

# VOLKSWAGEN 1300



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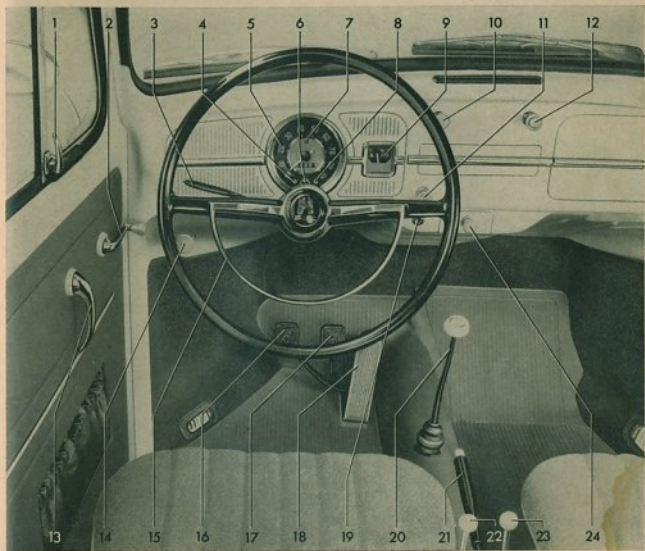
# Instruction Manual Sedan and Convertible

August 1965



V O L K S W A G E N W E R K A G

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# Operating Instructions



## Before driving off

acquaint yourself with the Volkswagen.

One key operates both the door locks and the ignition switch. Be sure the key number is recorded in the front of your Service Booklet so you can get a replacement if the key is lost.



Both doors can be locked and unlocked from the inside and outside.

### Unlocking - outside

A quarter turn of the key and the door can be opened by pressing the button in the door handle.

### Unlocking - inside

A pull on the inside door handle and the door will open regardless of whether it has been locked or not.

### Locking - outside

While the key can be used to lock the door, it is more convenient to push the inside door handle all the way forward and depress the button in the outside door handle as you close the door. If the door closes unintentionally after the inside handle has been pushed forward, it will not lock and thus the danger of being locked out is reduced.

### Locking - inside

For greater security inside the car, push the inside door handles all the way forward so the doors can not be opened from the outside without the key.





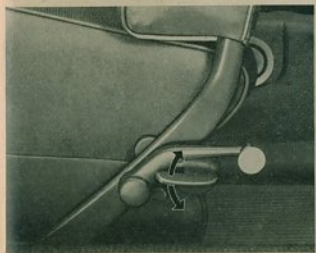
**The front seats** can be adjusted individually even when the vehicle is moving. To release the seat, just lift the lever at the front on the right. The seat can then be moved backwards or forward as desired. The seat runners are inclined so that the seat is raised as it is pushed forward and lowered as it is pushed to the rear.

The back rests of the front seats can be inclined to three different positions.



Safety locks prevent the back rests from tilting forward accidentally. To release the lock and tilt the back rest forward, lift the lever underneath the back rest adjusting cam.

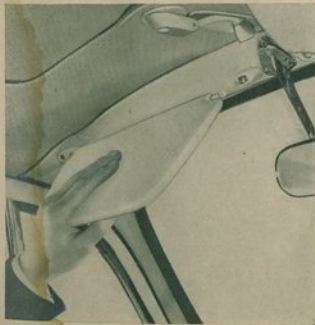
Sitting and driving for hours on end places a great strain on the human body. It is therefore essential to sit correctly when driving. Make full use of the possibilities of adjusting the seat to suit your individual requirements so that you still feel fresh even after driving for many hours.



**The rear view mirrors** are adjustable and should be set to give clear vision to the rear at all times without having to alter ones position. The height of the inner mirror of the Convertible can be altered by turning it 180° in order to give clear vision when the top is down.



**The sun visors** can be swivelled toward the door windows and offer protection against the sun from the side.



**Turn signal lever.** You can operate the turn signal lever with your fingers without taking your hands off the steering wheel.

Lever upwards – right turn signal

Lever downwards – left turn signal

A green dual arrow warning light situated in the speedometer flashes while the indicators are in operation. The signals are self-cancelling.

When the headlights are on, the beams can be raised or lowered with the button in the turn signal lever. A blue warning lamp in the speedometer dial shows when the lights are on high beam.





**The windshield wipers** are switched on with the right-hand push-pull switch on the dashboard. When switched off, the wipers return to the park position automatically.

**The windshield washer** is operated with the knob in the center of the windshield wiper switch. The washer works by compressed air so that by just holding the knob down, you can spray water onto the windshield until the field of vision is quite clear.

Do not forget to check the windshield washer container from time to time. It is located under the front hood behind the spare wheel and holds



about 1 quart (1 Liter) of water. As the air pressure in the container escapes when the cap is removed, it is advisable to refill the container at a filling station. The container can be filled until it overflows. The pipe in the container neck ensures that there is always sufficient air space.

The correct air pressure is 36 psi. (2.5 kg./cm.<sup>2</sup>). The addition of 25% alcohol to the water or the use of a suitable windshield washer antifreeze in winter will protect it from freezing down to a temperature of approximately 10° F (—12° C).



**The lights** are switched on with the left-hand pull switch on the dash board. When pulled out to the first stop – you can feel the stop engage in this position – the parking lights, the rear lights and the license plate light are switched on. To switch the headlights on, pull the switch out to the second stop. The dimmer switch is located in the lever of the turn signal switch on the steering column.

**The instrument lighting** can be varied in brightness by turning the lighting switch. It can also be switched off completely by turning the switch counter clockwise as far as it will go.



**The emergency blinker switch** is located at the dash board underneath the light switch. If the vehicle is disabled or parked under emergency conditions, pull the switch to make all four turn signals blink at once. A warning light in the switch knob blinks when the system is turned on.



**The interior light** is located above the left door. The switch incorporated in the lamp fitting has three positions:

- Upper – Interior light comes on when a door is open
- Intermediate – Interior light switched off
- Lower – Interior light switched on

On the Convertible the interior light is situated between the sun visors in the mirror support. The switch positions are:

- Up – On
- Center – Off
- Down – Door contact switch



**The ash tray in the dash board** can be removed by depressing the spring. When reinserting it the spring engages automatically.

**The rear ash tray** must be pressed down slightly to remove it. After cleaning, it must be pressed back into the housing evenly at top and bottom.



**The luggage compartment** under the front hood is theft-proof when the car is locked. The knob for releasing the hood is located under the dash board on the left.

On the Convertible, the knob is fitted with a lock so that you can lock up the spare wheel, fuel tank and luggage when the top is down. The key for the lock is also used for the door and the lockable glove compartment in the convertible.

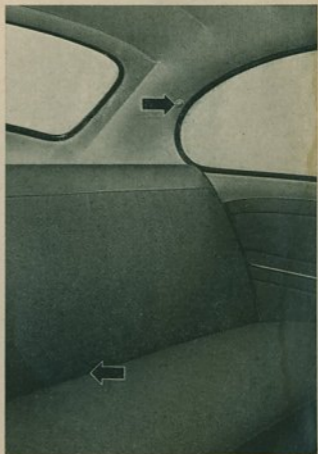
When closing the hood, ensure that the lock engages firmly.



There is a second luggage compartment behind the rear seats. This compartment is ideal for all the things you need to have handy when on the move. The rear back rest can be folded forward when loading and unloading luggage. If you wish to carry very large pieces of luggage, you can secure the back rest to the seat support in this position on the Sedan. In the normal position, the back rest is held by a rubber loop on the right-hand side.

**Safety belts** for the driver and the front passenger are attached to the mounting points in the floor. Mounting points in the door pillars allow the installation of combination lap/shoulder belts.

There are mountings for rear seat belts to the left and right of the rear seat back rest and under the back rest above the frame tunnel.



**Checking the brakes** before starting out on a trip is always a good idea. Just depress the brake pedal a few times to make sure that the brakes are working efficiently.

**The stop lights and turn signals** are an essential part of the lighting system. The ignition must be switched on if you wish to check them. If a turn signal bulb is defective the other turn signal lights and the warning light in the speedometer dial will flash considerably faster.

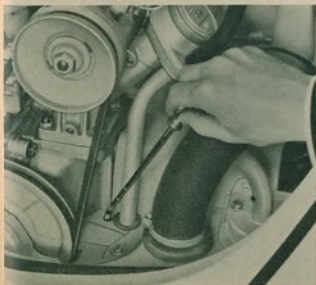
The stop lights only operate when the foot brake is applied.

**The oil level** should only be checked after the engine has been shut off a few minutes. Be sure the car is on level ground. It should always be between the two marks on the dipstick and must never fall below the lower mark. Wipe the dipstick with a clean rag before checking the oil level.

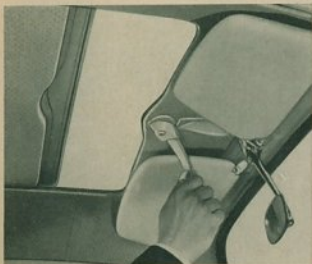
If possible, always use the same brand of oil (for Service MS).

**Tires.** Correct tire pressures are essential for ensuring the excellent road-holding properties of your car.

When the car is fully loaded, the tire pressure should be 17 psi. (1.2 kg./cm.<sup>2</sup>) at the front and 26 psi. (1.8 kg./cm.<sup>2</sup>) at the rear. Otherwise 16 psi. (1.1 kg./cm.<sup>2</sup>) pressure at the front and 24 psi. (1.7 kg./cm.<sup>2</sup>) at the rear is sufficient. For long, high speed trips, the tire pressures should be increased by 3 psi. (0.2 kg./cm.<sup>2</sup>) at front and rear.



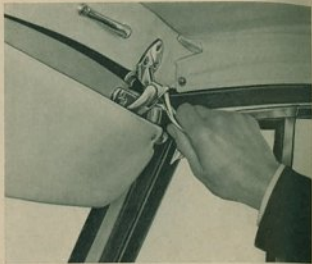




**The sliding roof** is operated by the crank located in the recess between the sun visors. After pulling down the handle, the roof can be opened or closed as required. It will stay in any position.

When closing, the sliding roof should be cranked fully forward to the stop and then the handle turned back slightly and folded into the recess.

**The ventilation** of the vehicle can be regulated to suit the weather conditions and the occupants by careful use of the vent wings. Even when it is quite cold, at least one vent wing should be opened slightly. A continuous change of air in the vehicle keeps the windows clear and prevents the otherwise inevitable misting-up caused by the moisture in the occupant's breath.



## **The Convertible Top**

can easily be opened and closed by one person. The service life of the top largely depends on the way the top is opened and closed.

The top must never be opened when wet.

After driving on dusty roads for long periods we recommend that you wipe the top carefully before opening it in order to prevent the dust particles from damaging the material and causing friction marks. These marks can also be caused if the top is not held securely by the fasteners when it is open. When this is the case, it is best to consult your VW Dealer.

## **To open the top**

Release the front fasteners.

Raise the header slightly and fold back the top.

Withdraw top cover from the linkages on both sides.



Push the headlining inwards so that the linkages are free.

Place the caps of the top clamps over the header guides.

Press down the top until the spring-loaded catches (one on each side) engage.

Pull the protective boot over from the rear and secure it with the press studs provided. Ensure that the boot fits over the top cover properly underneath and that the material does not hang down out of the boot. The trim molding on the lower edge of the top should be exposed.



## To close the top

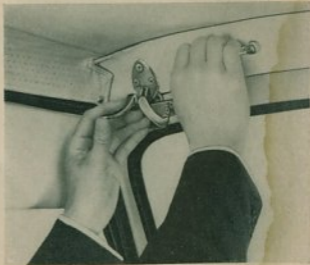
Release the fasteners of the boot and remove. It can then be stored in one of the two luggage compartments.

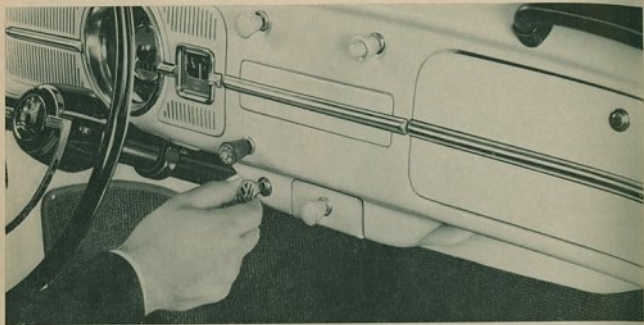
Press down the top and disengage the catches.

