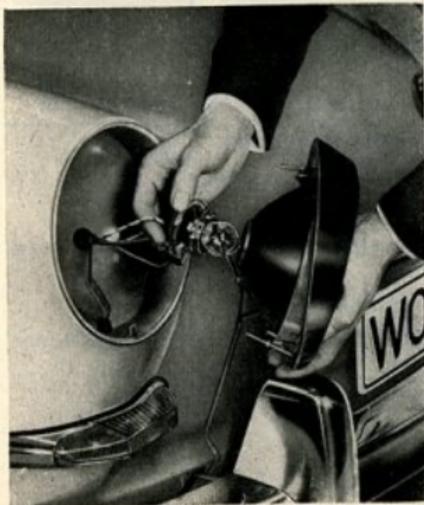
b - the height of the headlight center from the floor

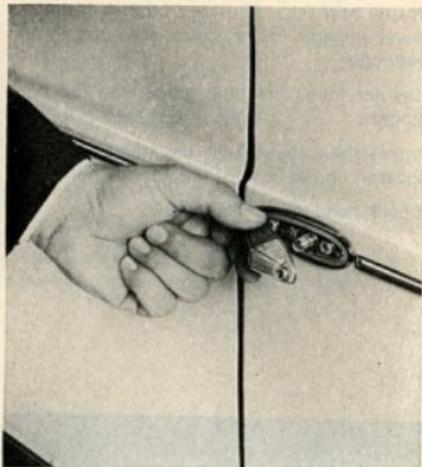
c - Sedan 50 mm (2")

Squareback Sedan 375 kg 150 mm (6")

Squareback Sedan 465 kg 100 mm (4")

at a distance of 5 m (16ft. 5 in.) from the screen





Parking lamp bulb

Remove Phillips screw.

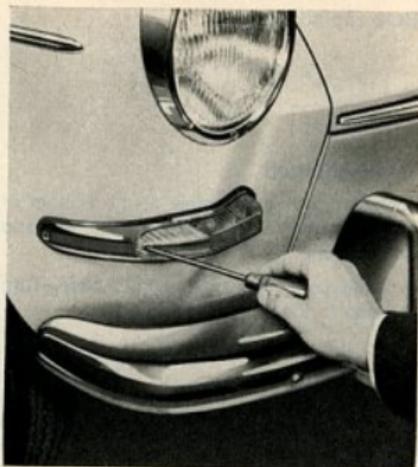
Take lens off.

Press bulb into holder lightly, turn and take out.

Install new bulb.

Insert the lens into the housing at the rear first.

Do not overtighten screw.



Front turn signal bulb

Remove two Phillips screws.

Take lens off.

Press bulb into holder lightly, turn and take out.

Install new bulb.

Ensure that gasket is located properly when installing.

Do not overtighten screws.



Stop, tail or turn signal bulb

Unscrew two Phillips screws until lense can be taken off.

Bulb positions:

Top — turn signal light

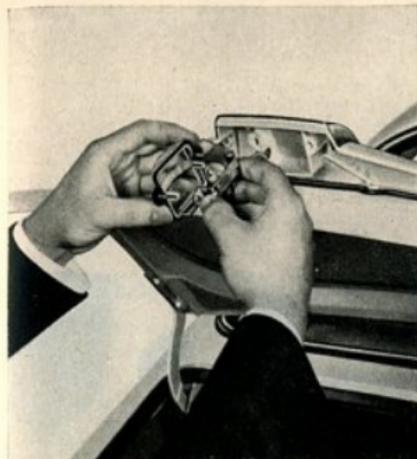
Center — tail light

Bottom — stop light

Press bulb into holder lightly, turn and take out.

Install new bulb.

When fitting the lens, ensure that gasket is located properly. Tighten screws evenly but do not overtighten.



License plate light bulb

Open rear hood.

Remove screws on each side of lens and take off lens with bulb holder.

Pull bulb holder out of lens.

Press bulb into holder lightly, turn and take out.

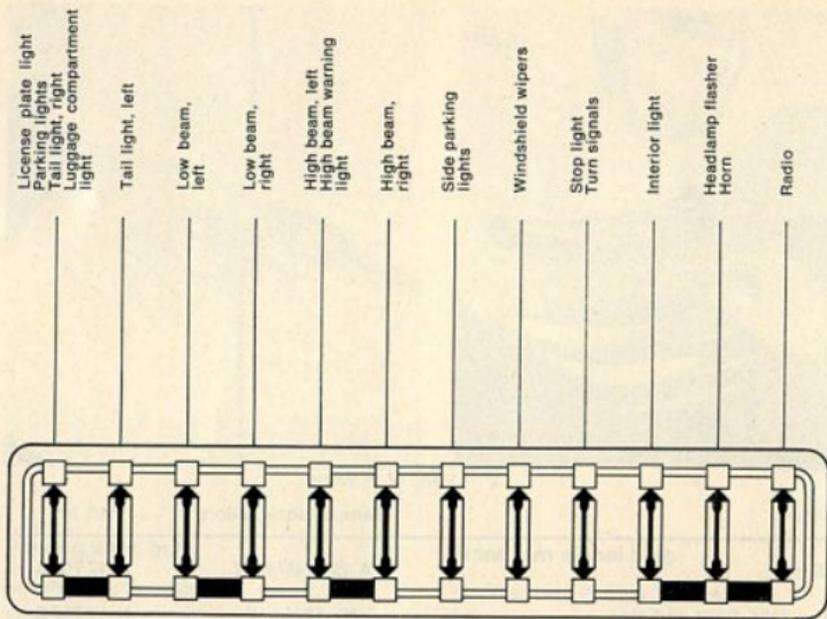
Install new bulb.

When installing, ensure that the cable grommet fits properly.

