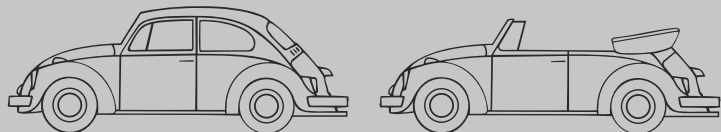


# Owner's Manual



8-1970

Brakefluid renewal has so far been carried out at specified intervals.

Every two years.

But now we have a better way.

In the future we'll change the brakefluid when it's necessary for safe operation.

After a brakefluid analysis.

Every 18000 miles **or once a year.**

# Volkswagen Owner's Manual

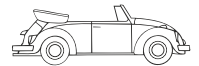
1971 Models



**Volkswagen  
Sedan 111**



**Volkswagen  
Sedan 113**



**Volkswagen  
Convertible**

V O L K S W A G E N W E R K   A K T I E N G E S E L L S C H A F T



# Dear VW Owner:

## Congratulations!

You are now the owner of a Volkswagen. A lot has gone into the manufacture of your car. Including advanced engineering techniques, rigid quality controls and thorough inspections. The engineering and safety features that have gone into your VW will be enhanced by . . . you.

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 suggest that you read this manual carefully, maintain your VW properly and get into the habit of following the check list shown below each time 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 seat belts.
- 4 - Check brake warning light (ignition on).
- 5 - Check brake operation.
- 6 - Make sure that all doors are closed securely and locked.

### And when you are on the highway:

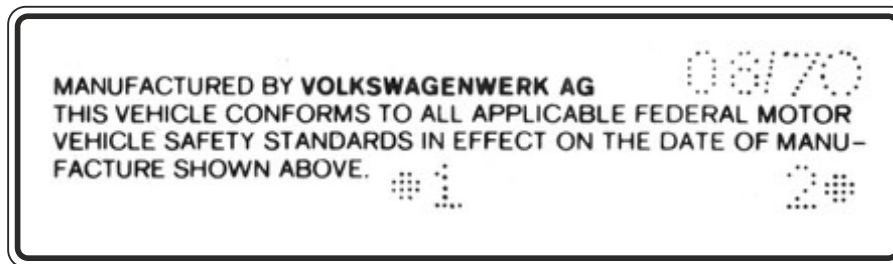
- 1 - Always drive defensively. Expect the unexpected.
- 2 - Use signals to indicate turns and lane changes.
- 3 - Turn on headlights at dusk.
- 4 - Follow at a safe distance. A good rule of thumb is to allow a minimum of one car length for each 10 mph of speed.
- 5 - Reduce speed during night hours and inclement weather.
- 6 - Observe speed limits and obey highway signs.
- 7 - When tired, get off the highway, stop and take a rest.
- 8 - Use emergency lights when stalled or stopped for repairs.
- 9 - Pull hand brake lever when vehicle is stopped or parked.

## Do not invite car theft!

An unlocked car with the key in the ignition offers both opportunity and temptation. Therefore, a steering wheel lock and a buzzer alarm are standard equipment in your 1971 Volkswagen. The buzzer will sound if you open the driver's door while the key is in the steering/ignition lock. It is your reminder to take the key and lock the doors.

In accordance with Federal Safety Regulations, the chassis number of your car is located on the left of the instrument panel and can be seen from the outside. This precaution is taken for your protection — to aid in the apprehension of thieves and the recovery of stolen vehicles.





This sticker, also found in the left doorjamb, assures you that your 1971 Volkswagen complies with all Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was produced.



The tires of your Volkswagen conform to the Federal Motor Vehicle Safety Standards,

When purchasing replacement tires, make sure that they show the same specifications for tire size, load, carrying capacity etc. This also applies to VW recommended alternate replacement tires.

# Contents

<b>Introduction</b> .....	5	<b>Do-it-yourself tips</b>	
<b>Identification plate, Chassis number, Engine number</b> .....	6	Removing and installing seats .....	40
<b>Operation</b>		Changing wheels .....	42
Keys .....	7	Adjusting or replacing V belt .....	44
Doors .....	8	Cleaning fuel pump filter .....	45
Seats .....	9	Cleaning or replacing spark plugs .....	45
Seat Belts .....	10	Adjusting headlights .....	47
Instrument panel, hand and foot controls ..	12	Bulb chart .....	48
Sliding roof .....	16	Replacing bulbs .....	48
Interior trim .....	16	Replacing fuses .....	50
Ventilation .....	18	Care of battery .....	52
VW Air Conditioner .....	20	Towing .....	53
Heating .....	22	Trouble shooting .....	54
VW Auxiliary Heater .....	23	<b>Fuel and lubricants</b> .....	56
Luggage compartments .....	24	<b>Lubrication</b>	
Convertible top .....	27	Engine .....	58
What to check .....	28	Manual Transmission	
Starting the engine .....	30	and Automatic Stick Shift .....	59
Driving hints .....	31	Front axle (VW Sedan 111 only) .....	60
VW Automatic Stick Shift .....	32	Hinges and locks .....	61
<b>Winter operation</b> .....	34	Air cleaner .....	62
<b>Care of car</b> .....	36	<b>Technical data</b> .....	64
Tires .....	39	<b>Index</b> .....	68

All pictures are of the Volkswagen Sedan 113 with Manual Transmission. The text in the Owner's Manual is based on this vehicle. Where the controls, equipment and technical data of the Automatic Stick Shift, the Volkswagen Sedan 111 and the Volkswagen Convertible differ considerably, it is indicated.

Specifications are subject to alterations -without notice.



Get to know your new car quickly so you can start off on your first trip with complete confidence. The first part of this booklet deals with the operation of your Volkswagen. We urge you to read it carefully.

The second part tells you everything about winter driving and care of the car. It also contains some useful do-it-yourself tips. Plus some information on proper fuel and oil, lubrication and technical data.

When you have studied this manual, you will know how to operate your car properly. Then you can expect many years of reliable and economical service from your Volkswagen.

This brings us to the Volkswagen Maintenance Record — which you also receive with the car. The Record explains what VW Diagnosis and Maintenance is all about. And tells you how to keep your VW in top driving condition. Always have the Volkswagen Maintenance Record with you when you take the vehicle to an Authorized VW Dealer for service — it helps establish proper contact with the service department staff. In your own interests: Have your Volkswagen serviced as indicated in the Volkswagen Maintenance Record right from the start. Proper treatment plus complete proof of all maintenance work carried out can be of vital importance should you have occasion to make a claim under warranty.

# Identification plate, Chassis Number, Engine Number

## The identification plate

is found under the front hood beside the hood lock. On the Volkswagen Sedan 111 the plate is located behind the spare wheel.

The 10 digit number after the words „Fahr-gest. Nr.“ is the chassis number. It describes the model number, model year and serial number of the vehicle as shown in this sample:

11 1 2000012  
Model Year Serial Number

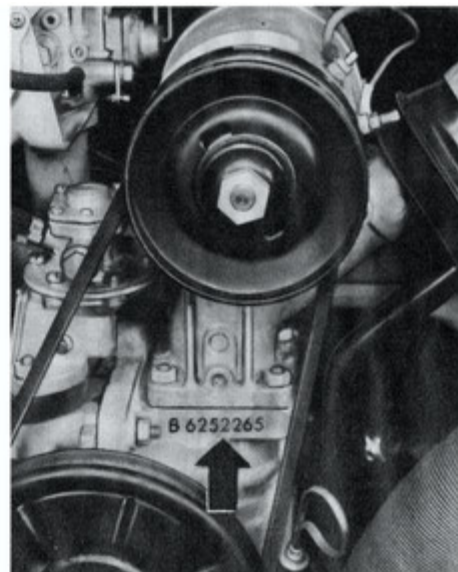
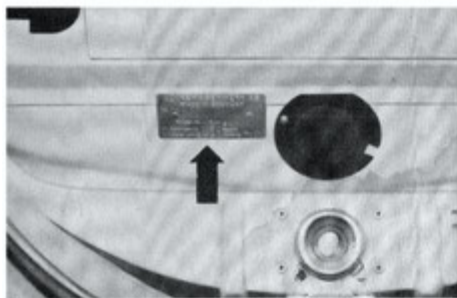
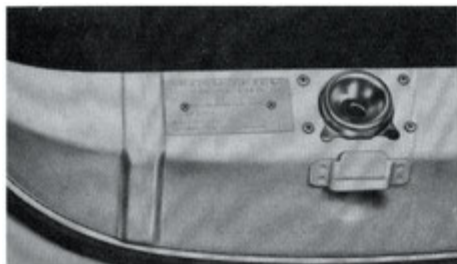
## The Chassis Number

is also found on the frame tunnel under the rear seat . . .