Raise the top.

Pull the top down until the header guides have entered the channels above the windshield frame.

Place the fastener caps over the noses of the brackets and turn up the levers.





## Starting the engine

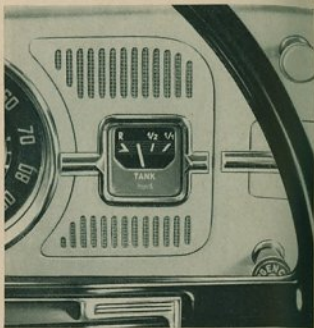
The ignition and starter are switched on, one after the other, by means of the combined starter-ignition switch. As starter operation stresses the battery heavily, other big current users, such as the headlights, windshield wiper and radio, should not be switched on when starting. Make sure, also, that the gear shift lever is in neutral.

First switch on the ignition by turning the key to the right until the red and green warning lights in the speedometer come on. Then operate the starter without delay by turning the key further to the right.

**At temperatures above freezing point** or when the engine is still warm, depress the accelerator pedal slowly while operating the starter. Depress the accelerator pedal fully only when the engine is very warm.

**At temperatures below freezing point** and when the engine is cold, depress the accelerator pedal fully and then release it before switching on the ignition. This enables the automatic choke to close the choke valve. When the weather is severely cold, the engine may turn over slowly during starting. In this case, depress the clutch while cranking; if it turns over faster, hold the clutch down until the engine starts. When starting without depressing the clutch, be sure the handbrake is on and the gearshift in neutral.

As soon as the engine starts, release the ignition key so that the starter is switched off. You can move off at once. The automatic choke regulates the mixture and idling speed to suit the operating temperature. Do not race the engine when it is still cold.



**Check the brakes, lighting and the amount of fuel before every trip. The oil level and tires of your car should be checked at regular intervals.**

**The fuel tank** contains sufficient fuel when full, that is when the fuel gauge needle is all the way over to the right, to cover a good 280 miles (450 kilometers). As soon as the needle moves to "R" (Reserve) it is time to refuel. There is still 1.3 gallons left in the tank which is enough for 30 to 35 miles (50 to 60 kilometers) so that you can reach the next gas station.

Your VW uses regular grade gasolines commonly sold in the U.S. and Canada. If regular fuels with adequate anti-knock properties are not available, premium fuels should be used or mixed with the regular fuel. Fuels of the required octane rating may not be available in all countries. When travelling abroad, please consult your VW dealer.

The tank holds 10.6 US gallons (40 liters, 8.8 Imp. gallons). The filler neck is under the front hood which can be opened with the knob on the left under the dash board.

If the engine does not start within the first 10 seconds, pause for about the same length of time to rest the battery before repeating the starter operation. The ignition will have to be switched off first and then on again as a non-repeat lock in the switch prevents the starter from being operated again when the ignition is on and thus being damaged by the engine when it is running. The starting procedure should not be interrupted if the engine is heard to fire a few times.

**The red warning light for the generator and cooling** goes out as the engine speed increases. If this light comes on when you are driving, stop at once and check the belt which drives the generator. If this belt breaks, the cooling of the engine is interrupted. The proper way to replace the belt is described on page 42.

If the generator ceases to charge for any other reason, you can drive on to the nearest VW dealer, but the battery will rapidly run down.

**The green warning light for oil pressure** goes out when the engine is started. If this warning light comes on while driving, you must stop at once as the chances are that the oil circulation has been interrupted. Check the oil level. If the oil level is correct, contact the nearest VW dealer.

If either the generator or oil pressure warning light goes on when the engine is idling, it does not indicate trouble. They should both be out when the vehicle is being driven, however.

**Caution.** Be careful when starting the engine in the garage. Provide ample ventilation so that the exhaust fumes, which contain carbon-monoxide gas, can escape.





## Practical Driving

**Breaking-in instructions** are not necessary for your Volkswagen. The most modern production and inspection methods have made it possible to dispense with the initial speed restrictions which are normally required. You can drive the vehicle at full speed from the first day.

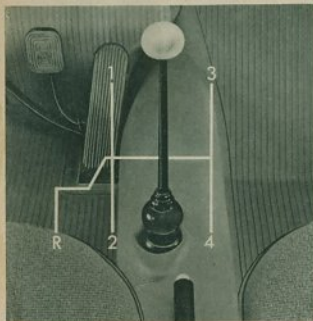
It is advisable, however, to observe certain general driving rules.

### Gear shifting

Glance occasionally at the speedometer especially during the initial period.

The red lines on the speedometer indicate the maximum speeds for each gear.

**Shift the gears within the permissible speed ranges only:**



1st GEAR  
0-15 mph.  
(0-25 kph.)



**You can drive very economically between:**

Do not race or lug the engine in the individual gears. This practice can have an adverse effect on the life of the engine.

Shift to reverse gear only when the car is stationary. A locking device prevents unintentional shifting. Depress the gear lever slightly and then move it to the left and to the rear to engage reverse.

### Shifting to a lower gear

Shift down to a lower gear when on steep inclines and also when accelerating from low speeds.



**2nd GEAR**  
5-30 mph.  
(10-50 kph.)



**5 and 20 mph.**  
(10 and 35 kph.)

**3rd GEAR**  
20-50 mph.  
(30-80 kph.)



**20 and 35 mph.**  
(30 and 55 kph.)

**4th GEAR**  
30 mph. and up  
(45 kph. and up)



**30 and 55 mph.**  
(45 and 90 kph.)

The transmission of your car is fully synchronized so do not hesitate to shift the gears.

Certain speed ranges have to be adhered to when shifting to a lower gear. Shifting down to a lower gear at excessive speeds puts an unnecessary strain on the transmission. On the other hand very low speeds in the individual gears are harmful to the engine. Shift down from 4th to 3rd gear approximately between 50 and 30 mph. (80 and

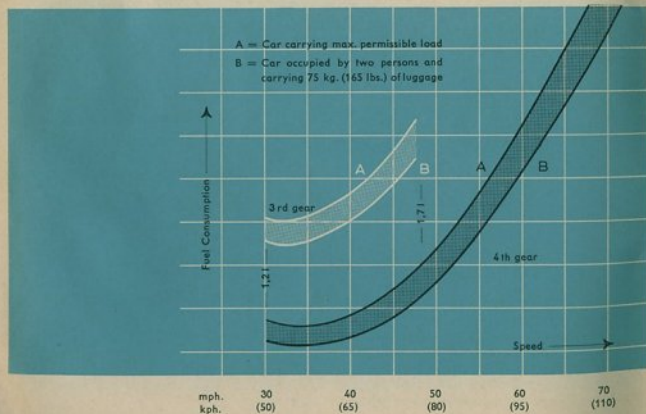
45 kph.) and from 3rd to 2nd gear between 30 and 20 mph. (50 and 30 kph.) The 1st gear is only used for moving off, driving at walking pace or on very steep inclines.

When shifting gears, it is absolutely essential to depress the clutch pedal fully. Incomplete declutching makes gear shifting difficult and leads to rapid wear of the synchronizer stop rings.

Economical operation is one of the outstanding features of your car. However, getting a few extra miles from each gallon depends on your driving habits:

Make good use of the lower speed ranges in the individual gears. The graph shows how the fuel consumption increases when you, to take one example, drive in 3rd gear in town traffic instead of using 4th gear. The same thing happens when you drive at unnecessarily high speeds in 1st or 2nd gear. Under normal circumstances you can shift into 2nd gear at 6 mph. (10 kph.), into 3rd gear at 20-25 mph. (35-40 kph.) and into top at 30 mph. (45 kph.).

Do not pump the accelerator pedal unnecessarily. Even the small quantity of fuel additionally discharged each time the accelerator pedal is depressed results in a noticeable increase in the fuel consumption.



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Do not continue to depress the accelerator pedal when your speed begins to drop on an incline, but shift down so that you keep the engine running at the best speed.

Reduce your speed before corners and when stopping. Do not coast in neutral downhill. High speeds always result in increased fuel consumption. This can be seen very clearly in the graph, which also shows that the consumption does not increase uniformly but goes up rapidly. However, you can drive quickly and economically if you accelerate to the desired speed and then ease the pedal back slowly to the point where the vehicle just remains at this speed. This method can prove very economical, particularly on long motorway trips.

The most advantageous engine operating conditions result from brisk driving and correct gear shifting.

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## Brakes

The brake responds to even the slightest foot pressure. Apply the brakes carefully and avoid locking the wheels. Locked wheels will not shorten the braking distance but may cause you to lose control of the vehicle and will shorten tire life.

When driving down steep hills, make use of the braking effect of the engine and shift to that

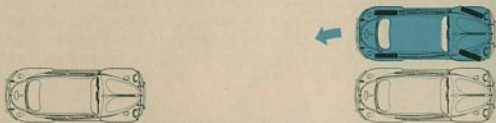
gear which you would use in driving uphill. The ignition must never be switched off when going downhill.

Violent braking can only be justified in an emergency. Nevertheless, it is advisable to check the full braking effect at certain intervals so that you will be familiar with the behavior of the car and the actual braking distance.

## Parking

Parking in limited spaces can be made quite simple:

Stop your car even with the car in front of the space. Turn the steering wheel sharply and back up slowly into the gap:



When the front bumper of your car is even with the rear bumper of the car ahead of you, turn the steering wheel fully the other way and back up further toward the curb:



Now turn the steering wheel back again and pull up a little bit, until both ends of the car are as close to the curb as possible:



When parking on a steep slope, set the handbrake to prevent the car from rolling. As a precautionary measure, it is advisable to engage first or reverse gear in addition to the handbrake. An do not forget to take the key out of the ignition switch before you leave your car.

## 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. If you do not expect the towing effort to be excessive, the rope can be attached at the rear to a lower shock absorber bracket. Otherwise, we advise you to use the cross tube which houses the torsion bars for the rear suspension. Neither of these points are very easy to reach but they at least ensure that your towing does not result in damage to your vehicle.



At the front, the rope should be attached to the lower axle tube as near to the frame head as possible.



## Cold Weather Hints

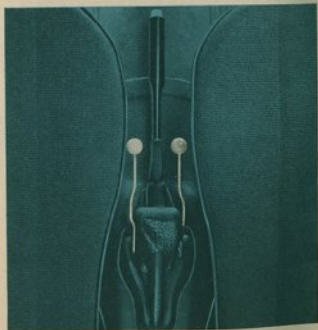
Your car has two features which you will appreciate in the winter: Air cooling and heating. You can expose your car to bitter cold without fear. Its air-cooled engine will always be ready to start and supply warm air for the interior of the car.

**The warm air heating** can be fully regulated. The distribution of warm air can be varied to suit the wishes of the occupants by means of controllable outlets at foot level.

The right-hand lever between the front seats turns all the heating on and off and the left-hand lever controls the heating in the rear foot well. The outlets in the front foot well can be closed with slides.

At very low temperatures, it is advisable to always close the rear outlets when first moving off. This

Lever up – on  
Lever down – off





increases the flow of air to the windshield and also helps to prevent steaming up when air humidity is high. As soon as the windshield is clear, the rear foot level outlets should be opened so that the interior of the body heats up as quickly and uniformly as possible.

If you open a vent wing slightly when the heating is on, the heat output will increase noticeably because the fan can then force the warm air into the body more easily.

Do not try to change the cooling and heating of your car in winter by covering the air intake slots below the rear window. These slots must always remain open to ensure the flow of fresh air to the carburetor and fan.

**Engine oil.** SAE 30 oil will thicken at temperatures below freezing point and result in difficult starting. Change over to the thinner SAE 10W engine oil at oil changes when temperatures under freezing point are expected.

Only if your car is mainly operated over short distances during the winter is it advisable to have the oil changed more frequently than every 3,000 miles, say every 1,500 miles (2,500 km.). If you only drive a few hundred miles per month under these conditions, it is advisable to change the oil every 6 to 8 weeks. In the warmer seasons, additional oil changes are unnecessary and uneconomical.

In territories where exceptionally low temperatures prevail (below  $-13^{\circ}$  F /  $-25^{\circ}$  C), SAE 5 W engine oil should be used instead of SAE 10 W and the oil changed every 750 miles (1,250 km.). It is advisable to avoid sustained highway driving when using SAE 5 W oil.