Bulb chart

V = Volt, W = Watts

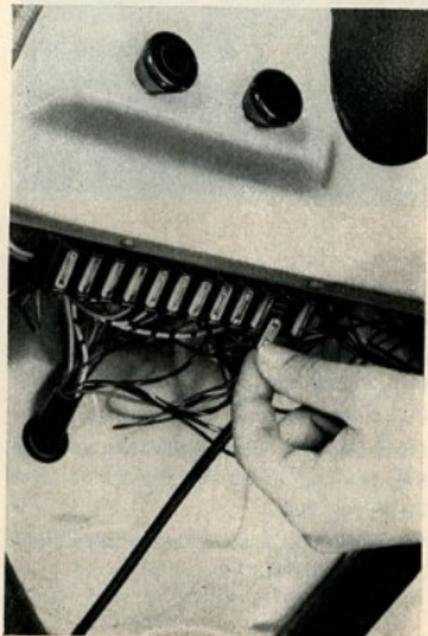
| Bulb for | German designation | Part No. |
|---|--------------------|------------|
| Headlight | A 12 V 45/40 W | N 17 705 3 |
| Parking light, front and side | HL 12 V 4 W | N 17 717 2 |
| Turn signal, front and rear, stop light | RL 12 V 21 W | N 17 732 2 |
| Tail light | G 12 V 5 W | N 17 718 2 |
| License plate lamp | G 12 V 10 W | N 17 719 2 |
| Speedo, clock, fuel gauge, warning lamps | J 12 V 2 W | N 17 722 2 |
| Interior light, luggage compartment lamps | K 12 V 10 W | N 17 723 2 |



Replacing fuses

The fuse box is located under the instrument panel on the left.

When a fuse blows, it is not sufficient to merely replace it with a new fuse. The cause of the short circuit or overload must be established. On no account should fuses be patched up with tin foil or wire as this can cause serious damage elsewhere in the electrical system. It is advisable to always carry a few spare 8 Ampere fuses on the vehicle.



Checking battery

The ability of the engine to start readily depends to a great extent on the condition of the battery. For this reason the battery should be checked regularly and given a certain amount of attention.

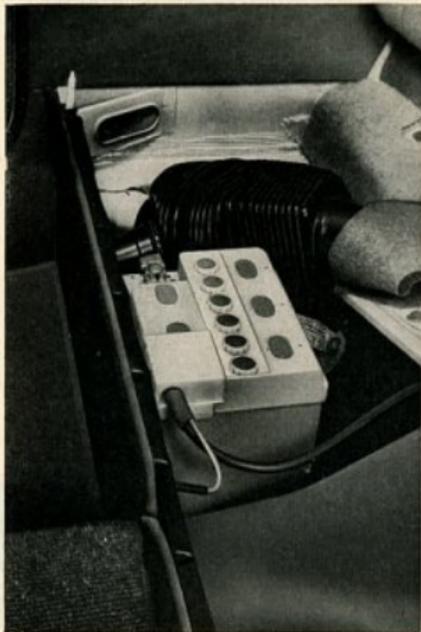
When the rear seat is lifted, the battery cell plugs can be screwed out. The acid should always be just above the tops of the plates. The acid level should be in accordance with the mark. If the level is low, top-up with distilled water only.

The acid level drops when the battery is charged due to the dissociation of the water used to dilute the acid and, to a lesser extent, to evaporation. How often the battery has to be topped up depends mainly on operating conditions and indirectly on the time of year. When a vehicle is often driven long distances in the daytime with hardly any current being used, the battery will have to be topped up with distilled water much more often than in the case of a vehicle which is operating under different conditions. As a general rule, the battery acid level must be checked more often in the summer than in the winter. VW drivers in hot countries who do a lot of driving are advised to check the battery at least every week.

Do not put in more water than is necessary because if the level is too high the acid will overflow when the battery is being charged and cause damage.

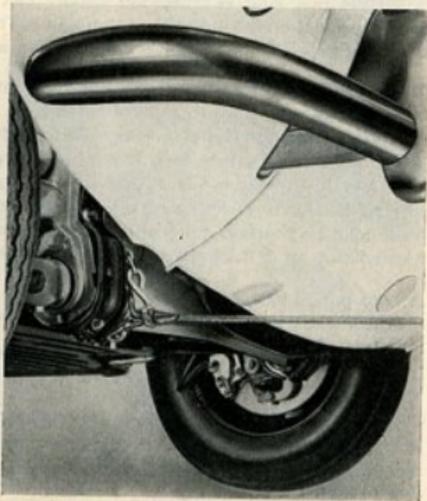
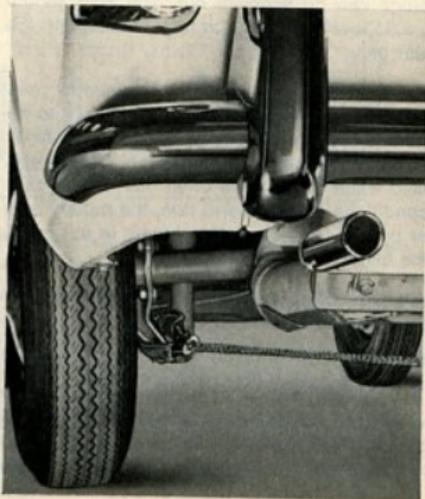
The terminals and connections should be kept clean and greased with battery terminal grease. Ensure that the ground connection to the body is free of corrosion and tight.

If you lay your vehicle up for a prolonged period, it is advisable to take the battery to a workshop. A battery which is not constant use will discharge itself in time and this can cause permanent damage to the plates if the battery is not checked about every four weeks and charged as necessary.



Towing

Just in case you wish to attach a towrope to your vehicle one day, please note that the bumpers are not suitable for this purpose. At the rear, the rope should be attached to a lower shock absorber bracket. This point is not very easy to get at but it does ensure that your desire to help does not result in damage to your vehicle. At the front, the rope should be attached to the lower tube of the front axle.



Give your Volkswagen that individual touch.

Fit approved Volkswagen accessories

Approved Volkswagen accessories are not just any old accessories. They have either been designed specially for the Volkswagen or selected from the vast range of accessories available and tested for use on the Volkswagen in the Volkswagen factory. The trademark "Approved Accessories" is your guarantee for material quality, good workmanship and reliability.

Approved VW accessories are supplied by your VW Dealer who will also fit them for you if necessary. You can fit lots of the accessories yourself.

