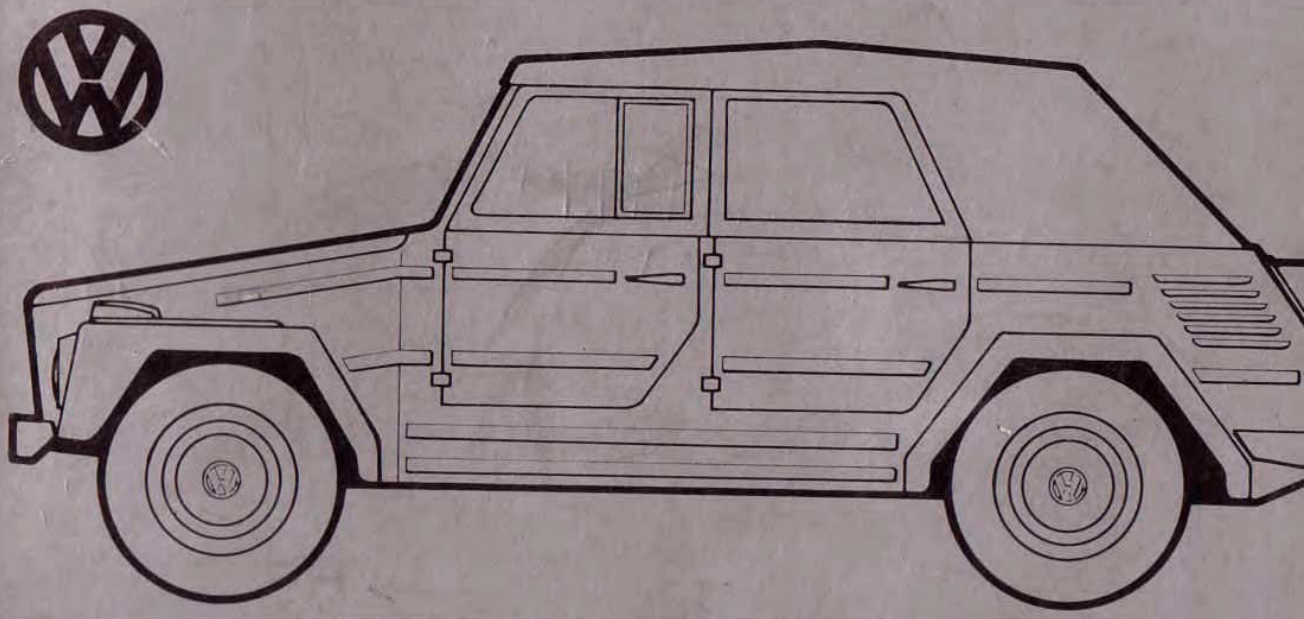
Volkswagen Owner's Manual: Operation and Maintenance



Owner

Van Sealund William
Last name First name Initial

108 So. Fremont St.
Street

San Mateo Ca. 94401
Town State Zip code

415
Area code Tel. No.

Volkswagen Owner's Manual: Operation and Maintenance

1973 Models

Volkswagen 181

Volkswagenwerk Aktiengesellschaft

3.02.561.026.23

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The VOLKSWAGEN OWNER'S MANUAL consists of two major parts: operation description and Diagnosis & Maintenance record.

The first part acquaints you with your Volkswagen Warranty and the operation of your car. It also gives you information on fuel, oil, lubrication, plus technical data.

The second part deals with the maintenance of your Volkswagen. It explains what the VOLKSWAGEN DIAGNOSIS and MAINTENANCE is all about, and how to keep your Volkswagen in top driving condition. Check the mileage chart at the end of this manual. It will tell you when to bring your car to your Authorized Volkswagen Dealer for periodic oil change, diagnosis and maintenance services.

The first maintenance service at 600 miles is free of charge (you only pay for engine and transmission oil).

You are further entitled to free diagnosis services at 6,000, 12,000, 18,000 and 24,000 miles.

Always have your Volkswagen Owner's Manual with you when you take your car to an Authorized Volkswagen Dealer for service ... it provides your Service Adviser with the information he needs and enables him to make the necessary entries for you.

Please read this manual before you drive your new Volkswagen. Acquaint yourself with its features, and know how to operate it more safely ... because the more you know about it, the more you will enjoy driving your Volkswagen.

Various items shown or described in the manual may be options. Check with your authorized VW dealer on available options or accessories.

It has always been Volkswagen's policy to continuously make technical improvements; therefore, the right is reserved to make changes at any time during the model year without notice.

Contents

Volkswagen offers a quality product. Maintain this quality by having your Volkswagen serviced regularly. A service schedule that we recommend is explained in the section Volkswagen Diagnosis and Maintenance.

Should you have occasion to make use of your Volkswagen Warranty, it is always helpful to have the related service receipts handy.

WARRANTY VOUCHER

for the new VW automobile

Type: Thing 181

Chassis No. 181330145593

Engine No. AM008976

In accordance with the **terms of warranty** printed overleaf.

The warranty commences at the date the VW automobile is delivered to the original purchaser,

viz. on March 25-74
(To be filled in by selling VW Dealer)

and covers a period of 24 months or the period before the vehicle has been driven 24,000 miles, whichever event shall first occur. Should any warranty claim arise, you are requested to present this voucher to your VW Dealer.

Volkswagen of America, Inc.

(Stamp of Selling VW Dealer)

Air Conditioner Installation	Auxiliary Heater Installation	Speedometer Replacement
Date	Date	Date
At Mileage	At Mileage	At Mileage
(Stamp of Installing VW Dealer)	(Stamp of Installing VW Dealer)	(Stamp of Replacing VW Dealer)
Make, Model	Make, Model	Make, Model

Except for the following warranty and the Emission Control System warranty by Volkswagen of America, Inc, no express warranties as to Volkswagen vehicles sold in the United States are made either by Volkswagen of America, Inc. ("VWoA"), or by the manufacturer, the distributor or the selling dealer.

Warranty for New Volkswagen Vehicles

This warranty is issued by Volkswagen of America, Inc. ("VWoA"), the authorized United States importer of Volkswagen vehicles.

Free repair or replacement in the United States and Canada of defective parts for 24 months or 24,000 miles

1. VWoA warrants that every Volkswagen vehicle imported by VWoA and sold as a new vehicle to a retail customer by an authorized United States Volkswagen dealer will be free from defects in material and workmanship under normal use and service for 24 months after the date of delivery of the vehicle to the original retail customer or until the vehicle has been driven 24,000 miles, whichever comes first. This warranty is limited, however, to the following: If any part of the vehicle becomes defective under normal use and service and the vehicle is brought during this period to the workshop of any authorized Volkswagen dealer in the continental United States, Hawaii or Canada, the dealer will, without charge, either repair the defective part or replace it with a new or factory reconditioned part.

Maintenance required to keep warranty in effect

2. In order to keep this warranty in effect, the owner must have the vehicle maintained and serviced as prescribed in the Volkswagen Maintenance Schedule.

Items not covered by warranty

3. VWoA's warranty does not cover: (i) Defects, damage or deterioration due to normal use, wear and tear or exposure; (ii) normal maintenance services, such as fuel system cleaning and wheel, brake or clutch adjustments; (iii) the replacement of service items, as for instance, spark plugs, ignition points, wiper blades or brake linings; (iv) deterioration of upholstery, soft trim and appearance items; (v) damage or defects due to misuse, alteration, negligence or accident; (vi) damage or defects due to the repair of the vehicle by someone other than an authorized Volkswagen dealer or the installation of parts other than genuine Volkswagen parts; (vii) damage or defects due to the use of the vehicle in competitive events, including rallies and races, and (viii) loss of time, inconvenience, loss of use of the vehicle or other consequential damage.

Warranty outside the United States and Canada

4. If the vehicle is brought to an authorized Volkswagen workshop outside the continental United States, Hawaii or Canada, VWoA's warranty will not be applicable and defective parts will be repaired or replaced free of charge with new or factory reconditioned parts only within the terms and limitations of the warranty for new Volkswagen vehicles in effect in the country where such authorized Volkswagen workshop is located.

No other warranties made

5. This warranty and the Emission Control System warranty for Volkswagen vehicles are in lieu of all other express warranties of VWoA, the manufacturer, the distributor and the selling dealer.
Neither VWoA nor the manufacturer assumes, or authorizes any person to assume, on its behalf, any other obligation or liability.

Let us explain the warranty ...

Volkswagen of America, Inc. is proud of the quality of the automobiles it imports. It warrants new vehicles for a period of 2 years or 24,000 miles from the date of purchase, whichever comes first. In general, the complete vehicle including battery and tires is covered under the provisions of the Volkswagen New Vehicle Warranty. It will be honored by any Authorized Volkswagen Dealer in the continental United States, Hawaii and Canada.

This warranty is transferable if the ownership of the vehicle changes within the above period.

In order to keep the warranty in force, you, as the owner of the vehicle, have certain responsibilities. It is important that the vehicle be maintained properly. To facilitate record keeping, this booklet provides space for listing diagnosis, maintenance, and oil change services as they are performed.

Diagnosis and maintenance services should be performed by Authorized Volkswagen dealers. They have Volkswagen trained mechanics and special tools to provide fast, efficient service in accordance with Volkswagen quality standards.

The terms of your warranty require you to keep a maintenance record of your vehicle. Provided that maintenance or oil change services were performed in accordance with Volkswagen specifications, dated bills of other than Authorized Volkswagen dealers will be accepted as proof that these services were performed when required.

Not all repairs, adjustments and replacements, however, are the result of defects in material or workmanship. There are other circumstances beyond the control of the manufacturer that might make a workshop visit necessary. These depend mainly on where you drive and how you drive. They would include weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage.

For example, you are required to pay for the following:

Lubrication services.

Diagnosis and Maintenance services – except those free of charge as specified in the Owner's Manual.

Wheel alignment and wheel balancing. The frequency of these services depends on driving conditions such as rapid starts and stops, tire skidding, hitting pot holes and curbs, etc.

Mechanical adjustments – including brakes, clutch, door locks – are required as a matter of normal operation of a motor vehicle. This protects you against early or expensive replacements.

Brake and clutch linings are directly affected by driving habits and use. The replacement of linings and the reconditioning of brake drums or brake discs should be performed whenever necessary.

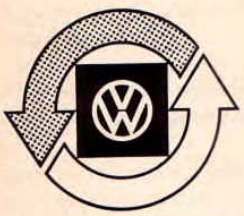
Spark plugs and ignition points are subject to wear. Periodic replacements ensure you of maximum engine performance and gasoline economy.

Wiper blades will have a varied life expectancy, depending on climatic conditions and extent of use. You are the best judge of when they should be replaced.

Light bulbs and fuses are service items.

Paint, chrome, convertible top, trim and other appearance items are affected by normal wear and exposure. Proper care of these items can add to their appearance and durability. (Imperfections are normally apparent during New Vehicle Delivery Inspection. For your protection, please report any imperfection to your dealer immediately.)

Tires and battery are subject to wear. If there is a manufacturer's defect, you pay only for the amount of use you obtained. An adjustment for tires is based on the remaining tread depth. Battery adjustment is according to time used, based on 24 months of service. This is known as the pro-rata method of adjustment.



Volkswagen parts, accessories and exchange units are identified by these trademarks.

All meet the same exacting quality control standards as the original equipment on the car, and comply with all applicable Government safety regulations.

They are guaranteed to be free from defects in material and workmanship for a period of 6 month or 6,000 miles, whichever comes first.

All Volkswagen parts and accessories are available at your Authorized Volkswagen Dealer.

Also, ask him about rebuilt parts under the Volkswagen Exchange Service . . . they cost less than new parts but carry the same warranty.

Dear VW Owner:

A lot has gone into the manufacture of your Volkswagen. Including advanced engineering techniques, rigid quality control and demanding inspections. The engineering and safety features that have gone into your VW will be enhanced by ... you,

the safe driver – who knows his vehicle and all the controls,
– who maintains his vehicle properly,
– who uses his driving skills wisely.

Because safe driving is important to you, we urge you to read this manual carefully, to maintain your VW properly and to follow the check list shown on this page whenever you use your VW.

Before getting behind the wheel:

1 – Make sure that the tires are inflated correctly.
2 – Watch the tread depth indicator on the tires. Look bruises and wear.
3 – See that all windows are clean and unobstructed.
4 – Check that headlight and tail light lenses are clean.
5 – Check that all lights are functioning properly.
6 – Check turn signal lamps and indicator light (ignition on).

In the driver's seat:

1 – Position seat properly for easy reach of controls.
2 – Adjust inside and outside mirrors for unobstructed rear view.
3 – Fasten safety belts.
4 – Check brake warning light when starting the engine.
5 – Check brake operation.
6 – Make sure that all doors are closed securely and locked.

And when you are on the highway:

1 – Always drive defensively. Expect the unexpected.
2 – Use signals to indicate turns and lane changes.
3 – Turn on headlights at dusk.
4 – Follow at a safe distance. A good rule of thumb is to allow a minimum of one car length for each 10 mph of speed.
5 – Reduce speed during night hours and inclement weather.
6 – Observe speed limits and obey highway signs.
7 – When tired, get off the highway, stop and take a rest.
8 – When stopped or parked, always set the parking brake.
9 – When stalled or stopped for repairs, move the car well off the road. Set the emergency flasher and use road flares or other warning devices to warn other motorists.

TYPE MULTIPURPOSE PASSENGER VEHICLE
MANUFACTURED BY VOLKSWAGENWERK AG (month/year)
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. (chassis number)
GVWR LB 0000
GAWR LB FRONT 0000/REAR 0000

These stickers are your assurance that your 1973 Volkswagen complies with all Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was manufactured. You can find these stickers on the left doorjamb.

The large sticker also shows the month and year of production and the chassis number of your car (perforation) as well as the **G**ross **V**ehicle **W**eight **R**ating and the **G**ross **A**xle **W**eight **R**ating.

Vehicle Identification

The identification plate

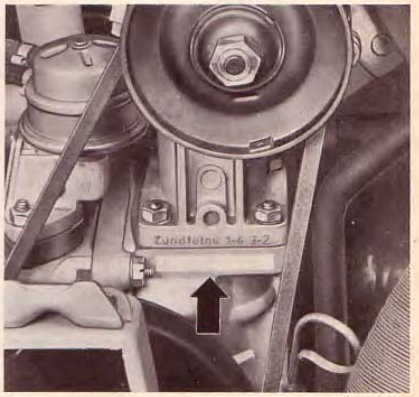
is the "birth certificate" of your Volkswagen. It is located under the front hood next to the hood lock.
The plate shows such information as manufacturer's name, place of origin, model, weights and "Fahrgest.-Nr.", which is the chassis number of your car.

The chassis number

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

The engine number

is stamped on the generator support flange.



Operation

Key

Two keys are supplied with the vehicle. The same key is used for the doors, the ignition/steering lock and the engine compartment. The right way of inserting the key is to hold it with the jagged side of the key head facing down.

The key number is listed on the tab attached to the key head. Record the key number and keep it together with your license or in any other safe place before cutting the tab off.
A replacement key can be made by your Authorized VW Dealer if the key number and proper identification of vehicle ownership are given.

Doors

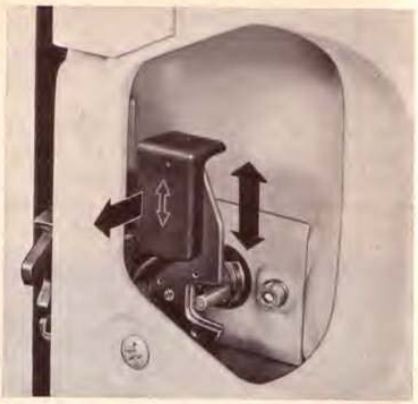
Always drive with locked doors to prevent inadvertent opening of a door from the inside.