. . . and on the instrument panel so that the number is visible from outside the car.

## The Engine Number

is stamped on the generator support flange.



# Operation

## Keys

Only one key is required to unlock and lock the doors and to start the engine.



This key locks the glove compartment (except Volkswagen Sedan 111).



Be sure the key numbers are recorded on the first page of the VW Maintenance Record. If you should lose a key, you can obtain a replacement from your Authorized Volkswagen Dealer.

## Doors

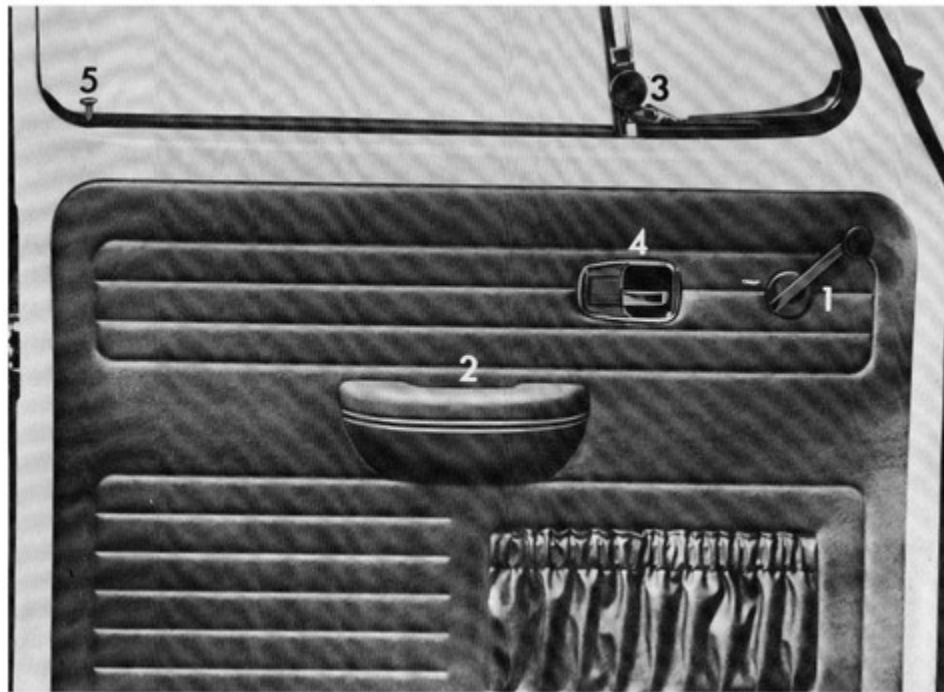
The doors can be closed more easily if a window is opened slightly.

### 1 - Window crank

### 2 - Armrest and door closing grip

### 3 - Vent wing fastener

To open the vent wing, turn knob of vent wing fastener until locking catch points in driving direction and push knob of vent wing fastener forward.



### 4 - Inside door handle

(with locking lever on the Convertible instead of locking knob — 5 —)

### 5 - Locking knob

(on the Convertible: locking lever — 4 —)

The doors cannot be opened from inside or outside unless the locking device is pulled out.

When you open the driver's door while the key is still in the steering/ignition lock, the buzzer alarm will sound. It is your reminder to take the key and lock the doors.

When leaving the vehicle, just push in the locking device and pull the trigger in the outer handle as you close the door. The vehicle is then locked.

If the door closes by itself after the locking device has been pushed in it will not lock because the locking device will spring out automatically. This is an additional safety measure to prevent you from being locked out if the door should slam shut while the key is still inside the vehicle.

## Seats

Your Volkswagen has separate front seats. You can alter seat and backrest positions to suit you. This is quite simple —

— just lift the lever at the front right hand side of the seat and slide the seat forward or backward. After adjusting, release the lever and move the seat slightly until it is securely locked in position.



The backrest can be set to four different angles by turning the lever. Try them out until you find the angle which suits you best.



As a safety feature, the backrests of the front seats are secured against tilting forward. To release the lock, just pull the knob on the side of the backrest upward.



## Seat Belts

Your Volkswagen is equipped with a seat belt for each seat. Occupants of the vehicle should wear the belts at all times.

Shoulder belts should not be worn by persons less than approximately 55 inches in height.



### The front seats

The front seat combination lap/shoulder belt is completely adjustable to fit different sized persons and to allow for seat and backrest adjustment. When not in use, the lap section of the belt retracts and the belt should be hung on the hook on the door post by means of the hole in the belt tongue. This prevents the belt end from lying about, lashing out, getting dirty and permits easy entrance and exit for the rear seat passengers.

**Operation:** After sitting down and adjusting the seat and backrest positions, pull the belt across in front of you to the center of the car. Insert the belt tongue into the anchor housing on the center tunnel and press it in lightly. A click will be heard when the belt tongue locks. **Be sure the belt is not twisted.** Pull lap belt through buckle until belt is completely unrolled from retractor and fits snugly across lap. Take up any slack of the loose belt end by moving slide. Adjust shoulder belt by pulling belt until it fits snugly across chest. Take up any slack by moving slide. To lengthen either section of the belt, release belt from housing, hold belt

tongue at a right angle to belt and pull belt through.

To release the belt, pull the unlocking lever on the anchor housing upward. Only a light pull on the belt and a small movement of the lever is necessary.





## The rear seats

Each rear seat is equipped with an adjustable lap belt.



**Operation:** After sitting down and making yourself comfortable, pull the longer section of the belt across in front of you. Insert the belt tongue into the buckle and press lightly together. A click will be heard when the buckle locks.

**Be sure the belt is not twisted.** Pull belt through the buckle until belt fits snugly across the pelvic area. Take up any slack by moving the slide. To lengthen the belt release buckle, hold belt tongue at a right angle to belt and pull belt through.

To release the belt, pull the unlocking lever on the inboard buckle. Only a light pull on the belt and a small movement of the lever is necessary.

For each rear seat, a third mounting point is provided to facilitate subsequent installation of combination lap/shoulder belts.

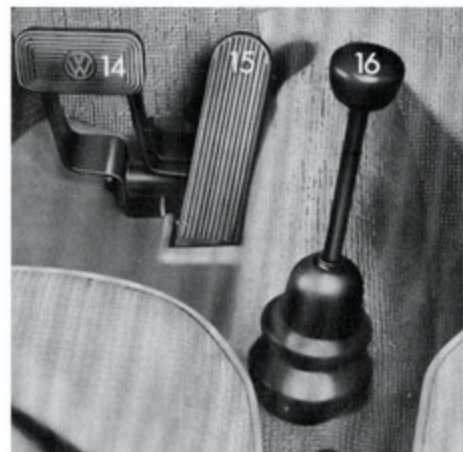
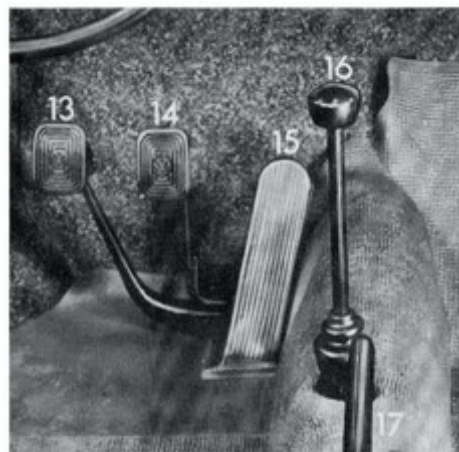
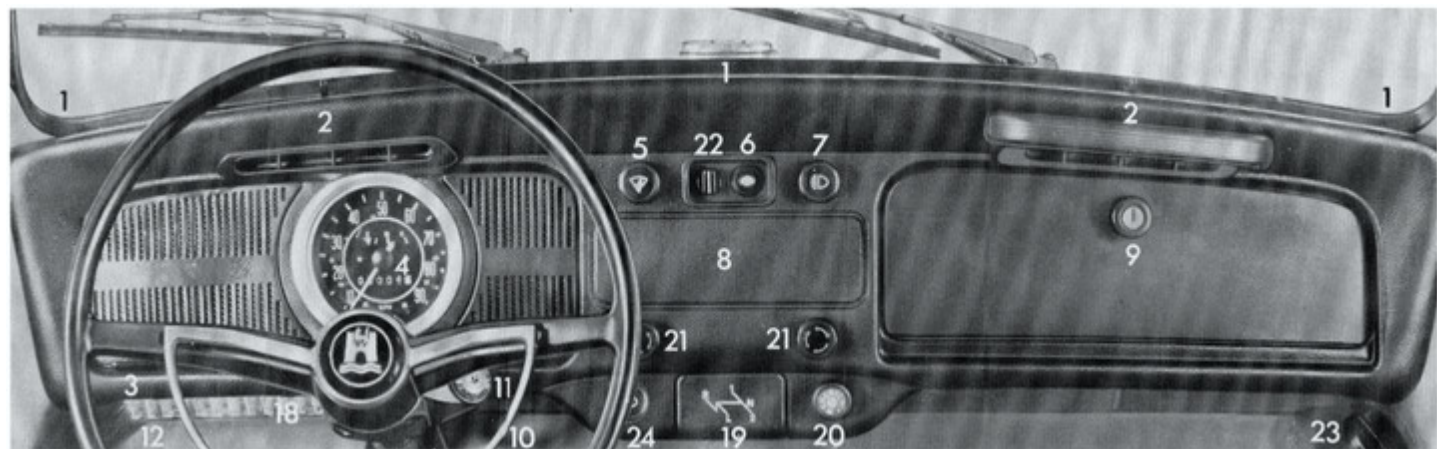
**Do not wear the belts loosely.**