VOLKSWAGEN

Erprobtes
Zubehör

Approved Accessories
Accessoires Agréés
Accessori Approvati
Accesorios Aprobados
Utprovade Tillbehör
Acessórios Aprovados
Beproeefde Accessoires

Proper lubrication . . .

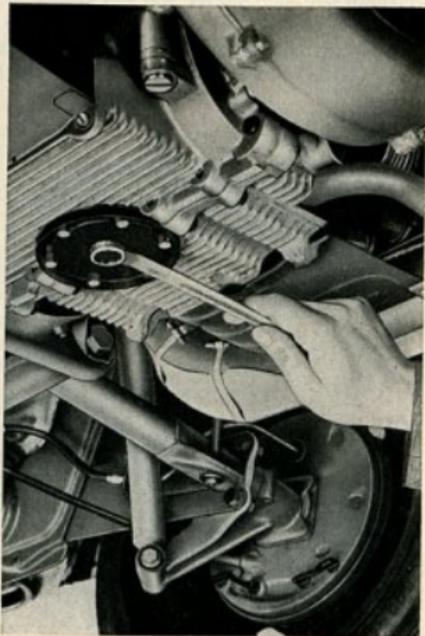
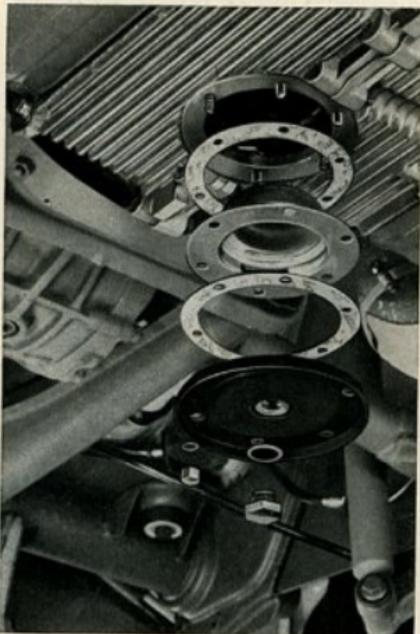
means regular and careful lubrication. The lubrication chart on page 54 shows you at which intervals the various points require your attention.

Engine

Regular oil changes are necessary even if the very best brand of HD oil is used because dirty oil in the engine means increased wear and reduces service life.

The oil is drained, when warm, by removing the plug in the oil strainer cover plate. Flushing is not necessary but the strainer must be removed and cleaned at every oil change. The gaskets and the copper washers under the cap nuts must always be renewed. The engine is then filled with 2.5 liters of HD oil (5.3 US pints / 4.4 Imp pints).

Due to the detergent properties of the HD oil, the fresh oil will look very dark after the vehicle has been running for only a short time. This need not worry you and under normal operating conditions there is no reason whatever to change the oil at shorter intervals than every 5000 km (3000 miles). We only recommend more frequent oil changes — every 2500 km (1500 miles) — in the winter if you drive mainly short distances and in city traffic. If you only drive a few hundred miles a month under these conditions it is advisable to have the oil changed every 6 to 8 weeks. In countries with arctic climates where average temperatures are about -25°C the oil should be changed every 1250 km (750 miles).



Some more information about oil

When changing and topping up the oil, try to always use the same brand of HD oil for gasoline engines. The quality of modern oils produced by reputable firms is so good that the choice of brand is left entirely to you. The VW engine makes no demands in respect of oil quality which cannot be fulfilled by every well known and popular brand. It is best to select "your" oil at the first 500 km oil change and stick to this brand on all occasions. Should you have any doubts at all, your VW Dealer will be pleased to advise you.

The classification of oil into various viscosity grades is shown by the designations SAE 30, SAE 20W/20 and so on. The viscosity of a lubricant indicates its resistance to flow at a given temperature. The VW engine only requires two different viscosity grades which are used, according to season of year, as follows:

SAE 30 In warm season and all the year in countries with hot climates.

SAE 20W/20 In the winter.

or

SAE 10W*) In areas where the average temperature is below -15°C (5°F).

SAE 5W*) In countries with arctic climates and temperatures below -25°C (-13°F).

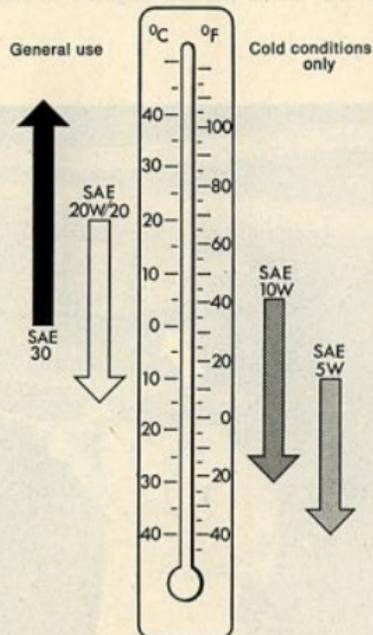
*) Avoid driving at high speeds for long periods if using SAE 10W oil and the outside temperature is above 0°C if using SAE 5W oil when the temperature is above -15°C .

All SAE grades cover a temperature range of about 35°C and the ranges of two neighbouring grades overlap by at least 20°C . Brief variations in temperature between seasons can therefore be disregarded. For the same reason it is also quite in order to mix oils of different viscosities when oil has to be added between oil changes and the viscosity of the oil in the engine no longer corresponds to the actual temperature. This is subject of course to the stipulation that the same brand of oil must be used.

In some countries, oils are classified according to the API system (American Petroleum Institute). Under this system HD oils suitable for the VW engine are designated "For Service MS".

No additives of any sort should be mixed with HD oil.