**Transmission oil.** SAE 90 oil can generally be used all the year round. Only in countries with arctic climate is it necessary to replace it with the thinner SAE 80.

**The battery** may require extra attention in winter because of the increased consumption of current when starting the engine and the increased use of headlights. Furthermore, its efficiency decreases at lower temperatures. If the car is mostly used over short distances or in city traffic, it is advisable to have the battery recharged occasionally. The connections between battery and starting motor must be kept perfectly clean.

**The spark plugs** should not have an excessively large gap especially in winter. The normal spark plug gap is .028" (0.7 mm.). In extremely cold weather the gap can be reduced to between .016" and .020" (0.4 and 0.5 mm.) to facilitate starting.

**The door lock** can freeze in winter, especially if water gets into the lock cylinder when washing the car. Do not aim the water jet directly at the lock, but instead, cover up the keyhole when washing. A frozen lock can be opened by warming the key before insertion and then squirting anti-freeze into the lock cylinder. Do not spill anti-freeze on the paint.

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

M + S tires with special heavy treads give good

road holding in snow and slush. They can be fitted to all four wheels. M + S tires should however, not be fitted on the front wheels only.

Better still are the M + S ice tires (spiked) which increase the safety margin even on hard snow and ice. Even with these tires, which should always be fitted to all four wheels, you should not allow yourself to be misled into driving faster than you would under the same conditions with normal M + S tires. Check your state laws before installing spiked tires.

In general, special winter tires only have real advantages when conditions on the roads 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 snow-free roads as a normal tire. Furthermore, under these conditions M + S tires wear rapidly, particularly at high speeds.

**Snow chains**, in conjunction with normal and winter tires, can only be used on the rear wheels. Only thin chains which do not stand clear of the tire tread and walls more than  $\frac{1}{2}$ " (13 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 and merely damage the tires and wear out quickly.

## Care of the Tires

Apart from the tire pressures, your driving habits also affect the service life of the tires considerably. Rapid acceleration, violent braking and cornering result in more wear.

Avoid overloading the car and protect the tires from intense sunlight, fuel, oil or grease.

The tires should be checked occasionally for foreign matter and external damage. The tires should always be replaced when the tread has worn down to a depth of  $\frac{2}{32}$ " (1 mm.) which is the absolute minimum required for safe usage. If the tires show signs of uneven wear after a considerable mileage, consult your authorized VW Dealer.

For smooth running at higher speeds and long tire life, it is suggested having the wheels occasionally balanced statically and dynamically. Wheels can become unbalanced due to normal tire wear.

When mounting a tire on a rim, the red mark should be positioned at the valve. This will ensure that any imbalance is neutralized to a certain extent.

## Care of the Car

It is our object to provide your car with paintwork that not only looks good and has a sparkling luster, but is most durable. A chemical treatment protects the body against rust and anchors the synthetic resin enamel to the metal.

But even the best paintwork requires occasional care since exposure to sunshine, rain, dust and dirt creates a weathering effect.

**Wash** your new car frequently during the first weeks as this is good for the finish. When washing you require a soft sponge for the body, a soft brush for the wheels, a sturdy, long-handled brush for the chassis, and plenty of water.

The chassis and underneath part of the body should first be flushed with water to soak off the dirt, and afterward a brush should be used.

Spray the exterior finish of body and wheels evenly with water until dirt is soaked off. Do not allow a powerful jet of water to hit the painted surface. Using plenty of clear water, remove dirt with a sponge. Clean the sponge at short intervals to avoid scratching the paint work.

There are many auto soaps and detergents available which greatly facilitate this job. Do not buy just any product, let your Authorized VW Dealer advise you. It is of utmost importance to rinse the body thoroughly with water to ensure that no traces of the detergent remain. After washing, dry off with a clean chamois to prevent water spots from forming.

## Changing wheels

The spare wheel, jack and tools are found under the front hood which is opened by means of the knob under the dash board. On the Sedan the jack is secured by a clip near the spare wheel.



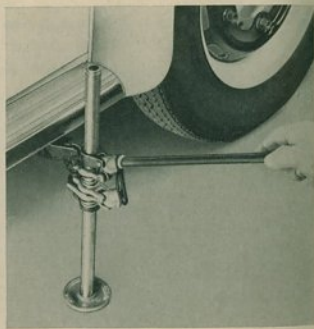
Set the hand brake.

Take off the hub cap with the removal tool and loosen the wheel bolts about one turn with the wrench and handle. The same bar serves as the jack handle.

Insert the jack in the square tube below the sill panel and push down the jack base plate until it makes contact with the ground.

Insert handle into upper link on jack. Raise vehicle until wheel is clear of ground by pumping the handle up and down.

Remove wheel bolts and take off the wheel.

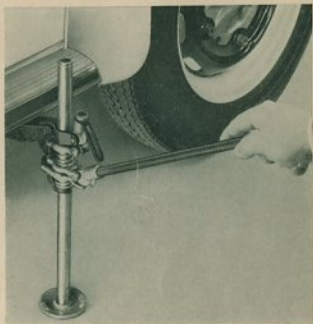




To put new wheel on, raise the car until the five holes in the wheel are nearly lined up with the holes in the brake drum.

Insert one wheel bolt and tighten it to such degree as to allow the wheel to be swung round this point by hand until the remaining holes in the wheel and brake drum line up.

Insert the other wheel bolts.



Tighten the screws until the wheel, centered by the spherical shape of the bolt heads, contacts the brake drum evenly.

Insert the jack handle into the lower link on the jack. Lower the vehicle by pumping handle up and down.

Tighten the bolts evenly.

Install hub cap and make sure that it is tightly seated.



**Preservation (Waxing)** should be carried out for the first time after approximately 8 to 10 weeks and afterward, if possible, at regular intervals of 6 to 8 weeks. Waxing restores to the finish certain substances it has lost by exposure to the weather. At the same time a protective water-repellent coating is applied to the body.

The "Genuine VW Preservative" (L 190) was specially produced for the Volkswagen and is obtainable from every VW Dealer. After washing and drying the car thoroughly, apply the preservative with a soft cloth. Let it dry for approximately 20 minutes and then rub it down with polishing cotton or a soft polishing cloth until iridescent colors can no longer be seen when you are standing at an angle to the polished area.

Do not forget to wax the car after each detergent washing as the intensive cleansing properties of the chemical detergent will partially dissolve the protective film of wax.

**Polishing.** You should polish your car only if its appearance has been affected as a result of insufficient care, or if the application of the preservative no longer restores the original luster. Avoid the use of abrasives or harmful chemical products.

A special polish for the synthetic-resin enamel finish is also available from your Authorized Volkswagen Dealer under the designation "Genuine VW Polishing Fluid" (L 170). Prior to applying the polish, the car should be washed and dried carefully. Apply the polish with a soft clean cloth or polishing cotton – use a straight horizontal or vertical motion rather than a circular motion. After rubbing for some time you will notice a slight resistance, which indicates that the ingredients of the polish have settled in the finish and that the solvent has evaporated. Now take clean polishing cotton and rub the body down until the high polish is restored.

To prevent the polishing fluid from drying prematurely, do not apply it on too large an area of the body at a time. A subsequent application of the preservative and your efforts will be rewarded with a long-lasting shine.

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**Never wash, wax or polish the car in sunlight.**

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**Tar spots.** Tar splashes have a tendency to corrode the finish within a short time and should be removed as soon as possible with Genuine VW Preservative.

On the road you usually have nothing at your disposal but fuel. Kerosene or turpentine may also be used. After this, the treated spots should be washed with a mild, luke warm detergent solution, and rinsed, in order to remove traces of the cleansing agent.

**Insects** are caught, especially in hot weather, on the front of the car and on the windshield. Insects should not be allowed to remain on the paint finish for long and should be removed with water and a sponge. Once baked on, they can only be removed with luke warm detergent solution.

**Parking under trees.** Vehicles parked under trees in summer are often found to be covered with spots. These spots can be removed easily with luke warm detergent solution if the treatment is not delayed too long. It is advisable to apply a coat of preservative afterward.

**Chrome parts** should be treated with "Genuine VW Chrome Cleaner Chromlin" when dry. Apply Chromlin thinly and allow to dry for 10 minutes before polishing with a dry cloth.

**The Convertible top** does not require any special attention. It is, however, essential to clean the plastic top cover regularly and in good time. When very dirty, it should be cleaned with a soap solution or a normal plastic cleaner. A hard brush can be used to remove dirt from the grained surface of the material but take care that the brush does not scratch the paint at the rear edge of the top. When the top has been cleaned, the whole vehicle should be rinsed thoroughly with clean water.

Never attempt to remove spots from the top with paint thinner, chlorine based spot removers or similar solutions. The spots should be wiped off with a benzine moistened cloth and the area then washed thoroughly with a lukewarm soap solution.

**Cloth upholstery.** If a vacuum cleaner is not available, the upholstery should be cleaned thoroughly with a brush or whisk broom. Stains can generally be removed with luke warm soap suds. Grease and oil stains are removed with cleaning paste or cleaning fluid. Do not pour the cleaning fluid directly on the upholstery as otherwise rings will form. Moisten a clean, white cloth with the fluid and rub with a circular motion, starting outside the spot and working inwards.

**Leatherette** can best be cleaned with a soft cloth or soft brush. If very dirty, a dry foam cleaner can be used.

The seating surface and front sides of the backrests may only be cleaned with a dry foam cleaner. The seating surface and the backrest are made of an air-permeable leatherette and liquid cleaners would immediately penetrate into the textile backing.

Grease and paint spots should be wiped off before they dry on. Soaked-in spots can be removed by carefully using a rag moistened with fuel or alcohol. Spots caused by shoe polish can be removed with turpentine. Use these agents carefully and sparingly as they tend to dissolve the dust-repellent finish of the leatherette. Solvents such as trichlorethylene or paint thinner should not be used for cleaning.

After cleaning, the leatherette should be dried thoroughly with a soft cloth. So-called preservatives are not suitable for leatherette because they do not soak into the material and will merely collect dust and soil clothing.

**The windows** can be cleaned best with a clean sponge and warm water. A glass cleaning solution should only be added to the water in exceptional cases as these solutions tend to affect the paint preservative. Use a separate cloth or chamois that is not used for the paintwork to dry the windows 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 and a lot of care, not forgetting the windshield wiper blades.

**Door and window weatherstrips.** It is important to keep the rubber parts undamaged and supple to ensure perfect sealing. To retain the flexibility of the rubber, these parts should be coated occasionally with talcum powder or silicone spray.

Friction noises occurring between the side window frames and the weatherstrips on the Convertible can also be easily eliminated by applying talcum powder or silicone to them.

**Airing the interior.** If the car is left in the garage for a long period, it should be aired regularly. Permit air to circulate freely by opening the doors and lowering the windows to prevent the formation of mold and damp stains.

## Lubrication Service

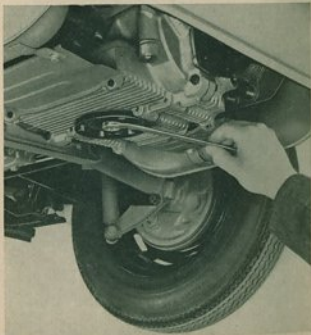
The Service Booklet makes it easy to keep track of lubrication, oil change and maintenance intervals. The mileage visible at the end of the top coupon, will remind you when the next service is due. Your Authorized Volkswagen Dealer has the skilled personnel, specialized tools and genuine VW parts to render quality, economical service.

To lubricate correctly means to lubricate carefully and at the prescribed intervals. Therefore, do not forget to have the lubrication service performed at the proper time. A lubrication chart on page 73 indicates the mileages at which to lubricate.

### Engine

Regular oil changes are necessary even if the very best brand of oil is used. Dirty oil in your engine simply means increased wear and a shorter service life.

Draining engine oil



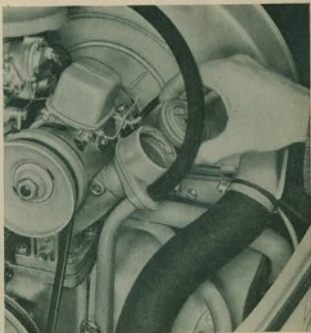
The oil is drained, when warm, by removing the plug in the oil strainer cover plate. Flushing of the engine is unnecessary. However, the oil strainer must be removed and cleaned at every oil change. The two gaskets and the washers for the cap nuts must be renewed each time. The engine is refilled with 5.3 US pints (2.5 liters / 4.4 Imp. pints) of oil labeled "for Service MS".