To lock and unlock the doors from the outside

The **front doors** can be locked and unlocked with the key.

All **four doors** can also be locked from the outside without a key. First pull the inside locking lever up. Then depress the plunger in the outside door handle as you close the door.

If the door, with the locking handle pulled up, closes by itself, the locking device will disengage automatically. This additional feature has been provided so you won't be locked out if the doors should slam shut while the key is still inside the car.



To lock and unlock the doors from the inside

All four doors can be **locked** and **unlocked** from the inside.

Move the handle up — doors locked

Move the handle down — doors unlocked

To **open the door** from the inside, just pull the locking handle toward you.

Removing the doors

All four doors can be taken out in a few easy steps.

- Open the door.
- Press the spring forward (with one finger), and unhook the door check strap.
- Open the door a little more than 90°.
- Lift the door out of the hinges.

To **reinstall** the doors, follow the above procedure in reverse order.

Do not drive on public roads with doors off and/or windshield down. Be sure you wear your safety belts.

Detachable side windows

The side windows in the front and rear doors can be taken out by pulling them out of the two brackets on the upper door panel.

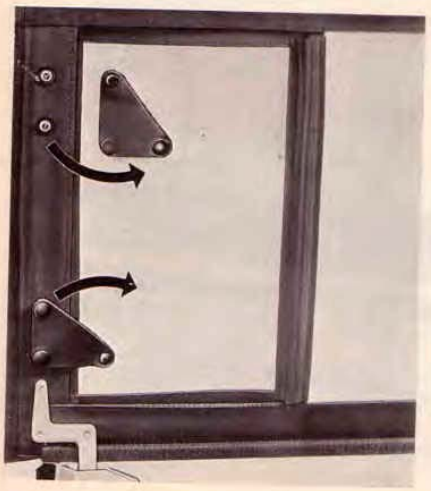
To **reinstall** the side windows, insert the pins, as shown in the illustration, into the two brackets at the upper door panel.

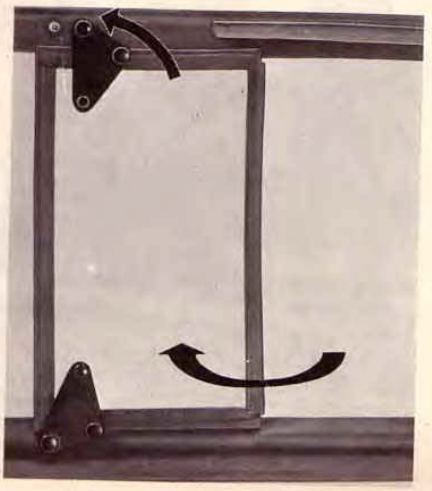
Place the side windows into the pouch provided with the new vehicle, and store under the front hood.

Vent windows

The side windows for the front doors incorporate flaps which open toward the outside. They are held in place by snaps and latches.

After unfastening the snaps, pivot the latches so that they are fully on the window. Open the flaps toward the outside. Pivot the latches on the vent window until the snaps are aligned with the snaps on the outer window frame. Fasten snaps.





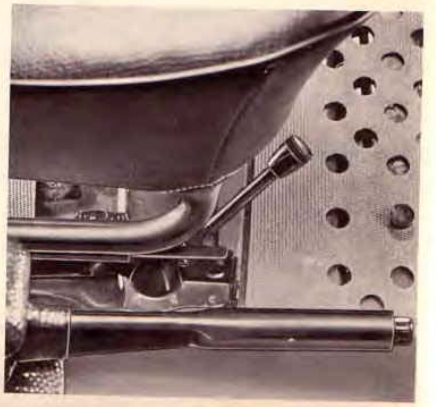
Front seats

We recommend you do not adjust the driver's seat while driving. Your seat may suddenly jerk forward or backward, which could result in loss of control.

Your VW 181 has adjustable front seats.

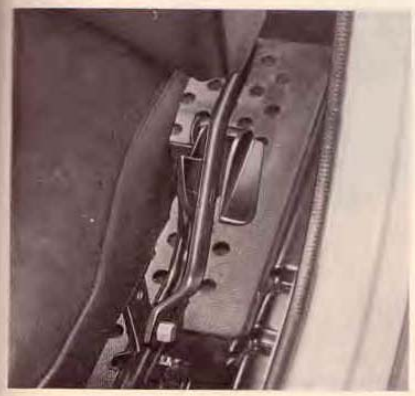
Seat adjustment

To move the seat forward and backward, pull the lever at the front right-hand side of the seat. Slide the seat to the desired position. Let the lever go and move the seat slightly back and forth to make sure it is securely engaged.



Backrest adjustment

The backrest can be adjusted to different angles by turning the lever on the outboard side of the seat. Take the weight off the backrest, while adjusting the backrest angle.



Backrest release

The backrest of the front seats can be folded forward. Pull the catch on the side of the seat frame up and tilt the backrest forward. When the backrest is tilted back, the lock will engage automatically.

Removing front seats

With the seat adjusting lever raised, slide the seat all the way forward until the runner touches the leaf spring stop.

Stand outside the vehicle, depress the leaf spring with a screwdriver and, with the seat adjusting lever raised, slide the seat forward approximately 1½ inch. Reach under the seat and unhook the coil spring. Slide the seat fully off the tracks and lift it out.

Reinstall front seats

To protect the floor covering, place paper in the front footwells.

Stand outside the vehicle, hold the seat with the backrest tilted forward for better balance and position it in front of the tracks.

Hook the inboard seat runner on its track first. Then insert the outer runner by pulling the seat slightly toward you.

With the seat adjusting lever raised, slide the seat back on the tracks and reconnect the coil spring.

Safety belts

A safety belt is provided for each seating position in your Volkswagen. For your protection, fasten your safety belt before driving off and wear it at all times while the car is in motion.

Store safety belts of unoccupied seats properly. The reduces the possibility of their becoming a striking object in case of a sudden stop.

Belt care

Keep safety belts clean. If cleaning is necessary, wash them with a mild soap solution, without removing them from the car. Do not bleach or dye safety belts. Do not use any other cleaning agents. They may weaken the webbing.

Check buckles and retractors for proper function. Check belt webbing and bindings for damage.

The front and rear seats are equipped with adjustable lap belts.

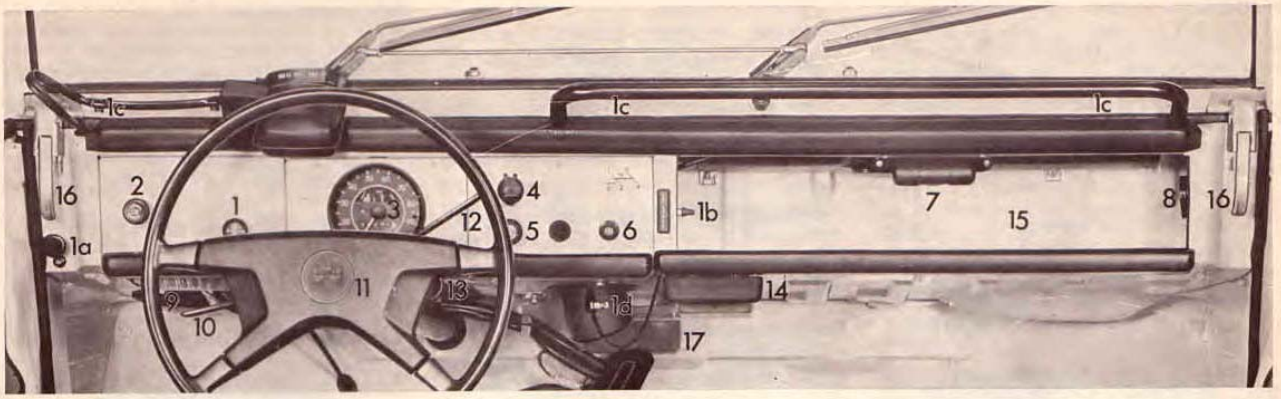
Pull the longer section across your lap and insert the tongue in the inboard buckle. Push in until you hear a click to be sure the belt is locked securely.

The belt should not be worn loose or twisted.

To **unfasten** the belt, push in the release marked PRESS in the buckle.

To **lengthen** or **shorten** the rear belt, hold the belt tongue at a right angle to the belt and pull the respective belt section in the desired direction. Take up any slack of the loose belt end by moving the slide on the belt.

Instrument panel



Instrument panel

1 - Knob to turn on heater
1a- Temperature control knob
1b- lever for HEAT and DEF(roster) setting
1c- Vent for heating/defrosting (over the full width of the windshield)
1d- Heater outlet
2 - Headlight switch
3 - Speedometer with fuel gauge and warning lights
4 - Electrical outlet (12-Volt)
5 - Emergency flasher switch
6 - Brake warning light
7 - Map light
8 - Release for front hood
9 - Fuse box
10 - Turn signal and dimmer lever
11 - Horn
12 - Windshield wiper/washer lever
13 - Ignition/steering lock
14 - Ashtray
15 - Glove compartment
16 - Windshield locking lever
17 - Brake fluid reservoir

Ignition/steering lock

The steering is equipped with an anti-theft ignition lock.

Fasten safety belts.
Make sure the gearshift lever is in Neutral when starting the engine.

1 - Ignition off/steering locked.
Insert the key. If it is difficult to turn the key, gently move the steering wheel until the key turns freely.
2 - Ignition on/steering free (for towing).

3 - Starter engages.
The key returns to position 2 as soon as it is released. Never operate the starter longer than a few seconds. If the engine should fail to start, turn the key back to position 1, and repeat the starting procedure. More on starting on page 17.

To remove the key and to lock the steering, turn the key back to position 1 and pull it out. Turn the steering wheel until it locks.

The steering column will lock when you remove the key. Therefore DO NOT REMOVE the key while you are driving or as the car is rolling to a stop.

If you leave the key in the ignition/steering lock, the buzzer will sound when the driver's door is opened. This is your reminder to remove the key.

Fuel gauge

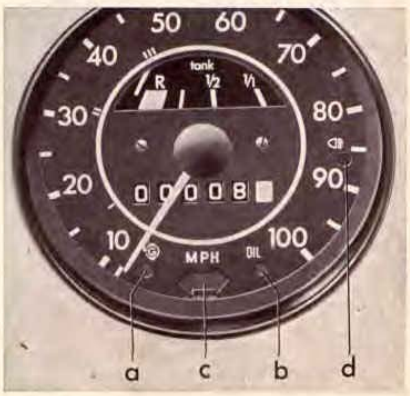
It is located in the speedometer dial, and only indicates the fuel level when the ignition is turned on.
When the needle is on "R" there is a reserve of about 1 gallon of fuel left in *your tank ... time to refuel at the next* gas station.

Speedometer dial

The speedometer indicates the speed; the odometer records the miles driven.

The following warning lights are in the speedometer dial:

a - red — generator
b - red — oil pressure
c - green — turn signals
d - blue — high beam



The red warning lights for generator and oil pressure in the speedometer dial will light up when the ignition is turned on. They should go out after you have started the engine.

a - Generator warning light (G)

Stop at once . . .

if the generator warning light comes on while you are driving.

Turn off the engine.

Check first whether the V-belt is slipping or broken. The V-belt not only drives the generator but also the fan that cools the engine.
Tighten or replace the belt.

c - Oil pressure warning light OIL

Stop at once . . .

if the oil pressure warning light comes on while you are driving.

Turn off the engine.

Check the oil level to make sure you have enough oil. If the oil level is normal, do not drive on but contact your nearest Authorized VW Dealer.

An occasional flickering of the oil pressure warning light when the engine is idling after a long high-speed trip is no cause for concern if the light goes out upon acceleration.

Whenever stalled or stopped for repair, move the car well off the road. Turn on the emergency flasher and mark the car with road flares or other warning devices. Before working on any part in the engine compartment turn off the engine and wait until the engine has cooled down sufficiently.

Brake warning light (B)

Your Volkswagen is equipped with a dual circuit brake system. Both circuits, one for the front brakes and one for the rear brakes, can function independently.

If the brake warning light lights up when you apply the brakes while driving, one of the two brake circuits may have failed.
Pull off the road and stop.
Try out the effectiveness of the brakes by carefully starting and stopping on the road shoulder.

If you judge that the brakes operate safely enough to take you to the nearest dealer, proceed cautiously and at low speed. If you do not feel it is safe to continue, have your car towed to the nearest dealer for repair.

Proper functioning of brake warning light

The brake warning light will light up when the ignition is turned on. It will go out after the engine has been started. This is your assurance that the bulb of the brake warning light functions properly.

If the brake warning light does not light up when turning on the ignition, or if it does not go out after starting, there may be a defect in the electrical system. If this is the case, contact your Authorized VW Dealer.

Headlight switch

Pull the knob to the first stop to turn on the parking and side marker, license plate, tail and instrument lights and the spot light for the heater outlet lever. Pull the knob to the second stop to turn on the headlights (ignition on).

Instrument illumination

Adjust the brightness of the instrument lights and the heater lever spot light by turning the headlight switch knob.

Note

To preserve the battery, the headlights will go out automatically when the ignition is turned off or when the engine is started.

Electrical outlet

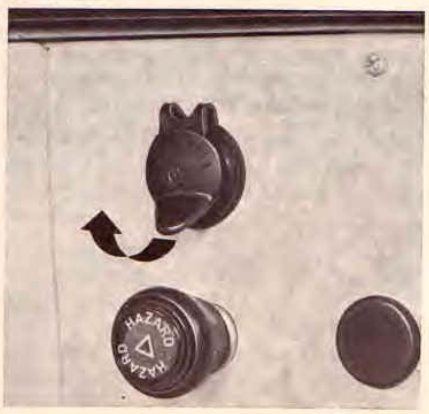
The 12-Volt electrical outlet can be used as a socket for electrical accessories, such as hand spot light, search light, flood light, etc.

In addition, the battery can be charged via the socket with a small commercial charge unit.

Emergency flasher switch

If your car is disabled or parked under emergency conditions, pull the switch to make all four turn signals flash simultaneously. The warning light in the switch knob flashes, too. The light in the flasher switch will glow when the parking lights or headlights are turned on.

Move the car well off the road when stalled or stopped for repairs.



Turn signal/headlight dimmer switch lever and windshield wiper/washer

There are two levers just behind the steering wheel:

The lever on the left side is for the turn signal/headlight dimmer switch.

The lever on the right side is for the windshield wiper/washer system.

The turn signals and the windshield wipers only work with the ignition on.

Turn signals

Lever up — right turn signal
Lever down — left turn signal

The green turn signal indicator light comes on in the speedometer dial when you operate the lever.

The turn signals are cancelled automatically when you have completed a turn (like driving around a corner), and the steering wheel returns to the straight-ahead position.

If a turn signal is defective, the control light flashes at about twice the normal frequency. Have your Authorized VW Dealer check and repair it for you.

Lane changer

To indicate your intention when changing lanes on expressways, slightly lift or depress the lever to an intermediate position. The lever will return to the OFF position when released.

Headlight dimmer

Dim the headlights by pulling the lever toward the steering wheel. The blue indicator light in the speedometer dial will light up when the high beams are on.

Windshield wipers WIPE

The windshield wiping system operates at two speeds: low and high.