Temperature ranges of SAE grades



Transmission

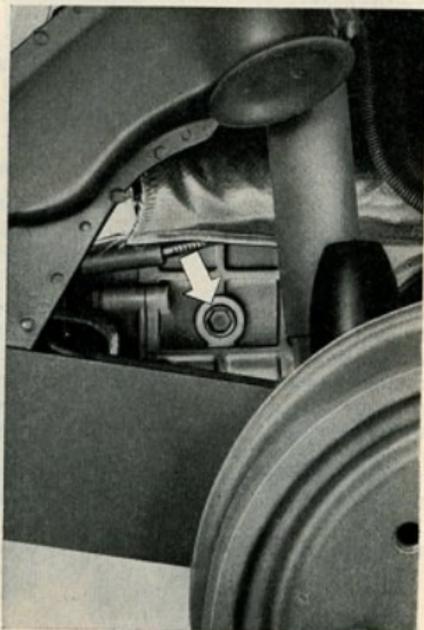
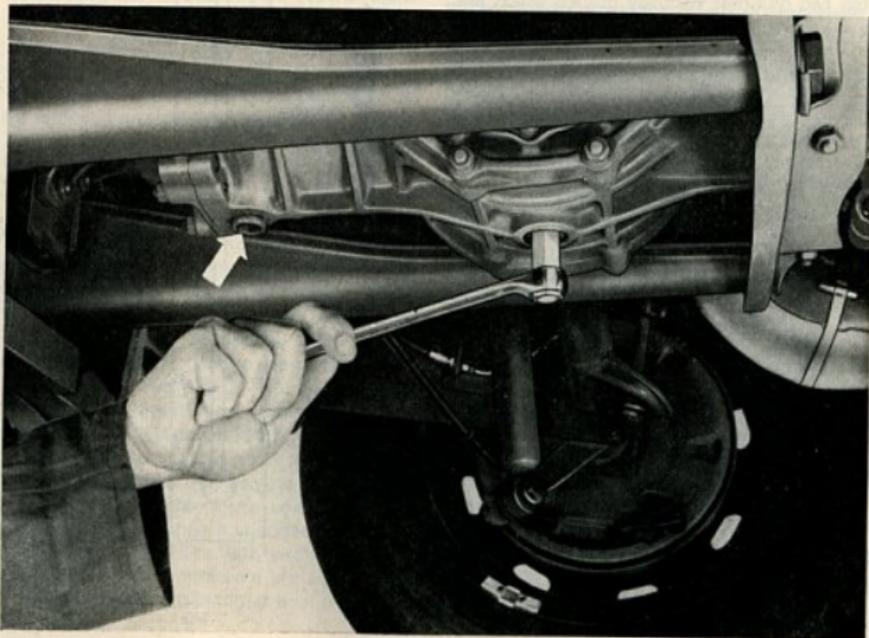
Transmission and differential are combined in one housing and both lubricated with the same Hypoid oil. The oil should be up to the edge of the filler hole.

At oil changes, the old oil should be drained when warm. The two magnetic oil drain

plugs must be cleaned carefully and 2.5 liters of good quality SAE 90 hypoid oil put in. In countries with arctic climates, SAE 80 oil should be used all the year.

The oil sometimes runs into the transmission housing very slowly. If one attempts to put the oil in too quickly it may overflow and give the impression that the housing is already full although actually only about 1-1.5 liters have been put in. It is essential to the service life and silent running of the rear axle that the correct amount of oil is used in the transmission.

Additives should not be put into a hypoid oil.



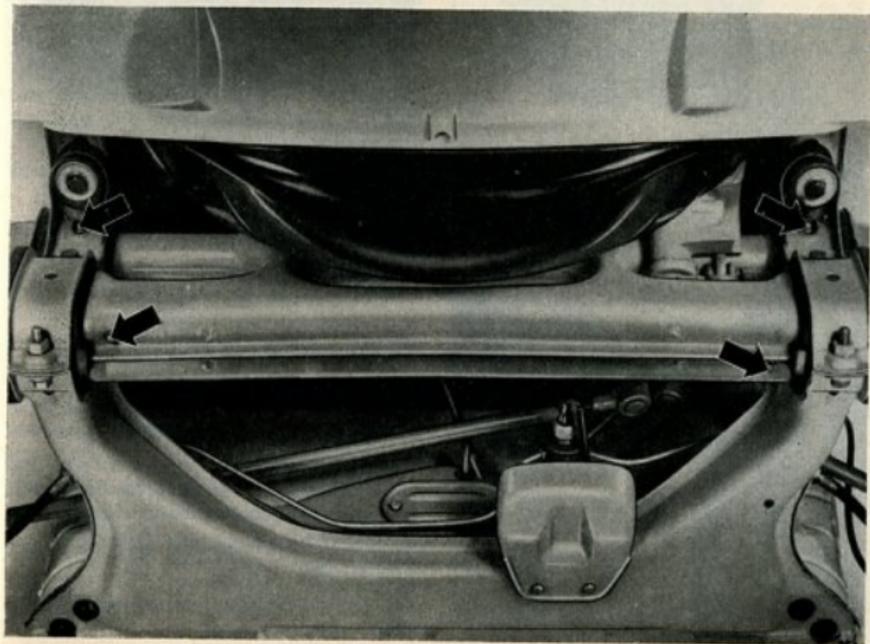
Front axle

The front axle can only be lubricated properly when the axle is free of load, that is with the front end lifted.

There are four nipples on the axle tubes which must be lubricated with a lithium-based multi-purpose grease. The nipples and the grease gun nozzle should be cleaned carefully. Place gun on nipples and inject grease until fresh grease starts to come out at the torsion arm sealing rings.

Grease and oil must not be left on tires and brake hoses for long periods. Even small traces should be wiped off immediately.

If the vehicle is driven less than 10000 kms per year, the front axle must be lubricated once a year.

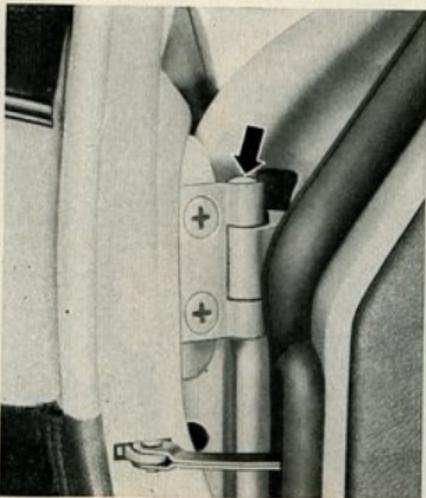


Doors and hoods

Above the door hinge pin is a small oil chamber which is sealed with a plastic plug. At least every three months, the amount of oil in the chamber should be checked after lifting the plug with a screw driver. The chamber should be filled with SAE 30 engine oil. Catch oil drops with a cloth, press plug in and wipe hinges carefully.