It is superfluous and uneconomical under normal operating conditions to change the oil at shorter intervals than every 3,000 miles (5,000 km.). We recommend oil changes at more frequent periods, only in the winter if you drive mainly short distances and in city traffic or only cover a few hundred miles per month under similar conditions.

Removing the oil strainer



Putting engine oil in





## **Types of lubricant**

Oils labelled "For Service MS" are prescribed for the engine lubrication. These are oils with proved oxidation stability, bearing corrosion preventive properties and detergent-dispersant characteristics which tend to hold foreign contaminants in suspension which would normally deposit on engine parts. These foreign contaminants will drain out with the oil at the periodical oil changes.

The detergent properties of these oils will make the fresh oil darker after a short period of operation. This is quite natural and does not mean that the oil should be changed earlier than called for in the Lubrication Chart.

## **Some more information on oils**

The quality of branded oils is such that the choice is left to your discretion. In cases of doubt, your Authorized Volkswagen Dealer will be glad to assist you. We recommend that you select "your" oil at the first 300 mile (500 km.) oil change and stick to it in all future oil changes.

The requirements of the VW engine in respect to oil quality are fulfilled by any well-known brand. No additives of any kind should be mixed with these oils.

The viscosity grades of the different oils are shown by the designations SAE 30, SAE 10 W and so on. The viscosity of a lubricant is an indication of its resistance to flow at a given temperature. The lubricant chart on page 73 shows you which viscosity grade of oil to select to suit the existing temperature.

Temporary deviations in the temperatures for the various viscosity grades are of no importance. It is permissible to mix oils of different viscosity grades when it is necessary to add oil between the oil changes, and the outside temperature no longer corresponds to the viscosity grade of the oil in the engine. It is, however, essential that the same brand of oil be used.

Some countries do not use the API classification (API = American Petroleum Institute). "For Service MS oils" are known in these countries as "HD oils".

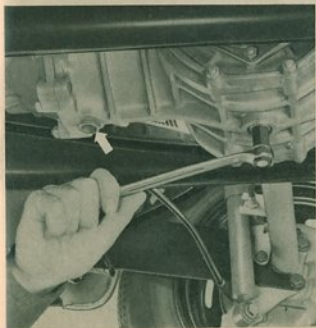


## Transmission

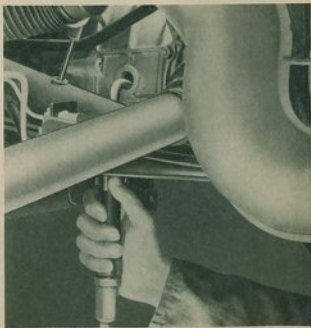
The transmission and differential gears are combined in the transmission case and both lubricated with hypoid oil. The oil should be up to the edge of the filler hole. At oil changes – at 300 miles (500 km.), and then again at 30,000 miles (50,000 km.) – the old oil is drained by removing both magnetic drain plugs while the oil is at operating temperature. The magnetic drain plugs should be thoroughly cleaned. The transmission is filled with 5.3 US pints (2.5 litres / 4.4 Imp. pints) of branded hypoid oil.

Additives should not be used with hypoid oils.

Draining transmission oil



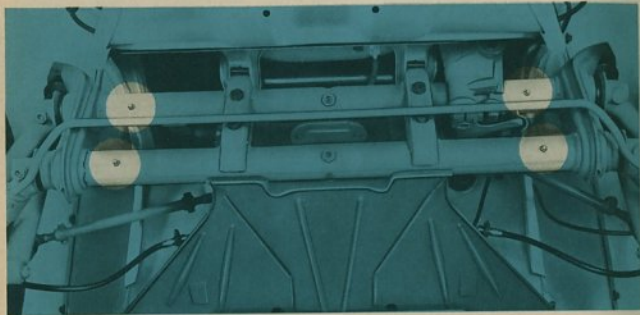
Putting transmission oil in



## Chassis

**The front axle can only be lubricated properly when the axle is free of load, that is, with the vehicle lifted by the chassis.**

The front axle has four grease fittings which must be lubricated every 6,000 miles (10,000 km.). Prior to lubrication, the grease fittings should be cleaned thoroughly with a cloth to prevent dirt from being forced into the bearings.



The dust seals of the maintenance-free ball joints and tie-rod ends should be checked for damage and security at every maintenance service.

Damaged seals should be replaced as soon as possible.

Oil and grease should be kept off the tires and brake hoses. Even small quantities should be wiped off immediately.

If you drive less than 6,000 miles (10,000 km.) a year, the front axle should be lubricated once a year. Annually at the beginning of the cold season the cables for the accelerator, clutch and heating as well as the clutch cable adjusting nut should be checked and, if necessary, cleaned and lubricated.

## The front wheel bearings

are packed with anti-corrosion grease at the factory. The caps on the front wheel hubs must be free from grease.

Every 30,000 miles (50,000 km.) the bearings should be carefully cleaned and packed with the grease prescribed under "Lubricants".

The brake drums must be removed for this purpose. Finally the front wheels bearings must be adjusted. In order to avoid damage to the bearings, this operation should, if possible, be carried out by an Authorized Volkswagen Dealer only.



### Front Seats

If the front seats become hard to push, the seat runners should be lubricated lightly from above and below. Before greasing, the runners must be cleaned with a cloth. The seats can be taken out of the runners by pushing them forward. When installing the seat, hook the spring in again.



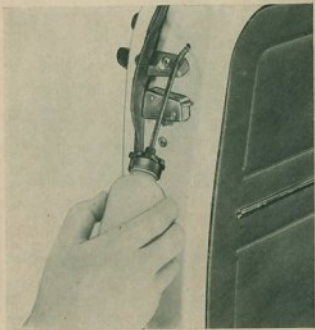
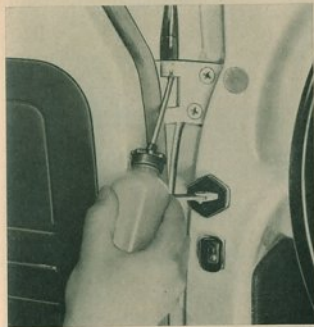
### Convertible Top

When necessary, the pivot points of the top linkage should be cleaned carefully and lubricated with a few drops of oil. Afterward it is advisable to wipe the joints thoroughly to prevent the top material from being soiled by excess oil.

## Doors and hoods

The door hinges should be lightly oiled at every lubrication service.

Lubricate the door lock with oil through the hole on the lock side of the door.



The lock cylinder should be treated with graphite when necessary. It is usual sufficient to dip the key in graphite and then turn it back and forth a few time in the lock.

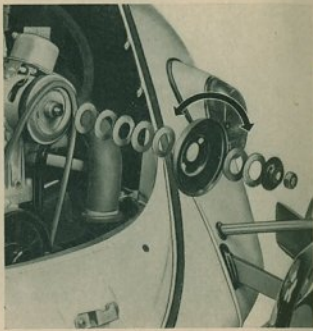
The sliding surfaces of the stricker plates should be lubricated lightly.

The hood hinges are to be oiled and the hood locks lubricated lightly.

The Volkswagen Organization has an extensive network of Authorized Volkswagen Dealers staffed with well-trained and experienced personnel, and equipped with all the special tools required to service your car. If ever you should need service when touring and away from home, look for the well-known VW Sign. Here you will receive prompt and expert assistance.

If you cannot get to an Authorized Volkswagen Dealer and must make adjustments yourself, we have listed here the most important tasks usually done during the maintenance services. However, it is important that repair jobs beyond your capacity be performed by the nearest Authorized Volkswagen Dealer. Your car is then in capable hands. This saves time, inconvenience, and money.

## Maintenance Service



### Checking the V-belt

The belt which drives the generator and the fan should be checked at regular intervals for tension and wear. When pressed with the thumb, it should yield approximately  $.6''$  (1.5 cm.) and should not show signs of excessive wear.

To adjust the belt, remove the rear half of the pulley on the generator. When loosening and tightening the nut, insert a screwdriver in the slot in the front half of the pulley and support it against the upper housing screw in the generator. To replace the belt, the cover plate for the

crankshaft pulley must also be taken off after removing the securing screws.

The belt is tensioned by increasing or decreasing the number of washers between the pulley halves. Taking washers out increases the tension and putting them in decreases it.

New belts stretch slightly at first and must be checked after 300 miles (500 kms.). The tension does not change any more after this so it is not necessary to readjust the belt again. Having the belt too tight is just as bad as having it too loose. Even though the belt normally has a long service life, it is advisable to always carry a spare.



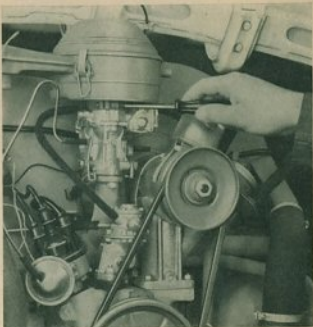
## Checking air cleaner

The oil bath air cleaner should be checked every 6,000 miles (10,000 km.).

The dust present in the air drawn in by the engine is retained by the filter insert in the upper part of the air cleaner and washed out, when the vehicle is in motion, by the oil in the lower part of the cleaner. In time, this causes a layer of sludge to form at the bottom of the lower part. If the cleaner check reveals that there is only  $\frac{3}{16}$ " (4–5 mm.) of oil above the sludge layer, the lower part should be carefully cleaned and filled with fresh oil. The top part does not need cleaning. However, if the filter insert has become so dirty due to delayed cleaning or oil shortage that the air inlet holes on the underside are partly blocked, the encrusted dirt should be removed, preferably with a small piece of wood.

A dirty filter insert not only reduces the engine output, it can also cause premature wear in the engine. If the local conditions are such that the vehicle is frequently driven over very dusty roads, it is advisable to clean the air cleaner more often.

The warm air control flap should be checked each time for free movement. This flap regulates the flow of pre-heated air to the carburetor according to the speed of the engine.



## Servicing air cleaner

Pull crankcase breather hose off air cleaner.

Pull pre-heater hose off air cleaner intake elbow.

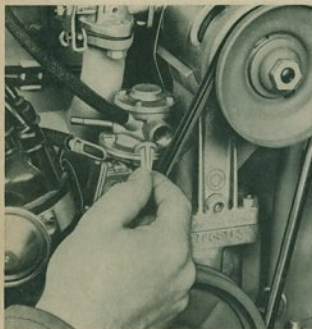
Loosen air cleaner clamp screw.

Take air cleaner off carburetor and disassemble.

Never lay the upper part down with the filter element upward.

Clean the lower part thoroughly and put in  $\frac{1}{2}$  pint (0.25 liter) of fresh SAE 30 engine oil.

When installing the air cleaner, ensure that the spacing between the recesses in the bottom part of the cleaner and the automatic choke housing is uniform.



### **Cleaning the fuel pump filter**

The fuel pump filter prevents foreign matter and water from entering the carburetor. It should be cleaned at the prescribed intervals.

Pull suction line off pump and seal it.

Remove plug and take out filter.

Wash filter carefully in solvent.

When installing the filter, do not omit the gasket for the plug.

### **Ignition timing**

Particular attention should be paid to correct ignition timing. In many cases, poor performance, high fuel consumption and even damage to the engine can be the result of incorrect ignition setting. The ignition should not be advanced arbitrarily.

Before setting the ignition timing, the breaker contact point gap must be checked. With the breaker arm fully lifted by the cam the clearance should be .016" (0.4 mm.). The ignition must be set at 7.5° before top dead center.

Adjust ignition timing only with the engine cold or slightly warm.

### **Cleaning contact points**

A certain amount of material movement takes place between the contact breaker points in the course of time. This creates a small build-up and a crater on the contact surfaces of the points, but does not normally affect the ignition system. It is important, however, to ensure that the points are always clean and free of oil and grease. The best way to clean the points is to pull a piece of cardboard between them while pressing them lightly together. Badly burned points should be replaced.

## Lubricating ignition distributor

The breaker arm fiber block in the ignition distributor should always be lightly greased with lithium grease. Every 6,000 miles (10,000 km.) check whether cleaning and lubrication is required. Use only a small amount of grease. Do not allow grease to come in contact with the breaker points because it will affect the ignition.

## Adjusting contact points

Remove distributor cap and rotor.