Lifting lever to first stop — low speed
Lifting lever to second stop — high speed

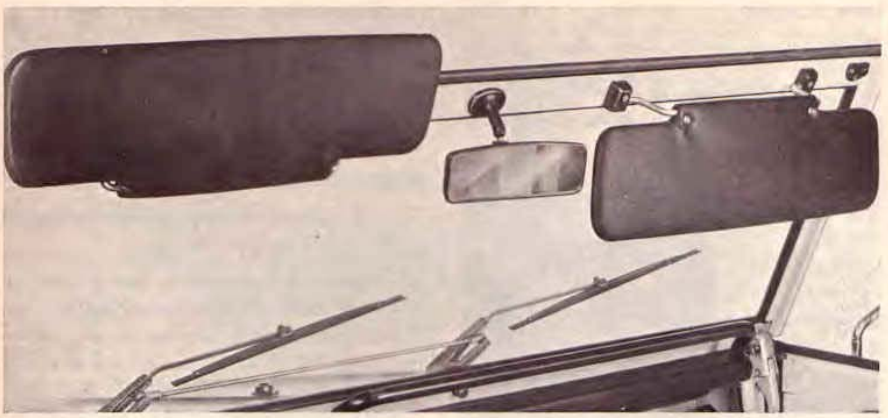
If you just slightly lift the lever before reaching the first stop, the wipers will wipe as long as the lever is held in this position and come to a stop when released.

To give you full battery power while starting the engine, operating windshield wipers will stop automatically at this moment.

Windshield washer WASH

To spray washer fluid on the windshield, pull the lever toward the steering wheel. You can operate the washer from any selected wiping position.

Avoid running the wiper blades over a dry windshield . . . you may scratch the glass. Spray washer fluid on it first.



Rear view mirrors

Adjust the inside and outside mirrors before driving off. It is important for safe driving that you have good vision to the rear.

Outside mirror

The outside mirror is hinged and folds flat against the vehicle when struck from either direction.

Inside mirror

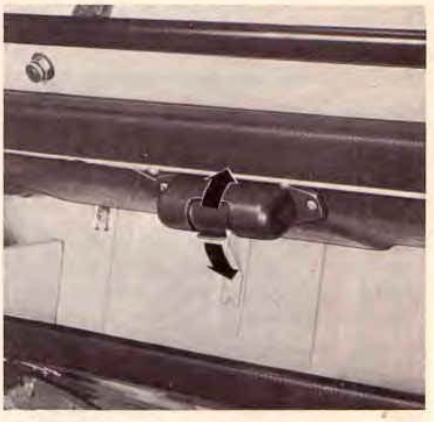
For safety reasons, the mirror stem will spring out of its mounting upon impact. To reinstall the mirror, twist the mirror stem firmly into its mounting.

Sun visors

The sun visors can be adjusted upward and downward to protect from light glare from the front.

Map light

To turn the map light on, slide the shutter up. The angle of the light rays can be adjusted by varying the shutter opening. To turn off the light, slide the shutter all the way down.

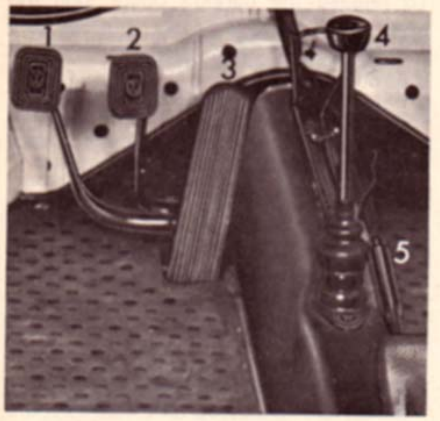


Ashtray

Pull to open the ashtray in the instrument panel. To remove the tray, depress the leaf spring, which you see just beneath the top cover of the tray and pull the tray out.
To put the tray back in, fold the top cover down, insert the tray in the guide rails and push in with the heel of your hand.

1 - Clutch pedal

Always depress the clutch pedal fully when changing gears. Do not hold the car on a steep hill with the clutch pedal partially depressed. This may cause premature wear or damage.



2 - Brake pedal

Make it a habit to check the operation of your brakes. You will remember from page 11 that the brake warning light will alert you if one brake circuit may have failed.

Make sure that the movement of the brake pedal is not obstructed by a floor mat, or any other object.

Volkswagen automobiles have excellent brakes, but they are still subject to wear ... depending on how the brakes are used. If you find that the brake pedal travel has increased, have the brakes adjusted; if necessary, between the specified maintenance intervals.

Keep in mind that the braking distance increases very rapidly as the speed increases. At 60 mph, for example, it is not twice but four times longer than at 30 mph. Tire traction is also less effective when the roads are wet and slippery. Therefore, always maintain a safe distance.

Driving through deep water may reduce tire traction. Moisture on the brakes may also affect braking efficiency. Cautiously apply the brakes for a test. If you notice a lag in the braking action, the brakes may be wet. They will dry after you have applied the brakes a few times, but do it very cautiously.

Brake linings may not have the highest possible braking efficiency when new. Therefore allow for longer braking distance during the initial 100 to 150 miles. This also applies when brake shoes are replaced.

3 - Accelerator pedal

For good fuel economy we recommend smooth and even acceleration. Very fast, racy driving, alternating between full throttle and hard braking, raises the fuel consumption considerably. Also, tires and brake linings wear faster.

You can drive most economically between:

9 and 12 mph in 2nd gear
18 and 37 mph in 3rd gear
28 and 50 mph in 4th gear

4 - Gearshift lever

The Manual Transmission is fully synchronized. The four forward gears and a reverse gear are arranged as illustrated. The shift pattern is also shown on the instrument panel above the brake warning light.

Resting your hand on the shift lever knob while driving will cause premature wear to the transmission.

Speed ranges

You can drive your Volkswagen at full speed from the first day. You do not have a break-in schedule. There are, however, certain recommended speed ranges for the various gears:

1st gear	0—18 mph
2nd gear	6—31 mph
3rd gear	15—53 mph
4th gear	from 28 mph up

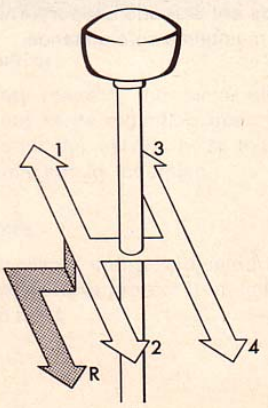
If you have a traffic situation where it is necessary for you to overtake rapidly, you can accelerate, for a brief period only, up to

34 mph in 2nd gear
55 mph in 3rd gear

Reverse

Only shift into Reverse when the car is not moving. To engage the reverse gear, press the lever down, move it to the left and pull back.

The back-up lights go on automatically when you engage the reverse gear (with the ignition on).



5 - Parking brake lever

To set the parking brake, press in the release button at the end of the lever as you pull up the lever. The parking brake is engaged as soon as you release the button on the raised lever.

To release the parking brake, pull the lever slightly up as you depress the release button. Then push the lever all the way down.

Be sure it is fully released. A partially engaged parking brake promotes wear of the brake lining.

Do not remove the key from the steering lock while the car is rolling to a stop. The steering column is locked as soon as you remove the key. Take out the key only after the car is parked.

Always set the parking brake when parking your car. On steep hills also turn the wheels toward the curb.

Starting hints

Never start or let the engine run in an enclosed unventilated area. Exhaust fumes from the engine contain carbon monoxide which is colorless and odorless. Carbon monoxide, however, is a very harmful gas, and can be fatal if inhaled.

Before turning the ignition key, make sure the gearshift lever is in Neutral.

As soon as the engine starts, release the ignition key.

If the engine does not start the first time or stalls, turn the ignition key all the way to the left and restart.

Operate the starter for a few seconds only.

Summer starting

Operate the starter while slowly depressing the accelerator pedal.

Winter starting

First depress the accelerator pedal fully and release slowly to activate the automatic choke. Then start the engine.

On the Manual Transmission, also depress the clutch pedal when starting so that the starter only has to crank the engine.

Do not try to warm up the engine by letting it idle with the car stationary . . . drive off immediately and maintain moderate speed until the engine is warm.

Starting the engine at operating temperature

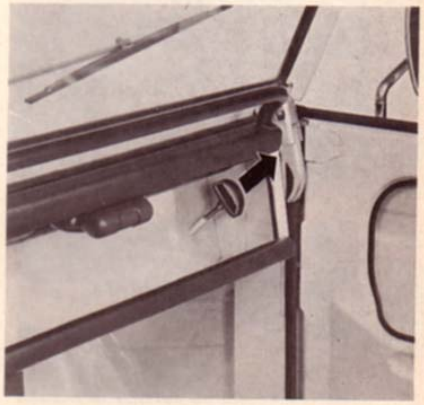
Before operating the starter, depress the accelerator pedal fully . . . **do not release it.** Now start.

Luggage compartments

Your VW has two luggage compartments, one under the front hood, and the other behind the rear seat.

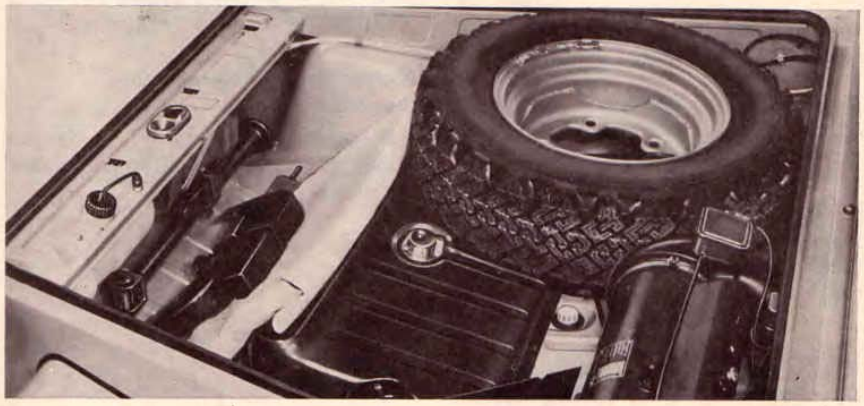
Front luggage compartment

To unlock the front hood, pull the release strap on the right side inside the glove compartment. The front hood will spring up slightly.



Open the hood by pulling the safety catch under the hood. Raise the hood and rest it on the hood prop by engaging it in the eyelet, as shown in the illustration below.

Since improper weight distribution can affect the car handling, take advantage of the two luggage compartments. Load the front luggage compartment first, using the heaviest pieces of luggage, if possible.



Rear luggage area

Additional luggage can be stored in the space behind the rear seats. You can expand this luggage area by folding the backrests down to form a deck (A and B).

Do not allow children to kneel or sit on the rear load surface while the car is in motion.

Note: When transporting luggage or other cargo, secure it in place. This precaution will help prevent such articles from shifting during a sudden stop.

To form a deck, proceed as follows:

- Release the backrest by pulling the lever on the outboard side of the backrest (1).
- Pull the backrest up while at the same time pivoting it forward (2).
- Firmly push the backrest toward the rear until it engages in the retaining hook (3).
- Release the rubber strap at the front of the seat frame and fold the retaining bar up. Press the retaining bar into the two backrest securing clips to hold the folded-down backrest in place (4).

Heater

To set the rear seat up again, proceed as follows:

- Lift the backrest slightly to disengage the retaining bar from the two backrest securing slips.
- Disengage the backrest retaining hook by lifting the backrest slightly.
- Lift the backrest further up and pivot it into place (5). Push the backrest back until the hook engages with an audible click.
- Fold the retaining bar at the seat frame down and secure it with the rubber strap (6).

The VW 181 is equipped with a gasoline heater, which draws its fuel from the vehicle's gasoline tank. The fuel consumption is approx. 0.4—1.3 U.S. pints (0.3—1.1 Imp. pints) per hour, but varies according to the heat output.

The heater must be turned off when filling the gasoline tank. It is, however, not necessary to wait until the run-on of the blower is completed.

Never start the gasoline heater or let the engine or the heater run in an enclosed, unventilated area. Exhaust fumes from the engine or the gasoline heater contain carbon monoxide, which is colorless and odorless. Carbon monoxide, however, is a very harmful gas, and may be fatal if inhaled.

The heater can be started without turning on the engine. However, when it is very cold we recommend you start the engine first as the full battery capacity is required for starting the engine under cold climatic conditions.

With the ignition on

To **switch the heater on,** turn the knob (A) to the right to the first stop.

To **switch the heater off,** turn the knob fully to the left. The blower motor continues to run until the heater has cooled down.

Temperature regulator

The desired temperature can be selected by pulling the knob (B). The temperature increases the farther the knob is pulled out.

With ignition off

A timer in the switch gives you the possibility to preheat the vehicle interior for approximately 30 minutes before starting the engine.

The heater uses about the same amount of electricity as the headlights on high beam. To prevent excessive battery drain, we recommend that the heater not be operated several times successively when the engine is not running.

This applies particularly when the temperature is low and the full battery capacity is required to start the engine.

To **set the timer,** turn the knob (A) to the right beyond the first stop.

You can select the **desired temperature** by **pulling the knob (B).** The temperature increases the farther the knob is pulled out.

As soon as the timing cycle is completed — the knob (A) will return to the first stop — the heater will shut itself off. If you start the engine before the timing cycle is completed, the heater will continue working, and can then be turned off manually. If you start the engine with the knob (A) at the first stop, the heater will come on again when you start the engine.

If you turn the knob (A) all the way to the left before the timing cycle is completed, the heater is turned off; however, the timer will continue to run down.

Note

The heater will stop working whenever the engine stalls or is turned off. Turn the heater off before restarting the engine.

If the heater is not used for a long time, fuel deposits can settle in the heater and cause trouble when the heater is used again.

This can be avoided by turning the heater on for a few minutes at least once every two months, even during the warm periods of the year.

Hints for defogging and defrosting

Defogging and defrosting your windshield will be more effective if you direct the total air flow toward the windshield. This is done by closing the **footwell outlet** under the instrument panel.

Here is what you do:

1. Turn knob (A) right to the first stop — heater is on.
2. Pull knob (B) out all the way — maximum heat output.
3. Pull lever to DEF — the total warm air flow is directed toward the windshield.

As soon as the windshield is clear, the footwell outlet should be opened so that the interior of the vehicle heats up as quickly as possible. **To open the footwell outlet, move the lever to position HEAT.**

Opening and closing the top

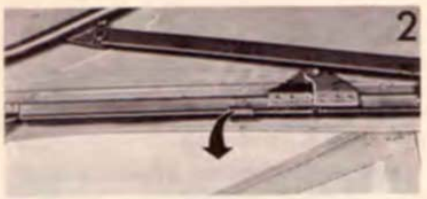
Opening and closing the top will be easier if done by two people.

The top should never be opened or closed when the vehicle is in motion.
The top should be dry before you open the top and fold it.

How to open the top

- Open all doors or take out the side windows.

- Release the locking levers at the top of the windshield and disengage the hooks (1).