The door and hood locks and the hood hinges should be lubricated at the same intervals. The door lock should be given a few drops of engine oil through a hole in the end of the door which is normally sealed with a plug. The hood hinges are also oiled and the hood locks greased lightly. Surplus oil on the hood hinges should be wiped off.

The lock cylinder is treated with graphite as necessary. The key can be dipped into the graphite and then turned in the lock a few times. The friction surfaces of the latches and striker plates should be greased lightly.



Air cleaner

A dirty cleaner element not only reduces the engine output, it can also cause premature engine wear. If local conditions are such that the vehicle is often driven on very dusty roads, the cleaner must be checked frequently, even daily if necessary.

All the dust present in the air drawn in by the engine is retained by the filter element in the upper part of the air cleaner and washed out when the vehicle is in motion by the oil in the lower part. In time, this causes a layer of sludge to form at the bottom of the lower part. When there is only 4–5 mm of oil above the sludge layer, the lower part must be cleaned and filled with fresh oil. The cleaner must be removed to do this:

Pull crankcase breather hose off air cleaner intake pipe.

Release clip on intake pipe and pull bellows off pipe.

1.6 liter engine

Take off connecting rod between bell crank and right-hand carburetor. Remove center wing nut securing air cleaner.

Unscrew right and left wing nuts so far that the air cleaner can be lifted off. These nuts cannot be taken out of the cleaner.

Release the five clips and take top part of cleaner off.

The top part must not be put down with the filter element upwards.



Clean lower part of cleaner carefully. The drain hole in the outer casing of the lower part must be clear.

Fill lower part to mark with 0.40 liter of fresh engine oil.

When assembling the cleaner, note that the embossed marks on upper and lower parts are in line.

When assembling the cleaner, note that the seals between carburetors and cleaner are located properly and that the bellows seals properly on the cleaner intake pipe. Furthermore, it is essential to tighten the two outer nuts securing the cleaner first and then the center one.



1.5 liter engine

Remove screw in clamp on elbow for carburetor and take clamp off.

Remove wing screw in cleaner.

Take air cleaner out. Turn top part as shown by embossed marks and take it off. The top part must not be put down with the filter element upwards.

Clean lower part carefully and fill to mark with 0.25 liter of fresh engine oil.

When assembling the cleaner, turn the top part in direction shown by embossed marks to engage it.

When installing the cleaner, ensure that the carburetor elbow is located correctly and that the bellows seals properly on the air cleaner intake pipe.

Viscosity of the oil for the air cleaner:

SAE 30 all the year. In countries with arctic climates SAE 10 should be used all the year.

The top part does not normally need cleaning. If the filter element has become so dirty due to delayed cleaning of the bottom part or oil shortage that the air inlet holes on the underside are partly blocked, the encrusted dirt should be scraped off with a piece of wood.

Check that the warm air flap in the intake pipe moves freely. At temperatures above $+10^{\circ}\text{C}$ this flap should be fixed in position but at temperatures below $+10^{\circ}\text{C}$ it should be free to move and regulate the flow of warm air according to the speed of the engine.

Technical data

Engine

Four cylinder, four stroke, horizontally opposed, flat design, in rear • Thermostatically controlled air cooling by fan on crankshaft • Pressure oil feed with gear-type pump • Oil cooler • Mechanical fuel pump • 1.6 liter engine: 2 downdraft carburetors with accelerator pumps and automatic chokes • 1.5 liter engine: 1 sidedraft carburetor with accelerator pump and automatic choke • Oil bath air cleaner with air pre-heating

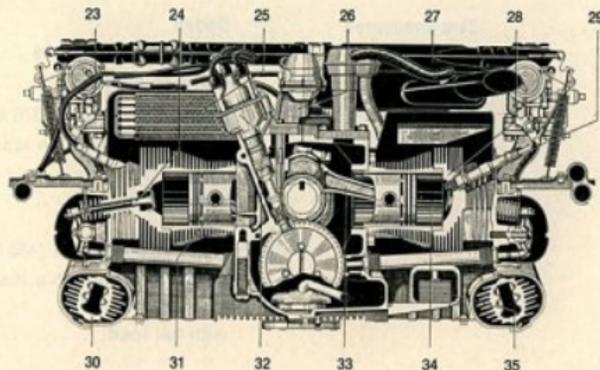
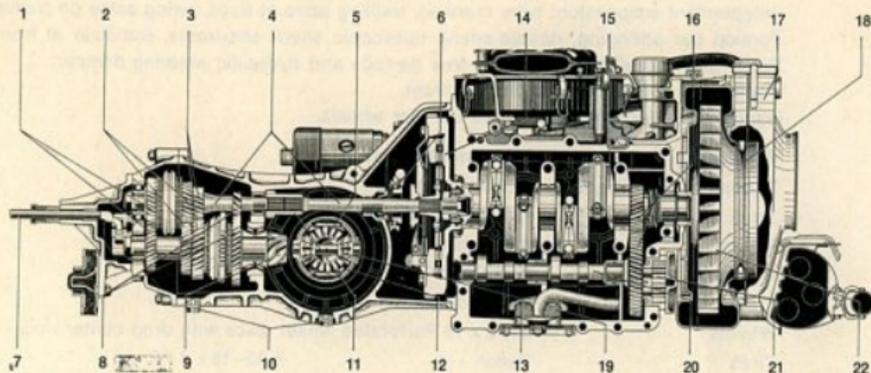
| | 1.6 liter engine | 1.5 liter engine |
|---|--|--|
| Bore | 85.5 mm (3.37 in) | 83 mm (3.27 in) |
| Stroke | 69 mm (2.72 in) | 69 mm (2.72 in) |
| Capacity | 1584 cc (96.66 cu. in) | 1493 cc (91.10 cu. in) |
| Compression ratio | 7.7 : 1 | 7.5 : 1 |
| Maximum output DIN | 54 bhp at 4000 rpm | 45 bhp at 3800 rpm |
| SAE | 65 bhp at 4600 rpm | 54 bhp at 4200 rpm |
| Maximum torque DIN | 11.2 mkg at 2200 rpm | 10.8 mkg at 2000 rpm |
| SAE | 86.8 ft. lbs. at 2800 rpm | 83.2 ft. lbs. at 2800 rpm |
| Average piston speed | 9.2 m/s (1811 ft/min) at 4000 rpm | 8.7 m/s (1720 ft/min) at 3800 rpm |
| Fuel consumption | approx. 8.9 liters per 100 km 26.4 miles per US gallon 31.5 miles per Imp gallon | approx. 8.4 liters per 100 km 28 miles per US gallon 33.5 miles per Imp gallon |
| Fuel rating | 90 Octane (Res. F 1) | 90 Octane (Res. F 1) |
| Oil consumption | 0.5–1.4 liters per 1000 km 1.7–4.8 US pints per 1000 miles | 0.5–1.0 liters per 1000 km 1.7–3.4 US pints per 1000 miles |
| Valve clearance with engine cold inlet and exhaust 0.10 mm (.004") | 1.4–4.0 Imp pints per 1000 miles | 1.4–2.8 Imp pints per 1000 miles |