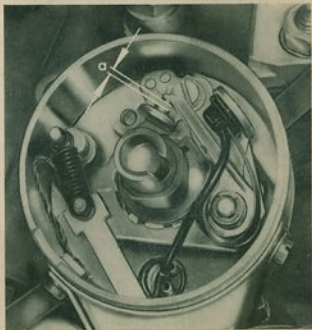
Turn the engine by means of the generator until the contact arm rests on the highest point of the cam lobe.

Loosen the breaker point locking screw.

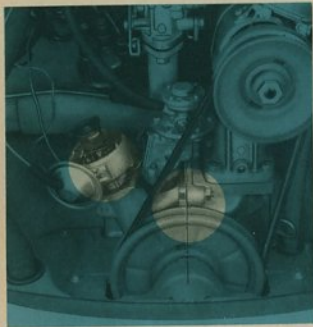
Insert a screwdriver between the two lugs on the contact plate and the slot in the point carrier and adjust the gap to "a" = .016" (0.4 mm.).

Tighten locking screw and install rotor.

After the contact points have been adjusted, the ignition timing must be reset.



## Setting ignition timing

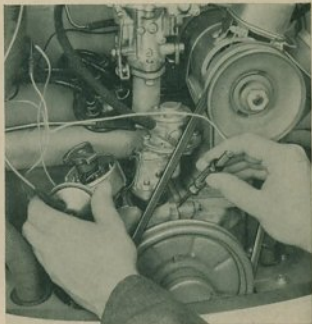


Turn the engine clockwise until the **left-hand** mark on the crankshaft pulley lines up with the crankcase joint and the distributor rotor arm is pointing to the number 1 cylinder mark on rim of distributor.

Loosen clamp screw on distributor retainer.

Connect a 6 Volt test lamp to terminal labeled no. 1 of the ignition coil and to ground.

Switch on ignition.



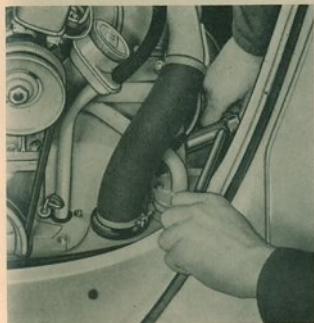
Rotate the distributor clockwise until the contact points are closed and then slowly counter-clockwise until the contact points just start to open and the test lamp comes on.

Tighten the clamping screw of distributor retainer.

Install distributor cap.

The ignition is correctly set if, on cranking the engine slowly clockwise, the test lamp comes on when the **left-hand** mark on the crankshaft pulley is in line with the crankcase joint. Beforehand, the engine should be turned back counter-clockwise approximately a quarter of a revolution to take up the play in the distributor drive.

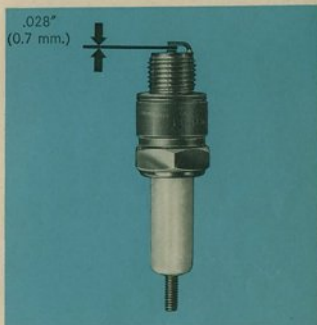
## Checking the spark plugs



The appearance of the electrodes and insulator gives valuable information on the adjustment and condition of the engine:

- medium grey – correct carburetor adjustment and proper performance of spark plug
- black – mixture too rich
- light grey – mixture too lean
- oiled up – failure of spark plug or piston ring blow-by

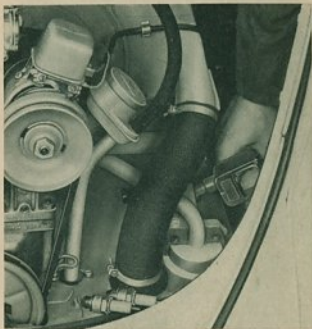
The spark plugs have an average service life of approximately 12,000 miles (20,000 km.) and should, therefore, be replaced in time.



To prevent any breakdowns in the ignition system, the spark plugs should be removed every 6,000 miles (10,000 km.) and checked. Deposits can easily be removed with a brush and a chip of wood. The insulator should be clean and dry on the outside in order to avoid short circuits and tracking. If necessary, adjust the spark plug gap which should be .028" (0.7 mm.). Do not omit the gasket when screwing in the spark plug. Do not overtighten the spark plugs.



## Checking the compression

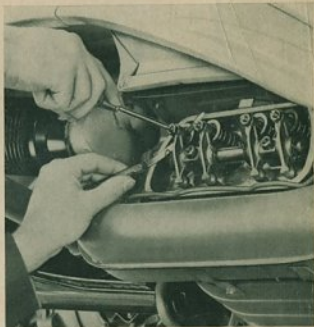
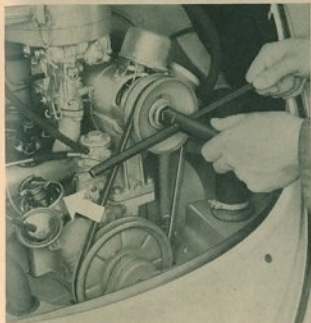


The compression is checked by inserting a suitable gauge into the spark plug hole when the engine is warm. All the spark plugs should be removed. The accelerator pedal is then depressed fully and the engine turned over with the starter until the gauge reading shows no further change.

The pressure should be at least 92 psi. (6.5 kg./cm.<sup>2</sup>). It is important that only an accurate instrument is used and a good seal obtained between instrument and spark plug seat.



## Adjusting the valves



The valves must only be adjusted when the engine is cold or **slightly warm**. The valve clearance is .004" (0.10 mm.) for the intake and exhaust valves.

When adjusting, both valves must be closed i. e. the piston of the corresponding cylinder must be at T.D.C. on the compression stroke. The arrangement of the cylinders can be seen by the numbers 1 to 4 on the engine cover plates. Valve adjustment is carried out in the following sequence: cylinders 1, 2, 3, 4.

Remove distributor cap.

Turn the engine until the rotor arm points to the No.1 cylinder mark on the rim of the distributor. Remove cylinder head cover.

Loosen the adjusting screw lock nuts for the valves of No.1 cylinder.

Adjust valve clearance with a feeler gauge.

Hold the adjusting screws and tighten the lock nuts.

To adjust the valves for cylinders No.2, 3 and 4, turn the engine further **counter-clockwise** until the rotor arm is 90° offset each time.

## Adjusting the carburetor

Each carburetor is checked at the factory and adjusted on the engine. Special knowledge and experience is required for checking and adjusting the carburetor with automatic choke and for carrying out repairs on the accelerator pump. For this reason, these operations should only be carried out by an Authorized Volkswagen Dealer. Do not alter the adjustment by replacing the jets with other than the prescribed sizes. This would be detrimental under normal operating conditions.

Only the idling speed may require occasional readjustment. The adjustment must be carried out when the engine is at operating temperature. Check that the idling adjusting screw is no longer resting on the fast idle cam of the automatic choke.

Turn the idling adjusting screw until an idling speed of 700–800 rpm. has been attained (1).

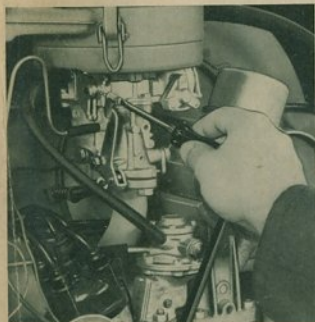
Turn the volume control screw clockwise until the engine speed begins to drop. Then give it a  $\frac{1}{4}$  to  $\frac{1}{2}$  of a turn in counter-clockwise direction (2).

Re-adjust the idling adjusting screw (1).

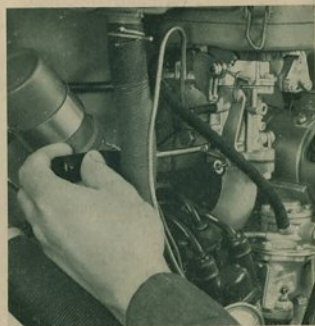
The adjustment is correct if the engine does not stall when the throttle is either suddenly opened or shut.

Poor idling may also be the result of damaged gaskets, loose intake manifold flanges, faulty ignition or leaky valves.

1



2



## Checking clutch pedal free-play

Easy gear shifting and complete transmitting of engine power to gears and wheels can only be guaranteed if the clutch is adjusted as specified.

Measured at the top of the clutch pedal, this free-play should be between .4 and .8 in./10 and 20 mm. (a). The clearance is adjusted with a wing nut on the cable end. Ensure that the two lugs on the wing nut engage in the recesses in the clutch operating lever.

After adjusting, depress clutch pedal several times and recheck pedal free-play.

Lubricate bearing point between operating lever and adjusting nut with universal grease.

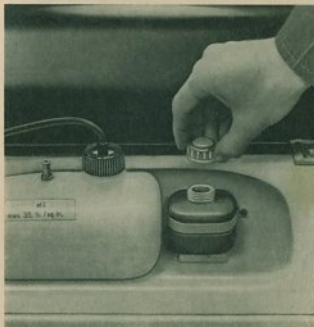


## Checking and adjusting brakes

As a result of natural wear, the clearance between brake shoes and drums increases. If the foot brake pedal travel becomes excessive, the brakes must be relined or re-adjusted.

The brake lining wear should be checked through the inspection hole in the brake drums every 6,000 miles (10,000 km.). The brake lining thickness must not be less than .1" (2.5 mm.). Also check the brake system for damage, leaks and corrosion. Damaged brake lines must be replaced immediately.

Spongy brake pedal travel indicates the presence of air in the system. Before bleeding the brakes, check the brake fluid level in the reservoir behind the spare wheel. The reservoir should be at least three quarters full. Only use Genuine VW Brake Fluid or Lockheed Brake Fluid when topping up. Handle the brake fluid carefully as it will damage the paint work.



## Adjusting the foot brake

The brake shoes are adjusted individually on all four wheels. Before and after adjustment, completely depress the brake pedal several times to centralize the brake shoes in the drums. When adjusting the rear brakes, the hand brake must be released.

Remove hub cap.

Jack up a wheel and turn it until the hole in the brake drum is in line with one of the two adjusting nuts.

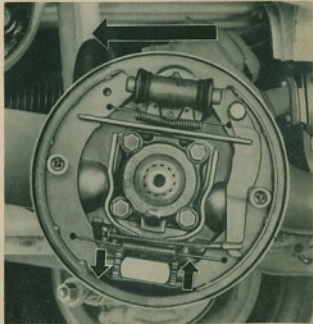
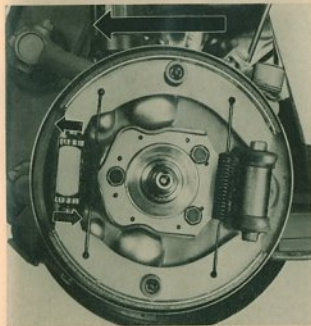
Turn the adjusting nut with a screwdriver in the direction indicated by the arrow until a slight drag is noted when wheel is turned by hand.

Repeat procedure on the other adjusting nut. Note that the two nuts turn in opposite direction.

Back off the adjusting nuts 3 to 4 teeth until the wheel rotates freely.

Install hub cap and make sure that it is correctly seated.

Repeat the above operations on the other wheels. After adjusting the foot brake, the hand brake should be checked.



## Bleeding the brakes

When bleeding the brakes, always begin with the wheel farthest away from the master cylinder. The sequence for cars with lefthand drive is as follows: Right and left rear wheels, then the right front and finally the left front wheel.

Remove rubber cap of the bleeder valve and attach bleeder hose.

Submerge the free end of the hose in a glass container partially filled with brake fluid. The end of the drain hose should, if possible, be above the level of the bleeder valve.

Loosen the bleeder valve between  $\frac{1}{2}$  and 1 turn using a 7 mm. wrench.

Pump the brake pedal several times until the air bubbles cease to appear.

Keep the brake pedal in the fully depressed position until the bleeder valve is closed.

Remove the bleeder hose and replace rubber cap.

Repeat the above operations on the other wheels. Make sure that the brake fluid level in the reservoir is sufficient to ensure that air is not drawn in. After bleeding the complete system, check the brake fluid level and top up if necessary.





## Adjusting hand brake

Before adjusting the hand brake, the foot brake should be adjusted.

The hand brake is adjusted at the hand brake lever. The adjusting nuts are accessible through slots in the side of the cover.

Raise both rear wheels.

Back off lock nuts and tighten the adjusting nuts evenly until the rear wheels are just free to turn when the hand brake is released.