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

Keep belts clean. Wash belts with mild detergent without removing from vehicle. Dry belts in the shade and do not allow lap belts to retract until completely dry.

**Do not bleach or dye the belts or use any other material to clean the belts because some of these agents can weaken the webbing.**

Check buckles, retractors, and fittings periodically to make sure they function correctly and check belts to ensure that the webbing has not been damaged.





## Instrument panel, hand and foot controls

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

1 - Defroster vents .....	(page 22)
2 - Vents for heating and fresh air ventilation .....	(page 18/22)
3 - Turn signal and dimmer switch lever .....	(page 13)
4 - Speedometer with fuel gauge and warning lights .....	(page 14)
5 - Windshield wipers and washer .....	(page 14)
6 - Brake warning light .....	(page 28)
7 - Light switch .....	(page 14)
8 - Plate over radio aperture	
9 - Glove compartment knob, lockable (except Volkswagen Sedan 111) .....	(page 14)
10 - Horn ring (button on Volkswagen Sedan 111)	
11 - Steering/ignition lock .....	(page 14)
12 - Fuse box (right of steering column on Volkswagen Sedan 111) .....	(page 50)
13 - Clutch pedal .....	(page 31)
14 - Brake pedal .....	(page 31)
15 - Accelerator pedal .....	(page 31)
16 - Gearshift lever .....	(page 15)
17 - Hand brake lever .....	(page 15)
18 - Switch for rear window defogger (Volkswagen Sedan 113 only) .....	(page 15)
19 - Ashtray .....	(page 15)
20 - Emergency flasher switch .....	(page 15)
21 - Fresh air control knobs .....	(page 18)
22 - Knob for fresh air fan (optional equipment on Sedan 111) .....	(page 18)
23 - Release for fuel tank flap .....	(page 28)
24 - Control knob for Auxiliary Heater (optional equipment) .....	(page 23)

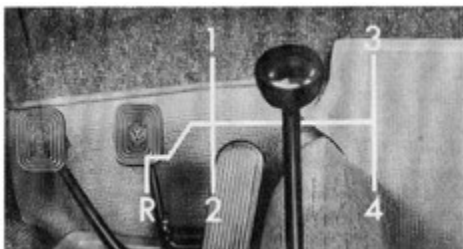


### 3 - Turn signal and dimmer switch lever

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

The turn signals are cancelled automatically upon completion of a turn.

Pull the lever toward steering wheel to raise **or lower headlight beams**. The blue warning light — c — in the speedometer dial shows when high beam is switched on.



### 16 - Gearshift lever for Manual Transmission

(for Automatic Stick Shift see page 32)

Shift into reverse gear only when the vehicle is stationary. The reverse gear cannot be engaged unintentionally. To engage reverse, press the lever down, move it over to the left and pull it back to the stop.

When reverse gear is selected with the ignition switched on, the back-up lights come on automatically.

### 17 - Hand brake

To release the hand brake, pull the lever and depress locking knob.



### 18 - Switch for rear window defogger (Volkswagen Sedan 113 only)

With the ignition switched on, the rear window defogger is activated by this switch. The green control lamp — f — in the speedometer dial will light up when the system is in operation. After the rear window has been cleared, switch off the rear window defogger to avoid an unnecessary drain on the battery.

### 19 - Ashtray

Remove ashtray by pressing leaf spring and pulling ashtray out.



### 20 - Emergency flasher switch

If the vehicle is disabled or parked under emergency conditions, pull the switch to make all four turn signals flash at once. A warning light in the switch knob flashes when the system is turned on.



#### 4 - Speedometer

Odometer with  $\frac{1}{10}$  mile indicator

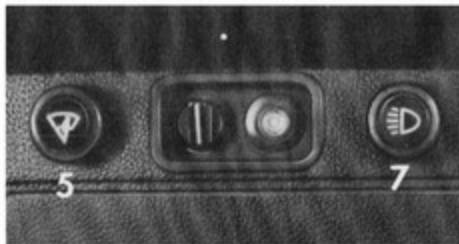
The following warning lights are in the speedometer dial:

- a - red — oil pressure
- b - red — generator and cooling
- c - blue — headlight high beam
- d - green arrows — turn signals
- e - red — ATF temperature
- f - green — rear window defogger (Volkswagen Sedan 113 only)

The fuel gauge is located in the speedometer dial. When the needle is on line "R", there is about 1 gallon of fuel left in the tank — time to refuel at the next opportunity.

#### 5 - Windshield wipers and washer

The two-speed wipers are controlled by turning the wiper switch knob. The blades park automatically when turned off. Push button in the



knob to spray fluid on windshield. Fluid will spray as long as button is held in.

#### 7 - Light switch

Pull the knob to the first stop to switch on parking and side marker, license plate, tail and instrument lights. To turn on the headlights pull the knob out all the way with the ignition turned on. To preserve the battery the headlights will go out automatically when the ignition is turned off or when the engine is being started.

**The brightness of the instrument lights can be adjusted by turning the light switch knob.**

#### 9 - Glove compartment

To open turn knob to the left.

Inside the glove compartment is the release lever for the front hood (see also page 24).

For added protection, the glove compartment can be locked (except on the Volkswagen Sedan 111). This prevents access to the front luggage compartment and spare wheel.



#### 11 - Steering/ignition lock

Should it be difficult to turn the key after inserting, gently move the steering wheel from side to side until key turns freely.

- 1 — Ignition off — steering locked \*) — key can be removed
- 2 — Ignition on
- 3 — To start

\*) Remove key and turn steering wheel until locking pin engages.

#### Important

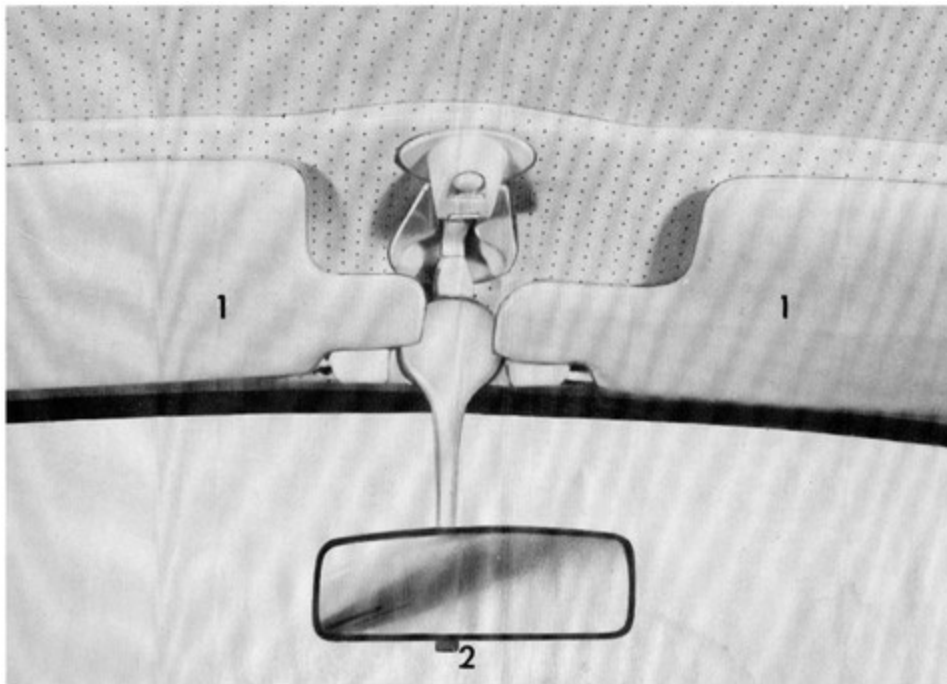
Remove key from lock only when vehicle is stationary.