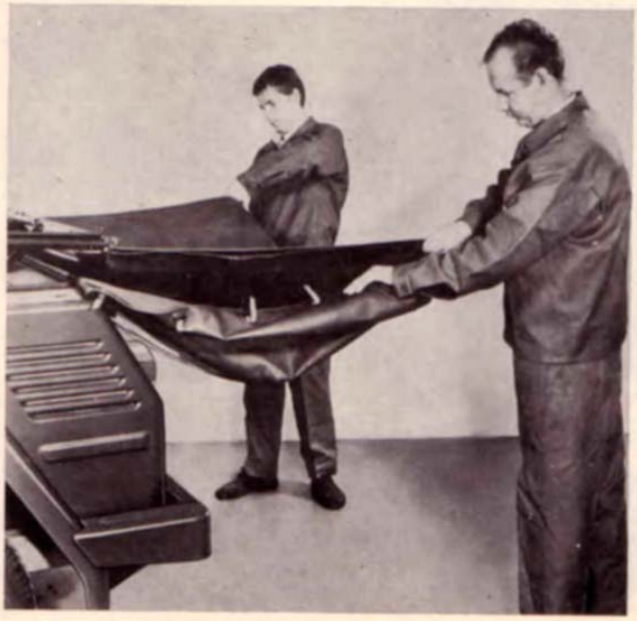
- Disengage the six securing clips at the windshield frame (2).

- Unfasten the straps on the sides of the vehicle (not the rear) and loosen the top from the tie-down eyes (3).

- Lift the top slightly, while at the same time pressing the top frame down on both sides near the linkages.

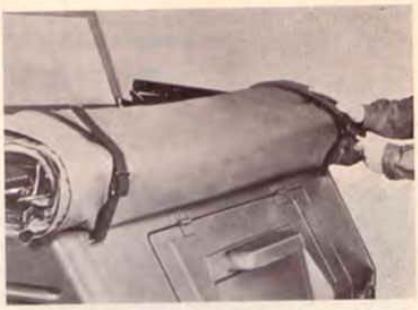
● Fold the top frame back, pull it to the rear and arrange to a double fold.

● Fold the overlapping sides inward, as shown in the illustration.



● Then move the folded top forward and back again so that the rear window is fully covered.

● Secure the top with two straps.



● Place the end covers over the linkage so that the buckle is placed outward.

● Loop the strap of the end cover over the top bow, insert in the nearest tie-down eye and fasten.

How to close the top

- Open all the doors or take out the side windows.
- Take the side covers off the linkage.
- Release the two straps and unfold the top to the rear.
- Pull the linkage forward while at the same time unfolding the top frame.
- Place the header on the windshield frame.
- Place the holes of the top material over the tie-down eyes on the sides of the vehicle. Tighten the straps.
- Engage the six retaining clips on both sides of the top frame.
- From the inside of the vehicle pull the top frame the windshield frame and hook it into the securing clips.
- Engage the hooks on the sides of the windshield an tighten the locking levers to securely lock the top in place.

How to fold the windshield down

The windshield is hinged and can be folded toward the outside when the top is open.

Do not drive on public roads with doors off and/or windshield down. Be sure you wear your safety belts.

When driving with the windshield down, be sure to wear eye protection.

- Remove the inside rear view mirror by turning its stem to one side and twisting it out of its mounting.
  Store the mirror in the glove compartment.
- Fold the sun visors down onto the windshield.
- Release the brackets on the sides of the instrument panel by pulling the levers.
- Place the cover over the windshield, making sure the wiper motor and the pins on the windshield ends are placed in the appropiate pockets (cut-outs) in the cover.
- Carefully fold the windshield onto the front hood, while at the same time pulling the wire for the wiper motor out from the opening in the instrument panel.

- Firmly insert the two pins into the mountings on the hood.
- Secure the fasteners to prevent rattling.

How to raise the windshield

- Pull the pins out of their mountings on the front hood.
- Slowly raise the windshield while at the same time pushing the wire for the wiper motor back into the opening in the instrument panel.
- Engage hooks and close the grasping brackets by pressing the levers down.
- Reinstall the inside rear view mirror. Attach the top.

Towing and trailer hauling

Always observe state laws and municipal ordinances governing towing.

Your VW 181 has two towing eyes each in the front and rear bumper. Do not exceed a tow stress of 2400 lbs. at a tow line angle of 20°.

When towing your Volkswagen with Manual Transmission, place the gearshift lever in Neutral. Turn the ignition on to be able to operate parking light, turn signals and stop lights. Be sure to release the parking brake.

Please keep in mind . . .

The towing eyes on your Volkswagen are not designed for towing by commercial tow trucks.

The driver of the towing car must be very careful when driving off and shifting to avoid sudden and abrupt jerks.

The driver of the towed car must always keep the tow rope taut.

Trailer hauling

When towing a trailer with your Volkswagen with Manual Transmission always shift to a lower gear when driving up or down steep hills with this extra load.

The total weight of a trailer (without brakes) should not exceed 882 lbs.

The trailer tongue load should be 55 to 88 lbs. Distribute load in the trailer evenly.

And remember: the additional trailer weight affects the braking of your car so that a longer distance is needed to bring the car and trailer to a stop. Test the brakes before starting out on a trip with a trailer.

Winter operation

Battery

During the winter months, the battery is subjected to greater use than in the summer months. More current is consumed when starting at very low temperatures. Lights and the rear window defogger are used more often. Besides, the battery tends to decrease in capacity as the temperature drops.

Therefore, it is very important to keep your battery in the best possible condition. See also "Battery" on page 37.

Do not expose battery to open flame or electric spark as hydrogen gas generated by the battery is explosive. Do not let battery acid come in contact with skin, eyes, fabric or painted surfaces.

If you mainly drive short distances or in city traffic, have the battery checked and, if necessary charged between regular inspections.

Emergency equipment

It is good planning to carry emergency equipment in your car. Some of the things you should have are: window scraper, snow brush, container or bag of sand or salt, flares, small shovel, first-aid kit, etc.

Door locks

can freeze in the winter if water gets into them. When washing your car in the winter, do not aim the water jet directly at the locks. It is a good idea to put tape over the keyholes to prevent the water from seeping in. Water in the locks must be removed with compressed air afterwards. Squirt lock de-icer, anti-freeze, or glycerine into the lock cylinders to prevent the locks from freezing.

To open a frozen lock, warm up the key before inserting it. It might also help to warm the lock. Do not use hot water as it will later freeze in the lock.

Windshield washer

Add anti-freeze to the washer fluid, such as Volkswagen's Windshield Washer Anti-Freeze and Solvent, to prevent it from freezing. Follow the instructions on the can for the right amount to be used.

Engine oil

To make starting easier during the cold winter months, we suggest you choose a thinner grade motor oil. Turn to page 48 for the recommended oil grades.
If you drive mostly short distances and in city traffic, we recommend you have your engine oil changed at 1500-mile intervals in the winter.

Transmission oil

SAE 90 grade transmission oil can generally be used all year round. Only in areas with a cold climate is it necessary to use the thinner SAE 80 transmission oil during the winter months.
In arctic climate and areas with temperatures consistently below —13° F, use Automatic Transmission Fluid (ATF) for the manual transmission and final drive. When the temperature rises, replace the ATF with SAE 80 or SAE 90 grade transmission oil. See also page 49.

Spark plugs

Make sure the spark plugs are not worn or have a gap larger than 0.028 inch.
For further details on spark plugs see page 43.

Tires

Your Volkswagen is equipped with radial ply tires with tubes. Volkswagen tires comply with all applicable U.S. Federal Motor Vehicle Safety Standards.

Tire pressures

For good car handling and long tire service life, it is important to maintain recommended tire pressures. Tires which are inflated above or below specifications can cause increased tire wear, increased gas consumption and affect the road holding of the car.

VW-recommended **cold tire inflation pressures** are listed on a sticker under the front hood next to the hood lock.

In the interest of safety, check the tire pressure of all tires, including the spare tire, at least once a week, and always before going on a long trip.

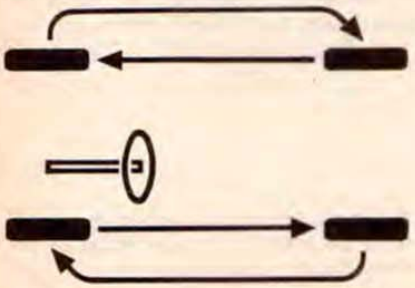
For road use do not exceed the maximum tire inflation pressure listed on the tire sidewall.

Spare tire pressure

Since the spare tire supplies the pressure to operate the windshield washer, the pressure of the spare tire should be between 29—42 psi (2.0—3.0 kg/cm²). This pressure level is only to be maintained for the operation of the windshield washer system. For road use, the pressure in the spare tire should be adjusted as specified on the sticker under the front hood next to the hood lock.

Tire rotation

If uneven tire wear should occur, we recommend that the tires be rotated as shown in the sketch below. Afterwards, the tire pressures must be corrected. The wheel bolts should be torqued diagonally to 72.3 ft. lbs. See also page 34.



Wheel balancing

A wheel should always be balanced after a tire repair. Also, since regular use can cause tire imbalance, the wheels should be balanced from time to time. Unbalanced wheels may affect car handling and tire life.

Tire wear

The original equipment tires on your VW have built-in tread wear indicators. They are molded into the bottom of the tread grooves and will appear as approximately ½ inch bands when the tire tread depth becomes 1/16 of an inch. When the indicators appear in two or more adjacent grooves, it is time to replace the tires. We recommend, however, that you do not let the tires wear down to this extent. Worn tires cannot grip the road surface properly, and are even less effective on wet roads.

If you notice that tires are wearing unevenly, consult your Authorized VW Dealer. Uneven wear may not always be due to improper wheel alignment. It can be the result of individual driving habits such as cornering at high speeds. If the tire pressure is not checked and adjusted regularly, abnormal tire wear can also occur.

Do not drive with worn tires or tires showing cuts or bruises as they may lead to sudden deflation.

Tire replacement

In the interest of maximum safety and best all-around car handling, always buy replacement tires that show the same specifications with regard to tire size, design, load carrying capacity, tread pattern, etc. This also applies to VW-recommended alternate replacement tires.

Tire specifications are imprinted on the sidewall of the tires. If in doubt, check with your Authorized VW Dealer.

Replace all 4 tires at the same time. If this is not possible, replace tires in pairs, either front or rear.

New tires do not posses maximum traction. They tend to be slippery. Break new tires in by driving at moderate speed for the first 60—100 miles.

Winter tires

The radial ply tires on your VW 181 have a deep M + S tread which gives good traction on mud and snow. However, they do not fulfill their purpose if the tread depth is less than 5/32" (4 mm).

Replace worn tires in time. For safety reasons, it is not advisable to drive at top speeds with winter tires. Winter tires do not have the same degree of traction on dry, wet or snow-free roads as regular tires.

For a better grip on hard snow or ice, you can use snow tires with studs, but **check with your State Motor Vehicle Bureau** for possible restrictions. Winter tires with studs should be run at moderate speed when new to give the studs time to settle.

Winter tires should preferably be mounted on all four wheels. They should also conform to the same load requirements as original equipment tires.

Inflation pressures for winter tires are also listed on the sticker under the front hood next to the hood lock. **Do not exceed the maximum tire inflation pressure imprinted on the sidewall of the tire.**

Tire care

1 - Frequently check tires for damage. Remove imbedded material.

2 - Keep oil and gasoline away from tires.

3 - Replace worn tires in time.

4 - Replace missing valve dust caps as soon as possible.

Spare wheel

The spare wheel is under the front hood.

To unlock the hood, pull the lever inside the glove compartment. See also page 29.

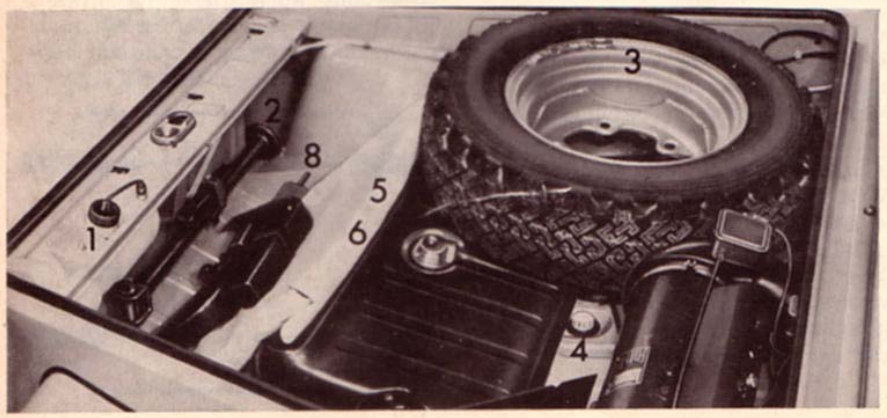
The spare wheel is connected to the windshield washer container and supplies the pressure to operate the washer. The air supply to the windshield washer will be interrupted automatically by a cut-off valve if the tire pressure drops to 29 psi (2.0 kg/cm²). This prevents the spare tire from being deflated below the required pressure.

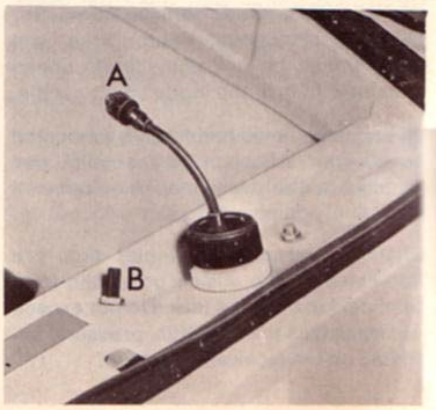
Check the spare tire pressure from time to time and maintain it up to a maximum of 42 psi (3.0 kg/cm²).

This pressure level is only required for the operation of the windshield washer system. For road use, adjust the spare tire pressure as specified on the sticker under the front hood next to the hood lock.

To check or correct the spare tire pressure, first unscrew the hose (A) from the valve (B) near the filler cap of the windshield washer container. The spare wheel is connected to this valve. Reconnect the hose to the valve after inflation or checking.

1 - Container for windshield washer fluid.
2 - Jack
3 - Spare wheel
4 - Filler cap for brake fluid reservoir
5 - Pouch for side windows
6 - Cover for folding windshield
7 - End covers for top
8 - Tool kit



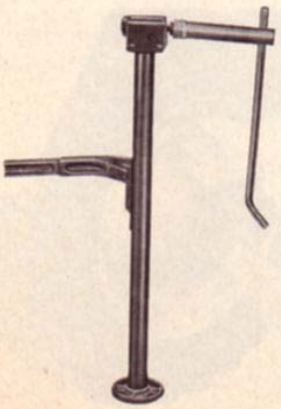


Jack

The jack is only to be used for changing a wheel. Do not use it as a support to work underneath the car.

The jack is located under the front hood at the front panel. It is held in stowage position by a clamp. To take out the jack, lift the clamp. When putting the jack back in again, tighten the clamp.

A breaker bar and socket wrench necessary to operate the jack are in the tool kit.



Changing a wheel

If you have a flat tire, **move off the road. Turn on the emergency flasher. In addition, mark the position of your car with flares or other warning devices to alert other motorists.**

Before you change a wheel, be sure **the ground is level and firm,** especially where the **jack ports** are.

Set the parking brake and block the wheels opposite the defective wheel on the other side of the car.

For more efficient and safe changing of a flat tire, observe the following 10 steps.

Later we expand on these steps in greater detail.

Step 1 - Take out tools, jack and spare wheel.

Step 2 - Remove hub cap.

Step 3 - Loosen wheel bolts. **Do not take them off.**

Step 4 - Securely insert the jack in jack port.

Never jack the car up by the bumper or the body.

Step 5 - Jack up car.

Step 6 - Change wheel and handtighten wheel bolts.

Step 7 - Lower car.

Step 8 - Further tighten the wheel bolts. **Do not overtighten. Important: Torque adjustment.**

Step 9 - Replace hub cap.

Step 10 - Correct the air pressure of the tire you have just put on.

Step 1

Take out your tool kit.

Take out the **jack** from under the front hood at the front panel. Lift the clamp that is holding the jack in stowage position.