Pull up the hand brake lever. At the fourth notch it should be impossible to turn the wheels by hand. The compensating lever under the adjusting nuts should be horizontal when the handbrake is on.

Lock the adjusting nuts again carefully.



## The front wheel camber and toe-in

should be checked and adjusted by an Authorized Volkswagen Dealer. When the vehicle is unloaded, the camber should be  $30' \pm 15'$  and the toe-in .080 to .18" (2 to 4.5 mm.). Excessive deviations from these values have a detrimental influence on the riding characteristics of the vehicle and on the service life of the tires.

## Checking the steering

The steering should not have an excessive amount of play in the straight ahead position. Moreover, the wheels must self-center after cornering.

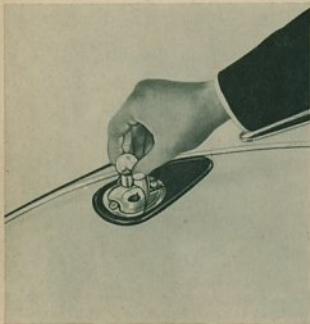
To check the steering, move the steering wheel lightly back and forth until resistance is felt in both directions. The steering gear is correctly adjusted if there is not more than 1" (25 mm.) play when measured at the steering wheel circumference.

Adjustments to the steering require special experience as well as special tools, and these operations should be carried out only by an Authorized Volkswagen Dealer.

### **Checking the battery**

Easy starting of the engine depends upon the condition of the battery. It should, therefore, be checked and maintained regularly. The battery cover can be removed by raising the rear seat and opening the battery snap fastener.

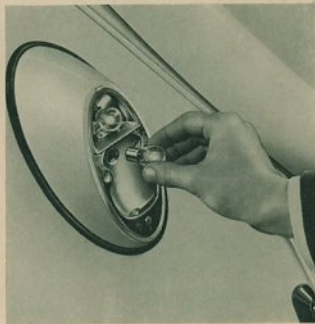
The fluid level must always be slightly above the plates. The fluid level has to be adjusted in accordance with the fluid level mark. Depending on the type of battery, either the lower edge of the insert or the bar above the plates must just be covered. Losses by evaporation can be replenished by adding distilled water. Do not add acid unless some of the electrolyte has been spilled. If the level is too high, the fluid can boil over and cause damage. For this reason exercise care when topping up.



### Front turn signal bulb replacement

Remove the Phillips screw, take off the housing and lens, and replace the bulb.

When installing, make sure that the seal is correctly seated.



### Replacing the rear turn signal or stop-tail light bulbs

Remove two Phillips screws.

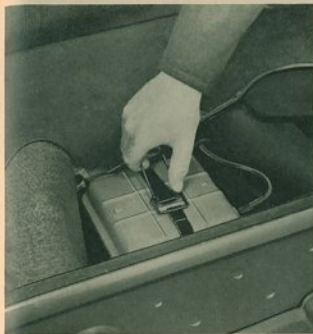
Take off lens.

Replace bulb.

Top – Turn signal bulb

Bottom – Stop-tail light bulb

When replacing the stop-tail light bulb, the retaining pin nearest to the bulb glass must point downward. The Phillips screws in the lens insert should be tightened evenly but not excessively.



The battery should be checked with a cell tester. This is a voltmeter in parallel with a heavy resistance. The voltage of each cell should not fall below 1.6 Volts while the reading is being taken (10–15 seconds). Below this reading, the cell is discharged or defective. The normal voltage is 2 Volts.

The battery poles should be cleaned with a clean cloth, or in the event of heavy corrosion, with a stiff brush. The battery poles and cable terminals should be coated with grease. Make sure that the battery ground strap is tightly bolted down.

The state of charge of the battery can be checked with a hydrometer. The specific gravity of the electrolyte will increase with the charging of the battery. The gravity can be read from a scale.

Battery fully charged	1.28 = 32° B <sub>é</sub>
Battery semi-charged	1.20 = 24° B <sub>é</sub>
Battery discharged	1.12 = 16° B <sub>é</sub>

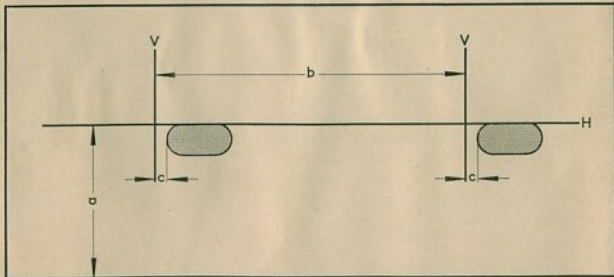
When storing your vehicle for a prolonged period, it is advisable to take the battery to a workshop for storage. A battery which is not in constant use will discharge itself in time and this can result in permanent damage to the plates if the battery is not checked about every 4 weeks and charged as necessary.

## Headlight adjustment

When adjusting the headlights, ensure that the tires are inflated to the correct pressure. If a headlight aiming device is not available, proceed as follows:

Position the vehicle on a level surface 25 ft. (7.6 m.) away from a vertical wall. The driver's seat must be loaded with one person or a weight of 154 lbs. (70 kg.).

Draw setting lines on the wall to the measurements shown in the headlight aiming sketch. Line H is the horizontal centerline of the headlights and lines V are the vertical centerlines of the headlights. The longitudinal centerline of the vehicle must be aligned with the center between the two vertical lines V and at right angles to the wall.



- a = Height of headlamp center from floor
- b = Distance between headlamps (39.5")
- c = 2"



### License plate light bulb replacement

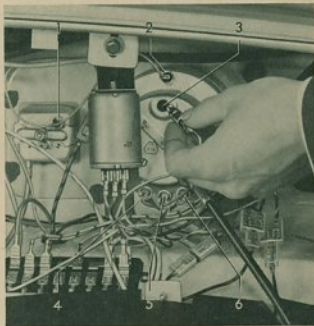
Open rear hood.

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

Pull bulb holder out of lens.

Replace bulb.

On installation, ensure that the cable grommet fits properly.



### Warning and instrument light bulb replacement

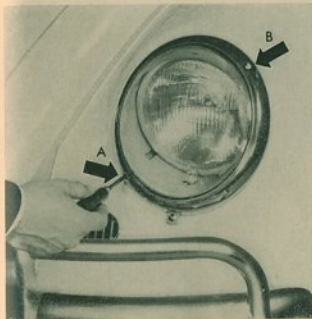
The warning lights for oil pressure, charging, turn signals and headlight high beam as well as the speedometer and fuel gauge lights are accessible after lifting the front hood and removing the cover at back of the dashboard. The bulb sockets can easily be pulled out of their holders.

- 1 - Fuel gauge light
- 2 - Speedometer light

Warning lamps:

- 3 - Headlights
- 4 - Oil pressure
- 5 - Turn Signals
- 6 - Generator





Aim the headlights individually by turning the two slotted screws in the head lamp rim with low beams switched on. Cover up the headlight not being adjusted.

- A - Lateral aim
- B - Vertical aim

The headlights are correctly aimed when the tops of the high intensity portion of the beams rest on the horizontal line H and the left edges of the brightest part of the beams are 2" to the right of the vertical lines V.

Check with your State Bureau of Motor Vehicles for variations from this dimension.



### Replacing Sealed Beam unit

Loosen the screw in the bottom center of the rim and take out the complete headlight unit.

Pull cable connector off the Sealed-Beam unit and disconnect the two cables from the parking light bulb holder.

Remove the five retaining springs and replace the Sealed-Beam unit.

#### Caution:

The removal of the springs must be accomplished without using any tools. Hold the unit with one hand and with the thumb of the other hand remove the springs. The use of a screwdriver or of any other instrument to remove the retaining springs may cause a spring to jump out.

The parking light bulb can be replaced after removing the bulb holder.

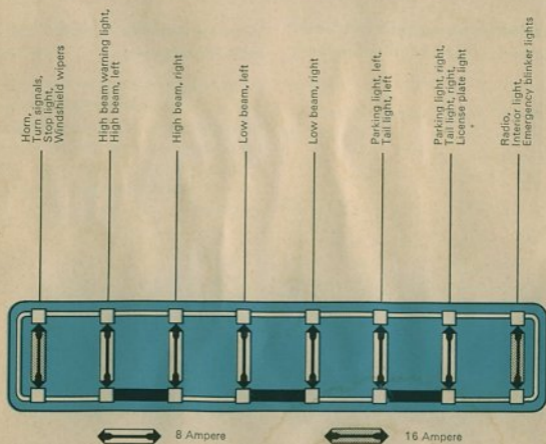
When installing the headlight, ensure that the Sealed-Beam unit and the sealing ring between lamp and fender are located correctly.

## Replacing fuses

The fuse box, with transparent cover is located under the dashboard near the steering column.

When a fuse has blown, it is not sufficient merely to replace it with a new one. Inspect the electrical system for evidence of short circuits or other faults which may have caused the fuse to blow.

Under no circumstances use fuses which have been patched up with tin foil or wire as they are liable to cause severe damage. We suggest that you always carry a few spare fuses (16 amp. for wipers, brake light, flasher relay and horn and 8 amp. for all other electrical equipment).



## Adjustment of door lock

There is no need to adjust the Volkswagen door locks regularly. If the door rattles or jams the wedge can easily be adjusted.

Check the 3 striker plate screws for security. Tighten if necessary.

Adjust the striker plate so that door and pillars are a flush fit. The lock housing on the door must have about the same clearance at top and bottom when sliding into the striker plate.

Hold the adjusting screw with a screwdriver and loosen lock nut with an 11 mm. wrench.

Turn the adjusting screw to the left if the door is rattling and to the right if it jams. A quarter to half a turn will usually suffice to bring the shoulder for the wedge into the proper position.

The locking device is properly adjusted if resistance can be felt when opening the door with the inside handle. If, however, there is too much resistance or if the door jumps open on its own, turn the shoulder back slightly. This is done by turning the adjusting screw to the right.

After adjustment, hold the screw with a screwdriver and tighten lock nut.



## Here is what to do when trouble troubles you

Your Volkswagen should repay you with trouble free driving if it receives regular preventive maintenance.

Should you ever encounter difficulty in starting your engine or have trouble on the road, there are a few simple repairs which you can make to get your VW going again. Locate the PROBLEM and PROBABLE CAUSE of your trouble in the Guide on the following pages and follow the directions on WHAT TO DO.

If the trouble is serious or you are uncertain as to its origin, be sure to see an Authorized VW Dealer as soon as possible.

Problem	Probable Cause	What To Do
VW will not start: engine will not turn over or turns over too slowly	<ol style="list-style-type: none"><li>1. Run down or dead battery</li><li>2. Loose connection<ol style="list-style-type: none"><li>A. At battery</li><li>B. At starter</li><li>C. At connections behind dash board</li></ol></li><li>3. Starter defective</li></ol>	<ol style="list-style-type: none"><li>1. Push to start the vehicle (turn on ignition, put in 3rd gear at a speed of approximately 20 mph., release clutch slowly). Have battery charged and cause of high current consumption checked</li><li>2. Make sure that all connections are tight<ol style="list-style-type: none"><li>A. Check both cable connections on battery and grounded end of ground strap</li><li>B. Check connections at solenoid, mounted on starter, under right rear of vehicle</li><li>C. Check push-on connectors behind dash board</li></ol></li><li>3. Have vehicle started by pushing and take it to nearest Authorized VW Dealer</li></ol>



Problem	Probable Cause	What To Do
VW will not start: engine turns over	<ul style="list-style-type: none"> <li>4. Loose connection in ignition system</li> <li>5. Loose connection in primary circuit to coil</li> </ul>	<ul style="list-style-type: none"> <li>4. Check for loose connections at coil, distributor and spark plugs.</li> <li>5. Turn on ignition. Remove thin black cable from ignition coil, hold it by insulation and strike it against blower housing or other ground, <b>being careful of gasoline and its fumes.</b> If no spark, electricity does not reach coil from battery. Check push-on connectors behind dash board. If still no spark, see the nearest Authorized VW Dealer.</li> </ul>
	<ul style="list-style-type: none"> <li>6. If spark at black coil cable, trouble is in ignition system</li> </ul>	<ul style="list-style-type: none"> <li>6. Check in this sequence:               <ul style="list-style-type: none"> <li>A. Turn on ignition, remove distributor cap, engage 4th gear and push vehicle until ignition points are closed. Open and close ignition points several times with a non-metal object. A visible and audible spark will appear between the points</li> </ul> </li> </ul>