If key is left in steering/ignition lock, a buzzer will sound when the driver's door is opened.

## Sliding roof

(optional equipment)

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



## Interior trim

### 1 - Sun visors

You can lift the driver's visor out of the center mounting and swing it toward the door window to prevent glare from the side.

Except on the Volkswagen Sedan 111 the right hand sun visor incorporates a vanity mirror.

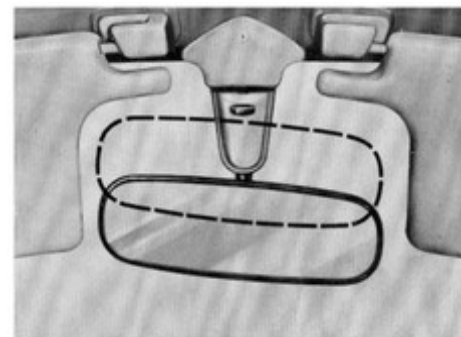
### 2 - Rear view mirrors

Outside and inside mirrors are adjustable so that they can be set to give clear vision to the rear at all times.

The outside mirror is hinged to fold flat upon contact.

The inside day/night mirror is rimmed with plastic for safety and designed to detach upon impact. Except on the Volkswagen Sedan 111 it can be set to the anti-glare position by the switch at the lower portion of the mirror.

On the Convertible the height of the inside mirror can be altered by turning it 180° so that you can see to the rear when the top is folded down.



### 3 - Rear ashtrays

To remove ashtray, press it down lightly and lift out. To put it back, insert the ashtray first at the top, then push it in.

The Volkswagen Sedan 111 does not have an ashtray for the rear seat passengers.

### 4 - Assist straps and coat hooks



### 5 - Interior light

Switch positions:

- Up — Light on when doors are open
- Center — Light off
- Down — Light on

On the Convertible the interior light is fitted in the mirror bracket between the two sun visors. The switch positions are:

- Right — Light on
- Center — Light off
- Left — Light on when doors are open

## Ventilation

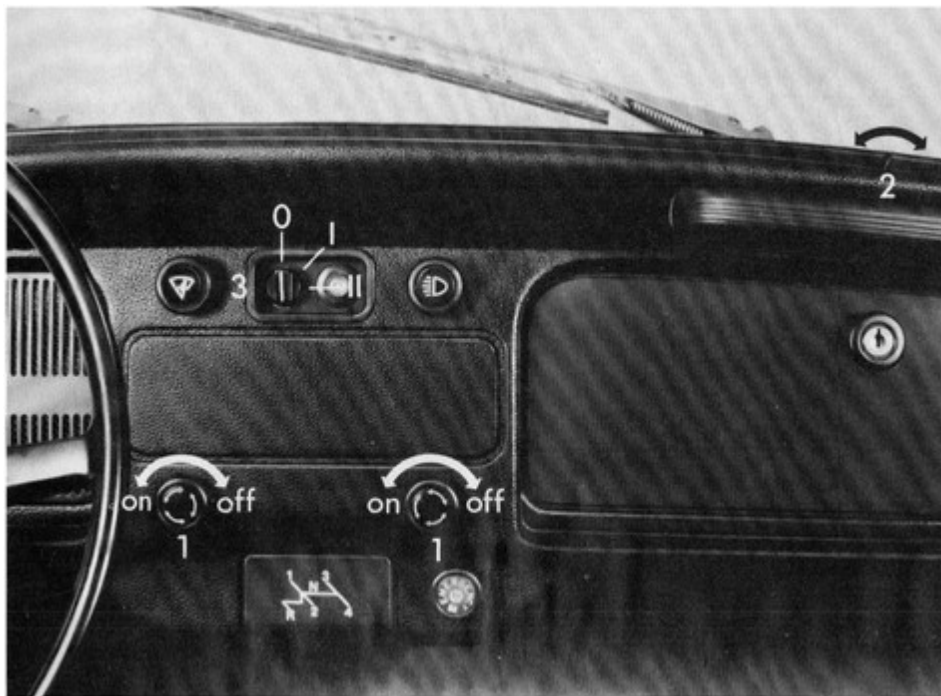
Your Volkswagen is equipped with flow-through ventilation: vents behind the rear side windows allow continuous circulation of air without creating a draft.

### 1 - Fresh air control knobs

The volume of fresh air coming from the vents on top of the instrument panel can be controlled separately on each side by turning knobs:

Turn knobs to the left — increasing air flow  
Turn knobs to the right — decreasing air flow

The air flow is completely stopped when the knobs are turned fully to the right beyond the pressure point.



### 2 - Fresh air (and defroster) vents

The air flow direction can be controlled separately on each side by the lever in the upper vent:

Move levers to the left — air flow to the windshield

Move levers to the right — air flow to the passengers

Every middle position of the levers can also be selected.

### 3 - Fresh air fan

(optional equipment on Sedan 111)

With the two-speed fan the air flow can be increased when the vehicle speed is too slow for the regular air flow.

The switch positions are:

Left — fan off (0)

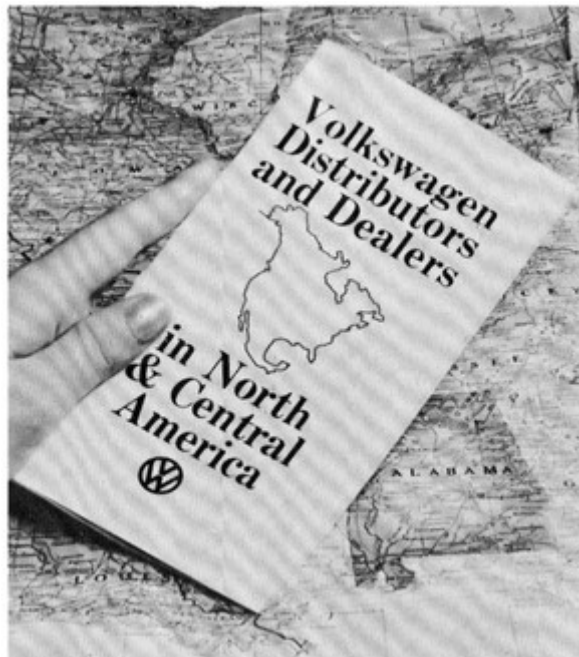
Center — slow speed (I)

Right — fast speed (II)

The fan is only effective, when the ignition is switched on and the fresh air control knobs — 1 — are turned fully to the left.



All over North and Central America Volkswagen dealers are ready to give you reliable service. Their names and addresses are contained in the booklet shown below.



Any one of these Authorized Volkswagen Dealers is well equipped to answer all questions you might have about your car.

And if needed fourteen VW Distributors will gladly help you too.