To unlock the front hood, pull the lever inside the glove compartment.

The **spare wheel** is held in place by a bracket and wing nut. Loosen the nut and turn the bracket by 90° to take out the wheel.

When putting the spare wheel back in again, adjust the bracket and tighten the wing nut.

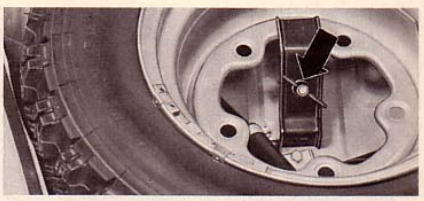
Before taking out the spare wheel, disconnect the hose (arrow) that is connected from the spare tire valve to the windshield washer container.

Step 2

With the wheels still firmly resting on the ground, remove the hub cap of the defective wheel.

Insert the puller in the holes at the rim of the hub cap. Put the breaker bar throught the puller, brace one end of the bar on the wheel rim and tug lightly on the other end.

When you place the hub cap face down, you can use it as a tray for your wheel bolts.



Step 3

Loosen all wheel bolts counterclockwise about one turn with the socket wrench. Insert the breaker bar to make full use of its leverage. **Do not yet remove the bolts.**

Step 4

Securely insert the jack into the jack port. There is one on each side under the running board toward the rear and is used for front and rear wheel changing. **Never jack the car up by the bumper or running board.**

Provide for a **firm base for the jack on the ground.** If necessary, use a board.

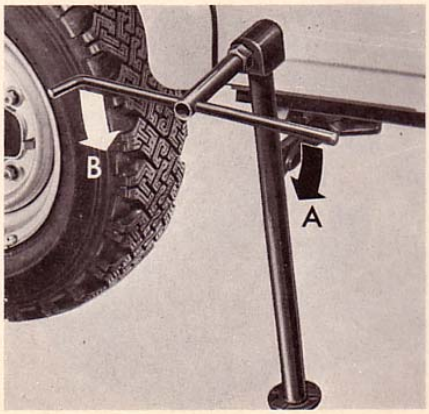
Passengers should not remain in the car when the car is jacked up.

Step 5

Do not raise the car until you are sure the jack is securely engaged.

To raise the car, turn the handle clockwise (A).

To get the jack as vertical as possible, push the upper part of the jack toward the body while you are jacking up the car. Only raise the car as much as is needed to change a wheel.



Step 6

Fully unscrew the wheel bolts and place them into the hub cap. Place the spare wheel against the brake drum so that the bolts holes in the wheel are in line with the threaded holes in the brake drum. Insert the wheel bolts and handtighten them crosswise before jacking the car down.

Step 7

To lower the car, turn the handle counterclockwise (B).

Step 8

Then go crosswise from one bolt to another, tightening them firmly with the socket wrench and breaker bar.

Correct tightness of the wheel bolts is important.

Correctly tightened bolts should have a torque of 72.3 ft. lbs. The torque can be obtained with socket wrench and breaker bar by any person of average strength. If in doubt about the correct tightness of the wheel bolts, have it checked with a torque wrench by your dealer or a service station.

Step 9

To install the hub cap, place it around the lower part of the wheel center, and with a firm push on the upper part, the hub cap will snap into place. Make sure it is properly seated.

Step 10

Correct the **pressure of the tire** you have just put on.

Fuel supply

In the interest of cleaner air, the VW engine is designed to run also on low-lead or lead-free gasoline.

The engine requires "Regular" gasoline. The minimum octane rating is shown on the label under the front hood next to the identification plate. If regular fuels with adequate antiknock qualities are not available, premium fuels should be used or mixed with regular fuel. This might be necessary when traveling outside the United States or Canada.

The Heater must be turned off when filling the fuel tank.

Never start or let the engine run in an enclosed unventilated area. Exhaust fumes from the engine contain carbon monoxide which is colorless and odorless. Carbon monoxide, however, is a very harmful gas, and can be fatal if inhaled.

Container for windshield washer fluid

The **filler neck to the fuel tank** is on the right side of the front fender.

The fuel gauge in the speedometer dial only indicates the fuel level when the ignition is turned on. The fuel tank has a filling capacity of about 10.6 US gal. (8.8 Imp. gal.).

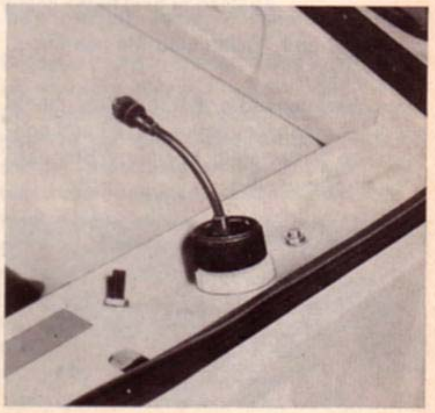
The windshield washer container is located under the front hood. It has a capacity of 3.6 US pints (3.0 Imp. pints). To add washer fluid, just unscrew the filler cap. The container can be filled to the top. After filling the washer container, screw the cap on tightly.

Since the spare tire supplies the pressure to operate the washer, it should always be kept at a pressure above 29 psi (2.0 kg/cm²) but not higher than 42 psi (3.0 kg/cm²).

As clear water is usually not adequate for cleaning the windshield, add a cleaning solution to the water such as Volkswagen's Windshield Washer Anti-Freeze & Solvent. It is a concentrate, so follow the directions on the can for the correct amount to be used.

You can use Volkswagen's Windshield Washer Anti-Freeze & Solvent all year round. It helps to keep your windshield clean, and prevents freezing of the washer fluid in the winter.

As soon as you unscrew the filler cap of the container the air supply from the spare tire is interrupted. This prevents the spare tire from being deflated below the required pressure. For instructions on how to pressurize the spare wheel, see page 30.



Brake fluid reservoir

The filler cap for the brake fluid reservoir is under the front hood. The reservoir is located underneath the instrument panel. The fluid level in the brake fluid reservoir should always be above the seam edge near the top of the reservoir.

If the brake fluid level falls considerably below this edge, the complete brake system should be thoroughly checked by your Authorized VW Dealer and the cause corrected.

Every 2 years the brake fluid has to be replaced

See "Additional Services Record" on page D 9 and "Scheduled Maintenance" on page D 5.

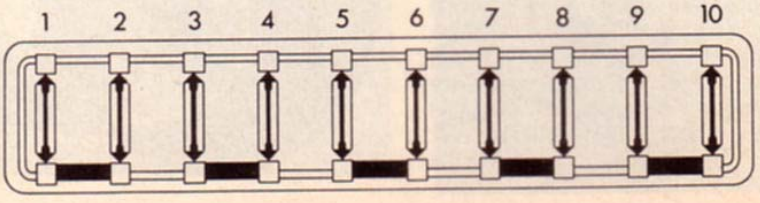
Only **new, unused** brake fluid that meets the SAE recommendation J 1703 and conforms to Motor Vehicle Safety Standard 116 must be used.

The 10-point fuse box is located under the instrument panel.

When a fuse is blown, it is not sufficient to merely replace it. The cause of the short circuit or overload must be found. On no account should fuses be patched up with tin foil or wire as this may cause serious damage elsewhere in the electrical circuit. It is advisable to always carry a few spare 8 amp. fuses in your car.
To replace a fuse, simply depress a contact on either side of the fuse.

Fuses

1 - Turn signals, windshield wipers, heater
2 - Horn, stop lights, brake warning light
3 - High beam, left; high beam indicator light
4 - High beam, right
5 - Low beam, left
6 - Low beam, right
7 - Tail light, right
License plate light,
Parking light, left and right
8 - Tail light, left
9 - Map light, electrical outlet
10 - Emergency flasher system, heater



The 8 amp fuse for the back-up lights is located in the engine compartment. It is in a fuse holder above the alternator.

To replace a fuse in an inline fuse holder, pull the holder out of the clip, where necessary. To open the holder, grasp both ends of the holder, press lightly together and twist counterclockwise. Install fuse. To close the holder, put both ends together again, press lightly and twist clockwise.

The battery

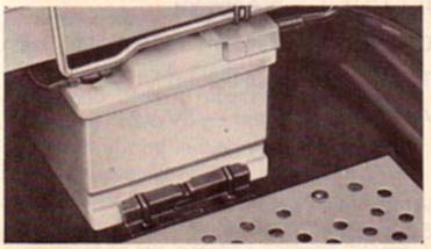
Do not expose the battery to an open flame or electric spark. Hydrogen gas generated by the battery is explosive. Do not let battery acid come in contact with skin, eyes, fabric, or painted surfaces.

The electrical system depends mainly on the battery. Therefore, the battery should be checked regulary and kept in good working condition.

Never drive the car with a disconnected battery as this may damage the electrical system.

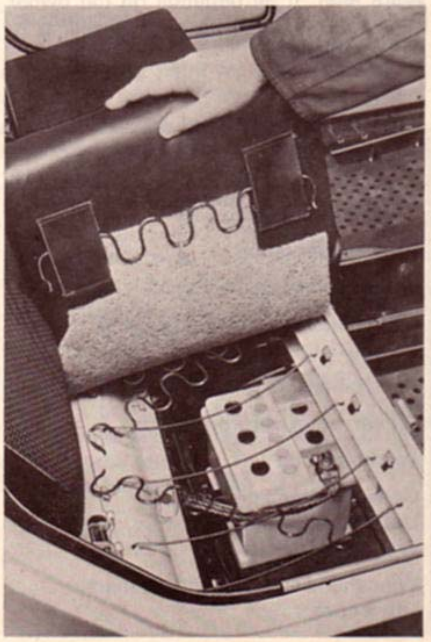
Battery location

The battery is located under the rear seat bench on the right side, as seen in driving direction.



Checking the electrolyte level

Lift the end of the seat cusion on the right side and unhook the retaining spring with a screwdriver. For better access to the filler plugs, also unhook spring No. 3 and 4 at the rear and move them to the front.



Each filler plug has to be unscrewed to check the fluid level in each cell. If it is **below** the indicator, top it up with distilled water. **Only fill up to indicator.**

How often the battery has to be topped up depends mainly on operating conditions and on the time of year. As a general rule, the battery electrolyte level must be checked more often in the summer than in the winter, and more often when driving long distances.

When working on the battery, be sure not to short circuit the terminals. This would cause the battery to heat up very quickly, which could lead to damage.

Before having a quick-charge performed on a battery installed in a car, **disconnect the negative ground strap first, then the positive cable to avoid serious damage to the electronic components of the electrical equipment.** It is not necessary to disconnect the three wires. After charging the battery, reconnect the positive cable first and then the ground strap.

If you have not used your car for an extended period of time, have the battery recharged.

Removing and reinstalling battery

Lift off the cover from the positive terminal.

Loosen both cable connectjons with the 13 mm open-end wrench; take the ground strap off first and then the positive cable. Leave the two small wires attached. Disconnect the center wire from the battery, which is the electrolyte level sensor for the diagnosis system. Remove the battery retaining nut with the socket wrench and breaker bar.

Before **reinstalling** the battery, clean all terminals and connections. Remove corrosion. Put the battery in its stowage position and ighten the nut for the hold-down bracket. Reconnect the positive first, then the ground strap and the center wire. Be sure not to interchange the wires. Grease the terminals and battery post well with silicone spray or petroleum jelly. Keep the ground connection free of corrosion and tight.

The paint on your VW is very durable, and so is the upholstery. But a car can get a lot of abuse from industrial fumes and corrosive road salt, half-eaten lollipops and muddy dog feet.

A well-cared-for VW can look like new 10 years later. It all depends on the owner and the amount of care he is willing to give to the car.

Here are a few hints on how to keep your VW looking young and beautiful. We have also compiled a list of cleaning products. They are available at any VW dealer.

Whenever using VW-recommended products or other cleaning agents, **follow the directions on the containers. Be aware of warning or caution labels.**

Application	Volkswagen Product
Car wash and liquid wax	Car Wash and Wax — ZVW 243 201
Paint preservative	Paint Preservative and Wax — 000 096 011
Paint waxing	Classic Car Wax — ZVW 246 101
Paint polishing and peint waxing	Combination Car Cleaner and Wax — ZVW 241 109
Paint polishing, remove paint oxidation	Paint Polish — 000 096 001
Preservation of chrome parts	Chrome Preservative — 000 096 067
Paint touch-up	Touch-Up Paint (all colors)
Convertible top cleaning, Upholstery cleaning, Whitewall tire cleaning	All Purpose Cleaner — ZVW 243 101
Windshield cleaning and washer anti-freeze	Windshield Washer Anti-Freeze & Solvent — ZVW 241 101

Washing your VW

The longer the dirt is left on the paint, the greater the risk of damaging the glossy finish, either by scratching if the dirt is rubbed into the paint, or simply by the chemical effect dirt particles have on the paint surface.
Therefore dirt should be washed off as soon as possible. NEVER WASH IN DIRECT SUNLIGHT.
Use plenty of water, a car-wash soap, such as VW's Car Wash and Wax, and a soft sponge or hose brush. Begin by spraying water over the dry car to remove all loose dirt before applying the lukewarm soap/water solution.
Use plenty of water to rinse the car off. Wipe the car dry with a chamois to avoid water spots.

Waxing

Waxing is not really needed when you have washed your car with VW's Car Wash and Wax. If you do not use a car wash liquid with wax, apply Paint Preservative and Wax to preserve the natural shine of the car.
To obtain a long lasting wax finish apply hard wax, such as VW's Classic Car Wax, eight to ten weeks after buying the car. Wax again when water remains on the surface in large patches instead of forming beads and rolling off.

Polishing

Use a polish such as VW's Paint Polish later in the car's life when the paint appears dull and loses its shine. **Do not polish the new car.**
Always apply wax after polishing.

Touch-up paint

Your authorized VW dealer has touch-up paint or spray paint for minor scratches and stone chips. Scratches and stone chips should be touched up soon after they occur to prevent rust formation. The paint number of your vehicles finish is listed on a sticker under the front hood.

Cleaning windows

Clean windows with a sponge and warm water. Dry with a chamois.

Be sure not to use the same chamois for cleaning the paint surface. Most car cleaners contain silicone, and the slightest trace of silicone is sufficient to cause streaks and clouding on the windows, which are hard to remove.

Weatherstrips

To seal properly, weatherstrips around windows and doors must be pliable. To retain flexibility of the rubber, spray with silicone, available from your VW Dealer, or coat with talcum powder.

Windshield wiper blades

Remove the wiper blades periodically and scrub with a hard bristle brush and alcohol or a strong detergent solution.

Chrome care

To protect the car's chrome, apply VW's Chrome Preservative.

Care of chassis

The underside of the car picks up dirt and salt and should be sprayed with a powerful jet of water. This is easier to do after the car has been driven in rain.

Airing

If the vehicle is stored in a closed area for long periods, the storage area and the vehicle should be aired from time to time to prevent the formation of mould and stains inside the vehicle.

Removing spots

Do not use gasoline, kerosene, naphtha, nail polish remover or other volatile cleaning fluids. They may be toxic or flammable or hazardous in other ways. Only use spot removing fluids in well ventilated areas. Keep them out of reach of children.

Tar

Do not allow tar to remain on the paint finish. Remove it as soon as possible with a cloth soaked with a special paint cleaner, such as Paint Preservative and Wax. If you do not have a spot remover, you may substitute with turpentine. After applying a cleaning fluid, always wash with a lukewarm soap/water solution and apply a new wax coat.

Insects

Remove as soon as possible with a lukewarm soap/water solution or apply insect remover.