¹⁾ Measured consumption plus 10 %, with half load at a steady ³/₄ of maximum speed on level road.

Power transmission

Single plate, dry clutch • Baulk synchronized four-speed gearbox and bevel gear differential in one housing • Swing axles • Gear ratios: 1st gear 3.80 : 1, 2nd gear 2.06 : 1, 3rd gear 1.26 : 1, 4th gear 0.89 : 1, Reverse gear 3.88 : 1 • Differential ratio: 4.125 : 1 • Clutch pedal free play: 10–20 mm (.4–.8")

- 1 - 4th gear train
- 2 - 3rd gear train
- 3 - 2nd gear train
- 4 - Main drive shaft
- 5 - Differential side gear
- 6 - Clutch release bearing
- 7 - Transmission shift lever
- 8 - 1st gear train
- 9 - Drive pinion
- 10 - Oil drain plugs
- 11 - Reverse gear
- 12 - Differential housing
- 13 - Differential pinion
- 14 - Flywheel
- 15 - Crankshaft
- 16 - Camshaft drive gears
- 17 - Fan housing
- 18 - Crankshaft pulley
- 19 - Oil strainer
- 20 - Camshaft
- 21 - Oil pump
- 22 - Fan
- 23 - Carburetor
- 24 - Valve
- 25 - Oil cooler
- 26 - Fuel pump
- 27 - Oil bath air cleaner
- 28 - Cylinder head
- 29 - Spark plug
- 30 - Heat exchanger
- 31 - Piston
- 32 - Ignition distributor
- 33 - Connecting rod
- 34 - Cylinder
- 35 - Thermostat



Chassis

Platform frame with tunnel-shaped center member.

Front axle bolted to forked frame head, sub-frame at rear to carry engine-transmission unit.

Independent suspension: twin, cranked, trailing arms at front, swing axles on trailing arms at rear.

Torsion bar springing, double-acting telescopic shock absorbers, stabilizer at front, equalizer spring at rear.

Roller steering with maintenance-free tie-rods and hydraulic steering damper.

Footbrakes: Hydraulic with discs at front.

Handbrake: Mechanical, effective on rear wheels.

| | |
|-------------------------|---|
| Wheelbase | 2400 mm (94.5 ins) |
| Turning circle diameter | 11.1 m (37 ft) |
| Track at front | 1310 mm (51.6 ins) |
| Toe-in | 4 to 6 mm unladen |
| Camber | 1° 20' ± 20' unladen |
| Track at rear | 1346 mm (53 ins) |
| Wheels | 4 ¹ / ₂ J x 15 Perforated wheel discs with drop center rims |
| Tires | Sedan 6.00-15 L 4 PR |
| | Squareback Sedan 375 kg 6.00-15 6 PR |
| | Squareback Sedan 465 kg 6.00-15 L 8 PR |

Tire pressures

| | | |
|----------------------------|------------------------------------|------------------------------------|
| Sedan | | |
| with 1 to 2 occupants | front 1.1 (16 psi) | rear 1.7 (24 psi) |
| with 3 to 5 occupants | front 1.2 (17 psi) | rear 1.8 (26 psi) |
| Squareback Sedan (375 kg) | | |
| with half permissible load | 1.2 kg/cm ² (17 psi) | 1.8 kg/cm ² (26 psi) |
| with full load | 1.2 kg/cm ² (17 psi) | 2.6 kg/cm ² (37 psi) |
| Squareback Sedan (465 kg) | | |
| with half permissible load | 1.2 kg/cm ² (17 psi) | 1.8 kg/cm ² (26 psi) |
| with full load | 1.2 kg/cm ² (17 psi) | 3.0 kg/cm ² (43 psi) |

For long, high-speed motorway trips the tire pressures should be increased by 0.2 kg/cm² (3 psi) at front and rear.



Electrical system

| | |
|-----------------------------|---|
| Voltage | 12 Volts |
| Battery | 36 Ah |
| Starter | 0.7 hp |
| Generator | max. 30 Ampere, early cut in |
| Distributor | with vacuum spark advance |
| Tiring order | 1-4-3-2 |
| Basic ignition timing | 7.5° before TDC |
| | (Rotor arm pointing to No. 1 cylinder mark on edge of distributor housing and left-hand mark on crankshaft pulley in line with crankcase joint) |
| Contact breaker gap | 0.4 mm (.016 in) |
| Spark plugs | Bosch W 175 T 1 Beru 175/14 Champion L 87y or plugs with similar values from other manufacturers |
| Plug thread | 14 mm |
| Plug gap | 0.7 mm (.028 in) |

