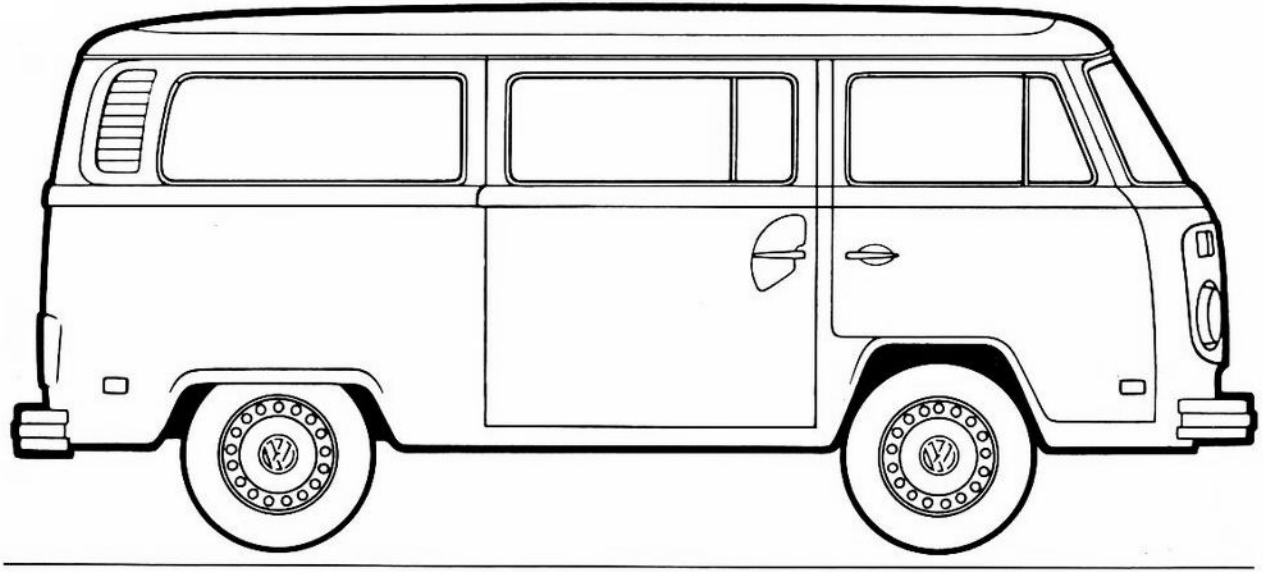
Volkswagen Owner's Manual

Type2 1976



Volkswagen Owner's Manual

1976 Models

Volkswagen
Station Wagon
and Kombi

Volkswagen
Campmobile

Volkswagenwerk Aktiengesellschaft

Fuel Injection Engines and Catalytic Converters

Federal and State Laws in the United States require automobiles to meet specific standards. Therefore, vehicles meeting U.S. specifications may differ from vehicles normally marketed in other countries where necessary spare parts for servicing such vehicles or specific fuels may not be readily available.

Fuel injection engines

U.S. specification Volkswagen models equipped with fuel injection engines require special service facilities and parts. Such facilities and parts are not commonly available outside the United States and Canada. Since Volkswagen of America, Inc. and Volkswagenwerk AG do not recommend the sale of Volkswagen vehicles with fuel injection engine for use in areas in which adequate service facilities and parts are not available, United States specification Volkswagen models with fuel injection are not normally sold for use outside the United States and Canada.

Catalytic Converters (California only)

VW models built for California are equipped with a catalytic converter which is a major element of the emission control system. Such vehicles require unleaded gasolines for the engine. Deposits from leaded gasolines and fuel additives containing sulfur, zinc, nickel or barium render catalytic converters inoperative, and thus defeat their purpose to control harmful exhaust emissions. Since unleaded gasolines may not be available outside the United States and Canada, Volkswagen of America, Inc. and Volkswagenwerk AG do not recommend the sale of Volkswagen vehicles equipped with catalytic converters for use outside the United States and Canada.

It is important to keep your new vehicle in proper operating condition. If engine malfunction should occur, particularly involving engine misfire or other noticeable loss of performance, do not continue to operate your vehicle in that condition but promptly contact an authorized dealer. Continued operation of your vehicle with a severe malfuction could cause the catalytic converter to overheat.

As with any vehicle, do not park or operate this vehicle in areas where combustible materials such as grass or leaves can come into contact with a hot exhaust system. Under certain conditions, these materials could be ignited by a hot exhaust system.

Should you have any questions about the use of U.S. specification Volkswagen models, which are equipped with fuel injection engines or catalytic converter in a particular country or area, we advise that you request specific formation from your authorized dealer, Customer Assistance of Volkswagen of America, Inc. or Volkswagen Canada Ltd.

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This Volkswagen Owner's Manual

acquaints you with the operation of your car. In your Owner's Manual you will also find information on fuel, lubrication, technical data, plus an explanation of how the emission control system works.

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

The Warranty and Maintenance

for your new Volkswagen is explained in a separate booklet. The first part of the Warranty and Maintenance booklet acquaints you with the New **Car Warranty and the Emission Control System Warranty.**

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

The second part of the Warranty and Maintenance booklet deals with the **Volkswagen Computer Analysis and Maintenance.** It explains how you can keep your Volkswagen in top driving condition by having it serviced regularly.

Check the service schedule and mileage chart at the end of the Warranty and Maintenance booklet. It will tell you when to bring your car to your Authorized Volkswagen Dealer for its periodic oil change, computer analysis and maintenance service.

Always have the Warranty and Maintenance booklet 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. So you'll have a record of all performed services.

Contents

Pictures and text in this manual are based on the 1976 Volkswagen Station Wagon with Manual Transmission. Where the controls, equipment and technical data of the commercial models and the Automatic Transmission differ considerably, we will point this out in the text.

Various items shown or described in the manual may be options on certain models. 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.

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 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 for 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.

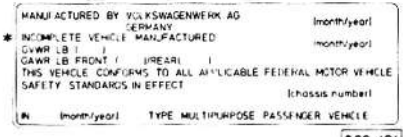
6 – Observe speed limits and obey highway signs.

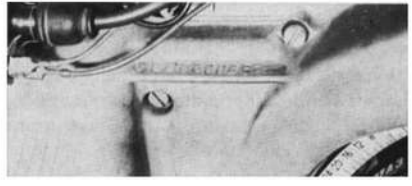
7 – When tired, get off the highway, stop and take a rest.

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.

Vehicle Identification





Safety Compliance Sticker

This sticker is your assurance that your new Volkswagen complies with all applicable Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was manufactured. You can find this sticker on the left doorjamb.

The sticker also shows the manufacturer's name, 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.

The Chassis Number

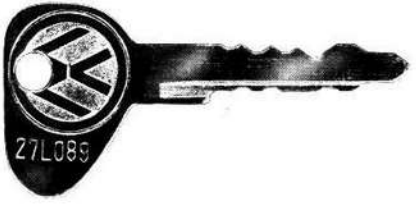
is located on the instrument panel on the driver's side so that it is visible from the outside through the windshield. This is for your protection . . . to aid in the apprehension of car thieves and the recovery of stolen vehicles.

The Engine Number

is stamped on the crankcase below the breather (not visible).
And also near the ignition coil.

* For Campmobile only. Campmobile equipment is installed subsequently.

Key



The same key is used for the ignition/ steering lock, the doors and the rear luggage compartment lid.

It is a good idea to keep a record of your key number in your wallet together with your license. If you should lose a key, your Authorized VW Dealer will thus be able to quickly secure a replacement key for you.

DO NOT INVITE CAR THEFT

by leaving your car unattended with the key in the ignition lock. Take the key with you and lock the doors.

A buzzer will remind you when you open the driver's door and the key is still in the ignition lock.

Doors

Always drive with locked doors to prevent inadvertent opening of the door from the inside, especially with small children in the car.

Since your Volkswagen is almost air tight it will be easier to close the door if you open a window slightly.

Front doors

From outside:

- Open doors by squeezing trigger (1) in outer door handle.
- Lock and unlock doors with the key (2).
- Doors can also be locked without a key. First depress locking knob (3), then squeeze trigger (1) in outer door handle as you close the door.

  If the door, with the locking knob depressed, closes by itself, the locking knob will disengage automatically. We provided this additional safety feature so you won't be locked out if the door should slam shut while the key is still inside the car.

From inside:

- Lock or unlock doors by depressing or raising locking knob (3).
- To open doors, pull inside door handle.

The sliding door

Always drive with a locked sliding door.

To open from the outside

Unlock the door with the key (1). Then press the handle down (2) and slide the door to the rear. The door is held in the fully open position by a catch.

To lock from the outside

Pull the handle up to release the catch (3). Slide the door forward until it is closed. Then lock with the key (4).

You can only lock and unlock the sliding door from the outside with the key.

To open from the inside

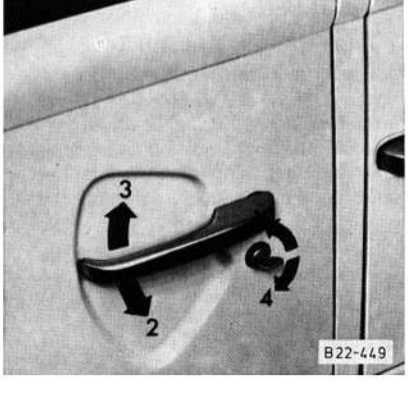
Move the small sliding knob up (5) and pull the handle back (6).

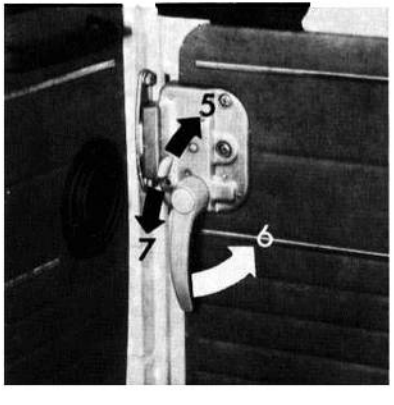
To lock from the inside

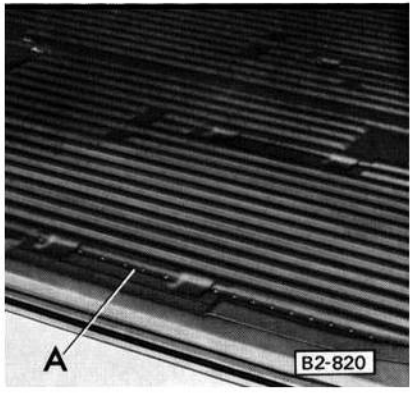
Pull the handle forward to release the catch, close the door and move the small sliding knob down (7).

In the VW Kombi,

embossed lines – A – on the cargo compartment floor mark the limit up to which cargo can be loaded without obstructing the operation of the sliding door.







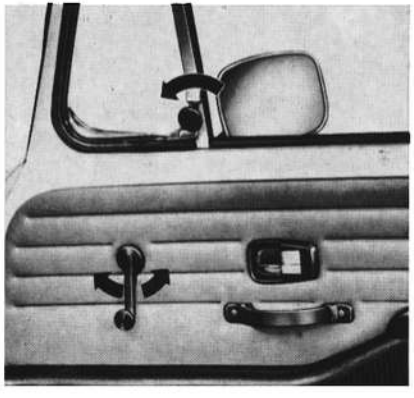
Windows

We recommend you do not put decals or other signs on the windows of your car that may interfere with the driver's vision.

You can lower and raise the windows in the front doors by using the window winders. We cushioned the knobs for your safety.

Vent windows
(VW Station Wagon only)

To open the vent windows, turn knob in driving direction, move locking lever forward and push out window.



To make closing the vent window easier, we suggest you first push on the forward part of the vent window so that it fits snugly against the weatherstripping. Then grasp the knob, and move the lever back to lock it in place.

Seats

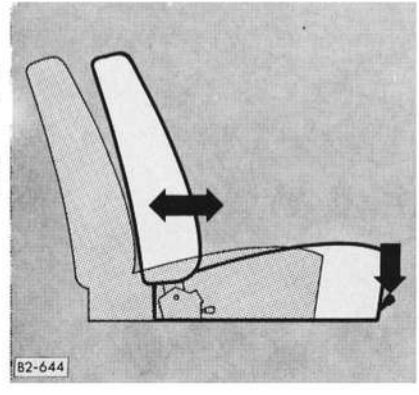
We recommend you do not adjust the driver's seat while driving. Your seat may suddenly jerk forward or backward, which could result in loss of control.

Head restraint (optional)

A head restraint can be installed for each seat. The head restraints cannot be adjusted.

To remove, pull head restraint out. To install, push head restraint in as far as possible.