Tree sap

Remove with a lukewarm soap/water solution. Do not allow tree sap to harden on the paint surface.

Cloth upholstery and carpet

Clean with a vacuum cleaner or a hard bristle brush. Dirt spots can usually be removed with a lukewarm soap/water solution.
Use spot remover for grease and oil spots. Do not pour the liquid on the cloth material. Dampen a clean cloth and rub carefully starting at the edge and working inward.

Leatherette and interior trim

Use VW's All Purpose Cleaner or a dry foam cleaner.

Grease or paint spots can be removed by wiping with a cloth soaked with VW's All Purpose Cleaner. Leatherette parts of the headliner and side trim panels can be cleaned with a soft cloth or brush and All Purpose Cleaner.

Cleaning the top material

The top does not require any special care. Wash off dirt as soon as possible. **Do not wash in direct sunlight.** Use lukewarm water together with VW's All Purpose Cleaner. A hard bristle brush will help to loosen dirt from the grained surface of the material. Avoid scratching the body of the car with the bristles.

To remove spots, use a stronger solution of VW's All Purpose Cleaner. Never use paint thinner, nail polish remover or similar agents as they may have adverse effects on the top material.

After cleaning and washing the top, rinse the car well with clear water.

Clean the **pivoted points of the top linkage** from time to time, and lubricate them lightly with a few drops of oil. Wipe off excessive oil to prevent oil from dripping on the top material.

Bulb chart

Bulb for	US Replacement bulbs	VW Part No.
Sealed beam (headlights)	6014	ZVP 118 114
Front turn signal/parking lights	1034	ZVP 118 034
Side marker lights	57	ZPP 118 057
Rear turn signal	1073	ZVP 118 073
Stop lights	1073	ZVP 118 073
Tail lights	67	ZVP 118 067
Back-up lights	1073	ZVP 118 073
License plate light	89	ZVP 118 089
Instrument and indicator lights	—	N 17 722 2
Warning lights for emergency flasher and brake operation	—	N 17 751 2
Map leight	211	N 17 720 2

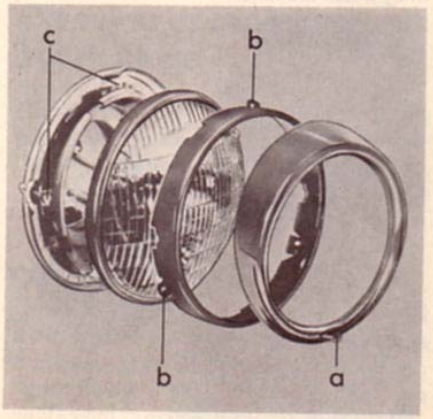
Replacing bulbs

Headlights

Your Volkswagen is equipped with double filament seven inch sealed beam units. Should it become necessary to replace a unit, loosen screw in the center of the trim ring below the headlight and take off the trim ring:

Firmly grasp the loose screw — a — (non-removable) and pull trim ring off.

Remove three short screws — b — in sealed beam retaining ring and take ring off.



Do not alter the position of the long headlight adjustment screws (— c —).

Take sealed beam unit out of support ring and pull cable connector off.

When installing new sealed beam units, be sure the three glass lugs engage properly in the support ring.

Before installing trim ring be sure the rubber gasket is in place. Loosely insert the screw for the trim ring and turn for 2 or 3 turns.

Position edge of trim ring over upper lug. Press ring over lug and tighten screw.

If no other headlight part as described here was removed or its position changed, it should not be necessary to aim the headlights. If in doubt have the adjustment checked at your dealer.

Front turn signal/parking light bulb or side marker light bulb

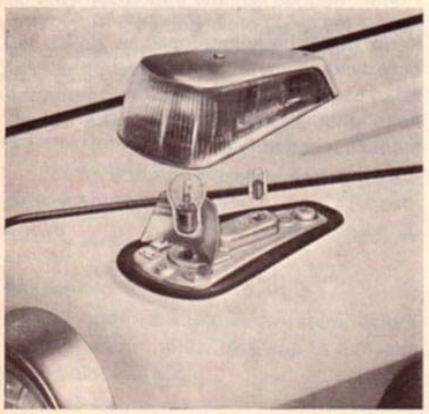
Remove two Phillips screws.
Take off housing and lens.

Gently press bulb into holder, turn and take out.

Install new bulb.

Be sure the gasket is properly positioned when reinstalling the housing and lens.

Tighten screws evenly. Do not overtighten as this may crack the lens.

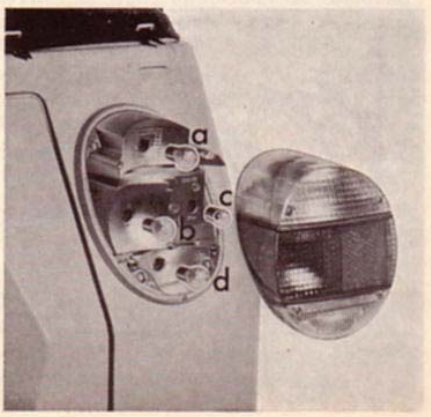


Rear turn signal, top/tail light or back-up light bulb

Unscrew four Phillips screws and remove mens.
Bulb positions:

a — turn signal light
b — stop light
c — tail light
d — back-up light

Gently press bulb into holder, turn and take out. Install new bulb.
Be sure the gasket is properly positioned when reinstalling the lens. Tighten screws evenly. No not overtighten as this may crack the lens.



License plate light bulbs

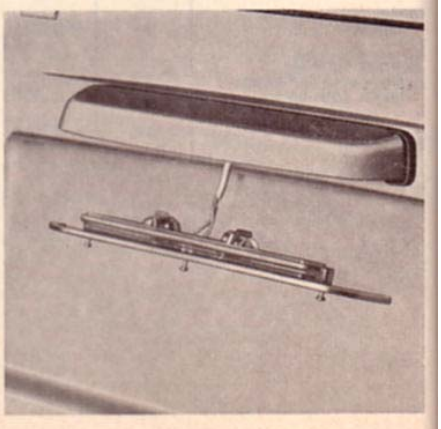
Loosen three screws and remove glass insert.

Press bulb gently into bulb holder, turn and take out.

Insert new bulb.

No not overtighten screws.

The license plate is properly illuminated only if both bulbs are working.

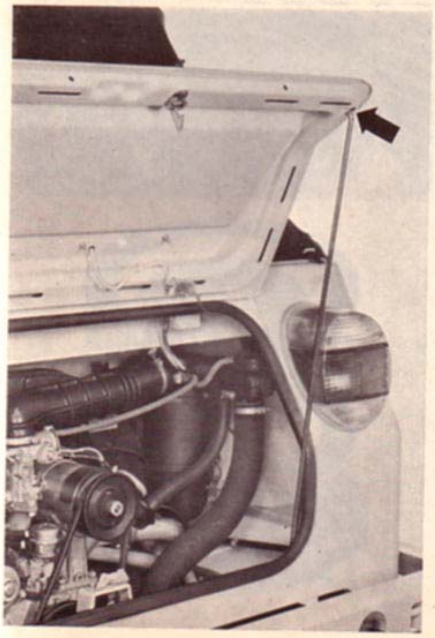


Engine compartment

The engine compartment is lockable.

To open: Unlock and depress release button in handle.

To hold open: Raise support from lower edge of lid opening and insert it into hole of lid.



General services

Before working on any part in the engine compartment, turn off the engine and let it cool down sufficiently.

Incomplete or improper servicing may cause problems in the operation of the car. If in doubt about any servicing, have it done by your Authorized VW Dealer or any other properly equipped and qualified workshop.

Cleaning or replacing spark plugs

The correct spark plug gap is 0.028 inch. Since the spark plug gap tends to increase in time during normal operation, it is advisable to replace spark plugs every 12,000 miles.

Removing spark plugs

Grasp the spark plug connector and pull it off. No not pull on the ignition wires as they may separate from the connectors. Unscrew the spark plugs with a suitable spark plug wrench.

Cleaning spark plugs

Dirty spark plugs should be cleaned with a sand blaster, but if not available, the carbon can be removed with a wooden or plastic pick. Do not use a wire brush. The plugs should also be clean and dry on the outside to avoid shorting and arcing. **The gap can be set by bending the outside elecrode. The gap should be 0.028 inch.**

Installing spark plugs

Insert them by hand and screw them into the cylinder head as far they will go. Only then use the spark plug wrench to tighten them firmly. Do not overtighten.

level

Your VW will usually not need additional oil between the scheduled changes.

Even so, you should check the oil level from time to time. To get a true reading, be certain the car is on level ground.

Wait a least 5 minutes after the engine has been stopped; give the oil time to collect in the crankcase.

To check the oil level, take the dipstick out and wipe it clean first. Now, insert and pull it out again. You have enough oil in the engine if the oil level is between the upper and lower marks on the dipstick.

Only add the amount of oil that is needed.

Always select a well-know brand and the recommended grade. Details about the correct oil viscosities are on page 48.

Change the oil in your engine at least every 3,000 miles. This is very important as the lubricating properties of oil diminish gradually during normal operation of the car.

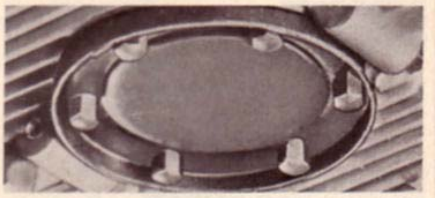
Drain the oil when the engine is still warm. Loosen all six cap nuts. Then, after removing five of the nuts, pry the oil strainer cover loose. Allow the oil to drain.

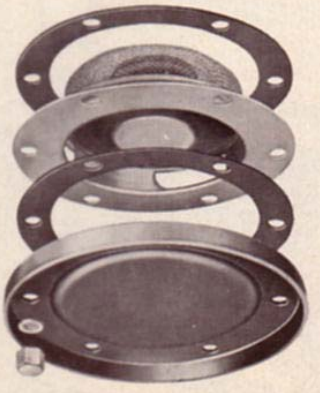
After the oil is drained, remove the oil strainer to clean it. The cleaning of the strainer should be done with every oil change. Use new gaskets and copper washers when re-installing the strainer to be sure no oil leak will develop later.

Fill the engine with 5.3 U.S. pints (4.4 Imp. pints) of oil labeled "For Service SD or SE" (or combination). For the right oil viscosity, see page 48.

Because of detergent additives in the oil the fresh oil will look dark after the engine has been running for a short time. This is to be expected, and there is no reason to change the oil at intervals shorter than 3,000 miles.

We recommend more frequent oil changes (every 1,500 miles) if you drive your car only short distances during the winter months. If you drive for only a few hundred miles a month under these conditions, we advise you change the oil every 6 to 8 weeks. In areas with arctic climate where average temperatures are below —13° F, the oil should be changed every 750 miles.





Manual Transmission oil

Both transmission and final drive are combined in one housing. The lubricant used is hypoid oil that is changed by your dealer only one time at 600 miles as part of the lubrication service. See page D 2.

Should the need arise to add oil, it should only be done with the necessary workshop equipment. Also hypoid oil is generally not marketed in small quantities.

Air cleaner

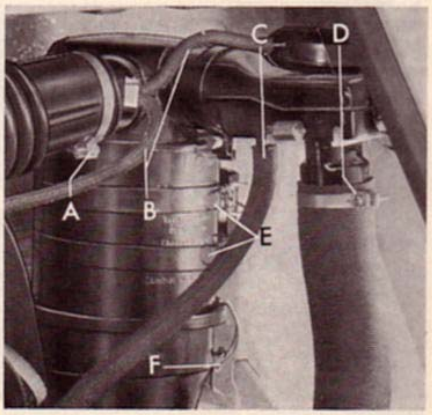
All the dust present in the air drawn in by the engine is retained by the filter element in the air cleaner.

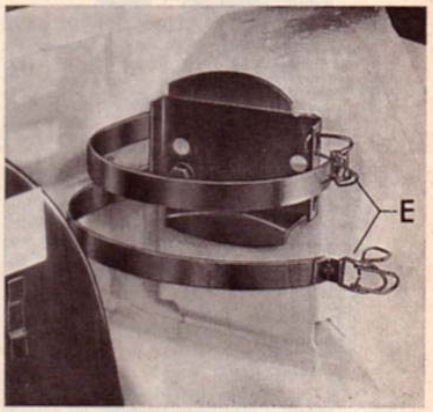
A dirty filter element not only reduces the engine output but can also cause premature engine wear. If local conditions are such that the vehicle is often driven on very dusty roads, the cleaner must be serviced frequently, even daily if necessary.

The dust in the air is retained by the filter element in the upper part of the air cleaner and trapped by the oil in the lower part when the vehicle is in motion. In time, this causes a layer of sludge to form at the bottom of the lower part. When there is only $^3/_{16}$ in. of oil above the sludge layer, the lower part must be cleaned and filled with fresh oil.

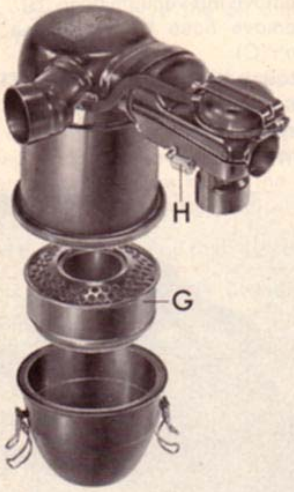
The air cleaner has to be removed for cleaning.

- Loosen screw at hose clamp (A). Remove rubber duct.
- Remove left vacuum hose (B).
- Remove hose for crankcase ventilation (C).
- Loosen screw at hose clamp (D). Remove preheater hose.
- Unsnap both clamps (E). Lift air cleaner out upright.





- Release two clips (F). Lift out upper part and store horizontally.
- Remove insert (G).
- Clean lower part and fill with fresh oil up to mark.



The oil quantity is a little less than 1 US pint (0.8 Imp. pint). In most climates use SAE 30 grade oil all year round. Use SAE 10 W grade in arctic climates.

The top section does not normally need cleaning. However, if the holes at the bottom of the filter element are partly blocked with dirt, remove the dirt with a wooden or plastic scraper.

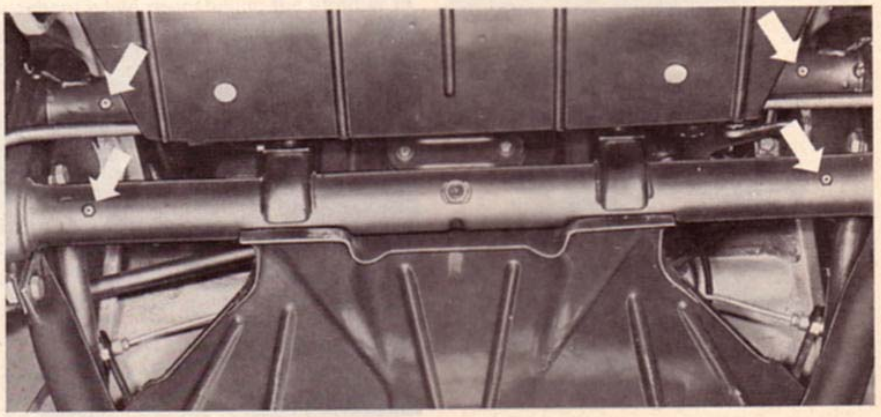
Before installing the air cleaner, check the control flap (H). It should move freely. If it is tight, apply a few drops of oil to the hinge points and work it until it moves freely.

Front axle

Lubricate the front axle once a year or every 18,000 miles.