## Addresses of VW Distributors in the US:

<b>Maine</b>	Volkswagen Northeastern Distributor, Inc.	<b>Maryland</b>	Volkswagen South Atlantic Distributor, Inc.
<b>Massachusetts</b>	100 Fordham Road	<b>North Carolina</b>	9300 George Palmer Highway
<b>New Hampshire</b>	Wilmington, Massachusetts 01887	<b>Tennessee (East)</b>	Lanham, Md. 20801
<b>Rhode Island</b>	(617) 658 6700	<b>Virginia</b>	(301) 577-2600
<b>Vermont</b>		<b>West Virginia</b>	
		<b>Washington, D.C.</b>	
<b>Illinois</b>	Volkswagen North Central Distributor, Inc.	<b>Delaware</b>	Volkswagen Atlantic, Inc.
<b>Iowa</b>	3737 Lake Cook Road	<b>Pennsylvania</b>	Gui ph & Brooks Roads
<b>Minnesota</b>	Deerfield, Illinois 60015		King of Prussia, Pennsylvania 19406 (215) 265-2900
<b>North Dakota</b>	(312) 272-5500	<b>Arizona</b>	Volkswagen Pacific, Inc.
<b>South Dakota</b>		<b>California (South)</b>	11300 Playa Street
<b>Wisconsin</b>		<b>Nevada (South)</b>	Culver City, California 90230
<b>Kentucky</b>	Midwestern VW Corporation	<b>Hawaii</b>	(213) 391-6274 (Santa Monica line)
<b>Ohio</b>	1125 Kinnear Road		(213) 870-3381 (Los Angeles line)
	Columbus, Ohio 43212	<b>Alaska</b>	Riviera Motors, Inc.
<b>Indiana</b>	(614) 486-9641	<b>Idaho</b>	2400 S. E. Fifth St.
<b>Michigan</b>	Import Motors, Ltd., Inc.	<b>Montana</b>	Beaverton, Oregon 97005
	P. O. Box 2008 (2660 28th St., S. E.)	<b>Oregon</b>	(503) 646-3111
	Grand Rapids, Michigan 49501	<b>Washington</b>	
	(616) 949-7788	<b>Colorado</b>	Volkswagen South Central Distributor, Inc.
<b>Florida</b>	Volkswagen Southeastern Distributor, Inc.	<b>New Mexico</b>	P. O. Box 2207
<b>Georgia</b>	P. O. Box 2274 (155 E, 21st St.)	<b>Oklahoma</b>	(Austin Highway at O'Connor Road)
<b>South Carolina</b>	Jacksonville, Florida 32203	<b>Texas</b>	San Antonio, Texas 78206
	(904) 355-1684	<b>Wyoming</b>	(512) Oldfield 5-4410
<b>Alabama</b>	International Auto Sales & Service, Inc.	<b>California (North)</b>	Reynold C. Johnson Company
<b>Louisiana</b>	P. O. Box 29127, Michoud Station	<b>Nevada (North)</b>	7100 Johnson Industrial Drive
<b>Mississippi</b>	4200 Michoud Blvd.	<b>Utah</b>	Pleasanton, California 94566
<b>Tennessee (West)</b>	New Orleans, Louisiana 70129		(415) 828-6700
	(504) 254-1500	<b>Arkansas</b>	Volkswagen Mid-America, Inc.
<b>Connecticut</b>	World-Wide Volkswagen Corporation	<b>Kansas</b>	8825 Page Blvd.
<b>New Jersey</b>	Greenbush Road	<b>Missouri</b>	St. Louis, Missouri 63114
<b>New York</b>	Orangeburg, New York 10962	<b>Nebraska</b>	(314) 429-2141
	(914) 359-5000		

# VW Air Conditioner (Only available in the USA as optional equipment)

## Operating controls

### 1 - Air volume switch ("AIR")

This switch serves two functions. It turns the air conditioning system on and off and controls the fan speed. The fan positions are:

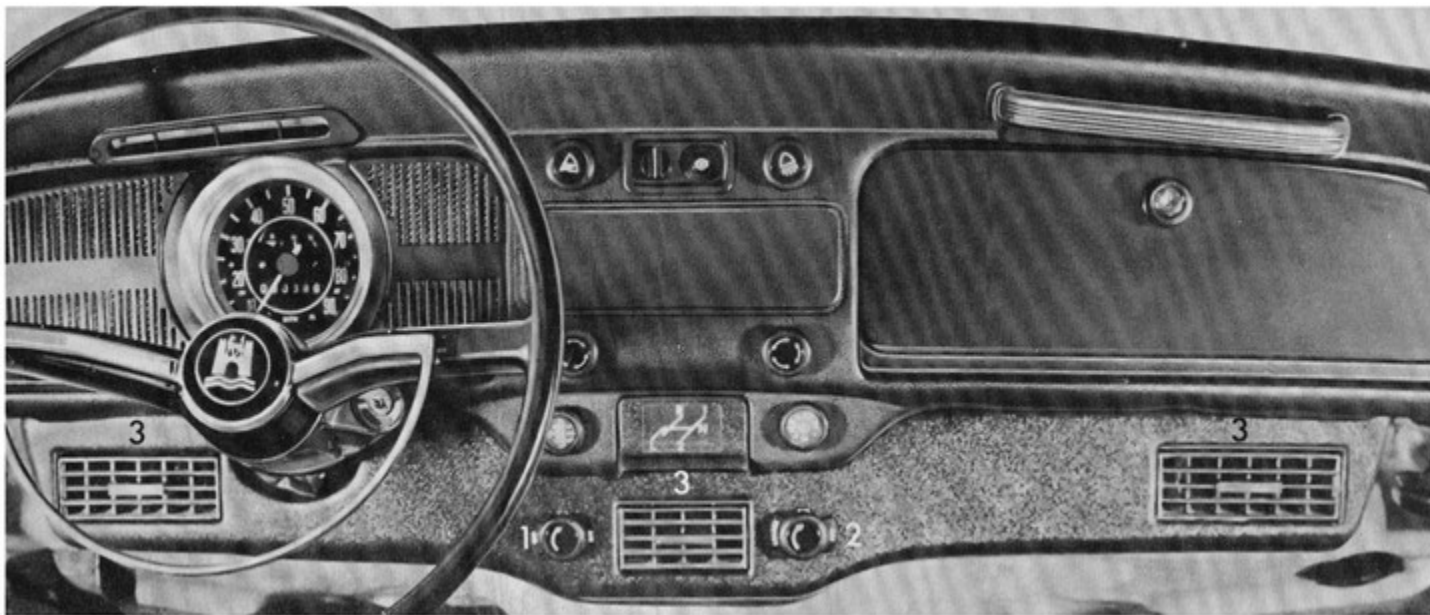
- 1st position — HIGH
- 2nd position — MEDIUM
- 3rd position — LOW

### 2 - Air temperature switch ("COLDER")

By progressively turning this switch to the right, the desired cooling range can be selected. It is in the coldest position when rotated as far as possible to the right.

### 3 - Air discharge louvers

These movable louvers can be adjusted by moving the center vane to direct the conditioned air flow upward, downward or sideways.





## Starting the Air Conditioner

With the engine running, windows and fresh air regulator closed, turn the air temperature switch to the desired position and select the air volume speed desired. On extremely hot days turn the air volume to full capacity and open a window. Within a few minutes, the hot air will be forced out of the car and the window can be rolled up as cooling starts.

Adjust the air discharge louvers to the desired position.

## Operational hints

If the volume of cold air suddenly decreases it is likely that the evaporator coil is "icing up". To remedy, turn the air temperature switch to the left and leave in this position until the air volume is back to its original rate.

If the car interior becomes too cold after adjusting the air volume, turn the air temperature switch to the left until the desired comfort level is reached.

In case the window exteriors fog over on warm, humid days, turn the air temperature switch to the left until they are cleared up.

If the window interiors should become fogged up during adverse weather conditions, they can be quickly cleared by switching on the air conditioner.

During highway driving, set the air temperature switch in approximately the middle position.

## Stopping the Air Conditioner

Turning the air volume switch to the "OFF" position stops the entire air conditioning system.

When shutting off the engine, the air conditioner should also be turned off and not turned on again until the engine is running. This is to reduce the load on the electrical system and conserve the battery.

## Maintenance hints

During the winter season, it is advisable to operate your Air Conditioner for a brief moment every week. This will help to keep the seals and fittings properly lubricated.

After the winter months and before prolonged summer usage, the air conditioner should be checked and, if necessary, serviced by an Authorized VW Dealer.

The condensers should be checked periodically for cleanliness. If the louvers are clogged, the condensers should be washed down with water.

If, upon inspection, the condenser fins are bent, the car should be taken to an Authorized VW Dealer for straightening of the condenser fins.

### Caution:

An air-conditioned Volkswagen should only be raised on a special lift available at any Authorized VW Dealer to prevent the possibility of damage to the vehicle and/or air conditioner components.

## Circuit breaker

An automatic resetting circuit breaker for the current supply of the air conditioning system is located under the rear seat. It is connected directly to the battery.