Driver's seat
To move the driver's seat forward and backward, pull the lever at the front left hand side of the seat. Now 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 for driver's seat

The backrest is secured and cannot tilt forward accidentally.
To adjust the backrest, push the lever down at the inboard side of the seat cushion as you exert slight body pressure in the direction desired. Let the lever go to lock the backrest in position.

Removing and installing driver's seat

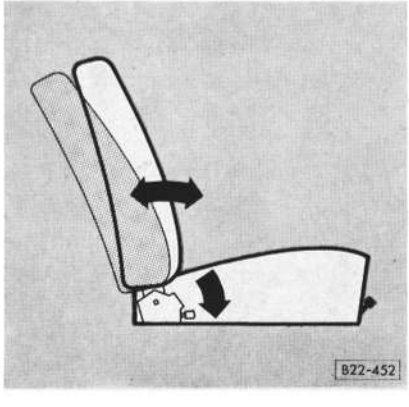
With the adjustment lever raised, slide the seat all the way forward until the runner touches the leaf spring stop. Stand outside the car, pull the leaf spring stop with the right hand and, with the adjusting lever raised, slide the seat fully off the tracks. Lift out.

To reinstall the driver's seat, stand outside the vehicle and position the seat 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 adjustment lever raised, slide the seat back on the tracks.

Removing and installing the front passenger seat

Lift the seat at the front edge first; then remove.

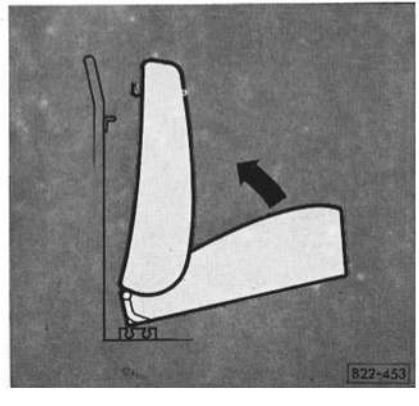
When putting the seat back in again, hold the seat with the seat cushion tilted toward the backrest, slide the hook on the rear side of the backrest into the bracket on the partition. Insert the seat cushion in the desired notch, and fold the seat cushion down. Always check to be sure the backrest is securely attached to the partition.



Front passenger's seat

The front passenger seat can be adjusted to two different positions. Lift the seat cushion at the front edge and move the seat into the second notch.

Keep the backrest hooked into the bracket on the partition when adjusting the seat position.



Passenger compartment

In the 9-seater version, the backrest of the first seat in the middle row can be tilted forward and out of the way for easy access to the rear bench. To disengage the lock of the backrest, pull up the lever on the side of the backrest.

For your passenger's protection, the backrest lock must be engaged at all times while the car is in motion.

Removing and installing seats in the rear passenger compartment

All seats in the rear passenger compartment can be taken out. First remove the side and front trimming from the seat frames.

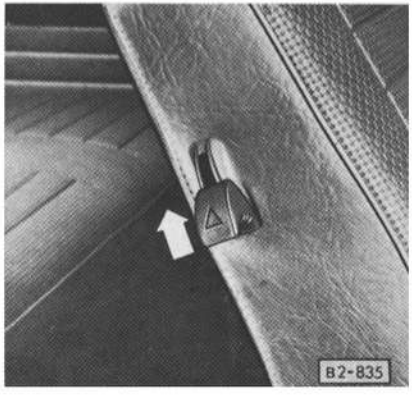
Then unscrew the nuts and take off the mounting supports. Remove seats. Take out bolts by turning them.

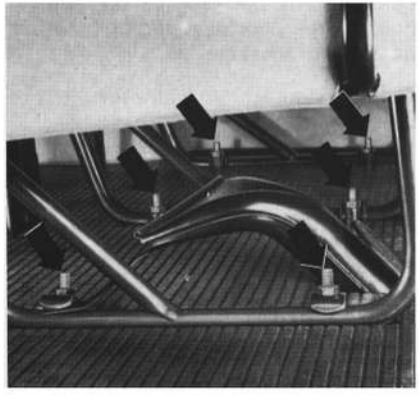
When reinstalling the rear seats, be sure to push belt tongue and buckle through between backrest and seat cushion. The safety belts should always be on top of the seat cushions for ready use.

Center seat bench

After loosening the seat retaining nuts of the center seat bench, remove the heater duct first. A flap will fold to cover the opening in the floor. When reinstalling the center bench, raise the flap and insert the duct in the opening. Be sure the duct ends are positioned underneath the mounting supports before tightening the nuts.

When reinstalling the seats use all bolts, mounting supports and nuts. Be sure to tighten the nuts firmly.





Safety belts

A safety belt is provided for each seating position in your Volkswagen. For your protection, **wear your safety belt at all times while the car is in motion.**

Safety belts that were subjected to excessive stretch forces during an accident should be replaced.

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

Belts should not be worn loose or twisted. They should fit snugly across your body.

Do not strap in more than one person in each belt.

Safety belts for front seats

The **front seats** are equipped with **combination lap/shoulder belts.** For easy storage a hook is provided on the door post.

In models with a three-passenger front seat, the middle seating position is equipped with a lap belt. See next page on how to use a lap belt.

A shoulder belt should not be worn by a person less than 4'7" in height because it would not be in its most protective position, and therefore may increase the possibility of injury in a collision.

To **fasten** your **combination lap/shoulder** belt, grasp the belt tongue, take it off the hook on the door post and pull the belt across your chest and lap.

Insert the belt into the anchor housing on the inboard side of the seat and push down until it is **securely locked.**

To **unfasten the belt,** push in the release marked PRESS in the anchor housing. The belt tongue will spring out of the anchor housing.

When not in use the belt should be hung on the hook provided for this purpose on the door post.

Depending on the design of your safety belts for the front seats, the length of the belt can be either adjusted at the buckle or with an adjuster on the shoulder belt.

(Type A)

Adjusting length at buckle (Type A)

To adjust the length of the belts, press in the release in the buckle as you pull the respective belt section in the desired direction. With this release it is also possible to adjust the belt length with the buckle already engaged in the anchor housing. Take up any slack of the loose belt by moving the slide on the belt.

Adjusting length at shoulder belt (Type B)

To **lengthen** the belt lift the adjuster as indicated by arrow in the illustration. At the same time pull the belt on the buckle side. Shoulder belts with plastic covered adjusters are lengthened by squeezing the metal tab. This adjustment can be made before or after buckling up.

To **shorten** the belt pull the free end as illustrated.

After each adjustment be sure belt is pulled snugly across your lap.

Safety belts for rear seats

The 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.

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 belts should always be kept on top of the seat for ready use. Do not permit them to get caught under the seat.

Coat hooks/Assist handles

For your convenience, there are several coat hooks on the door posts.
Hang clothes in such a way that they do not impair the driver's vision.

For easier entrance and exit of passengers, we have provided 5 assist handles:
1 on the dashboard for the front passenger seat, and
4 in the rear passenger compartment.

Luggage compartment

The rear luggage compartment is easily accessible through the lid at the rear of the vehicle. You lock and unlock it with the key.

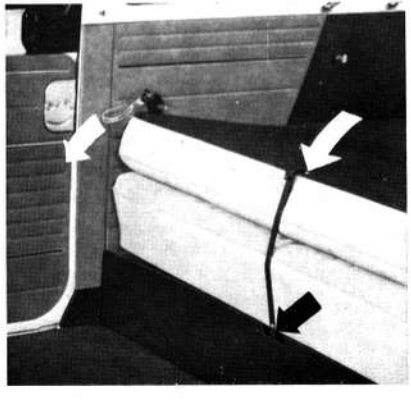
To open the lid, depress the lock and raise the lid until it is held in the fully open position by springs. Do not let the lid fly open on ist own.

To close the lid, swing it down firmly. Always make sure it is properly closed and locked.

Do not drive with the rear luggage compartment lid open. This precludes the possibility of exhaust fumes entering the car.

Folding backrest for rear seat bench
(Optional equipment)
You can expand the luggage compartment by folding the backrest of the rear seat bench down and fastening the backrest in this position.

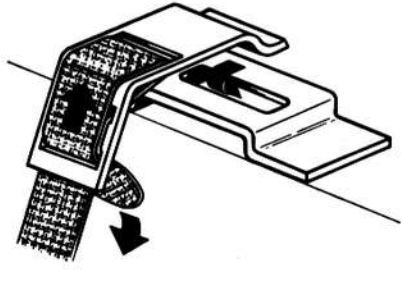
If your car is equipped with head restraints, take them off before folding the backrest down.



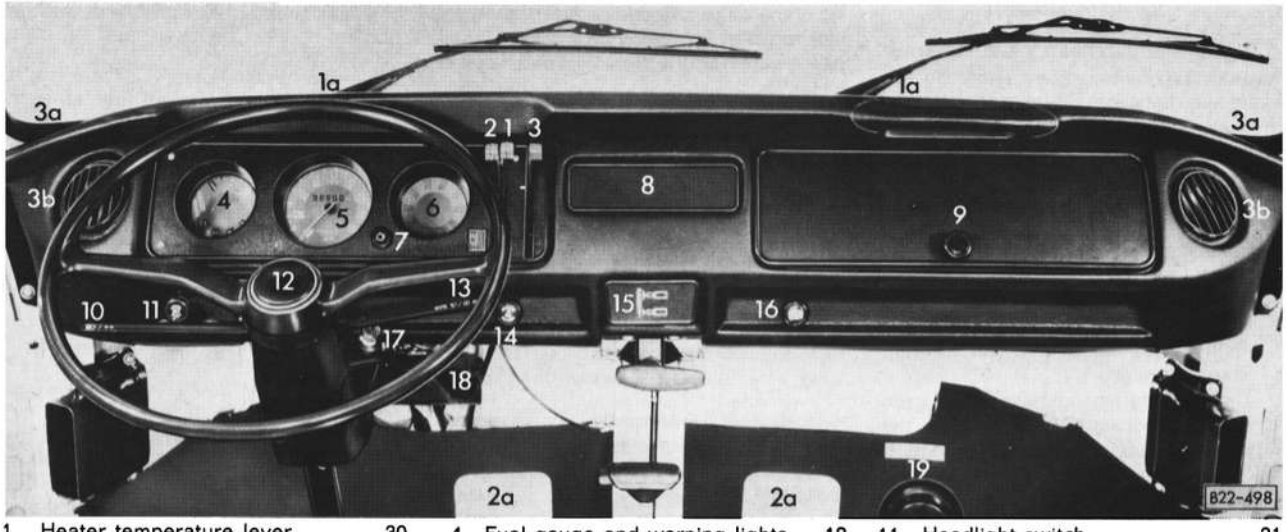
To **release** the backrest, pull the strap on the right, as seen in driving direction. When you fold the backrest back, it locks automatically in its place.

To **hold** the backrest in the folded-down position, take the retaining strap from under the seat bench through a cut-out in the kick panel and hook it into the bracket on the back of the backrest.

To **adjust** the length of the strap, unhook the strap and pull it through the hook in the desired direction.



Instrument panel



1 – Heater temperature lever . . . 30
1a– Vents for heating and defrosting (two for each side)
2 – Heat distribution lever
2a– Warm air outlets for front leg area (one for each side)
3 – Fresh air control lever
3a– Vents for fresh air ventilation below the windshield (one for each side)
3b– Vents for fresh air ventilation on the dashboard (one for each side)

4 – Fuel gauge and warning lights . 18
5 – Speedometer 20
6 – For installation of optional equipment: electric clock . . . 20
7 – Brake warning light 20
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9 – Glove compartment
10 – Turn signal/headlight dimmer switch lever 22

11 – Headlight switch 21
12 – Horn button
13 – Windshield wipers/washer lever 22
14 – Emergency flasher 21
15 – Ashtray 23
16 – Rear window defogger 21
17 – Ignition/steering lock 18
18 – Fuse box 35
19 – Container for windshield washer fluid 33

Ignition/steering lock

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

Fasten safety belts.
Make sure the gearshift lever is in Neutral (Manual Transmission) when starting the engine. The Automatic Transmission can be started in Neutral or Park (also see pages 25 and 26).

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 29.

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.

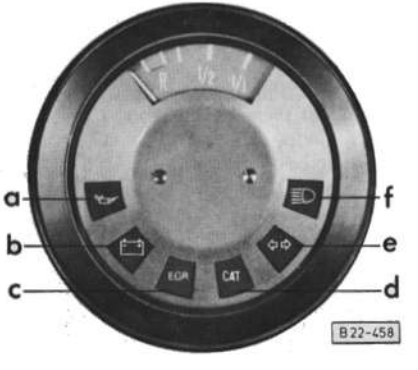
The steering column will lock when you remove the key. Therefore DO NOT REMOVE the key while you are driving or as the car is rolling to a stop.