Dimensions and weights

| | Sedan | Squareback Sedan 375 kg | Squareback Sedan 465 kg |
|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| Length | 4225 mm (166.3") | 4225 mm (166.3") | 4225 mm (166.3") |
| Width | 1605 mm (63.2") | 1605 mm (63.2") | 1605 mm (63.2") |
| Height | 1475 mm (58.1") | 1465 mm (57.7") | 1465 mm (57.7") |
| Ground clearance | 149 mm (5.9") | 144 mm (5.8") | 144 mm (5.8") |
| Unladen weight | 920 kg (2028 lbs.) ¹⁾ | 1025 kg (2259 lbs.) ²⁾ | 1025 kg (2259 lbs.) ²⁾ |
| Maximum load | 400 kg (881 lbs.) | 375 kg (826 lbs.) | 465 kg (1025 lbs.) |
| Permissible total weight | 1320 kg (2910 lbs.) | 1400 kg (3086 lbs.) | 1490 kg (3284 lbs.) |
| Permissible rear axle load | 550 kg (1212 lbs.) | 550 kg (1212 lbs.) | 550 kg (1212 lbs.) |
| Permissible rear axle load | 790 kg (1741 lbs.) | 940 kg (2072 lbs.) | 1020 kg (2248 lbs.) |

¹⁾ without driver
²⁾ including driver

Capacities:

| | |
|----------------------------------|---|
| Fuel tank | 40 liters (10.6 U.S. galls.; 8.8 Imp. galls.) |
| Engine | 2.5 liters of engine oil (5.3 U.S. pints; 4.4 Imp. pints) |
| Rear axle and transmission | 2.5 liters of hypoid oil (5.3 U.S. pints; 4.4 Imp. pints) |

Oil bath air cleaner:

| | |
|--------------------------|---|
| 1.6 liter engine: | approx. 0.40 liter (.8 US pint; 1 Imp .7 pints) |
| 1.5 liter engine | approx. 0.25 liter (.53 US pint; .44 Imp pints) |
| Windshield cleaner | approx. 1 liter water (1 quart) |
| | 2.5 kg/cm ² (36 psi) air |

Performance

| | | | | | |
|--|----------------|--------------------------------------|--------------------------|--------------------------------------|--------------------------|
| Maximum and cruising speed | | 1.6 liter engine 135 kph (84 mph) | | 1.5 liter engine 125 kph (78 mph) | |
| Acceleration time from 0-80 kph (0-50 mph) | | 12.5 seconds | | 15 seconds | |
| | | Sedan ³⁾ | Squareback ⁴⁾ | Sedan ³⁾ | Squareback ⁴⁾ |
| | | | 375 kg 465 kg | | |
| Climbing ability % | 1st gear | 46.0 | 41.5 39.5 | 45.5 | 40.0 38.0 |
| | 2nd gear | 24.0 | 21.5 28.5 | 23.5 | 20.0 19.0 |
| | 3rd gear | 13.5 | 12.0 11.5 | 13.0 | 11.5 11.0 |
| | 4th gear | 8.0 | 7.5 7.0 | 7.5 | 6.5 6.0 |

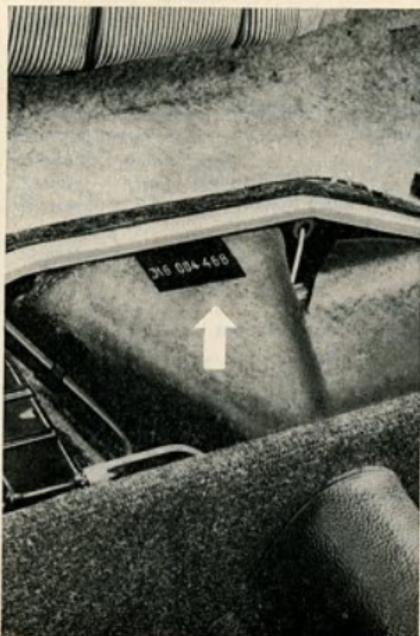
³⁾ with two occupants
⁴⁾ half maximum load

In the vehicle documents are, amongst other things, the model designation, and the chassis number and engine numbers.

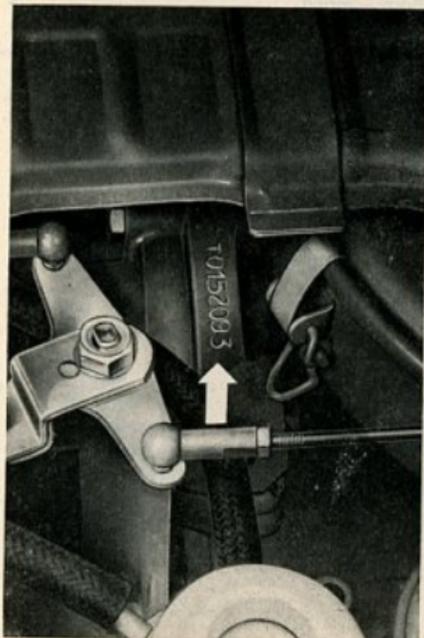
The identification plate is under the front hood near the lock.



The chassis number is on the frame tunnel under the rear seat.



The engine number is between the oil cooler and air cleaner the crankcase.



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The lubrication and maintenance charts . . .

list all the operations which we specify for the lubrication and maintenance services. Having this work carried out regularly by an authorized VW Dealer is an essential part of the instructions regarding the operation of your Volkswagen. Please see also paragraph 6 of our warranty conditions in this connection.

Lubrication chart

| Operation | W 1 At 500 km (300 miles) | WS 5 At 5000, 15000, 25000 km (3000, 9000, 15000 miles) and so on | W 10 At 10000, 20000, 30000 km (6000, 12000, 18000 miles) and so on |
|--|---------------------------------|---|---|
| Engine: Change oil, clean strainer, check for leaks | × | × | × |
| Rear axle: Change oil, clean magnetic drain plugs, check for leaks | × | | Only at 50000, 100000 km (30000, 60000 miles) and so on |
| Rear axle: Check oil level, top-up as necessary, check for leaks | | | × |
| Front axle: Lubricate | | | × |
| Door and hood locks, door hinges: Lubricate | | × | × |
| Carburetor linkage: Lubricate | | × | × |
| Air cleaner: Check, clean lower part if necessary and put fresh oil in | | | × |
| Battery: Check voltage and acid level, add distilled water if necessary. Clean and grease terminals | | × | × |
| Windshield washer container: Fill | × | × | × |

Important

If your Volkswagen is driven less than 10000 km (6000 miles) a year, have the torsion arm bearings in the front axle greased once a year. The door and hood locks and the door hinges should be lubricated at least every 3 months.