# Heating

## 1 - Heating control lever

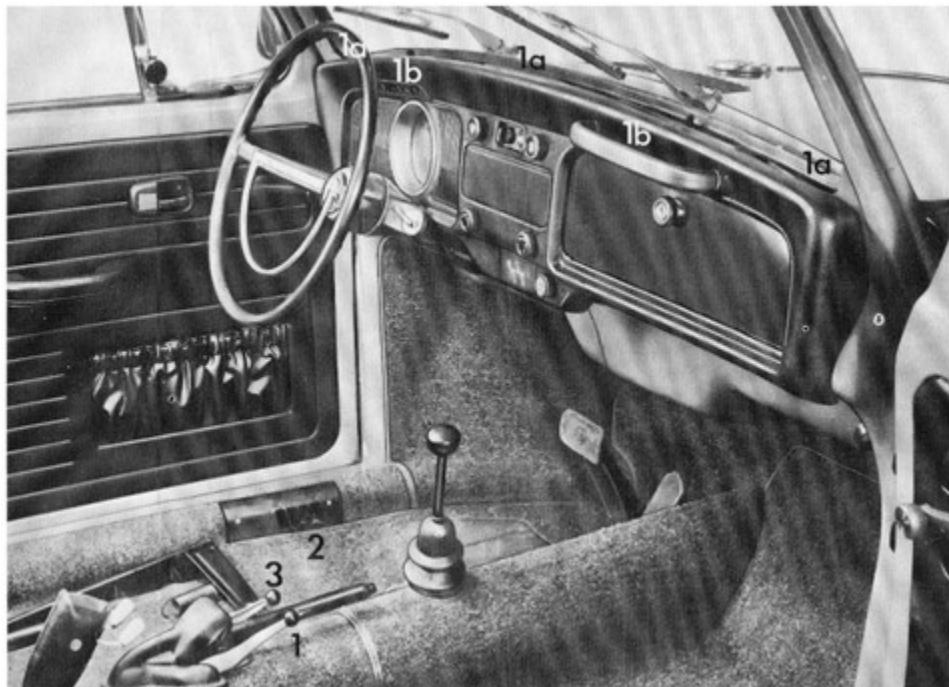
Lever up — heat on

Lever down — heat off

With the heating system switched on, warm air comes out of the 3 defroster vents (1 a) at the lower edge of the windshield. Warm air is also distributed through the 2 fresh air vents (1 b).

### Hint:

Defrosting the windshield will be more effective, when the levers in the vents — 1 b — are moved to the left, the levers for the front footwell heating — 2 — are pushed forward and the lever for the rear footwell heating — 3 — is pushed downward.



## 2 - Control lever for heating in front footwell

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

Pull lever backward — open

Push lever forward — closed

## 3 - Control lever for heating in rear footwell

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

Lever up — rear seat heat on

Lever down — rear seat heat off

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

## VW Auxiliary Heater (Optional equipment)

**To switch the heater on**, pull the knob (arrow) out. This lights up a green warning lamp in the knob.

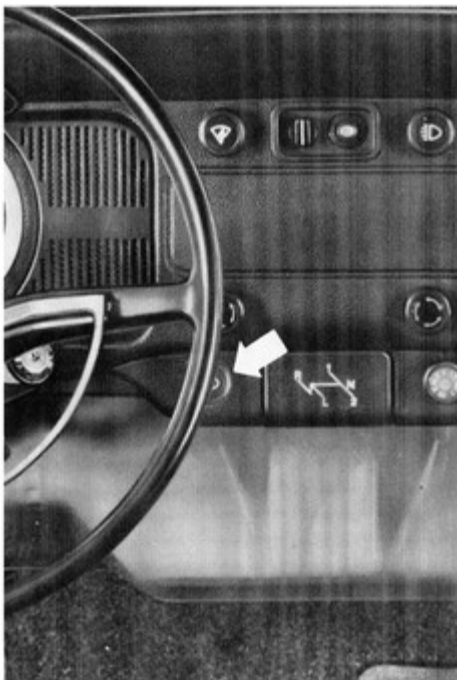
To avoid an unnecessary drain on the battery switch the heater off after about 25-30 minutes if the engine has not been started in the meantime.

**To switch the heater off**, push the knob in. The warning lamp then goes out but the blower motor continues to run until the heater has cooled down.

**The heater must be switched off when filling the tank.**

When it is very cold, the full battery capacity is required to start the engine. To avoid starting difficulties, it is advisable not to preheat the vehicle interior under these conditions, that is to say, do not switch the heater on until the engine is running.

**The heater** normally requires no special maintenance. It is advisable, however, to have the heater plug checked once a year before the cold weather sets in and a new plug installed if necessary. The fuel system should also be checked for cleanliness and the electrical connections for tightness.



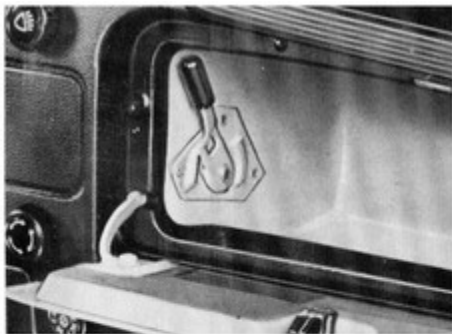
During the winter and when driving over very poor roads, mud or snow may tend to accumulate on the exhaust and combustion air intake pipes. Have these pipes checked for blockage from time to time so that the heater continues to work properly.

When the heater is not used for long periods, during the summer for instance, gum-like deposits from the fuel can settle in the fuel lines. To avoid trouble due to these deposits, it is advisable to run the heater briefly about once a month when it is not in regular use.

Heat output .....	8 000 BTU/h
Fuel .....	Gasoline
Fuel consumption .....	approx. .7 pint/h
Current consumption ....	40 Watts

## Luggage compartments

Whether you are taking a lot of luggage with you or not, load the front luggage compartment first, using the heaviest pieces of luggage if possible. The correct distribution of load means the best road holding, so take advantage of the possibilities offered by the Volkswagen with its two luggage compartments.



**The front hood** is opened by pulling the lever on the left inside the glove compartment. The front hood opens partially and can be opened fully by pressing the knob in the hood handle.

To close the front hood, just press it down firmly until you hear a click.



Volkswagen Sedan 111



## 1 - Tools

In the tool roll you will find:

- 1 V belt size 9.5 X 905 mm
- 1 hub cap remover
- 1 pair of combination pliers
- 1 screwdriver with reversible blade for slotted and Phillips screws
- 1 open-end wrench 8 mm/13 mm
- 1 socket wrench for spark plugs, fan pulley nut and wheel bolts
- 1 socket wrench 13 mm
- 1 bar for socket wrenches (also used to operate the jack)

## 2 - Spare wheel

It also provides the air supply for the windshield washer container. Therefore the spare tire pressure should occasionally be checked and increased to 42 psi.

To do this unscrew hose from valve (arrows). After checking and inflating the tire reconnect the hose.

The air flow from the spare tire to the washer container is interrupted by the filler cap valve if the tire pressure drops to 26 psi. As a result the spare tire is always inflated to at least the maximum pressure usually required on the road. Whenever you use the spare wheel, make sure that the tire pressure is adjusted according to the specifications on page 66.

## 3 - Container for windshield washer fluid

As soon as the filler cap of the container is opened, the air supply from the spare tire to the windshield washer container is interrupted by a valve in the filler cap. The washer container can be filled completely with washer fluid. It is advisable to add a cleaning solution to the water, such as Volkswagen's Windshield Washer Anti-Freeze and Solvent, as clear water is usually not adequate for cleaning the windshield quickly and thoroughly.

Follow the directions on the Anti-Freeze and Solvent container for the amount to be used.

After filling washer container ensure that the filler cap is screwed on tightly.

## 4 - Brake fluid reservoir

The brake fluid level should always be above the protruding edge near the top of the container. If the brake fluid level ever falls below this edge, the complete brake system should be thoroughly examined by your Authorized VW Dealer.

**Brake fluid** is water absorbent. Therefore it has to be **renewed every 2 years**.

**The rear luggage compartment** is readily accessible if you fold the rear backrest down. To do this, simply pull the strap — arrow — on the left hand side of the backrest releasing the safety catch. When you return the backrest to its upright position it locks in place automatically.



If you wish to carry extra large pieces of luggage in the sedan, you can strap the rear backrest down by hooking the hold down strap to the seat support thus increasing the size of the rear luggage compartment.



By tightening the hold down strap the rear seat back rest can be held in a nearly horizontal position. If the strap is not in use it should be hooked onto the back of the back rest and tightened slightly to prevent rattling.

Make sure that the hold down strap is assembled correctly: the end of the strap with the loop and the slide must be threaded through the buckle as shown in the illustration below; otherwise the strap cannot be tightened.