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

The fuel gauge only works with the ignition on.

When the needle is on "R", there is a reserve of about 1 gallon of fuel left in the tank ... time to refuel at the next gas station.



Indicator or warning lights

The following indicator or warning lights are in the fuel gauge dial:

a – red		oil pressure
b – red		alternator
c – red	EGR	exhaust gas recirculation
d – red	CAT	catalytic converter
e – green		turn signals
f – blue		high beam

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 the engine off and wait until it has sufficiently cooled down.

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

a – Oil pressure warning light 

STOP AT ONCE . . .

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

Turn the engine off!

Check the oil level to make sure you have enough oil. If the cause is somewhere else, 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.

b – Alternator warning light 

If this light comes on when you are driving, the alternator may have stopped charging or a fuse in the fuse box may be blown. See page 60 (Troubleshooting, items 14 and 15).

c – Exhaust gas recirculation light EGR

The EGR indicator lamp will light up every 15,000 miles. This is your reminder to take your car to your authorized dealer for the scheduled emission control and maintenance services.

d – Catalytic converter light CAT

(not connected)

4 – Fuel gauge and warning lights

(see pages 18 and 19).

5 – Speedometer dial

The speedometer indicates the speed; the odometer records the miles driven. The last digit in red indicates 1/10 of a mile.

6 – This dial can be used for installation of **an electric clock,** which is optional equipment. To set the clock, depress the knob in the center and turn.

7 – Brake warning light

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. First make sure the parking brake is fully released. The other brake circuit will still operate, but a longer distance and greater pedal pressure are required to bring the car to a halt.

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 and the parking brake released. This is your assurance that the brake warning light function properly. If the brake warning light does not light up when turning on the ignition, or if it does not go out after starting the engine and releasing the parking brake, there may be a defect in the electrical system. If this is the case, contact your Authorized VW Dealer.

11 – Headlight switch

Pull the knob to the first stop to turn on the parking lights, the side marker lights, the license plate, tail and instrument lights and the emergency flasher light.

Pull the knob to the second stop to turn on the headlights (ignition on).

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

Instrument illumination

Adjust the brightness of the instrument lights by turning the headlight switch knob.

14 – 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.

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

When the headlight switch is operated, the emergency flasher knob glows with reduced brightness for easy recognition in the dark. When the emergency flasher is not in operation, the brightness of the light can be regulated together with the instrument panel lights (see instrument illumination). The light has full brightness when the emergency flasher system is in operation.

16 – Rear window defogger

Turn ignition on first.

Pull out the knob to activate the rear window defogger.

The green control lamp in the knob will light up to remind you that the defogger is switched on.

The rear window defogger will help to keep the inside of the rear window clear of condensation and frost in the winter. Be careful when removing objects from the luggage compartment behind the rear seat. Sharp edges may damage the defogger in the rear window.

After the rear window has been cleared, switch the rear window defogger off to avoid an unnecessary drain on the battery.

To give you full battery power while starting the engine, the operating rear window defogger will turn off automatically at this moment.

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

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 in the fuel gauge dial comes on 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.

Lane changer

If you are just changing lanes on an expressway, slightly lift or depress the lever. When you release your hold on the lever, it will return to the OFF 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.

Headlight dimmer

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

Windshield wipers WIPE

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

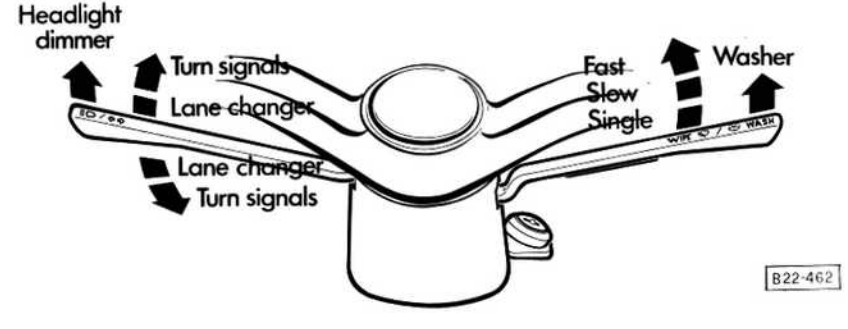
Lifting lever to first stop – low speed
Lifting lever to second stop – high speed
If you just slightly lift the lever before reaching the first stop, the wipers will wipe as long as the lever is held in this position and come to a stop when released.

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 outside and inside 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 car when struck from either direction.

Inside day-night mirror

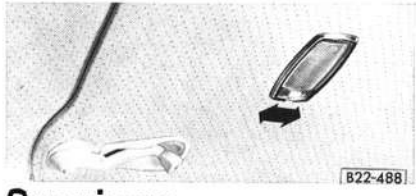
You can move the day-night mirror from clear daylight visibility to non-glare visibility at night by adjusting the lever upward or downward at the bottom of the mirror.

Interior lights

Switch positions

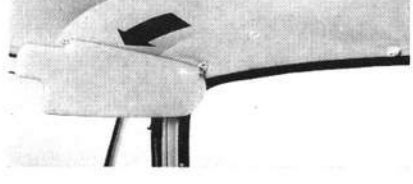
Front interior light:
Front – ON – with front doors open
Center – OFF
Rear – ON – with front doors closed

Rear interior light:
Up/Front – ON – with sliding door open
Center – OFF
Down/Rear – ON – with sliding door closed



Sun visors

To protect the driver from side glare, the sun visor on the driver's side can be moved toward the door window after lifting it out of its center mounting. **The sun visor on the passenger's side cannot be moved toward the side.**



Ashtrays

You will find one ashtray in the front on the instrument panel and two in the rear passenger compartment.

Front ashtray

Pull to open it. You can remove the ashtray by depressing the leaf spring and pulling the tray out.

To put it back in, depress the leaf spring, insert the tray in the guide rails and push in with the heel of your hand.

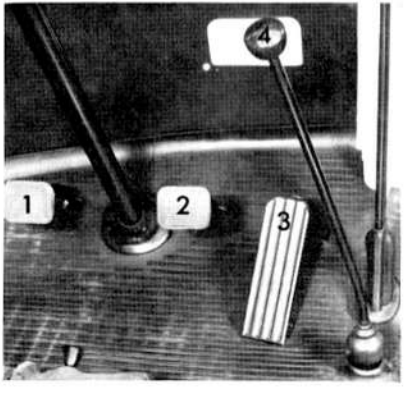
Ashtrays in the rear passenger compartment

To remove it, press down on the tray and pull out. To put it back in, insert the bottom of the tray first, then push in.

Controls for Manual Transmission

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 20 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 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 pads or shoes are replaced.

3 – Accelerator pedal

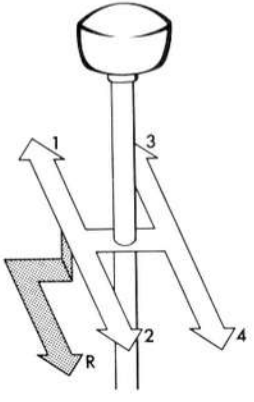
For good fuel economy we recommend smooth and even acceleration. Very fast, racy driving, alternating between full throttle and hard braking, raises the fuel consumption considerably. Also, tires and brake linings wear faster.

You can drive most economically between:
10 and 23 mph in 2nd gear
15 and 35 mph in 3rd gear
30 and 50 mph in 4th gear

4 – Gearshift lever

Your Volkswagen has a fully synchronized transmission. The four forward gears and a reverse gear are arranged as illustrated. The shift pattern is also shown on the face of your ashtray in the dashboard.

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. There is no break-in schedule.

There are, however, certain recommended speed ranges for the various gears:

1st gear	0 – 15 mph
2nd gear	10 – 32 mph
3rd gear	15 – 52 mph
4th gear	from 30 mph up

If you have a traffic situation where it is necessary to accelerate in 2nd and 3rd gear above the recommended speed ranges, you may do so for a brief period only. A governor is installed on the engine to prevent damage from excessive engine speed (revolutions per minute).

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.

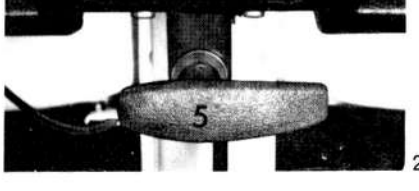
The back-up lights go on automatically when you engage the reverse gear (with the ignition on).

5 – Parking brake

To set the parking brake, pull out the handle. With the ignition on, the brake warning light will light up. To release the parking brake, first slightly pull the handle as you turn it to the right. Then push it all the way in. When the parking brake is fully released, the brake warning light will go out. 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 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.

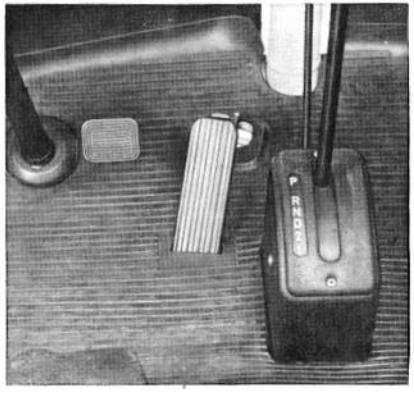


Controls for Automatic Transmission

There are few points you should know if you want to take full advantage of your Automatic Transmission.

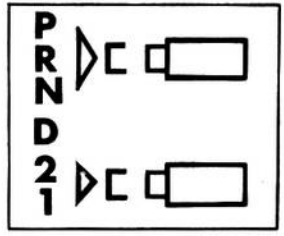
Remember the following basic rules:

- You can start the engine with the selector lever in Neutral or Park.
- Apply the parking brake or foot brake before selecting a driving range. When the selector lever is in a driving range, the car may creep even at idling speed. Therefore, do not release the parking brake or foot brake until you are ready to move.
- Do not accelerate while selecting a driving range. At this time the engine must run at idling speed so that no undue stress will be placed on the automatic clutches in the transmission.
- If the selector lever is accidently moved into Neutral (N) while driving, take your foot off the accelerator pedal and wait until the engine speed has dropped to idling before selecting a driving range.



The selector lever has 6 positions:

P = Park
R = Reverse
N = Neutral
D = Drive
2 = } Lower driving ranges
1 = }



The selector lever has a push button in the handle. The push button must be depressed when selecting the following positions:

From P to R
R to P
N to R
2 to 1
} depress push button in handle

The selector lever can be moved freely between the other positions.

The selector lever console is illuminated when the parking lights or headlights are switched on.

The driving ranges

The Automatic Transmission has 3 forward driving ranges and one reverse. In the driving ranges 2 and D, the Automatic Transmission changes gears automatically while driving.

Range D

is the driving range to be normally used for day-to-day driving and highway driving. It ranges from zero to top speed, and all three gears engage automatically while driving.

Ranges 2 and 1

are to be used for mountain driving or slow driving, and also when you want to make use of the engine's braking effect.

Range 2

should only be used up to 55 mph. In "2", only the first and second gears will engage automatically. Therefore, only shift down into driving range "2" when the car speed is below 50 mph. It is not necessary to let up on the accelerator.

Range 1

Range 1 is needed on rare occasions, such as steep mountain driving. The first gear engages immediately upon selecting "1". In "1", the transmission will stay in first gear and not shift into second or third. Therefore, **do not select "1" when driving more than 25 mph.**

An interlock prevents inadvertent shifting into Range 1. When selecting "1", depress the push button in the handle and pull the lever back. When shifting back into 2, just push the lever forward.

The reverse driving range

should be selected only when the vehicle is stationary and without depressing the accelerator. To select reverse you must depress the push button in the handle and push the lever forward. To move the lever back to Neutral, just pull the lever back.

Accelerator "Kickdown"

If you need quick acceleration to pass moving vehicles or to climb steep grades, make use of the accelerator "kickdown" in your VW with Automatic Transmission. It gives you the possibility to shift into a lower gear without moving the selector lever. The accelerator kickdown can only be applied with the selector lever in the driving ranges D and "2".

When depressing the accelerator pedal you will find resistance at the full throttle position. By applying greater pressure the pedal can be pushed beyond this point to the kickdown position. The transmission will now shift automatically into the next lower gear to give you maximum acceleration, and only shift up again after the engine has reached maximum speed in that particular gear.

Be careful when using the kickdown on icy roads. Rapid acceleration may cause skidding.

Please observe the following when applying the accelerator kickdown:

With the selector lever in D, you can apply the kickdown to make the transmission shift down into second gear when driving below 50 mph and down to first gear when driving below 25 mph. With the selector lever in "2", you can apply the kickdown to make the transmission shift down into first gear when driving below 25 mph.