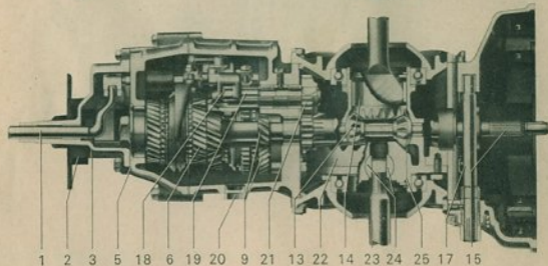
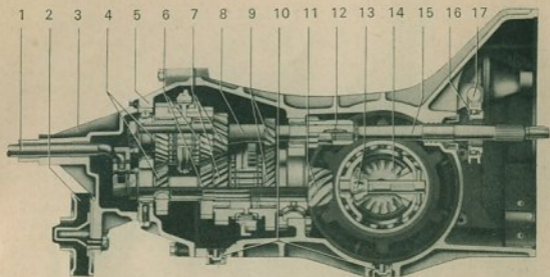
If this is not the case, the cables on ignition coil and distributor should be checked for tightness. Clean and adjust distributor points (page 44 and 45). If



Problem	Probable Cause	What To Do
	<p>7. If spark is fairly good at plugs, trouble is most likely in fuel system</p> <p>A. Caused by improper starting procedure. If the gas pedal is depressed too often, the accelerator pump of the carburetor injects too much gasoline</p>	<p>even then no spark is visible, see your nearest Authorized VW Dealer</p> <p>B. If spark appears at points, remove high tension wire from center of distributor cap and hold it against a metal part of the engine at a distance of approximately <math>\frac{1}{4}</math>". Switch on ignition and turn over engine or open ignition points as described under A. A strong blue spark must appear. If this is not the case, see your Authorized VW Dealer.</p> <p>C. If a spark appears at high tension cable, the distributor cap should be cleaned inside and outside. Reconnect high tension cable. Remove all spark plugs (page 47). If plugs are clean and dry, reconnect ignition cables to spark plugs and bring spark plugs in connection with metal (ground). <b>Hold cable with dry piece of cloth to avoid shock.</b> A spark should appear between spark plug electrodes when the engine is turned over. If not, clean and dry ignition cables and spark plug connectors and check that ignition cables are tight in distributor cap and plug connectors. See your Authorized VW Dealer if the above steps did not ensure proper ignition</p> <p>D. Dirty or wet spark plugs should be cleaned and dried. Install new plugs if necessary. Unburned gasoline on plug electrodes points to excessive fuel supply.</p> <p>7. Check fuel system in the following sequence:</p> <p>A. Depress gas pedal completely and operate starter for a prolonged period. If engine does not start, remove and dry spark plugs, turn over engine with plugs removed for approximately 30 seconds. Reinstall plugs and start engine as described on page 16.</p>

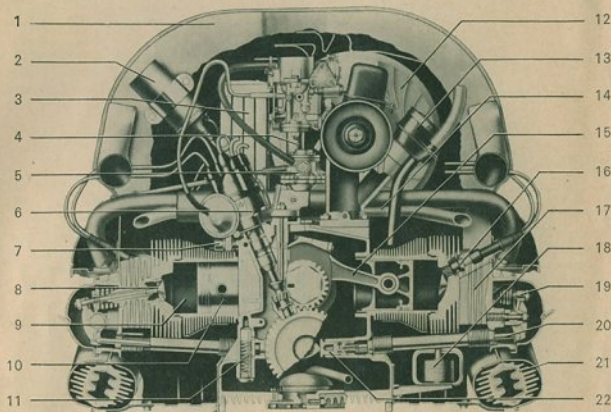


Problem	Probable Cause	What To Do
	B. Carburetor may be flooded, float or needle valve may be sticking	B. Tap around outside of carburetor with wooden or plastic tool handle. Wait a few minutes and try starting again as described at 7 A.
Engine stalls shortly after starting	8. Poor fuel supply 9. Automatic choke does not open, excessive fuel supply	8. See paragraph 11 through 13 9. Check whether choke valve is in vertical position after ignition has been switched on for 2-5 minutes (depending on outside temperatures). Cover for choke unit must be hot. If choke valve is binding in a closed position open at fast idle cam and, if necessary, retain with wire. See your Authorized VW Dealer
Engine stalls while vehicle is driven	10. Defect in ignition system 11. Fuel supply is exhausted 12. Fuel filter pump may be clogged  13. Gasoline may be contaminated by water, dust or dirt	10. See paragraph 4 through 6 11. Check whether any gasoline is left in tank 12. Disconnect intake fuel line from fuel pump and plug up line. After removing the screw plug, the fuel filter can be taken out for cleaning (see page 44). 13. See your VW dealer for cleaning of all components of the fuel system
Green warning light comes on while you are driving	14. If green light goes on, the oil pressure is too low	14. Stop at once and check oil level. Add oil as necessary. If the oil level is sufficient and green light goes on during driving, contact the nearest Authorized VW Dealer before driving on
Red warning light comes on while you are driving	15. If red light goes on, V belt may be torn or generator does not charge	15. If belt drives generator without slipping, switch off all unnecessary electrical equipment (radio, etc.). Drive to nearest VW dealer as otherwise the battery will soon get run down. If belt is broken, replace it before driving on (see page 42)



## Transmission

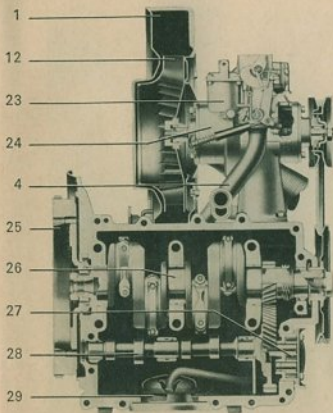
- |                              |                             |
|------------------------------|-----------------------------|
| 1 – Transmission shift lever | 13 – Differential pinion    |
| 2 – Bonded rubber mounting   | 14 – Differential side gear |
| 3 – Gearshift housing        | 15 – Main drive shaft, rear |
| 4 – 4th speed gears          | 16 – Clutch release bearing |
| 5 – Gear carrier             | 17 – Clutch operating shaft |
| 6 – 3rd speed gears          | 18 – Reverse sliding gear   |
| 7 – 2nd speed gears          | 19 – Reverse shaft          |
| 8 – Main drive shaft, front  | 20 – Oil filler plug        |
| 9 – 1st speed gears          | 21 – Reverse drive gear     |
| 10 – Oil drain plugs         | 22 – Ring gear              |
| 11 – Drive pinion            | 23 – Rear axle shaft        |
| 12 – Reverse gear            | 24 – Fulcrum plate          |
|                              | 25 – Differential housing   |



## General Description

### Engine

The engine located in the rear of the car is attached by four bolts to the recessed flange of the rubber mounted transmission case. The crankcase is made of a light alloy. Two pairs of cylinders are horizontally opposed. Each pair has a common cylinder head made of light alloy. The overhead valves are located in the cylinder heads and are operated by the camshaft via cam followers, push rods and rocker arms. The short crankshaft runs in four bearings and is induction hardened at its bearing surfaces. The camshaft is driven from it by means of helical gears. The connecting rods are fitted with lead-bronze-bearings. The pistons are of light alloy with steel inserts.



- 1 - Fan housing
- 2 - Ignition coil
- 3 - Oil cooler
- 4 - Intake manifold
- 5 - Fuel pump
- 6 - Distributor
- 7 - Oil pressure switch
- 8 - Valve
- 9 - Cylinder
- 10 - Piston
- 11 - Oil pressure relief valve
- 12 - Fan
- 13 - Oil filler and breather
- 14 - Pre-heating pipe
- 15 - Connecting rod
- 16 - Spark plug
- 17 - Cylinder head
- 18 - Thermostat
- 19 - Rocker arm
- 20 - Push rod
- 21 - Heat exchanger
- 22 - Cam follower
- 23 - Carburetor
- 24 - Generator
- 25 - Flywheel
- 26 - Crankshaft
- 27 - Oil pump
- 28 - Camshaft
- 29 - Oil strainer

A down-draft carburetor with automatic choke and accelerator pump supplies the fuel-air mixture to the cylinders.

The engine is equipped with battery ignition. The spark advance is controlled automatically by a vacuum mechanism. The generator is driven by a V belt. The generator pulley can be adjusted to alter the V belt tension.

The oil pump of the pressure lubrication system is driven by the camshaft. The oil is drawn through the strainer in the crankcase and forced via an oil cooler to the lubrication points. When the oil is thick, an oil pressure relief valve enables the oil to flow directly to the lubrication points by by-passing the oil cooler.

The engine is cooled by a fan mounted at the generator. The fan sucks in air through an opening in the fan housing and forces it through the fins of the cylinders. The flow of cooling air is regulated by a thermostat ensuring a constant operating temperature.

## **Transmission and Rear Axle**

Power from the engine is transmitted to the gears via a dry single-plate clutch. The transmission case houses the transmission with four forward speeds, one reverse and the differential.

All the forward gears are synchronized. The gears are helically cut to ensure silent operation.

The drive pinion and the ring gear are cut spirally. The two swinging rear axle shafts are pivoted in the differential.

## **Chassis**

The frame of the Volkswagen is of pressed steel. The steel floor of the frame is formed in two pieces. These two pieces are spot-welded together with the channel shaped center section of the frame, the forked rear end of which serves to support the transmission and engine unit. The following parts pass through the center of the frame:

Gearshift rod, fuel line, and, in guide tubes, the cables of hand brake, clutch, throttle, and heating controls.

The front suspension is an independent parallel arm type, using torsion bar springs. The front axle is bolted to the front end of the frame and consists of two rigidly joined tubes, which carry the torsion bar springs and the upper and lower arms of the front wheel suspension. A stabilizer is attached to both lower torsion arms.

The roller type steering gear acts on the front wheels via divided tie rods. A steering damper ensures steering steadiness.

The rear axle is of the swinging half axle design. The rear wheels are independently sprung and have adjustable torsion bars.

Double-acting hydraulic shock absorbers in front and rear prevent excessive rebound.

## **Brakes**

The hydraulic foot brakes operate on all wheels, and the handbrake, via cables, on the rear wheels.

## **Body**

The two-door body is made of pressed steel and electrically welded. It is bolted to the frame. Both window doors can be lowered. Vent wings in the doors ensure draft-free ventilation. Both front seats can easily be adjusted while driving.

The luggage compartments are located under the front hood and behind the rear seat. The lock in the front hood is opened from the driving seat by means of a cable. The fuel tank and spare wheel are also under the front hood.

## **Heating System**

The fresh air drawn in by the fan is heated in heat exchangers. It is emitted through three defroster vents on the windshield, and two controllable outlets each in front and rear foot wells. The heating is regulated by two levers situated beside the driver's seat on the frame tunnel.



## Technical Data

### Engine

Design . . . . .	4 Cylinder, 4 Cycle, O.H.V.-Type in rear of car
Arrangement of Cylinders	Horizontally opposed (Flat four)
Bore . . . . .	3.031" (77 mm)
Stroke . . . . .	2.716" (69 mm.)
Capacity . . . . .	78.3 cu.in. (1285 c.c.)
Compression ratio . . . .	7.3:1
Valves . . . . .	Overhead
Valve clearance with engine cold . . . . .	Intake .004" (0.10 mm.) Exhaust .004" (0.10 mm.)
Maximum output (SAE) . .	50 hp at 4600 rpm
Lubrication . . . . .	Force feed by gear pump. Oil cooler
Oil capacity . . . . .	5.3 U.S. pints (4.4 Imp. pints; 2.5 liters)
Fuel delivery . . . . .	Mechanical fuel pump
Carburetor . . . . .	Downdraft-Solex 30 PICT-1
Cooling system . . . . .	Air cooling by fan, thermostat controlled
Battery . . . . .	6 Volts, 77 Ampere-hour
Starting motor . . . . .	Electric, 6 Volts, 0.5 hp.
Generator . . . . .	Voltage regulating, 6 Volts, 180 Watts at 2500 rpm.
Ignition distributor . . . .	with vacuum spark advance
Firing order . . . . .	1-4-3-2
Initial spark advance . . .	7.5° before T.D.C.
Breaker point gap . . . . .	.016" (0.4 mm.)
Spark plugs . . . . .	14 mm. thread Bosch W 175 T 1 Beru 175/14 Champion L 87 y and plugs of similar values from other manufacturers
Spark plug gap . . . . .	.028" (0.7 mm.)