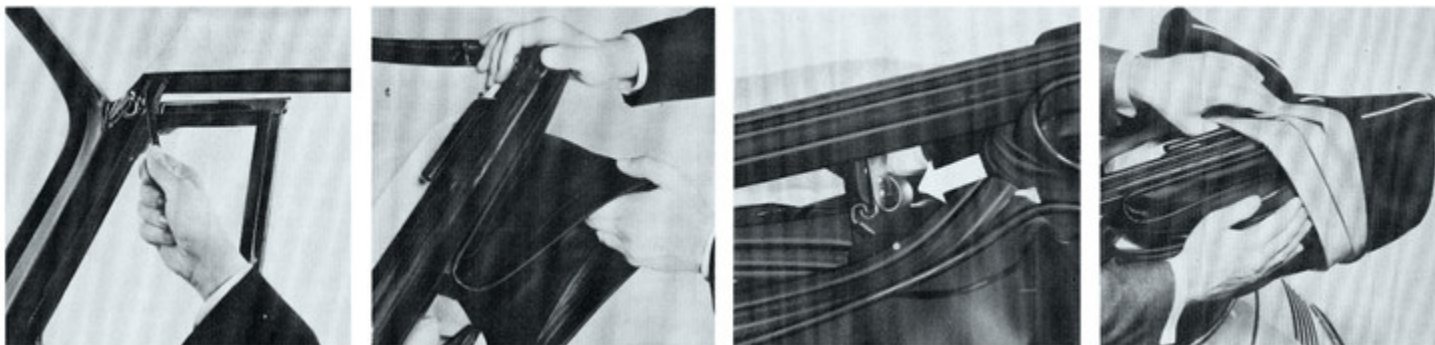




## Convertible top — opening and closing

You can open the Convertible top with ease, but open it only when it is dry and clean because sharp particles of dirt will damage the material.

First, release the locking levers for the top above the front vent windows and fold top backwards. Pull top cover and padding towards the rear and out of the linkage. Clear headliner from linkage so that it does not get jammed. Push the locking catches down. Before putting on the protective boot and securing it with the press buttons, press the top down lightly on both sides until the small catches engage. When sliding on the protective cover, raise up top cover on both sides so that the top is completely covered by the boot as otherwise there will be friction marks.

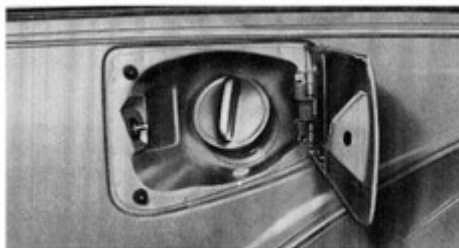


When you want to close the top remove protective boot, press top down lightly, unhook it and pull it forward. From inside the car grasp the locking levers and pull the top down to the windshield frame until the guide pins engage. Then guide the hooks into the brackets on the windshield frame and lock the levers.

One tip: As a last step, open and close the rear windows so that the weatherstrips are properly positioned.

## What to check

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



### The fuel level

will be indicated by the fuel gauge in the speedometer when the ignition is switched on (see also page 14). The filler neck is located above the right front fender. The flap opens if you pull the release on the right hand side underneath the instrument panel.

To close the filler neck on the Volkswagen Sedan 113 and Convertible turn the cap to the right until it locks with a click.

**The Auxiliary Heater (optional equipment) must be switched off when filling the tank!**

### The brakes

should be checked by applying the brake pedal just after moving off. Your Volkswagen is equipped with a dual circuit brake system. Both circuits, front and rear, can function independently.



### The brake warning light

monitors the brake system. Should the indicator lamp light up while applying the brakes, see your Authorized VW Dealer as soon as possible because one of the two brake circuits may have failed. The brakes will still operate, but a longer distance is required to bring the vehicle to a halt.

To check the brake warning light depress it after switching the ignition on. If the lamp does not light up, the bulb should be replaced.

Please bear in mind that brakes are subject to wear. An increase in pedal travel will indicate this wear. Depending on individual operating conditions, the brakes may have to be adjusted between specified maintenance intervals.





### **The oil level**

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

The vehicle must be on a level surface when the oil level is checked so that the dipstick reading will be accurate. Do not check the oil immediately after stopping the engine. Wait at least 5 minutes to give the oil in the engine time to drain down into the bottom of the crankcase.

To top up the oil, a well known brand should be selected.

Details about the proper oil viscosities are given on page 56.

### **The lights**

include parking and side marker lights, headlights, tail lights, license plate light, turn signals, brake lights and back-up lights. The headlights, turn signals, brake lights and back-up lights must be checked with the ignition on.

If a turn signal is defective, the warning lamp in the speedometer dial flashes much faster than usual or goes out. The brake lights work only when the brake pedal is depressed. The back-up lights go on automatically when reverse gear is engaged.

### **The correct tire pressure**

is most important in the interest of safety. Too low as well as too high a tire pressure reduces the life expectancy of the tires and, furthermore, adversely affects the road holding of the vehicle. Although the tubeless tires of your car will hold the inflated tire pressure for a long time, you should check the pressure before you start out on a long trip or at least once a week.

The specified tire pressure can be found in the table on page 66 and also on the label inside the glove compartment lid.

### **Two more important points:**

- 1 - If the vehicle is used mostly under very dusty conditions, the oil bath air cleaner must be checked frequently, even daily if necessary. How this is done is described on page 62.
- 2 - Do not drive your car with a disconnected battery. On the other hand, both terminals must be taken off before quick-charging a battery in the vehicle. Failure to do this can lead to damage to the electronic components of the electrical equipment.

## Starting the engine

Before turning the ignition key, make sure that the gearshift lever is in Neutral. Vehicles with Automatic Stick Shift can be started in Neutral only.

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

**At temperatures below freezing** or when the engine is cold, depress the accelerator pedal once fully and then release it slowly so that the automatic choke can work. Switch ignition on and start immediately. On the Manual Transmission depress clutch pedal, so that the starter only has to crank the engine.

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

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

Do not race the engine while it is cold.

If the engine does not start the first time or stalls at any time, the ignition will have to be switched off and then on again. The non-repeat lock in the switch prevents the starter from being operated when the engine is running and thus from being damaged.



**The warning lights for generator and oil pressure in the speedometer will come on when the ignition is switched on. As soon as the engine starts, these lights will go out. Stop at once if one of these lights comes on when driving:**

### Red warning light for generator and cooling

Check the belt that drives the generator. If this belt breaks, the engine cooling fan also stops working, which will overheat the engine and cause damage. The proper way to fit a new belt is described on page 44.

If the generator stops charging for any other reason, you can drive on. But try to get the vehicle to an Authorized Volkswagen Dealer as soon as possible because the battery will soon run down.

### Red warning light for oil pressure

If this warning light comes on when driving, the flow of lubricating oil in the engine may be interrupted. Check the oil level first. Should the cause of the trouble be elsewhere, do not drive on. Contact your nearest Authorized Volkswagen Dealer.

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

## Driving hints

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

1st gear:	0 - 16 mph
2nd gear:	12 - 34 mph
3rd gear:	22 - 56 mph
4th gear:	31 mph and up

When a particular traffic situation makes it essential to move rapidly, you can accelerate up to 37 mph in 2nd gear and up to 62 mph in 3rd gear for brief periods only. Bear in mind,

however, that full throttle acceleration raises fuel consumption considerably. It is more economical to drive smoothly and keep the speed fairly constant. Very fast, racy-sporty driving, alternating between full throttle and hard braking will mean more frequent visits to a gas station and increased tire and brake lining wear.

You can drive very economically between:

- 12 and 28 mph in 2nd gear
- 22 and 44 mph in 3rd gear
- 31 and 62 mph in 4th gear

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

**Volkswagen automobiles have excellent brakes.** But do not forget that the braking distance increases very rapidly as the speed increases. At 60 mph for example, it is four times longer than at 30 mph. Apply the brakes in time, but do not use too much force — locked wheels increase the braking distance.

Remember that water reduces the tire traction and increases braking distance. Drive carefully and remain at a safe distance behind the vehicle in front, particularly when roads are wet and slippery.

Always set the handbrake after parking your car. On steep hills turn the front wheels toward the curb.

**That just about covers the operation of the car and how to drive it properly. From page 34 on you find the tips for winter driving, breakdowns and all there is worth knowing about the vehicle. Before driving a vehicle with Automatic Stick Shift be sure to read the following pages:**

# VW Automatic Stick Shift



## At first glance

you will notice the lack of a clutch pedal. Driving with the Automatic Stick Shift is simpler and shifting is easier. We suggest you carefully read the following instructions to familiarize yourself with the operation of the transmission.