Lift the front end of the car to take the weight off the front wheels. This is necessary to free the bearings to accept the lubricant. There are 4 grease fittings for the front axle. For their location, see arrows in the illustration.

Before forcing grease into the fittings, be sure to wipe them clean with a piece of cloth. Force lithium-based multi-purpose grease into the fittings until fresh grease starts to emerge at the sealing rings.



Wipe off any grease or oil that may have come in contact with tires or brake hoses because grease and oil have an adverse effect on rubber.

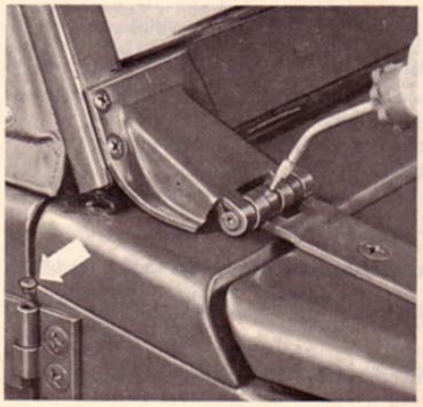
Hinges and locks

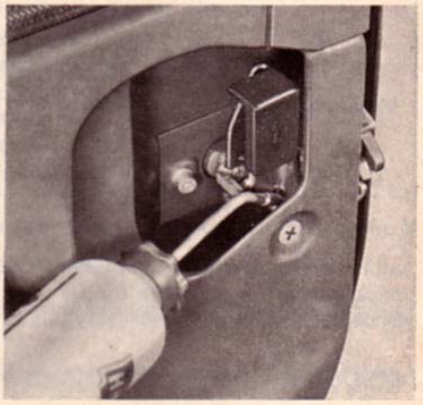
The upper part of the door hinges contain a small oil chamber. It is closed by a plastic plug. About every three months lift the plug out with a screwdriver and fill the chamber with SAE 30 weight oil. At the same time, apply some oil to the windshield hinges, front hood hinges and door locks. Lubricate moving parts of the door locks on the inside.

47-48

To lubricate the lock cylinders, dip the key into graphite, insert it and turn it a few times in the lock.

Apply a thin film of grease to the door striker plates on the door posts.





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Engine oil

Always use a name brand oil labeled "For Service SD" or "SE" (or combination) for the engine of your Volkswagen.
Engine oils are graded according to their viscosity. The proper grade to be used in your engine depends on existing climatic or seasonal conditions.

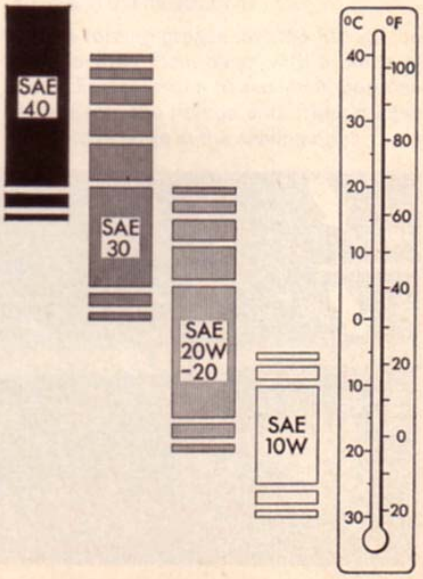
The following table contains the grading for oils to be used in VW engines:

Tropical climate	Hot season		SAE 40
	Cool season		SAE 30
Moderate climate	Summer		
	Winter	At average outside temperature above 5° F	SAE 20 W-20
		At average outside temperatures not lower than — 13° F	SAE 10 W*

If outside temperatures are continuously below — 13° F use SAE 5 W*

As temperature ranges of the different oil grades overlap, brief variations in outside temperatures are no cause for alarm. It is also permissible to mix oil of different viscosities if you find it necessary to add oil.

Temperature ranges of SAE grades



* Avoid high speed long distance driving when using SAE 10 W or SAE 5 W if outside temperatures rise above the indicated limits.

Transmission oil

Manual Transmission

Transmission and final drive are both lubricated with hypoid oil according to Mil —L—2105—B specifications (additive basis: sulphur-phosphorus):

SAE 90 In general all year.
SAE 80 In areas with cold climate.

ATF In areas with arctic climate and temperatures consistently below —13° F.

ATF is a special fluid for automatic transmissions, but ATF can also be used in the Manual Transmission under the above mentioned climatic conditions.

Lubricant additives

If a VW engine is properly maintained, it is uneconomical to mix any type of additive with fuel, or lubricating oils and transmission fluids.

Grease

1. **Multi-purpose grease with lithium base** should be used for the front axle.
2. **Dry stick lubricant** should be used for the hood locks and the sliding surfaces of the striker plates.
3. **Silicone spray or petroleum jelly** should be used for the battery terminals and posts.

Troubleshooting

Your Volkswagen should repay you with trouble-free driving if it receives regular 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 the trouble in the guide on the following pages and follow the directions on what to do.

Exercise extreme caution when working on any part of the car to prevent accidental injury. Incomplete or improper servicing may also cause problems in the operation of the car. If in doubt about anly servicing, have it done by a qualified mechanic or by your Authorized VW Dealer.

Note: The adjustment of idling and ignition timing requires special equipment and training. We suggest that you consult your Authorized VW Dealer.

Problem	Probable Cause	What To Do
VW will not start: engine will not turn over or turns over too slowly	1. Run down or dead battery	1. Charge or replace battery.
	2. Loose connection A. At battery B. At starter C. At connections behind dash board	2. Make sure that all connections are tight. A. Check both cable connections on battery and grounded end of ground strap. B. Check connections at solenoid, mounted on starter, under right rear of vehicle. C. Check push-on connectors behind dash board.
	3. Starter defective	3. See your nearest Authorized VW Dealer.
VW will not start: engine turns over	4. Loose connection in ignition system	4. Check for loose connections at coil, distributor and spark plugs.
	5. Loose connection in primary circuit to coil.	5. Check push-on connector on coil (thin black wire). Check push-on connectors behind dashboard. Should hte engine not start, ask for assistance.
	6. If spark is present at black coil cable, trouble is in ignition system	6. Check in this sequence: A. Turn ignition off. Remove distributor cap and rotor. Clean distributor contacts with stiff paper (post card). Have someone turn engine over with starter. Sparks should be visible between contacts. If no spark, check contact of cable connectors between coil and distributor cap. Check if contacts open. If there is still no spark, see your nearest Authorized VW Dealer. B. If sparks are visible between contacts disconnect high tension cable from center connection of distributor cap. With starter cranking the engine point cable to a metal object in the engine leaving a gap of approximately 1/4". Strong arcing sparks should appear. If there are no sparks, contact your nearest Authorized VW Dealer.

Problem	Probable Cause	What To Do
VW will not start: engine turns over		C. If sparks appear at high tension cable, the distributor cap should be cleaned inside and out. Reconnect high tension cable. Remove all spark plugs. If plugs are cleaned and dry, reconnect ignition cables to spark plugs and bring spark plugs into contact with metal (ground). **Hold cable with dry piece of cloth to avoid shock.** Sparks 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. Ask for assistance if the above steps did not ensure proper ignition. D. Dirty or wet spark plugs should be cleaned and dried. Install new plugs if necessary. Unburned gasoline on plug electrodes indicates excessive fuel supply.
	7. If spark is fairly good at plugs, trouble is most likely in fuel system A. Caused by improper starter procedure. If the gas pedal is depressed too often, the accelerator pump in the carburetor injects too much gasoline B. Carburetor may be flooded, float or needle valve may be sticking	7. Check fuel system in the following sequence: A. Depress gas pedal completely and operate starter for a prolonged period. If engine does not start, remove and dry sparks plugs, turn over engine with plugs removed for approximaately 30 seconds. Reinstall plugs and start engine. B. Tap around outside of carburetor with wooden or plastic tool handle. Wait a few minutes and try starting again as described at 8 A.
Engine stalls shortly after starting	8. Poor fuel supply 9. Automatic choke does not open, excessive fuel supply	8. See paragraph 12 through 14. 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 exhaust 12. Fuel pump filter may be clogged 13. Gasoline may be contaminated by water, dust or dirt	10. See paragraph 5 through 7. 11. Check whether any gasoline is left in tank. 12. After removing the upper part of the pump, the fuel filter can be taken out for cleaning. 13. See your VW dealer for cleaning of all components of the fuel system.
Red warning light for oil pressure comes on while you are driving	14. If 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 light goes on during driving, contact the nearest Authorized VW Dealer before driving on.
Red warning light for generator and cooling comes on while you are driving	15. If light goes on, V belt may be broken or generator does not charge	15. If belt drives generator without slipping, switch off all unnecessary electrical equipment (raido, etc.). Driven to nearest VW dealer as otherwise the battery will soon run down. If belt is broken, replace it before driving on because engine cooling fan is no longer working.

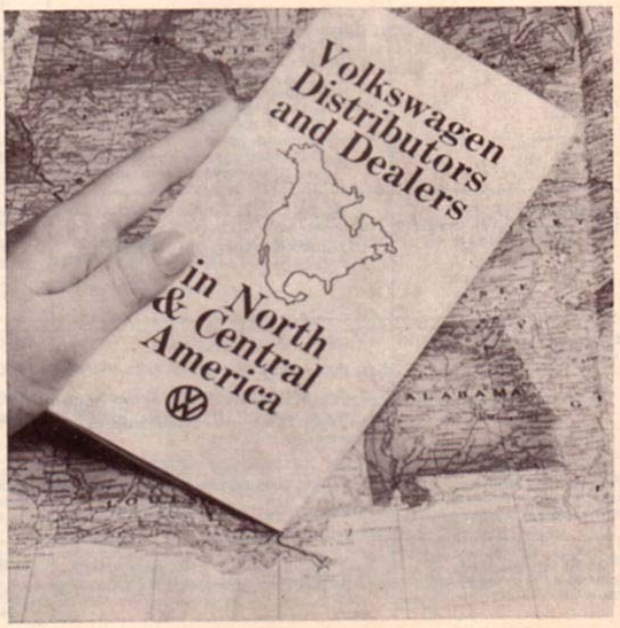
Owner Relations

There are more than 1200 authorized Volkswagen dealers in the 50 U. S. states. Their addresses and telephone numbers are compiled in a booklet which is available at your VW Dealer.

Any one of these dealers is well equipped to help you with virtually all VW-related matters; and your dealer should be your primary source.

Should there be an occasion where you need further assistance, you may want to contact your area distributor. We have listed their addresses and telephone numbers on the next page.

However, remember that ultimately your questions will be resolved in the dealership with dealer personnel and dealer equipment. We therefore suggest you contact your dealer first.



Addresses of VW Distributors in the US:

Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Volkswagen Northeastern Distributor, Inc.
100 Fordham Road
Wilmington, Massachusetts 01887
(617) 658-6700

Illinois, Iowa, Minnesota, North Dakota, South Dakota, Wisconsin
Volkswagen North Central Distributor, Inc.
3737 Lake Cook Road
Deerfield, Illinois 60015
(312) 272-5500

Kentucky, Ohio
Midvo, Incorporated
5000 Post Road
Dublin, Ohio 43017
(614) 889-2911

Indiana, Michigan
Import Motors Ltd., Inc.
P.O. Box 2008 (2660 28th St., S.E.)
Grand Rapids, Michigan 49501
(616) 949-7788

Florida, Georgia, South Carolina
Volkswagen Southeastern Distributor, Inc.
155 East 21st Street
Jacksonville, Florida 32203
(904) 355-1684

Delaware, Pennsylvania
Volkswagen Atlantic, Inc.
1001 South Trooper Road
Valley Forge, Pennsylvania 19481
(215) 666-7500

Alabama, Louisiana, Mississippi, Tennessee (West)
International Auto Sales & Service, Inc.
4200 Michoud Boulevard
New Orleans, Louisiana 70129
(504) 254-1500

Connecticut, New York, New Jersey
World-Wide Volkswagen Corporation
Greenbush Road
Orangeburg, New York 10962
(914) 359-5000

Washington, D. C., Maryland, North Carolina, Tennessee (East), Virginia, West Virginia
Volkswagen South Atlantic Distributor, Inc.
9300 George Palmer Highway
Lanham, Maryland 20801
(301) 577-2600

Arizona, California (South), Nevada (South), Hawaii
Volkswagen Pacific, Inc.
11300 Playa Street
Culver City, California 90230
(213) 870-3381 or (213) 390-6226

Alaska, Idaho, Montana, Oregon, Washington
Riviera Motors, Inc.
P.O. Box 220 VW
(Five Oak Industrial RTE 1)
Hillsboro, Oregon 97123
(503) 645-5511

Arkansas, Missouri, Kansas, Nebraska
Volkswagen Mid-America Inc.
8825 Page Boulevard
St. Louis, Missouri 63114
(314) 429-2141

Colorado, New Mexico, Oklahoma, Texas, Wyoming
Volkswagen South Central Distributor, Inc.
P.O. Box 2207
San Antonio, Texas 78298
(512) 341-8881

California (North), Nevada (North), Utah
Reynold C. Johnson Company
7100 Johnson Industrial Drive
Pleasanton, California 94566
(415) 828-6700

Engine

Four cylinder, four stroke, horizontally opposed, in rear.
Air cooling by fan, thermostat-controlled. Pressure oil feed with gear-type pump.
Oil cooler. Mechanical fuel pump.
Downdraft carburetor with automatic choke and accelerator pump.
Air cleaner with load and temperature sensitive intake air pre-heating.
Exhaust emission control system. Activated charcoal filter in the fuel system.

Bore	3.36 in. (85.5 mm)
Stroke	2.72 in. (69 mm)
Displacement	96.6 cu. in. (1584 cc)
Compression ratio	7.3 : 1
Maximum output SAE net	46 hp at 4000 rpm.
Maximum torque SAE net	72.0 lb. ft. at 2800 rpm.
Valve clearance with engine cold	Intake and exhaust 0.006 in. (0.15 mm)
Fuel rating	"Regular" gasoline incl. low-lead or lead-free fuels*.
Oil consumption	U.S. —1.7—3.4 pints per 1000 miles Metric—0.5—1.0 liter per 1000 km Imp. —1.4—2.9 pints per 1000 miles

* The correct fuel octane rating for your VW engine is listed on a sticker under the front hood next to the hood lock.

Transmission

Manual Transmission

Single, plate, dry clutch.
Clutch pedal free play: 3/8—3/4 in. (10—20 mm)
Baulk synchronized four-speed transmission and bevel gear differential in one housing.
Drive shafts with two constant velocity joints per shaft.

Chassis

Platform frame with tunnel-shaped center member.
Front axle bolted to framehead. Engine/transmission unit bolted to rear frame fork.
Independent wheel suspension: Torsion arms at front. Double joint axles, trailing arms and diagonal links at rear.
Torsion bar suspension, telescopic shock absorbers, stabilizer at front.
Roller steering with maintenance-free tie rods and hydraulic steering damper.
Hydraulic dual-circuit foot brakes with drums at front and rear.
Mechanical parking brake effective on rear wheels.

Wheelbase	94.5 in. (2400 mm)
Turning circle diameter	36 ft. (11 m)
Track at front	53 in. (1354 mm)
Total wheel toe (unladen)	+30′ ± 15′ 0.07—0.21 (1,8—5,4 mm)
Camber (unladen)	30′ ± 20′
Track at rear	54.5 in. (1385 mm)
Wheels	5 JK x 14 steel discs with drop center rims
Tires	Radial ply tires with tubes
Tire pressures	Tire size and VW-recommended cold tire inflation pressures are listed on a sticker under the front hood next to the hood lock.