## Clutch

Design . . . . . Single plate, dry  
Pedal free-play . . . . . .4"-.8" (10 to 20 mm.)

## Transmission

4 Forward speeds, 1 reverse  
All forward gears synchronized and silent.

Gear ratios . . . . .	First	3.80:1	Third	1.32:1
	Second	2.06:1	Fourth	0.89:1
			Reverse	3.88:1

## Rear Axle

Power is transmitted through a spiral drive pinion and ring gear, via two swinging axles to the rear wheels.

Ratio: . . . . . 4.375:1

Oil capacity  
of transmission . . . . . 6.3 U.S. pints (5.3 Imp. pints; 3.0 liters)

## Chassis

Springs, Front . . . . . Two torsion bars  
Rear . . . . . Two torsion bars  
Shock absorbers . . . . . Double acting telescopic type at front and rear  
Steering . . . . . Roller steering gear, divided tie rod and hydraulic steering damper

Turns of steering wheel,

Lock to lock . . . . . 2.6

Turning circle . . . . . 36 ft. (11 m.)

Wheels . . . . . Disc wheels 4 J x 15, drop-center type

Tires . . . . . 5.60 x 15, tubeless

Inflation pressure

1 to 2 occupants . . . . .	Front: 16 psi. 1.1 kg./cm <sup>2</sup>	Rear: 24 psi. 1.7 kg./cm <sup>2</sup>
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3 to 5 occupants . . . . .	Front: 17 psi. 1.2 kg./cm <sup>2</sup>	Rear: 26 psi. 1.8 kg./cm <sup>2</sup>
----------------------------	-------------------------------------------	------------------------------------------

For long, high speed motorway trips, the tire pressures should be increased by 3 psi. (0.2 kg./cm<sup>2</sup>) at front and rear.

Wheel base . . . . .	94.5 in. (2,400 mm.)
Track . . . . .	Front: 51.4 in. (1,305 mm.) Rear: 51.2 in. (1,300 mm.)
Toe-in (unladen) . . . . .	0.08 in. to 0.18 in. (2 to 4.5 mm.)
Camber (unladen) . . . . .	30' ± 15'
Foot brake . . . . .	Hydraulic, acting on all wheels
Handbrake . . . . .	Mechanical, acting on rear wheels

### Dimensions and Weights

	Sedan	Convertible
Length . . . . .	13 ft. 4 in. (4,070 mm.)	13 ft. 4 in. (4,070 mm.)
Width . . . . .	5 ft. 0.6 in. (1,540 mm.)	5 ft. 0.6 in. (1,540 mm.)
Height . . . . .	4 ft. 11 in. (1,500 mm.)	4 ft. 11 in. (1,500 mm.)
Ground clearance	6.0 in. (152 mm.)	6.0 in. (152 mm.)
Unladen weight, ready for use . . . . .	1720 lbs. (780 kg.)	1807 lbs. (820 kg.)
Max. load . . . . .	838 lbs. (380 kg.)	794 lbs. (360 kg.)
Permissible total weight . . . . .	2558 lbs. (1160 kg.)	2601 lbs. (1180 kg.)
Max. load on front axle . . . . .	1058 lbs. (480 kg.)	1058 lbs. (480 kg.)
Max. load on rear axle . . . . .	1543 lbs. (700 kg.)	1543 lbs. (700 kg.)

### Fuel

Consumpting according to DIN 70030 . . . . .	U.S. - 28.5 miles per gallon Metric - 8.2 liters per 100 km. Imp. - 34.5 miles per gallon
(Consumption plus 10% at half the load and at a steady ¾ of top speed 60 mph./90 kph. on level road)	
Fuel rating . . . . .	87 Octane (Res. F1)
Oil Consumption . . . . .	1.0-3.4 U.S. pints per 1,000 miles 0.3-1.0 liters per 1,000 km. (600 miles) 0.9-2.9 Imp. pints per 1,000 miles

## Refill Requirements

Fuel tank . . . . .	10.6 U.S. gall. (8.8 Imp. gall.; 40 liters)
Engine . . . . .	5.3 U.S. pints (4.4 Imp. pints; 2.5 liters)
Rear axle and transmission	5.3 U.S. pints (4.4 Imp. pints; 2.5 liters)
Brakes . . . . .	0.53 U.S. pint (0.44 Imp. pint; 0.25 liter)
Container for windshield washer . . . . .	approx. 1 quart (1 liter)
Oil bath air cleaner . . .	0.53 U.S. pint (0.44 Imp. pint; 0.25 liter)

< 240 mi

## Performance

Maximum and cruising speed . . . . . 74 mph. (120 kph.)

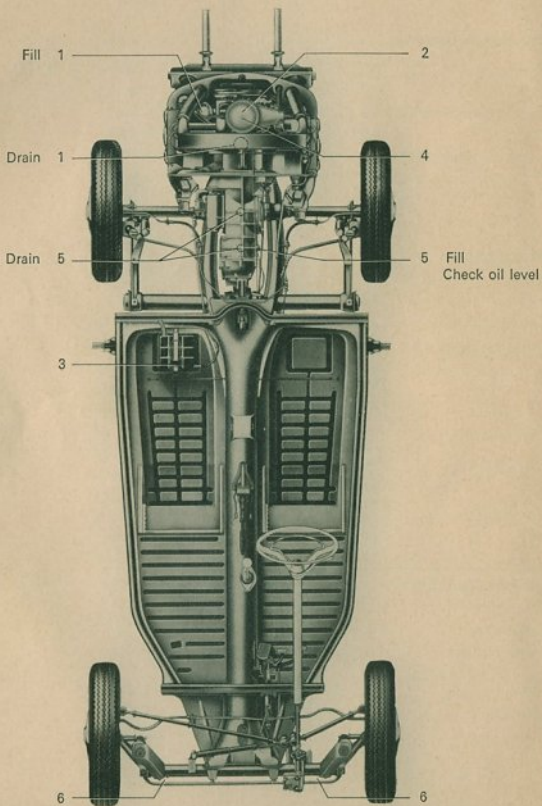
	Sedan	Convertible
Hill-climbing ability . . .		
First gear	44.5%	42.0%
Second gear	23.0%	22.0%
Third gear	13.5%	13.0%
Fourth gear	8.0%	7.5%

## Bulb Chart

V = Volts, W = Watts

Designation according to German Standard DIN 72 601

	U.S. Replacement bulbs	VW Part No.
Headlights (Sealed Beam)	6006, type 2	111 941 161 A
Parking lights . . . . .	HL6V4W	81 N177171
Stop/tail lights . . . . .	S 6V18/5W	1154 N177371
License plate light . . . .	G 6V10W	81 N177191
Speedometer, fuel gauge and warning lights . . . .	J 6V1.2W	— N177221
Interior light . . . . .	K 6V10W	— N177231
Turn signal lights . . . . .	R 6V18W	1129 N177311



## Lubrication Chart

at 300 miles 500 km	No.	Lubrication Points	Every
✓	1	Engine: Change oil, clean oil strainer Check for leaks	<b>3,000 miles 5,000 km.</b>
	2	Carburetor controls	
	3	Check battery, clean and grease terminals	
		Door and hood locks and door hinges*)	
	4	Check air cleaner, clean lower part if necessary	<b>6,000 miles 10,000 km.</b>
	5	Rear axle: Check oil level Check for leaks	
	6	Front end: Lubricate	
✓	5	Rear axle: Change oil, clean magnetic oil drain plugs Check for leaks	<b>30,000 miles 50,000 km.</b>

\*) at least every 3 months

## Lubricants

Lubricant	Lubrication Points	Specifications	
		Temperature 'F °C	Viscosity Grade
Engine oil for Service MS	Engine, oil bath air cleaner, carburetor linkage, door hinges	above 32 0	SAE 30
		below 32 0	SAE 10 W
		below -25 -13	SAE 5 W
Hypoid Oil	Transmission	all year SAE 90*)	
Universal grease	Door and hood locks	cold-resistant water-repellent high pressure grease	
Lithium grease	Front wheel bearings, torsion arms Breaker arm fiber block in distributor	Multi-purpose grease	

\*) SAE 80 all the year in countries with arctic climates.

## Maintenance Chart

at 300 miles 500 km.	Operation	Every
✓	Check rear axle shaft nuts for tightness	
✓	Check tire pressures and tightness of wheel mounting bolts	
✓	Check fan belt	<b>6,000 miles</b>  <b>10,000 km.</b>
✓	Clean fuel pump filter	
✓	Check breaker points and replace if necessary, grease distributor, check breaker gap and ignition timing	
✓	Adjust valve clearance and fit new cylinder head cover gasket	
	Clean spark plugs and check compression pressures	
	Check rubber valve for crankcase ventilation, check exhaust system for damage	
✓	Check clutch pedal free-play	
✓	Check dust seals on tie rod ends and steering joints, and tightness of tie rods	
	Check and adjust toe-in	
	Steering gear: Check and adjust play between roller and worm	
	Check tire wear, damage and inflation pressures	
✓	Check hydraulic brake system for leaks and damage Check brake fluid level and adjust foot and hand brakes	
	Check thickness of brake linings	
✓	Check operation of complete electrical system and headlight alignment	
✓	Road test vehicle, check foot and hand brake efficiency Check and adjust idling and heating	
	Clean, grease and adjust front wheel bearings	



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# NONE!

## Tools and Accessories

- 1 Spare Fan Belt
- 1 Tool Roll
- 1 Spare Wheel *etc*
- 1 Jack *etc*
- 1 Hub Cap Removal Tool
- 1 Combination Pliers
- 1 Screwdriver with reversible blade  
for slotted and Philipps screws
- 1 Open End Wrench 8/13 mm.
- 1 Socket Wrench for Spark Plugs, Fan Pulley Nut  
and Wheel Bolts
- 1 Socket Wrench 14 mm.
- 1 Bar for Socket Wrench and Jack



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**The identification plate** is found under the front hood behind the spare tire. The 9 digit number after the words "Fahrgest. Nr." is the chassis number. It describes the model number, model year and serial number of the vehicle as shown in this sample:

11 6 000001  
/   /   /  
Model Year Serial Number



**The Chassis Number** is also found on the frame tunnel under the rear seat.

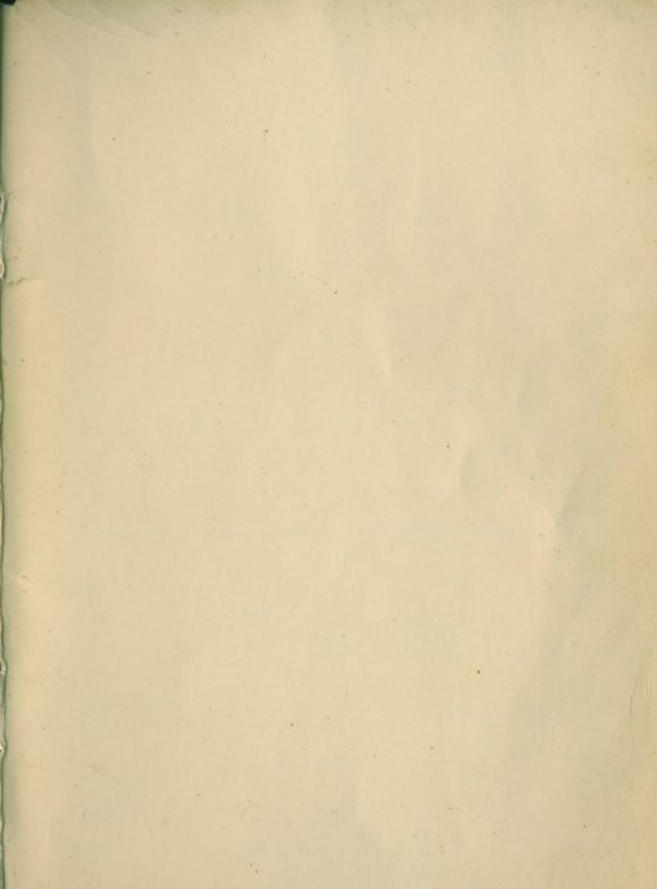


**The Engine Number** is on the crankcase flange for the generator support.



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VOLKSWAGEN 1300  
Export - Modell USA