As soon as you release the pedal from the kickdown position the next higher gear is automatically engaged.

Starting the engine

is only possible when the selector lever is in Neutral or Park. As long as one of the driving ranges is engaged a safety switch prevents the engine from being started. For further details on starting see pages 18 and 29.

Moving off

With the parking brake or foot brake set, shift into the range you wish to use, usually position D. To move off, release the brake and accelerate.
Do not release the brake before you are prepared to move, because power is transmitted to the wheels as soon as a driving range is engaged.

Selecting a driving range

is easy. Simply release the accelerator pedal and move the selector lever from the range you are in to the range you want. Then step on the accelerator again. To select Range 1, see pages 26 and 27.

Stopping

When stopping temporarily, at traffic lights for example, it is not necessary to move the selector lever to Neutral. Simply apply one of the brakes. To start off again, release the brake and accelerate.

Maneuvering

When alternating between forward and reverse drive – for instance, while maneuvering the car into a tight parking space – only shift into Reverse or Drive when

- the car has come to a full stop,
- and the engine is running at idling speed.

Mountain driving

When driving on long, steep and winding mountain roads select range 2 or 1.

Parking

Do not remove the key from the ignition/ steering lock until you have parked the car, because removal of the key locks the steering.

When parking your car, apply the parking brake first; then move the selector lever to position P. To do this, depress the push button in the handle and push the lever forward to the Park position. The transmission is then mechanically locked.

The Park position may only be engaged when the car is stationary.

Shift out of the Park position before releasing the parking brake.

When the car is parked on a steep hill, shifting out of Park may be a little harder. This is due to the weight the car exerts on the transmission.

Emergency starting

Your Volkswagen with Automatic Transmission **cannot be started by pushing or towing.** Should the engine fail to start consult your nearest Authorized Volkswagen Dealer.

Starting hints

Fasten safety belts!

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

The Automatic Transmission can only be started with the selector lever in Neutral or Park (see also page 26).
Before starting the Manual Transmission, make sure the gearshift lever is in Neutral (see shift pattern on page 25).

It is not necessary to depress the accelerator pedal when starting. This holds true for a cold engine and an engine at operating temperature no matter what the outside temperature is. The fuel injection system, with which your Volkswagen is equipped, automatically supplies the required amount of fuel for starting.

Operate the starter for a few seconds only.
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.
The red warning lights for oil pressure and alternator in the fuel gauge dial and the brake warning light on the dashboard will light up when the ignition is turned on. They should go out after you have started the engine. The brake warning light should go out after releasing the parking brake.
It is not necessary 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.

Winter starting of Manual Transmission

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

Cars with catalytic converter

If your Volkswagen is equipped with a catalytic converter as part of the emission control system, the following is important to know:
After the engine is warmed up (not during or shortly after engine start-up) a malfunction in the ignition system, caused by a faulty spark plug, for instance, could reduce the effectiveness of the converter. To keep the converter operating properly, we advise you to slow down immediately if you should notice a sudden interruption in the pull of the engine under normal acceleration. This interruption could be for brief moments or of longer duration. Drive slowly (with half or less throttle) to the nearest VW dealer or other qualified workshop to have your ignition system checked and if necessary corrected.

Heater/Defroster

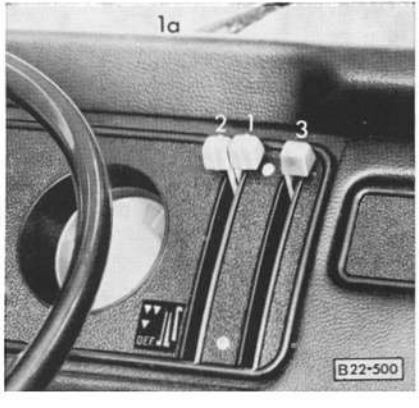
A fresh air heater/defroster is standard equipment on your Volkswagen.
The three control levers are located on the instrument panel.

Heater temperature lever 1

This right red lever controls the temperature level:

Lever up – heat off
Lever down – heat on fully

By setting the levers at any intermediate position, you can select the degree of heat that is most comfortable for you.



After a reasonable warm-up time, which also depends on the speed of the car, warm air will enter the vehicle through the two warm air vents – 1a – at the lower edge of the windshield.

Lever 1 also activates an electric fan. The fan increases the flow of warm air when driving at low speeds and also supplies warm air when the car is standing still (with the engine running).

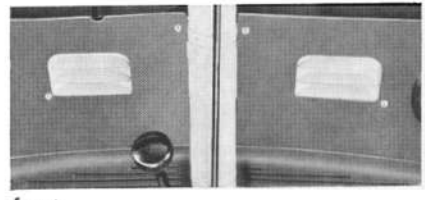
Heat distribution lever 2

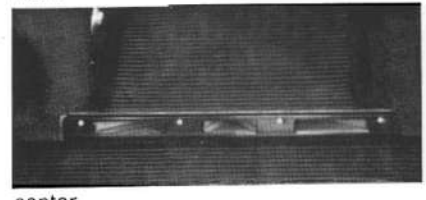
With the left red lever you can regulate the flow of warm air to the windshield to the front leg area and to the rear passenger compartement.

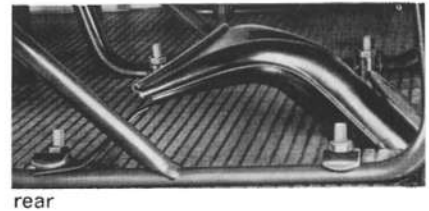
Lever up ▼▼
front **and** rear footwells fully open
Lever in middle position ▼
only front footwells open
Lever down DEF
outlets below the windshield open, front and rear footwells closed

You can select any intermediate position to regulate the heat for the front and rear.

The warm air outlets for the front leg area are underneath the dashboard. The heat outlets for the center seats in the rear passenger compartment are on the floor in front of the seats; and those for the rear seats are underneath the center seats.


front


center


rear

Ventilation

Hints for defogging and defrosting

Defogging and defrosting of your windshield will be more effective if you direct the total air flow toward the front.

Here is what you do:

Heater temperature lever – 1 – all the way down – heat fully on.

Heat distribution lever – 2 – all the way down – no heat to car interior.

Close round vents – 3b – on dashboard.

Move blue lever – 3 – up – fresh air ventilation off.
After the windshield is defrosted, move the blue lever down for maximum ventilation to help defog the windshield.

Now all air is directed toward windshield.

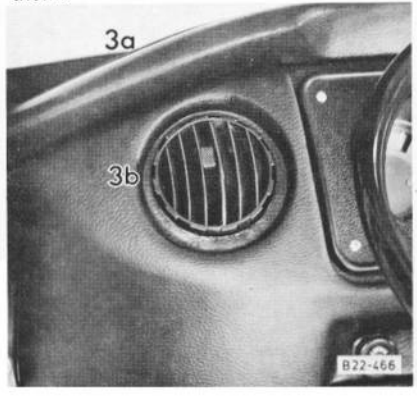
As soon as the windshield is clear the footwell outlets should be opened so that the interior of the vehicle heats up as quickly and evenly as possible.

The fresh air circulation system provides a continuous draft-free exchange of air while driving.

With the blue lever – 3 – on the dashboard you can regulate the flow of fresh air.

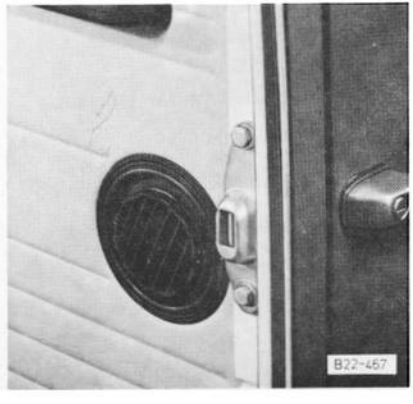
Lever up – ventilation off
Lever down – ventilation on

Fresh air enters through two vents – 3a – below the windshield and two round discharge vents – 3b – on the sides of the dashboard. You can regulate the flow of fresh air from the round discharge vents in any direction by turning them.

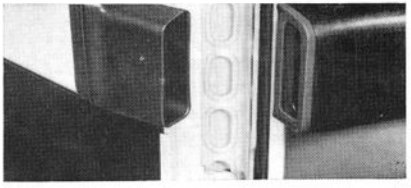


You can open and close these vents by adjusting the flap in the vents.

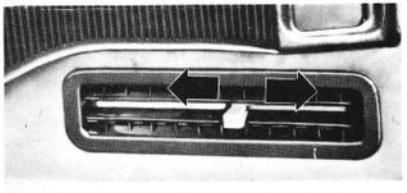
Two additional discharge vents are located on the partition between the driver's cab and the rear passenger compartment. They are individually adjustable and provide fresh air ventilation toward the rear.



Sliding roof (optional equipment)



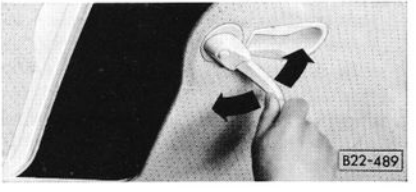
Air that enters the interior of the car via the fresh air circulation system is drawn out through openings in the front door frames.

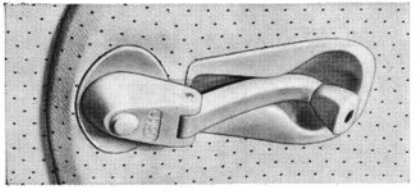


The air flow can be regulated by levers in the inside panel of the front doors (arrows).

Lever to the front –
fresh air circulation on
Lever to the rear –
fresh air circulation off

To open the sliding roof, pull the handle out and turn it counterclockwise; to close the sliding roof, turn the handle clockwise. The sliding roof is locked in any open position.





For safety reason, fold the handle back into its recess, as shown in the illustration.

Fuel supply

VW with catalytic converter: Unleaded fuel only.

All other VWs: "Regular", incl. low-lead and unleaded fuels.

The minimum octane rating is shown on a plate visible after taking off the filler cap. If regular fuels with adequate anti-knock 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 if regular gasolines have a lower octane rating than recommended by the manufacturer.

The filler neck is located above the right rear wheel.

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

Catalytic converters

Cars equipped with catalytic converters for the emission control system require unleaded gasolines for the engine.
Deposits from leaded gasolines and fuel additives containing sulfur, zinc, nickel or barium render catalytic converters inoperative, and thus defeat their purpose to control harmful exhaust emissions.
Cars with catalytic converters are so identified by a sticker on the steering column and another sticker next to the fuel filler cap.

Lead-free fuel

Cars with catalytic converters requiring unleaded gasoline will have smaller fuel tank openings, and gas stations pumps will have smaller nozzles.

This will prevent accidental pumping of leaded fuel into cars with catalytic converters.

Unleaded fuels may not commonly be available outside the United States. Therefore Volkswagen of America, Inc. or Volkswagenwerk AG does not recommend the sale of VW cars with catalytic converters for use in areas in which unleaded fuels are not available.

Container for windshield washer fluid

It is located on the right under the dashboard.

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.

After filling the windshield washer container, screw the cap on tightly.

Pressurize the container up to maximum of 42 psi (3.0 kg/cm²) by attaching the hose from the air pump to the container hose.

Place plastic cover over container cap.

Battery

The battery is located in the engine compartment on the right hand side

You can **check** the fluid level through the transparent battery housing. The fluid level should always be between the upper an lower marks on the housing in each cell.

If it is below the lower mark, take off the plastic cover, unscrew the filler plug on top of the battery and top the cell up with distilled water. **Only fill up to the upper mark.**

How often water must be added to the battery 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.

Grease the terminals and battery post well with silicone spray or petroleum jelly. Keep the ground connection tight and free of corrosion.

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 both terminals to avoid serious damage to the electronic components of the electrical equipment.**

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

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 and the ability of the engine to start readily depends to a great extent on the battery. Therefore, the battery should be checked regularly and kept in good working condition.

Brake fluid reservoir

It is located under the driver's seat (lift rubber mat). You can check the brake fluid level through a cut-out in the kick panel.

The brake fluid should always be between the upper and lower edge of the reservoir. If it drops below the lower edge, the cause should be corrected by your Authorized Volkswagen Dealer.

Every 2 years, the brake fluid has to be replaced. See Warranty and Maintenance booklet.

Only new, unused brake fluid that meets the SAE recommendation J 1703 and conforms to Motor Vehicle Safety Standard 116 must be used.
Luggage may not be stowed under the driver's seat which could damage the brake fluid reservoir.

Fuses

A failure in the electrical system may be caused by a burned fuse.

Before replacing a fuse, the ground terminal on the battery should be disconnected. If this is impossible, all electrical components including the ignition have to be turned off.