Electrical system

Voltage	12 volts
Battery	45 Ah
Starter	0.7 bhp
Generator	max. 420 watts
V belt size	9.5 x 900 LA "DA", 9.5 x 905 LA "DA", 9.5 x 905 LA "XDA" ("DA" = low stretch factor)
Ignition distributor	with combined vacuum and centrifugal spark advance
Firing order	1—4—3—2
Ignition timing	for correct specifications for your engine, see label in engine compartment
Contact breaker gap	0.016 in. (0.4 mm)
Spark plugs	Bosch W 145 T 1, Bosch W 175 T 1 * / Beru 145/14, Beru 175/14 * / Champion L 88 A — or plugs with similar values from other manufacturers
Plug thread	14 mm
Electrode gap	0.028 in (0.7 mm)

* To be used in vehicles driven at high speed for long periods in areas, where the average temperature is above 77° F.

Dimensions and weights

Length	148.75 in (3780 mm)
Width	64.5 in (1640 mm)
Height	63.7 in (1620 mm)
Ground clearance	8 in (205 mm)
Unladen weight (ready for use)	1984 lbs (900 kg)
Vehicle capacity weight	970 lbs (440 kg)
Gross vehicle weight	2954 lbs (1340 kg)
Gross axle weight, front	1212 lbs (550 kg)
rear	1763 lbs (800 kg)
Permissible trailer weights:	
Trailer without brakes	880 lbs (400 kg)
Trailer with brakes	1433 lbs (650 kg)
Trailer tongue load	55—88 lbs (25—40 kg)

Capacities

Fuel tank	10.5 U. S. gallons (40 Liters; 8,9 Imp. gallons)
Engine	5.3 U. S. pints of engine oil (2.5 liters; 4.4 Imp. pints)
Transmission and final drive	6.3 U. S. pints of hypoid oil (3 liters; 5.3 Imp. pints), refill with 5.3 U. S. pints (2.5 liters; 4.4 Imp. pints)
Brake system	approx. 0.53 U. S. pints (0.25 liter; 0.44 Imp. pints)
Oil bath air cleaner	approx. 0.9 U. S. pints (0.4 liter; 0.8 Imp. pints)
Windshield washer	approx. 3.6 U. S. pints of fluid (1.7 liter; 3 Imp. pints) operating pressure 42 psi (3 kg/cm²)

Performance

Maximum and cruising speed	68 mph

VW Diagnosis and Maintenance

The **VW Diagnosis and Maintenance Service** has been developed to give each car "tailored maintenance". In other words, just the proper amount of service that each individual car needs.

The **Diagnosis and Maintenance Record,** which appears at the end of this manual, shows you the mileage intervals at which diagnosis and maintenance services should be performed to keep your car in top driving condition.

Every Authorized Volkswagen Dealer at home or abroad will perform all the operations listed for VW Diagnosis, VW Maintenance, and the additional services (such as oil change, lubrication, brake fluid reneval) in accordance with Volkswagen quality service standards.

The **first maintenance service at 600 miles is free of charge;** you only pay for the engine and transmission oil change. From then on, every 6,000 miles your car will be tested through VW's unique diagnosis service system. You are entitled to **free diagnosis services at 6,000, 12,000, 18,000 and 24,000 miles.**

The VW Diagnosis Test Report will show precisely what work might be necessary in addition to the regular maintenance and oil change services that your VW requires.

If your Volkswagen in driven less than 18,000 miles in twelve months, have the front axle lubricated once a year.

Of course, you can obtain a VW Diagnosis at any time — outside the regular schedule — at your Authorized VW Dealer. Especially if you drive less than 6,000 miles a year, we recommend you have a VW Diagnosis performed at least once a year.

Your Authorized Volkswagen Dealer will certify on the mileage chart at the end of this manual which services have been completed.

If you have your car serviced somewhere other than at an Authorized VW Dealer, retain all receipts so that you can verify that regular services were performed at the recommended time or mileage intervals.

Oil Change and Maintenance Service 600 Miles

The free maintenance service at 600 miles consists of the following: (Lubricants, fluids and materials such as gaskets are paid for by the customer).

Oil Change

1 — Engine: Change oil, clean oil strainer.

2 — Transmission: Change oil, clean magnetic drain plugs.

Maintenance Service

1 — V Belt: Check, adjust if necessary.

2 — Valves: Check and adjust clearance.

3 — Clutch pedal free play: Check and adjust.

4 — Rear axle: Check torque of bolts on constant velocity joints.

5 — Tires and wheels: Check tire pressures, including spare wheel.

6 — Brake system: Check for damage and leaks. Check brake fluid level, add if necessary. Adjust foot and parking brakes.

7 — Electrical system: Check operation of all components, adjust headlights if necessary.

8 — Fuel cap, tank and connections: Check visually.

During road test:

Check efficiency of braking, steering and heating systems. Check overall performance.

After road test:

1 — Check and adjust idle speed.

2 — Check cylinder head covers for leaks.

VW Diagnosis and Maintenance

Oil Change Service

The engine in the Volkswagen requires little oil. But for long engine life, this oil should be changed every 3,000 miles. An oil change at a VW dealer includes the services shown below:

Engine: Change oil, clean oil strainer.

VW Diagnosis

A physical checkup of your VW is extremely important for determining the amount of additional maintenance your vehicle may need for continuing peak performance.

Listed on the following pages is the VW Diagnosis procedure which applies to your vehicle.

Chances are, if you have regularly maintained your vehicle, it is in good running condition.

The VW Diagnosis Test Report will be given to you so you will know the exact condition of your VW.

It is something you should know.

A VW Diagnosis every 6,000 miles consists of:
(only applicable operations on your vehicle will be performed)

Engine and clutch:

1 — V Belt: Check tension and condition.

2 — Ignition system: Check with electronic equipment.

3 — Compression: Check.

4 — Exhaust system: Check for damage.

5 — Manual transmission
Clutch: Check pedal free play.

6 — Engine: Check engine oil level.

Rear axle and transmission:

7 — Drive shafts: Check boots for leaks.

Front axle and steering:

8 — Front axle: Check dust seals on ball joints and dust seals on tie rod ends, check tie rods.

9 — Ball joints: Check play.

10 — Steering: Check play.

11 — Front wheels: Check camber and toe.

Brakes, wheels, tires:

12 — Brake system: Check for damage and leaks.

13 — Brake pedal: Check free play.

14 — Brake pedal: Check pedal travel.

15 — Parking brake: Check adjustment.

16 — Brake fluid: Check level.

17 — Brake linings: Check thickness.

18 — Tires, including spare wheel: Check for wear and damage, check and correct pressure.

Electrical system:

19 — Cranking system: Check with electronic equipment.

20 — Charging system: Check with electronic equipment.

21 — Check operation of headlights, high beam indicator light, parking lights, side marker lights, licence plate light, emergency flasher, stop lights, tail lights, back-up lights, turn signals, horn, and brake warning light.

22 — Headlights: Check adjustment.

23 — Windshield wiper: Check operation.

24 — Windshield washer: Check operation and fluid.

25 — Battery: Check electrolyte level, check voltage under load.

Test Drive

Test drive if Diagnosis is not followed by maintenance or repair. If maintenance or repair follows the diagnosis, test drive after the job is completed.

1 — Check braking, clutch, steering, heating system and overall performance.

2 — Check map light and instrument lights.

3 — Check ignition/steering lock and buzzer alarm.

4 — Check warning lights for generator and oil pressure.

VW Maintenance

After your vehicle receives a VW Diagnosis, your Authorized Volkswagen Dealer can perform the VW Maintenance.

The maintenance which should be performed at specified mileage intervals is shown below.

There may be additional maintenance required which will show up on the VW Diagnosis Test Report.

Your VW Service Manager or Service Adviser will explain the results of the VW Diagnosis in detail.

This will help keep a small maintenance problem from growing into a big maintenance problem.

So that your VW will keep running like a VW.

A VW Maintenance every 6,000 miles consists of:

1 — Engine: Change oil, clean oil strainer.

2 — Valves: Check and adjust clearance.

3 — Door hinges and door check: Lubricate.

4 — Hood and windshield frame hinges: Lubricate.

5 — Windshield wiper linkage: Lubricate.

6 — Transmission: Check oil level, add if necessary.

7 — Heater lever spot light: Check.

8 — Test drive: Check braking, clutch, steering, heating system and overall performance. Cylinder head covers: Check for leaks.

In addition:

Every 12,000 miles

1 — Contact breaker points: Replace.
Adjust dwell angle. Check timing, adjust if necessary.

2 — Ignition system: Visually check distributor cap and rotor.

3 — Spark plugs: Replace.

4 — Activated charcoal filter: Check visually.

Every 18,000 miles

1 — Front axle: Lubricate.

2 — Air cleaner: Clean and refill lower part with oil.

Every 24,000 miles

1 — Exhaust recirculation valve: Check, replace if necessary.

2 — Filter element for exhaust recirculation: Replace (at least every 2 years).

3 — Fuel cap, tank and connections: Check visually.

4 — Ignition wires, distributor cap and rotor: Check, replace if necessary.

Every 48,000 miles

Activated charcoal filter: Replace.

Every 2 years

1 — Brakes: Replace brake fluid.

2 — Brake warning light switch: Check functioning.

Delivery Inspection	600 miles	
426 012 (Dealer Stamp) PENINSULA VOLKSWAGEN SAN MATEO, CALIF. Date 3 25 74 Miles 12	**Engine and Transmission Oil Change** (Dealer Stamp) Date Miles	**Free Maintenance Service** Valid only between 500 and 1,000 miles (Dealer Stamp) Date Miles

3,000 miles **Oil Change Service** (Dealer Stamp) Date Miles	**6,000 miles** **Free Diagnosis** Valid only between 5,000 and 8,000 miles (Dealer Stamp) Date Miles	**6,000 miles** **Maintenance** (Dealer Stamp) Date Miles	**9,000 miles** **Oil Change Service** (Dealer Stamp) Date Miles	**12,000 miles** **Free Diagnosis** Valid only between 11,000 and 14,000 miles (Dealer Stamp) Date Miles	**12,000 miles** **Maintenance** (Dealer Stamp) Date Miles
15,000 miles **Oil Change Service** (Dealer Stamp) Date Miles	**18,000 miles** **Free Diagnosis** Valid only between 17,000 and 20,000 miles (Dealer Stamp) Date Miles	**18,000 miles** **Maintenance** (Dealer Stamp) Date Miles	**21,000 miles** **Oil Change Service** (Dealer Stamp) Date Miles	**24,000 miles** **Free Diagnosis** Valid only between 23,000 and 26,000 (Dealer Stamp) Date Miles	**24,000 miles** **Maintenance** (Dealer Stamp) Date Miles

27,000 miles Oil Change Service (Dealer Stamp) Date Miles	30,000 miles Diagnosis (Dealer Stamp) Date Miles	30,000 miles Maintenance (Dealer Stamp) Date Miles	33,000 miles Oil Change Service (Dealer Stamp) Date Miles	36,000 miles Diagnosis (Dealer Stamp) Date Miles	36,000 miles Maintenance (Dealer Stamp) Date Miles
39,000 miles Oil Change Service (Dealer Stamp) Date Miles	42,000 miles Diagnosis (Dealer Stamp) Date Miles	42,000 miles Maintenance (Dealer Stamp) Date Miles	45,000 miles Oil Change Service (Dealer Stamp) Date Miles	48,000 miles Diagnosis (Dealer Stamp) Date Miles	48,000 miles Maintenance (Dealer Stamp) Date Miles
51,000 miles Oil Change Service (Dealer Stamp) Date Miles	54,000 miles Diagnosis (Dealer Stamp) Date Miles	54,000 miles Maintenance (Dealer Stamp) Date Miles	57,000 miles Oil Change Service (Dealer Stamp) Date Miles	60,000 miles Diagnosis (Dealer Stamp) Date Miles	60,000 miles Maintenance (Dealer Stamp) Date Miles

63,000 miles Oil Change Service (Dealer Stamp) Date Miles	66,000 miles Diagnosis (Dealer Stamp) Date Miles	66,000 miles Maintenance (Dealer Stamp) Date Miles	69,000 miles Oil Change Service (Dealer Stamp) Date Miles	72,000 miles Diagnosis (Dealer Stamp) Date Miles	72,000 miles Maintenance (Dealer Stamp) Date Miles
75,000 miles Oil Change Service (Dealer Stamp) Date Miles	78,000 miles Diagnosis (Dealer Stamp) Date Miles	78,000 miles Maintenance (Dealer Stamp) Date Miles	81,000 miles Oil Change Service (Dealer Stamp) Date Miles	84,000 miles Diagnosis (Dealer Stamp) Date Miles	84,000 miles Maintenance (Dealer Stamp) Date Miles
87,000 miles Oil Change Service (Dealer Stamp) Date Miles	90,000 miles Diagnosis (Dealer Stamp) Date Miles	90,000 miles Maintenance (Dealer Stamp) Date Miles	93,000 miles Oil Change Service (Dealer Stamp) Date Miles	96,000 miles Diagnosis (Dealer Stamp) Date Miles	96,000 miles Maintenance (Dealer Stamp) Date Miles

99,000 miles	100,000 miles	100,000 miles
Oil Change Service	**Diagnosis**	**Maintenance**
(Dealer Stamp)	(Dealer Stamp)	(Dealer Stamp)
Date	Date	Date
Miles	Miles	Miles

Additional Services Record

The boxes to the right indicate a brake service that is required in addition to the preceding Maintenance schedule.

Your Authorized Volkswagen Dealer will perform this service at the recommended intervals.

It is the best way to keep your VW running. And running. And running.

Brake Fluid Renewal and checking of brake warning light switch		
after 2 years of operation	**after 4 years of operation**	**after 6 years of operation**
(Dealer Stamp)	(Dealer Stamp)	(Dealer Stamp)
Date	Date	Date
Miles	Miles	Miles

The "National Traffic & Motor Vehicle Safety Act of 1966" requires manufacturers to be in a position to contact vehicle owners if a correction of a product defect becomes necessary.

Please fill in one of the attached postcards if you change your address or purchase a Used Volkswagen.

You need not use this card if you purchased your car through an Authorized Volkswagen Dealer.

Please quote the VW chassis number as it appears on the identification plate of the vehicle. Its location is shown on page 3. Do not use an abbreviated serial number.

Additional cards can be obtained from any Authorized Volkswagen Dealer.

NOTICE OF ADDRESS CHANGE ☐

NOTICE OF USED CAR PURCHASE ☐

please check one of the above boxes

VW Chassis Number

Mo. Day Yr.

Last Name First Name Initial

Number Street

City State Zip Code

Please print and give complete information.

BUSINESS REPLY MAIL

No Postage Stamp Necessary if Mailed in the United States

POSTAGE WILL BE PAID BY

VOLKSWAGEN of AMERICA, Inc.

818 Sylvan Avenue

Englewood Cliffs, N.J. 07632

FIRST CLASS
Permit No. 785
Englewood, N.J.
07631

NOTICE OF ADDRESS CHANGE

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please check one of the above boxes

Mo. Day Yr.

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FIRST CLASS
Permit No. 785
Englewood, N.J.
07631

Customer Identification Card

This is another feature of Volkswagen Service that adds to your convenience. Just present this booklet whenever you stop for service at your Authorized Volkswagen Dealer. Your Identification Card will quickly furnish the Service Adviser wiht your name and address and all pertinent vehicle data.

USA VW 181