Maintenance chart

| Operation | W 1 At 500 km (300 miles) | W 10 At 10000, 20000, 30000 km (6000, 12000, 18000 miles) and so on |
|---|---------------------------------|---|
| Check security of rear axle shaft nuts and tighten if necessary | × | |
| Check V belt, tighten or replace if necessary | × | × |
| Clean fuel pump filter | × | × |
| Check contact breaker points, replace if necessary, lubricate distributor, adjust breaker gap and ignition timing | × | × |
| Adjust valve clearance and fit new cylinder head cover gaskets | × | × |
| Clean spark plugs, check and adjust plug gaps. Check compression | | × |
| Checked weighted control flap for carburetor preheating | | × |
| Replace crankcase breather filter | | × |
| Check rubber valve for crankcase ventilation and replace if necessary; Check pre-heating throttle, check exhaust system for damage | | × |
| Check water drain flaps and air intake bellows | × | × |
| Adjust clutch pedal free-play | × | × |
| Check dust seals on steering ball joints and tie-rod ends. Check security of tie-rods | × | × |
| Clean front wheel bearings, pack with grease and adjust (includes removal and installation of both brake discs) | | W 50 Only at 50000, 100000 km (30000, 60000 miles) and so on |
| Check and adjust upper torsion arm axial play | | × |
| Check front wheel toe-in and camber | × | × |
| Steering gear: Check and adjust play between roller and worm | | × |
| Correct tire pressures. Check security of wheel bolts and tighten if necessary | × | × |
| Check tires for wear and damage, rectify inflation pressures | | × |
| Check brake system for leakage and damage, check fluid level and top-up if necessary, adjust hand and foot brakes | × | × |
| Check thickness of brake linings | | × |
| Check operation of electrical equipment, adjust headlight alignment | × | × |
| Road test, check efficiency of foot and hand brakes, check and adjust heating, fresh air ventilation and idling | × | × |



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Servizio rotazione
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Ruil-Systeem

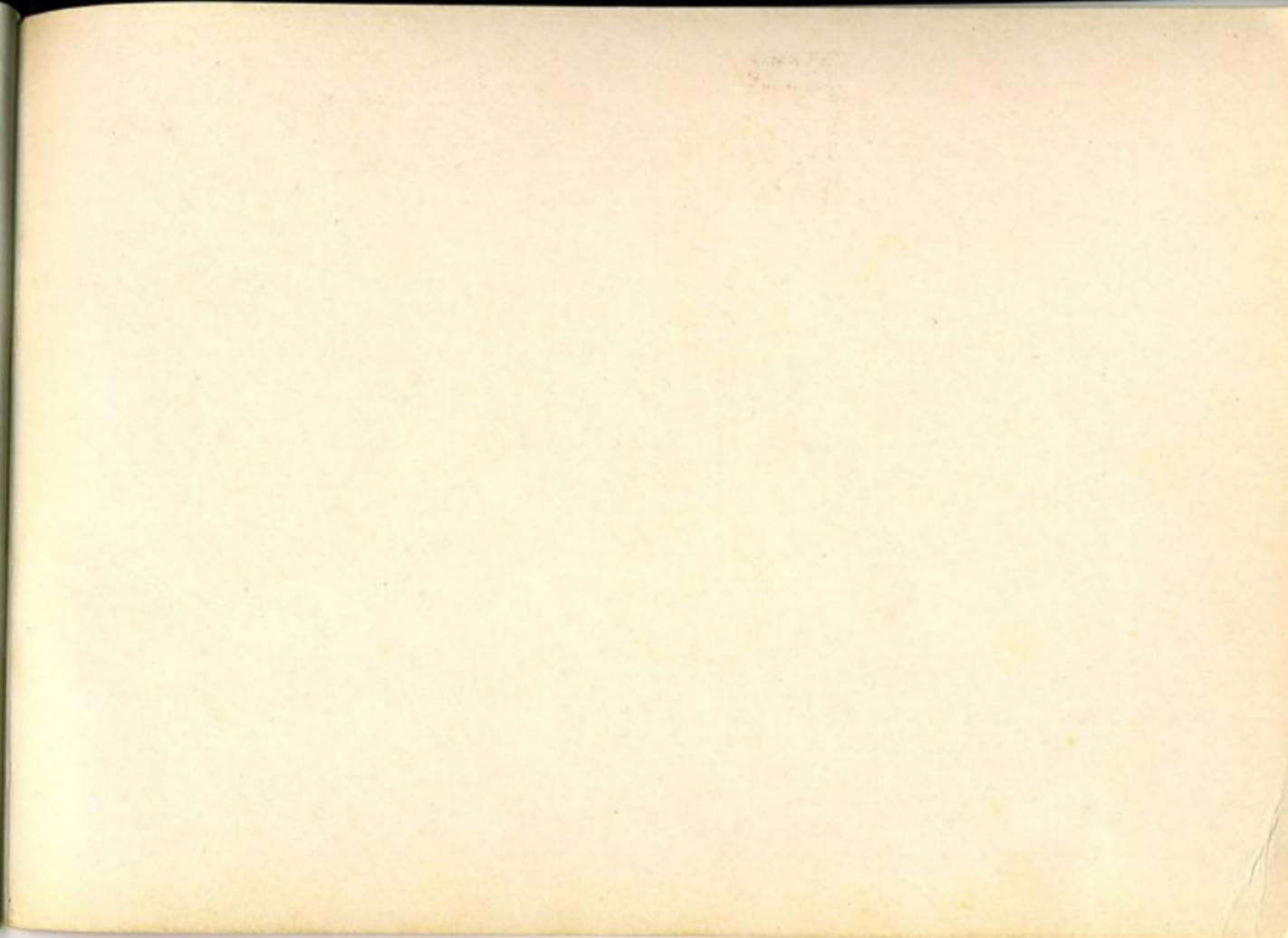
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Please consult your VW workshop on all questions concerning repairs. They will be pleased to advise you and your vehicle will be in good hands.

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