The 12-point fuse box with plug-in arrangement for relays is located under the instrument panel on the right hand side of the steering column.

Take cover off.

Turn all fuses between contact springs until metal fuse strips face upward. In a blown fuse the metal strip is separated.

To replace a fuse, simply depress a contact on either side of the fuse.

Carefully install new fuse with metal strip facing upward. The fuse must fit tightly between the contact springs – do not bend the springs.

Reinstall cover.

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 fuses in your car.

Additional fuses

The 8 amp. fuse for the **back-up lights** of the Manual Transmission is located in the engine compartment on a support near the ignition coil.

The 16 amp. fuse for the **warm air blower** is located in the engine compartment near the blower motor.

Replacing bulbs

Plug connector for **electric fuel pump** is located in engine compartment on left side.

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.

Headlights

Your Volkswagen is equipped with double filament seven inch sealed beam units. Should it become necessary to replace a sealed beam, loosen the screw of the trim ring. Firmly grasp the loose screw (non-removable) and pull the trim ring off.

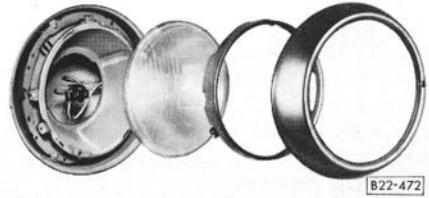
Remove the three short screws in the sealed beam retaining ring and take the ring off.

Do not alter the position of the long headlight adjustment screws.

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

When installing a new sealed beam unit, be sure the three lugs on the headlight engage properly in the support ring. Loosely insert the screw for the trim ring and turn for 2 or 3 turns. Position the upper edge of the trim ring over the lug. Press the ring over the lug and tighten the 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 by your dealer.



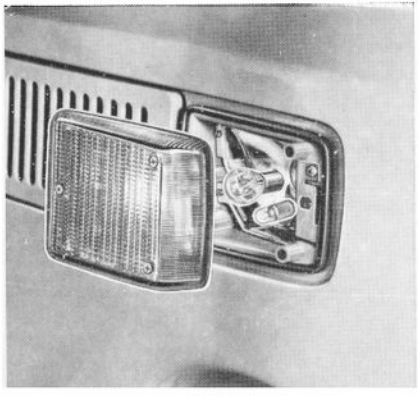
Front turn signal / parking light bulb and front side marker light bulb

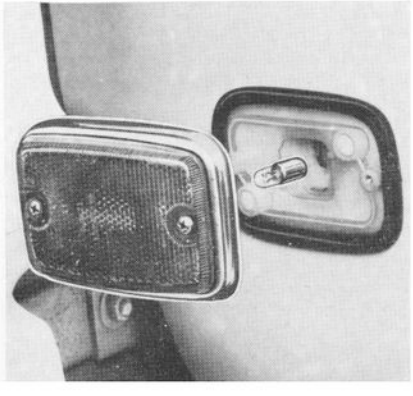
Rear side marker light bulb

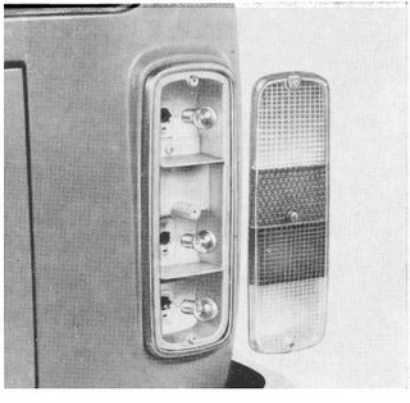
Rear turn signal / stop / tail light bulb or back-up light bulb

The following instructions apply to the replacement of the bulbs for the lights shown below:

Remove Phillips screws.
Take off lens.
Press bulb lightly into holder, turn it and take it out.
Install new bulb.
Be sure the gasket is properly positioned when reinstalling the lens.
Tighten screws evenly. Do not overtighten as this may crack the lens.







License plate light bulb

Open engine compartment lid.

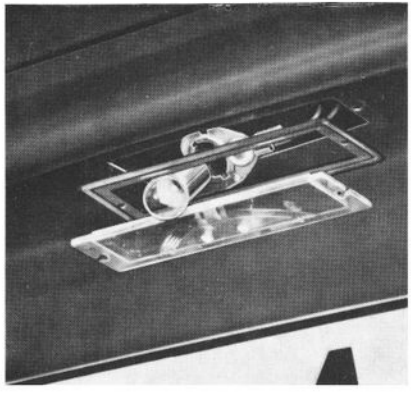
Remove Phillips screws on each side of lens and take off lens with bulb holder. Press bulb in lightly, turn and take out.

Install new bulb.

During re-assembly be sure the rubber gasket is properly seated.

Tighten screws evenly.

Do not overtighten as this may crack the lens.



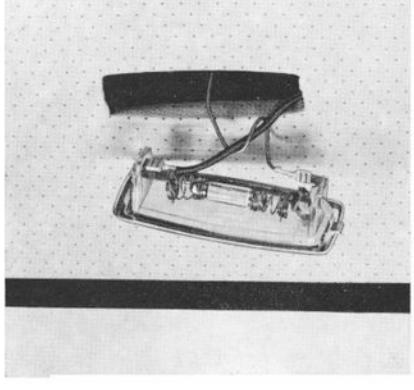
Interior light bulb

Pull interior light out carefully with a screwdriver.

Take bulb out.

Install new bulb.

Insert housing at rear first, then press it in until retaining spring engages.



Bulb chart

Bulb for	Trade bulbs	VW Part No.
Sealed beam (headlights)	6014	ZVP 118 114
Front turn signal/parking lights	1034	ZVP 118 034
Front and rear side marker lights	57	ZPP 118 057
Rear turn signal Stop/tail lights	1034	ZVP 118 034
Back-up lights	1073	ZVP 118 073
License plate light	89	ZVP 118 089
Warning lights for emergency flasher, brake operation, and rear window defogger	—	N 17 751 2
Selector lever console light (Automatic Transmission only)	—	N 17 751 2
Interior lights	—	N 17 723 2

Cleaning your VW

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 his 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 paint waxing	Combination Car Cleaner and Wax — ZVW 241 109
Paint polishing, remove paint oxidation	Paint Polish — 00 096 001
Preservation of chrome parts	Chrome Preservative — 000 096 067
Paint touch-up	Touch-Up Paint (all colors)
Upholstery cleaning	All Purpose Cleaner — ZVW 243 101
Whitewall tire cleaning	
Windshield cleaning and washer anti-freeze	Windshield Washer Anti-Freeze & Solvent – ZVW 239 101

*These or similar products are available in the United States and Canada. Comparable products are also available in Europe.

When cleaning upholstery or carpet, never use gasoline, kerosene, naphtha, nail polish remover or any other volatile solvents. They may be toxic or flammable and therefore hazardous. Keep all cleaning agents out of reach of children.

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 with 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 well. 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.

Cleaning windows

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

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.

Touch-up paint

Your dealer has touch-up paint for minor scratches and stone chips. Scratches should be touched up soon after they occur.

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.

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 let tar remain on the paint finish. Remove it early 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 early with a lukewarm soap/water solution or apply insect remover.

Tree sap

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

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.

Towing and trailer hauling

Towing

Always observe local laws and municipal ordinances governing towing.

Your Volkswagen has towing eyes at the front and rear. They are for emergency towing over short distances only.

When you tow your VW with the engine not running, the brake booster does not assist the braking force. To get the full braking effect, the driver must apply more force to the brake pedal.

Manual Transmission

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.

Automatic Transmission

When towing your Volkswagen with Automatic Transmission, please also observe the following in addition to the items listed under Manual Transmission:

The towing speed should not exceed 30 mph, and the towing distance should not be longer than 30 miles. This is very important because the transmission will not be adequately lubricated due to the lack of oil pressure normally provided when the engine is running. These limitations do not apply if the car is lifted at the **rear** or if the drive shafts are disconnected.

Please keep in mind . . .

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 start out in the first gear (Manual Transmission) with this extra load. Also, shift to a lower driving range or gear when driving up or down steep hills.

The total weight of a trailer **without brakes** should not exceed 1322 lbs. or 600 kg.

The total weight of a trailer **with brakes** should not exceed:

Automatic Transm.	1322 lbs.	600 kg
Manual Transm.	2645 lbs.	1200 kg

The trailer tongue load should be 55 to 110 lbs. or 25 to 50 kg. 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 34.

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 surface.

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 55 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-miles intervals in the winter.

Transmission oil

SAE 80 W or SAE 80 W-90 (multigrade) hypoid oil can generally be used in the transmission all year round. It does not have to be changed.
See also page 56.

Spark plugs

Make sure the spark plugs are not worn or have a gap larger than 0.028 inch. or 0.7 mm. For further details on spark plugs see page 49.

Tires

Your VW is equipped with tubeless radial tires of either designation:

185 R 14 **C** 6 PR
or 185 SR 14 **Reinforced**

The letter "C" and the word "Reinforced" are part of the tire designation and are imprinted on the tire sidewall
"C" stands for **"commercial"**, and **not load range.**

From the imprint on the tire sidewall, you can determine which type of tires are mounted on your vehicle.

The original equipment tires on your vehicle conform to all applicable Federal Motor Vehicle Safety Standards.

Tire pressures

VW-recommended cold tire inflation pressures are listed on a sticker on the steering column bracket. They are:

	¾ load	max. load
185 R 14 C 6 PR		
front	30 psi	30 psi
rear	40 psi	44 psi
185 SR 14 Reinforced		
front	30 psi	30 psi
rear	37 psi	40 psi

For good car handling and long 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.

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.

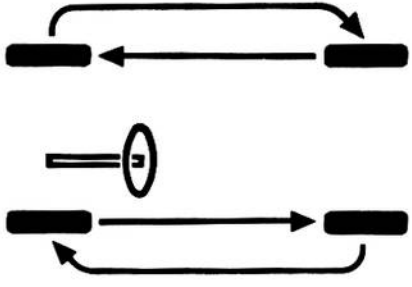
Spare tire pressure

The pressure in the spare tire should be:
44 psi for "C" type tires
40 psi for "Reinforced" type tires.

For road use, adjust the pressure in the tires for their position on the vehicle, front or rear, and also according to vehicle load.

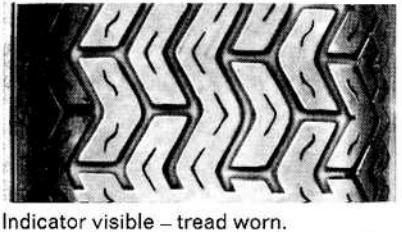
Tire rotation

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, and the wheel nuts/bolts torqued diagonally to 94 ft lbs./13 mkg. Also see page 48.



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 1/2 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.



Indicator visible – tread worn.

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

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.

Tire replacement

Always buy tires of the same specifications.

Tires of the "C" and "Reinforced" specification may be interchanged, but only in axle pairs, both front and both rear.

For best riding and car handling, replace all four tires at the same time. If this is not possible, replace tires in pairs, either front or rear. If in doubt, check with your VW dealer.

Do not mix fabric cord and steel cord tires on your vehicle.

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

Winter tires

Radial tires are designed to also provide good traction in snow or slush on winter roads. If you equip your vehicle with snow tires, use radial M+S tires, preferably for all four wheels.

For a better grip on hard snow or ice, you can use snow tires with studs, but **check with your local 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 also conform to the same load requirements as original equipment tires.

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

The driving direction should be clearly marked on all tires before removing them for storage. This is to make sure that they are mounted and run in the same direction as before.

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

Location in rear luggage compartment

The spare wheel is stored in the rear luggage compartment. To remove it, take off the cover and loosen the strap. When putting it back in again, be sure the plastic cap is in the shown position and tighten the strap.

Location under front seat bench

In models with a front seat bench, the spare wheel is located under the front passenger's seat. To remove the spare wheel, lift the front edge of the passenger seat to unhook the backrest. Fold the backrest forward, and move the seat approximately 1 inch/25 mm forward. Reposition the safety belts. Turn the seat toward the door. Take out the spare wheel from the driver's side.
(See page 12 on how to install the front passenger seat.)

Location for spare tire in Campmobile

The spare tire for the Campmobile is stored in the sink cabinet.

Spare tire pressure

Check the tire pressure from time to time and maintain it at a maximum of 40 psi (2.8 kg/cm²).

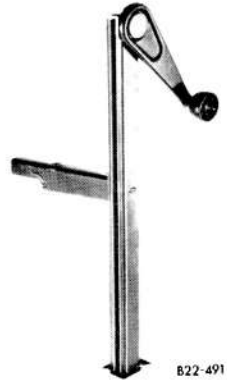
Whenever you have to use the spare wheel, adjust the tire pressure as specified on the sticker on the steering column bracket.

Jack

Warning

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 and the tool kit are in a bag and stowed under the front passenger seat. See page 12 on how to remove and reinstall the seat.



Changing a wheel

If you have a flat tire, **move off the roadway. 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 nuts/bolts. **Do not take them off.**

Step 4 - Securely insert the jack in jack port. There are two jack ports on each side of the car body.

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

Step 5 – Jack up car.

Step 6 – Change wheel and handtighten wheel nuts/bolts.

Step 7 – Lower car.

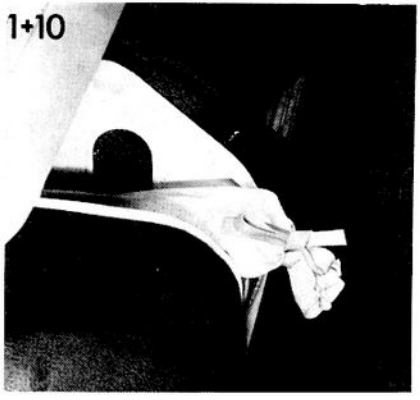
Step 8 – Further tighten the wheel nuts/bolts. **Do not overtighten.**
Important: Torque adjustment.

Step 9 – Replace hub cap.

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

Step 1

Take out the bag with tool kit and jack from under the front passenger seat. Lift the front edge of the seat to unhook the backrest and remove the seat.



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 through 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 nuts/bolts.

Step 3

Loosen all wheel nuts/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 nuts/bolts.**

Provide 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 4

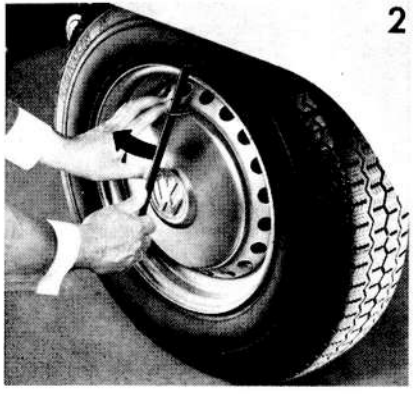
Securely insert the jack into the jack port closest to the wheel to be changed. There are two jack ports on each side under the car body for front and rear wheel changing. **Never jack the car up by the bumper or body.**

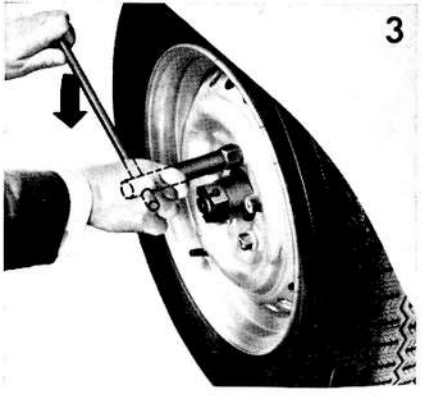
Step 5

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

Raise the vehicle by turning the handle clockwise.

Only raise the vehicle as much as is needed to change the wheel.





Step 6

Fully unscrew the wheel nuts/bolts and place them into the hub cap. Take the nut/bolt at the top off last. Place the spare wheel against the wheel hub and slightly rotate the wheel until a bolt hole in the wheel is in line with a threaded stud/hole in the wheel hub. Reinstall the nuts/bolts and tighten them crosswise by hand before jacking the car down.

Step 7

To lower the vehicle, turn the handle counterclockwise.

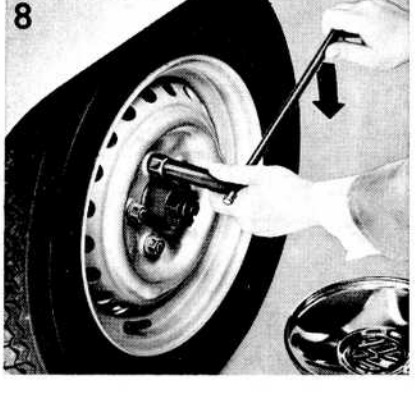
a = to raise b = to lower

Step 8

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

Correct tightness of the wheel nuts/bolts is important.

Correctly tightened nuts/bolts should have a torque of 94 ft. lbs./13 mkg. This torque can be obtained with the socket wrench and breaker bar by any person of average strength. If in doubt about the correct tightness of the wheel nuts/bolts, have it checked with a wrench by your dealer or at service station.



Step 9

To install the hub cap, place it around the lower part of the wheel center. With a firm blow of your hand on the upper part, the hub cap will snap into place. Make sure it is properly seated.

Step 10

Adjust the air pressure of the tire you have just put on. For correct tire inflation pressures, see the sticker on the steering column bracket.

Store the jack and tool kit under the front passenger seat. See page 12 for instructions on how to reinstall the seat.

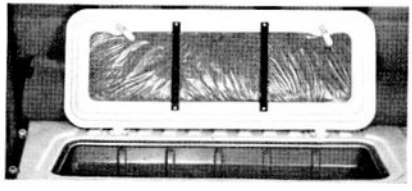
General services

Before working on any part in the engine compartment, turn off the engine and let it cool down sufficiently. If work has to be done with the engine running, exercise extreme caution to prevent neckties, jewelry or long hair from getting caught in the V-belt.

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.

Engine compartment

You have access to the engine compartment through the rear outside engine compartment lid and through another lid located inside the luggage compartment.



To open the lid inside the luggage compartment, roll the floor covering out of the way, then turn the lid handles to the **OPEN** position and lift up the lid.

To close the lid, perform the operation in reverse order.

Spark plugs

The correct spark plug gap is 0.028 inch/ 0.7 mm. Since the spark plug gap tends to increase in time during normal operation, it is advisable to replace spark plugs periodically (see Warranty and Maintenance booklet).

0.028 inch/0.7 mm

Removing spark plugs

Turn the engine off!

Grasp the spark plug connector and pull it off. Do not pull the ignition wires as they may separate from the connectors.

Unscrew the spark plugs with a suitable spark plug wrench.

Cleaning spark plugs

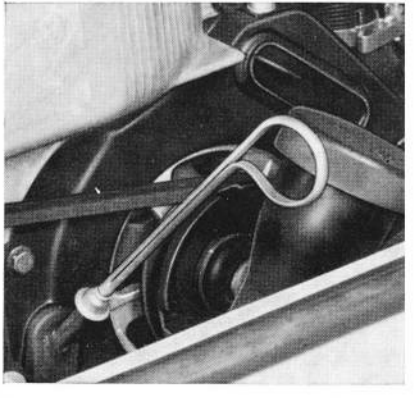
Dirty spark plugs should be cleaned with a sand blaster, but if not available, the carbon can be removed with a wood or plastic pick. Do not use a wire brush. The plugs should also be clean and dry on the outside to avoid shorting and arcing. **The gap can be set by bending the outside electrode. The gap should be 0.028 inch/ 0.7 mm.**

Installing spark plugs

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

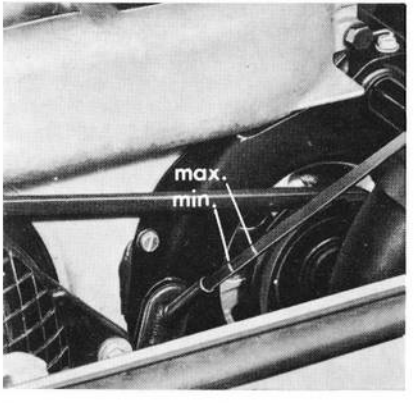
Checking the engine oil level

You should check the oil level from time to time. To get a true reading, be certain the car is on level ground. Wait at 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.

The difference between the two marks is about 0.5 US quarts (0.4 Imp. qt/0.5 liter).



Only add the amount of oil that is needed. Always select a well-known brand and the recommended grade. Details about the correct oil viscosities are on page 55.

Changing the engine oil

Change the engine oil at specified mileage intervals, but at least twice a year (see Warranty and Maintenance booklet). This is very important as the lubricating properties of oil diminish gradually during normal operation of the car and by ageing:

Drain the oil when the engine is still warm. Remove the drain plug A first. After the oil is drained, take out the oil strainer by removing the center nut B and clean it. The cleaning of the strainer should be done at specified mileage intervals (see Warranty and Maintenance booklet). Use new gaskets and washers when reinstalling the strainer to be sure no oil leak will develop later.

Fill the engine with oil labeled "For Service API/SE". For the right oil viscosity, see page 55.

For engine oil capacity data, see page 62.

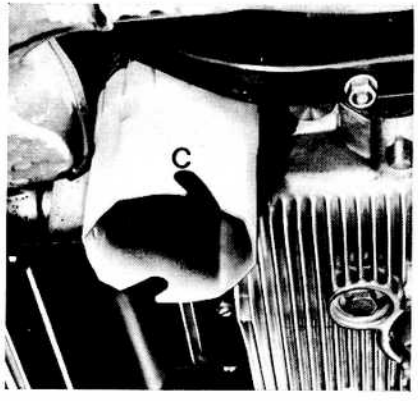
Important

The center nut B for the oil strainer should be tightened with a torque wrench. The correct torque is 7–9 ft. lb. (1.0–1.3 mkg).

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 recommended by the manufacturer.

We recommend more frequent oil changes 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 arctic areas with temperatures generally below –4° F, change the oil every 1,000 miles.

Be mindful of how you dispose of the engine oil. Do not dump it in streams or down sewage drains. Check your local ordinances.



A special wrench C should be used to screw the oil filter off and on.

Manual Transmission oil

Both transmission and final drive are combined in one housing. The lubricant used is hypoid oil which does not have to be changed.

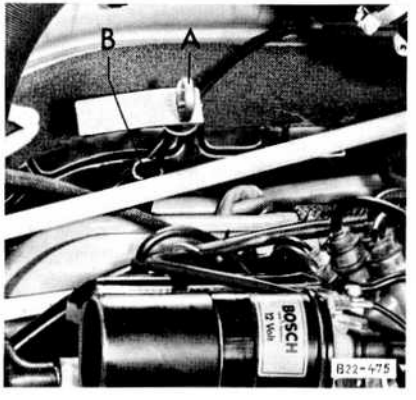
The transmission is checked for leaks during the maintenance service. Should the need arise to replenish the oil filling, it should only be done with the necessary workshop equipment. Generally, hypoid oil is not marketed in small quantities.

Automatic Transmission Fluid

Checking the ATF level

The torque converter and the transmission are lubricated with Automatic Transmission Fluid (ATF). The final drive requires hypoid oil SAE 90 which does not have to be changed.

The ATF has to be checked at frequent intervals, for instance, when the engine oil is being checked, but at least at the specified intervals (see Warranty and Maintenance booklet). A correct ATF level is very important for the proper functioning of the transmission. The reading should be done when the ATF is warm; with the engine idling, the selector lever in Neutral and the parking brake applied.



A = dipstick B = filler neck

The ATF filler neck is in the engine compartement on the left hand side. The dipstick is attached to the plug. Pull it out and wipe it clean first before inserting it to take a reading.

Do not tow the car or run the engine when there is no ATF in the transmission. The Automatic transmission may be damaged by even a tiny speck of dirt. Only use lint free rags to wipe the dipstick. Use a clean funnel or spout when adding ATF.

You have enough ATF if the fluid level is between the two marks on the dipstick. It should never be above or below these marks.

If level is too high or too low do not just add or drain ATF. Have your dealer check and correct the cause as soon as possible.

For correct ATF specifications, see page 56.

Changing the ATF

The complete ATF filling has to be changed at recommended mileage intervals. The ATF filling should be changed more frequently under heavy duty conditions such as continued stop-and-go driving, extended mountain driving, and at extremely high outside temperatures (see Warranty and Maintenance booklet).

The transmission oil in the final drive does not have to be changed.

Air cleaner

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

A dirty air cleaner 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 cleaned or replaced frequently.

Under normal conditions it is not necessary to replace the filter element more frequently than is mentioned in the Warranty and Maintenance booklet.

Checking, cleaning or exchanging filter element

1. Disconnect upper part of hose **A** from heater air blower. Open clamp at lower part of hose **A** and remove hose.
2. Open clamps **B** on air cleaner housing (2 at front and 2 at rear). Open cover on left side to expose filter element.
3. Take filter element out; clean or replace it. Remove dirt by shaking filter element.

Note

Under no circumstances may the paper filter be cleaned or soaked with gasoline, cleaning solvent or oil.

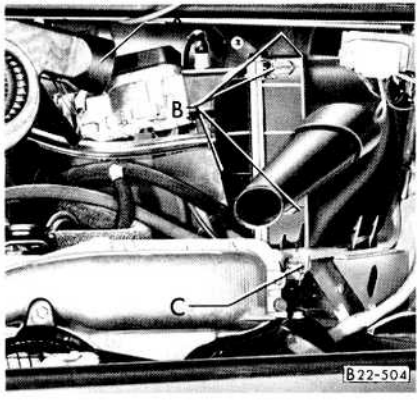
If you want to clean the right section of the air cleaner housing or remove the battery, also disassemble the right section of the air cleaner housing.

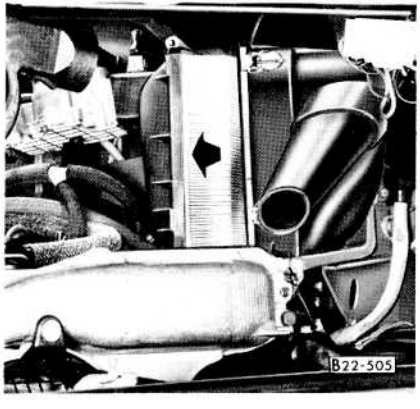
Proceed as follows:

4. Open clamp **C.**
5. Lift right section of air cleaner housing up and remove toward rear.

Reinstalling air cleaner housing

When reinstalling the right section of the air cleaner housing, be sure the rubber grommet **D** is in place.





1. Insert upper projection on housing in **D** first. Then press housing toward rear as you insert lower projection on housing in cutout in bracket base.
2. Close clamp **C.**
3. Reinstall filter element and cover on left side.
4. Close clamps **B.**
5. Reconnect hose **A.**

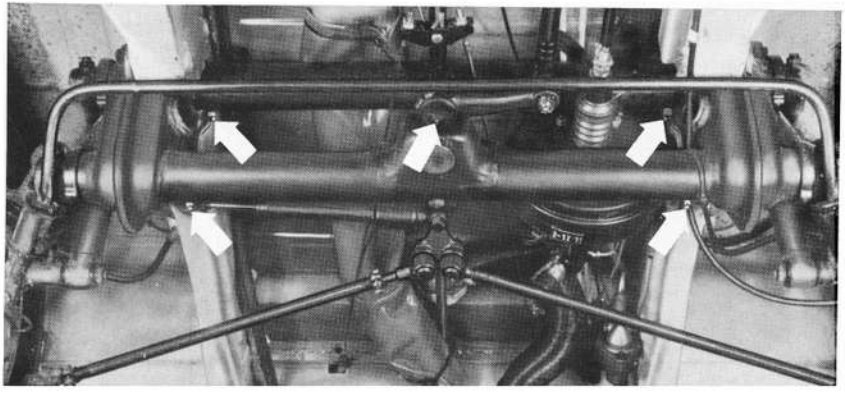
Lubrication

Front axle

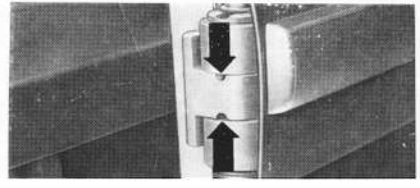
Lubricate the front axle once a year or at specified mileage intervals (see Warranty and Maintenance booklet).

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 5 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.



Door hinges and locks

The hinges of the sliding door and the rear lid should be lubricated with a few drops of SAE 30 engine oil every 6 months. Lubricate where marked by arrows.

Wipe off excess oil with a cloth.

Lubricate the **door lock cylinders** with graphite. Dip the key into graphite and turn it in the lock a few times.

Lubricants

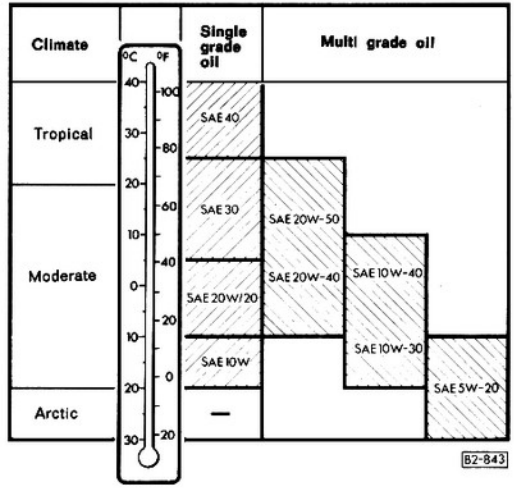
Engine oil

The table on the right contains the grading for oils to be used in your VW engine.

Always use a quality oil labeled "For Service API/SE" 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.

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.



When using SAE 10W or SAE 5W-20 engine oil avoid high speed long distance driving if the outside temperature rises above the indicated limit.

Transmission oil and Automatic Transmission Fluid (ATF)

Transmission oil

Hypoid oil	Single-grade	Multi-grade	Specification	Additive basis
Manual Transmission	SAE 80W	SAE 80W–90	Mil-L-2105 API/GL 4	sulphur-phosphorus
Final drive of the Automatic Transmission	SAE 90	–	Mil-L-2105 B API/GL 5	

ATF

Automatic Transmission and torque converter require ATF all year round.
All ATF's labeled "Dexron®" with a five-digit number preceded by the letter "B" can be used.

Lubricant additives

If your Volkswagen is properly maintained, it is uneconomical to mix any type of additive with fuel, or lubricating oils.

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 difficiulty in starting your engine or have trouble on the road, there are a few 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. To prevent sparking or accidental fires, disconnect battery ground cable when working on the electrical or fuel systems. Incomplete or improper servicing may also cause problems in the operation of the car. If in doubt about any 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. We suggest that you consult your Authorized Volkswagen 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 light switch or fuse box	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 dashboard.
	3. Starter defective.	3. Ask for assistance.
	4. On vehicles with Automatic Transmission: The selector lever is not in starting position.	4. Shift into Neutral or Park.

PROBLEM	PROBABLE CAUSE	WHAT TO DO
VW will not start: engine turns over.	5. Loose connection in ignition system.	5. Check for loose connections at coil, distributor and spark plugs.
	6. Loose connection in primary circuit to coil.	6. Check push-on connector on coil (thin black wire). Check tight fit of spark plug connectors. Check ignition wires for tight fit. Should the engine not start, ask for assistance.
	7. If spark is present at black coil cable, trouble is in ignition system.	7. Check in this sequence: **Caution** Always disconnect white cable from coil connector No. 1 (marked on coil). This stops the fuel injection with the ignition switched on. Excess fuel may damage the catalytic converter (where available). A. Turn ignition off. Remove distributor cap and rotor. Clean distributor contacts with stiff paper (post card). Have someone start the engine. 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 part of 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 outside. Reconnect high tension cable. Remove one of the spark plugs. If plug is clean and dry, reconnect ignition cable to spark plug and bring spark plug in connection 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.
	8. If spark is fairly good at plugs, engine may be flooded.	8. If the spark plug is dirty and wet, also remove the other plugs: unburned gasoline on the plug electrodes indicates excessive fuel supply! Turn engine over for at least 10 seconds, with plugs removed, white cable disconnected from coil connector No. 1 and accelerator pedal fully depressed. Install cleaned and dried spark plugs or new plugs, if necessary. Reconnect the white cable and start engine. If engine still does not start, ask for qualified assistance.
Engine stalls shortly after starting.	9. Poor fuel supply	9. See paragraphs 11 and 12.

PROBLEM	PROBABLE CAUSE	WHAT TO DO
Engine stalls while vehicle is driven.	10. Defect in ignition system. 11. Fuel supply is exhausted. 12. Fuel filter may be clogged, gasoline may be contaminated by water or dirt.	10. See paragraph 5 through 7. 11. Check whether any gasoline is left in tank. 12. 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.	13. If light goes on, the oil pressure is too low.	13. 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 alternator comes on while you are driving.	14. A fuse in the fuse box (see page 37) may be blown. 15. The V-belt may be torn or slipping or alternator does not charge.	14. Replace fuse. If it blows again, do not drive on, because the turn signals will not work. Ask for assistance. 15. If belt drives alternator without slipping, switch off all unnecessary electrical equipment (radio, etc.). Drive to nearest VW dealer as otherwise the battery will soon run down.

Technical Data

Engine

Four cylinder, four stroke, horizontally opposed in rear. Thermostatically controlled air cooling by fan on crankshaft. Pressure oil feed with gear-type pump. Oil cooler, full flow filter and strainer. Electric fuel pump. Electronically controlled fuel injection. Paper element air cleaner. Activated charcoal filter in the fuel system.

Bore	3.70 in. (94 mm)
Stroke	2.80 in. (71 mm)
Displacement	120.2 cu. in. (1970 cc)
Compression ratio	7.3 : 1
Maximum output SAE net	67 hp at 4200 rpm
Maximum torque SAE net	101.0 lb. ft. at 3000 rpm
Valve clearance with engine cold:	
Intake	0.006 in. (0.15 mm)
Exhaust	0.006 in. (0.15 mm)
Fuel requirement*	**VW with catalytic converter:** Unleaded fuel only. **All other VW's:** "Regular", incl. low-lead or unleaded fuels. See also page 33.

* The minimum fuel octane rating for your VW engine is shown on a plate visible after taking off the filler cap.

Automatic Transmission

Automatic Transmission combined with final drive. The transmission consists of a hydrodynamic torque converter and planetary gearing with three forward gears and one reverse. Drive shafts with two constant velocity joints per shaft.

Manual Transmission

Single plate dry clutch.
Clutch pedal, free play: 3/8–1 in. (10–25 mm)

Baulk sychronized four-speed transmission and bevel gear differential in one housing. Drive shafts with two constant velocity joints per shaft.

Chassis

Unitized body, frame plates reinforced with side and cross members, front axle bolted to frame side members, engine/transmission suspended in 4 bonded rubber mountings. Independent wheel suspension: torsion arms with ball joints at front, double jointed axle with trailing arms and diagonal links at rear. Torsion bar, telescopic shock absorbers, stabilizer at front.

Roller steering with maintenance-free tie rod and hydraulic steering damper. Hydraulic dual-circuit power-assisted foot brakes with pressure regulator for rear wheel circuit. Front wheels with disc brakes, rear wheels with drum brakes.
Mechanical parking brake effective on rear wheels.

Wheelbase	94.5 in.(2400 mm)
Turning circle diameter	approx. 40 ft. (12.3 m)
Track at front (at gross. vehicle weight)	54.8 in.(1395 mm)
Wheel-toe angle (wheels pressed together)	0.024 ± 0.071 in. (0.6 ± 1.8 mm)
Camber	0° 40′ ± 20′
Track at rear (at gross vehicle weight)	57.2 in. (1455 mm)
Wheels	5½ J x 14 (Perforated discs with drop center rims)
Tire pressure	see sticker on the steering column bracket

Electrical system

Voltage	12 Volts
Battery	54 Ah
Additional battery for Campmobile with refrigerator	45 Ah
Starter	
Manual Transmission	0.7 hp
Automatic Transmission	0.8 hp
Alternator with regulator	max. 55 A
V-belt size	9.0 x 965
Ignition distributor	with combined vacuum and centrifugal spark advance and speed limiter
Firing order	1–4–3–2
Ignition timing	for correct specification for your engine, see label in engine compartment
Contact breaker gap	0.016 in. (0.4 mm)
Spark plugs	Bosch W 145 M2 Beru 145/14/3 L Champion N-288
Plug thread	14 mm
Electrode gap	0.028 in. (0.7 mm)

Performance

Maximum and cruising speed	
Manual Transmission	79 mph
Automatic Transmission	76 mph

Capacities

	U.S.	Imp.	Metric	
Fuel tank	14.6 gal.	12.1 gal.	ca. 55 liters	Engine oil "For Service API/SE" (s. p. 55
Engine oil with filter change	3.7 qts.	3.1 qts.	3.5 liters	
Engine oil without filter change	3.2 qts.	2.6 qts.	3 liters	Hypoid oil* (s. p. 56)
Transmission and final drive	3.7 qts.	3.1 qts.	3.5 liters	
On vehicles with Autom. Transm.				
Torq. conv. and planetary gears	6.4 qts.	5.3 qts.	6 liters	ATF (s. p. 56)
Refill quantity	3.2 qts.	2.6 qts.	3 liters	
Final drive	1.5 qts.	1.2 qts.	1.4 liters	Hypoid oil* (s. p. 56)
Windshield washer	1.5 qts.	1.2 qts.	1.4 liters	Fluid (s. p. 33)

Dimensions and weights

	Station Wagon	Kombi	Camp-mobile
Length in./mm	177.4/4505	177.4/4505	177.4/4505
Width in./mm	67.7/1720	67.7/1720	67.7/1720
Height, unladen in./mm	77.0/1955	77.0/1955	80.0/2032
Ground clearance in./mm	7.8/ 200	7.8/ 200	7.8/ 200
Unladen weight lbs./kg	3042/1380	2921/1325	3296/1495
Vehicle capacity weight lbs/kg	1918/ 870	2149/ 975	1665/ 755
Gross vehicle weight lbs./kg	4960/2250	5070/2300	4961/2250
Gross axle weight front lbs./kg	2227/1010	2227/1010	2227/1010
Gross axle weight rear lbs./kg	2800/1270	2866/1300	2800/1270
Perm. roof and trailer weights:			
Roof weight lbs./kg	220/100**	220/100**	110/ 50**
Trailer without brakes (lbs/kg):	1322/ 600	1322/ 600	1322/ 600
Trailer with brakes (lbs/kg):			
Manual Transm.	2645/1200	2645/1200	2645/1200
Automatic Transm.	1322/ 600	1322/ 600	1322/ 600
Trailer tongue load lbs/kg	55–110 /25–50	55–110 /25–50	55–110 /25–50

* Does not have to be changed

** Applies only to roof rack mounted to rain gutters or roof-luggage rack (Campmobile with Pop-Up Roof). Distribute load evenly.

Emission Control System

In the Interest of Clean Air

Pollution of our environment is of increasing concern to all of us. We urge you to join us in our efforts for cleaner air in controlling the pollutants emitted from the automobile.
Volkswagen has long recognized its responsibilities not only toward its customers but also toward the public in general. We have developed an emission control system that controls or reduces those parts of the emission that can be harmful to our environment. Your Volkswagen is equipped with such a system.

Volkswagen warrants the emission control system in your vehicle under the terms and conditions set forth in the Warranty and Maintenance booklet.
You, as the owner of the vehicle, have the responsibility to provide regular maintenance service for the vehicle, as specified in the Maintenance Schedule, and to keep a record of all maintenance work performed. Authorized Volkswagen dealers have VW trained mechanics and special tools to offer fast, efficient service.

How Emission Control Works

When an automobile engine is running, it uses energy generated through the combustion of a mixture of air and fuel. Depending on whether a car is driven fast or slow or whether the engine is cold or hot, some of the fuel (hydrocarbons) may not be burned completely but be discharged into the engine crankcase or exhaust system. Additional hydrocarbons may enter the atmosphere through evaporation of fuel from the fuel tank. These hydrocarbons released into the air contribute to undesirable pollution.

In addition, carbon monoxide (CO) and oxides of nitrogen (NOx) contribute to harmful engine emissions. They, too, are formed during combustion and discharged into the exhaust system.

To reduce these pollutants all Volkswagen are equipped with a special emission control system.

Your Volkswagen may have all or part of the following major components:

Controlled Combustion System

The amount of pollutants emitted from an engine greatly depends on the combustion of the air/fuel mixture. Complete burning of the air/fuel mixture is, therefore, very important. An improved combustion process in your Volkswagen makes it possible to keep harmful emissions from the engine at the required low level.

Your Volkswagen is equipped with a precisely calibrated fuel injection system to assure a finely balanced air/fuel mixture under all operating conditions.

Crankcase Ventilation

Through crankcase ventilation harmful emissions from the engine crankcase are not permitted to reach the outside atmosphere. These emissions are recirculated to the air cleaner. From here the emissions mix with the air/fuel mixture in the intake system and are later burned in the engine (see illustration).

Exhaust Gas Recirculation (EGR)

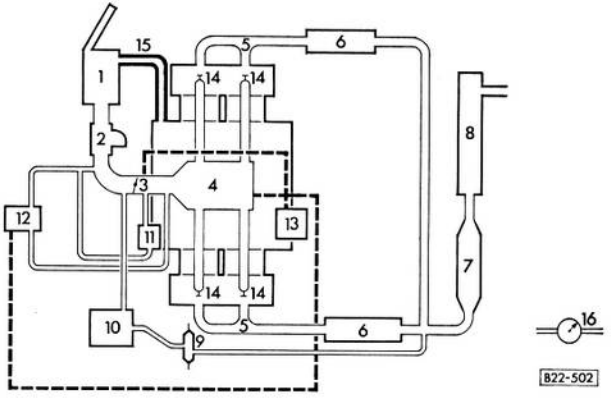
Some of the exhaust gas from the engine is diverted before it enters the muffler. This gas is routed back into the intake manifold. An exhaust gas recirculation valve controls the flow to the intake manifold. The exhaust gas recirculated into the combustion chambers of the engine helps lower the formation of oxides of nitrogen (NOx) during the combustion process (see illustration).

Catalytic Converter (where applicable)

The catalytic converter is an efficient "clean up" device built into the exhaust system of your car to further help reduce engine pollutants. Harmful carbon monoxide and hydrocarbons in the exhaust gas are chemically changed into harmless carbon dioxide and water vapors before they pass to the outside through the muffler (see illustration).

The use of **unleaded fuel,** however, is **critically important** for the life of the converter. Deposits from leaded gasolines and fuel additives containing sulfur, zinc, nickel or barium will ruin the catalyst and make it ineffective as an emission clean-up device. Therefore, **only unleaded gasoline without harmful additives must be used.**

Emission Control System



1 – Air cleaner
2 – Air sensor
3 – Throttle valve
4 – Intake air distributor
5 – Exhaust manifold
6 – Heat exchanger
7 – Catalytic converter*
8 – Muffler
9 – EGR-filter*
10 – EGR-valve
11 – Auxiliary air regulator
12 – Decel. control valve
13 – Ignition distributor
14 – Fuel injector
15 – Crankcase ventilation
16 – Indicator light for EGR

* where applicable

Exhaust and air lines
Control lines (vacuum)

Fuel Evaporation Control

The sealed Volkswagen fuel evaporation system prevents gasoline vapors from escaping to the atmosphere through the following controls:

Fuel tank venting

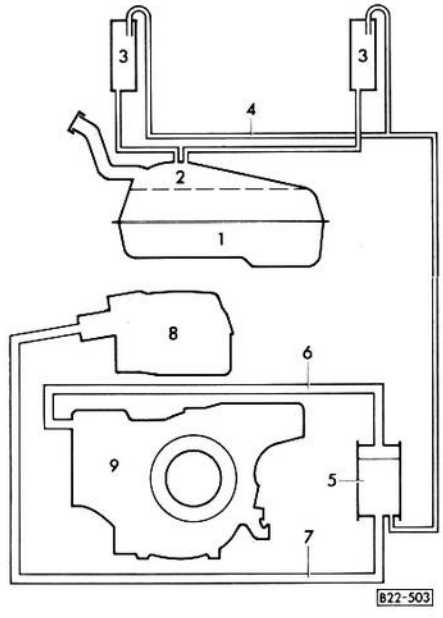
An expansion chamber for the fuel tank and vent lines are part of the fuel tank vent system. These components prevent fuel from escaping to the outside at extreme high outside temperatures and when the car is driven or parked at an incline or in any other non-level position.

Activated charcoal filter

Vapors from the fuel tank are trapped in a container filled with activated charcoal. The filter is connected to the fuel tank vent system. This is how it works:

Fuel vapors pass through the filter and deposit hydrocarbons on the surface of the charcoal filter element. When the engine is running, fresh air entering the activated charcoal filter through an opening cleans the filter and routes these hydrocarbons via the air cleaner back to the engine where they are burned during normal combustion.

How fuel evaporation control works is shown in the illustration.



1 – Fuel tank
2 – Expansion chamber
3 – Separator
4 – Vent line
5 – Activated charcoal filter
6 – Vent line
7 – Vent line
8 – Air cleaner
9 – Fan housing

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In any authorized VW dealer's service department, you get VW Specialists who know VW's intimately.

VW Specialists work on VW's Period.

Every so often they take time off and get a refresher course at one of our VW training centers.

So they learn to fix Volkswagens before they start working on your car. Rather than while they are working on your car.

We think it is better that way.

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Gas Station Information

Gas Station Information

Starting

Manual Transmission – Start in Neutral.
Autom. Transmission – Start in Neutral or Park.

It is not necessary to depress accelerator. Fuel injection system supplies required amount of fuel for starting.

Driving ranges

See shift pattern on ashtray.

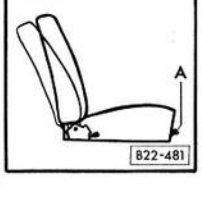
Chassis number (Serial No., VIN)

Visible through driver's side of windshield.

Driver's seat

To **adjust seat,** pull lever (A) on left.

To **adjust backrest,** push lever down on inboard side of seat.



Fuel cap

Above right rear wheel.

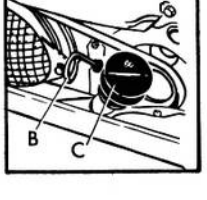
Fuel recommendation

VW with catalytic converter	**Unleaded fuel only.**
All other VW's	"Regular", incl. low-lead or unleaded fuels.

Engine oil dipstick

Check oil level 5 min. after engine has stopped. Level should be between upper and lower marks on dipstick.

The difference between the two marks is about 0.5 US quarts (0.4 Imp. qt./0.5 liter).



B = dipstick
C = oil filler cap

Engine oil grades

Use quality oil labeled "For Service API/SE". See oil viscosity chart on page 55.

Transmission oil

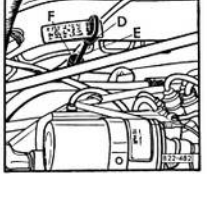
Manual Transmission – hypoid oil* SAE 80 W or SAE 80 W-90 (multi-grade), MIL-L-2105 API/GL 4.

Automatic Transmission: final drive – hypoid oil* SAE 90, MIL-L-2105 B, API/GL 5.
Lifetime filling

ATF (Automatic Transmission)

Check ATF level when ATF is warm, with engine idling, selector lever in Neutral and parking brake applied. ATF tank cap has dipstick attached.

Use ATF "Dexron®" with 5 digit number preceded by B.

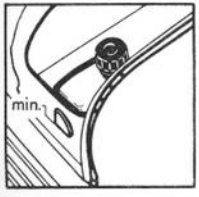


D = filler cap
E = dipstick
F = fluid tank

Brake fluid reservoir

Under driver's seat. Brake fluid level should be between upper and lower edge of reservoir.

Only use new brake fluid SAE J 1703, conforming to Mot. Veh. Safety Std. 116.



Fuse box – under dashboard, left side

Additional fuses for:
Back-up lights – in engine compartment near ignition coil.
Warm air blower – in engine compartment near blower motor. See page 35.

Plug connector for electric fuel pump – in engine compartment on left side.

Tire pressure
See sticker on steering column bracket

Battery – in engine compartment
Check fluid level through transparent battery housing. Top up with distilled water.

Campmobile with refrigerator has two batteries

Towing – Manual Transmission
Place gearshift lever in Neutral.
Turn ignition on.
Release parking brake.

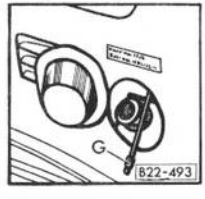
Towing – Automatic Transmission
Place lever in Neutral.
Turn ignition on.

Release parking brake.

When lifting at front:
Max. towing speed – 30 mph.
Max. towing distance – 30 miles.

Limitations do not apply if car is lifted at **rear** or if drive shafts are disconnected.

Windshield washer container – under dashboard right hand side.
Fill with water and cleaning solution.
Follow mixture instruction on can.
After filling, screw on cap tightly.
Pressurize container up to 42 psi (3.0 kg/cm²) through container hose.



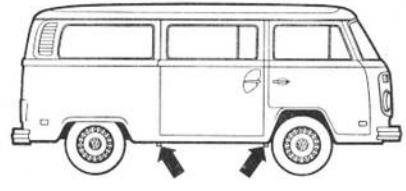
G = Pressurize via valve.

Spare wheel

In rear luggage compartment or under front seat bench.

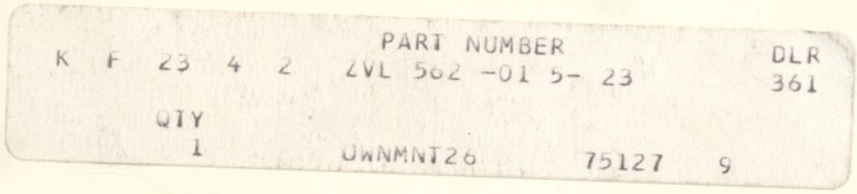
Campmobile: Spare tire is stored in sink cabinet.

Jack and tool kit – under front seat or bench.



Jack ports – two on each side for front and rear wheel changing.

Do not jack up car by the bumper or body.


PART NUMBER
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