## The Automatic Stick Shift

transmission consists of a torque converter, a power-operated clutch for shifting, and a mechanical three speed transmission. The torque converter multiplies the torque produced by the engine and allows the vehicle to be driven with very little shifting — usually two driving ranges will be used. It automatically changes the torque from the engine in an infinitely variable ratio according to driving conditions. Since the torque converter is a fluid coupling, it also permits stopping the vehicle with an engaged gear while the engine is running. The clutch interrupts the flow of power from the engine to permit the gears in the transmission to be shifted. Because the power-operated clutch is actuated by the first slight movement of the gearshift lever, there is no need for a clutch pedal.

## Driving ranges

Your Automatic Stick Shift has three forward driving ranges and one reverse. They have been designed so that you will very quickly know which range to use to produce the best performance under all driving conditions.

## Neutral

is between all gears in the H-pattern. Neutral is the only range that completely interrupts the flow of power to the rear wheels. It should be used when the car is standing at idle for any length of time, with the hand brake set. Neutral is also the only range in which the engine may be started.

## Starting

With the hand brake set, move shift lever to Neutral and start the engine. Move the shift lever into the range you wish to use, usually Range 1. After shifting be sure to remove your hand from the shift lever to allow the clutch to engage. To start 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 gear is engaged.

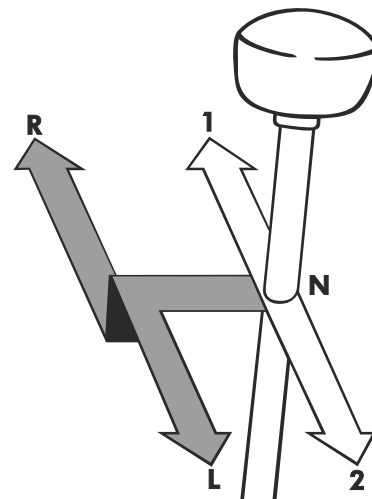
## Low Range

or the load range is not normally used in day to day driving. It is only used to get the car moving on steep slopes with a full load or when driving down a very steep hill to take ad-

vantage of the additional engine braking. Low is also recommended for particularly slow driving over rough ground. Speeds from 0 - 35 mph can be obtained in this range.

## Driving Range 1

is for starting off and accelerating, and covers the speed range from 0-55 mph. Under normal driving conditions, the vehicle is started in this range before shifting to Range 2. Range 1 is also recommended for use in city traffic, slow moving lines of vehicles and whenever maximum acceleration is required for passing. If the vehicle is in Range 2, you may downshift into Range 1 at any speed under 55 mph.



## Driving Range 2

is the range that should normally be used for highway driving. While this range may be used at any speed from 0—top speed, it is the only range that can be used above 55 mph. At low speeds, however, it is better to use Range 1 to take advantage of its better acceleration.

## The Reverse Range

should only be engaged when the vehicle is stationary. The gearshift lever must be depressed to get past the safety stop to shift into Reverse.

## Shifting

is easy. Simply release the accelerator pedal and move the gearshift lever from the range you are in to the range you want, remove your hand from the gearshift lever, and again step on the accelerator.

## If you like quiet, smooth driving,

which saves fuel, we recommended that you shift to Range 2 at about 20 to 25 mph.

## If you want to drive fast

and want maximum acceleration, you can stay in Range 1 right up to 55 mph and then shift into Range 2. Naturally, this will use more fuel.

## Driving downhill

If you make full use of the braking power of the engine, just select a lower driving range as with a conventional transmission. When parking in tight spaces, it is advisable to use the driving ranges Reverse and Low. Shift into Reverse only when the vehicle is stopped.

## Warning light in speedometer

There is a red warning light on the right hand side of the speedometer dial (see page 14). If the light ever goes on, it indicates that the ATF (Automatic Transmission Fluid) has reached too high a temperature. If you drive for a longer time under heavy load conditions, such as when pulling a trailer up a hill, and the warning light goes on, shift to a lower driving range. However, if the car is loaded so heavily that it barely moves or does not move at all, shift to a lower gear immediately without waiting for the warning light to go on.

## Stopping

Release the accelerator and apply the foot brake. If you are going to start off again in another range, you may shift into the new range while the vehicle is standing still, but if you remain in a driving range apply the foot or hand brake to prevent the vehicle from creeping.

## Towing

It is possible to tow a trailer or another vehicle with the Automatic Stick Shift. However, it is better to start in the Low driving range with this extra load. When driving up and down steep hills, shift to a low range early.

## Push starting

is accomplished in the following manner: Turn ignition on and select Low driving range. Push or tow vehicle at a speed of at least 15 mph.

For further hints about towing and pushing see page 53 and 54.

## Some basic rules

1. When parking, apply the hand brake.
2. When idling for an extended period of time, shift into Neutral and apply the hand brake. When stopped in traffic, apply either the hand or foot brake to prevent creeping.
3. When starting out, shift into a driving range before releasing the hand brake.
4. After shifting, remove your hand from the gearshift lever. Do not try to drive with your hand resting on the lever.

## An 8 Amp. fuse

in a fuse holder on a support above the ignition coil protects the control valve of the Automatic Stick Shift. If this fuse should ever burn out, the transmission cannot be shifted.

# Winter operation

Do not, under any circumstances, try to influence the heating of the vehicle by covering up the louvers below the rear window and in the engine compartment lid. These louvers must always be clear so that air can flow into the carburetor and to the engine cooling fan.

Tires with badly worn treads are very dangerous, particularly in the winter. Make sure they are replaced in time.

Winter tires do not fulfill their purpose if the tread depth is less than  $\frac{3}{32}$ " (4 mm).

Winter tires with special heavy treads give good traction in snow and slush.

Better still are winter tires with studs which increase the safety margin even on hard snow and ice. Winter tires with studs should be run at moderate speeds when new in order to give the studs time to settle. Check your state laws before using studded tires.

Winter tires should always be fitted on all four wheels.

If winter tires are mounted, they should have the same load capacity as tires of the original equipment.

The specific characteristics of winter tires can be improved by raising the tire pressures to 3 psi (0.2 kg/cm<sup>2</sup>) above the normal operating pressure for the tire concerned. This inflation pressure then covers the recommended pressure increase of 3 psi for fast highway driving.

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

Radial ply tires are suitable all year round. If winter conditions are not too severe, they may very well replace conventional snow tires.

Even more suitable for operation of the vehicle during the winter season are radial ply winter tires and tires with studs. An increased tire pressure of 3 psi (0.2 kg/cm<sup>2</sup>) applies to these tires also.

## Snow chains

Only thin chains which do not protrude from the tire tread and inner side wall more than  $\frac{1}{2}$  inch including tensioner, are suitable. While winter tires should be used on all four wheels, chains are required on the rear wheels only.

When driving over long stretches of road which are free of snow, the chains should be removed because they serve no useful purpose and merely damage the tires and wear out quickly.

**Engine oil** of SAE 30 grade will tend to thicken at temperatures around freezing and may cause difficult starting. As soon as winter temperatures are expected, change to a thinner grade of engine oil. Details of the various oils to be used are given on page 56. If you drive mostly short distances and in city traffic, especially in the winter, we recommend that you have the engine oil changed at 1500 miles-intervals. At other times, these additional changes are unnecessary and uneconomical.

In areas with arctic climate and temperatures below  $-13^{\circ}\text{ F}$ , the engine oil should be changed every 750 miles.

**Transmission oil** of SAE 90 grade can generally be used all year round. Only in areas with cold climate is it necessary to use the thinner SAE 80 transmission oil.

In areas with arctic climate and temperatures below  $-13^{\circ}\text{ F}$ , ATF (Automatic Transmission Fluid) can be filled into the transmission and final drive. As soon as the temperature rises, this fluid must be replaced by SAE 80 or SAE 90 transmission oil.

**The battery** not only tends to drop in capacity as the temperature drops, it also has to work

much harder in cold weather. Apart from the higher current consumption when starting and using the lights more often, there are numerous other electrical items used mainly in winter, such as rear window defogger and auxiliary heater.

A really cold battery which may not be fully charged has only a fraction of the capacity that a battery at normal temperature has, and this might not be enough to start a cold engine. If the car is only driven short distances and in city traffic, the battery may have to be charged from an external source from time to time. For more details see page 52.

**The spark plugs** should not have excessively large gaps especially in the winter. The gap is .028 in.

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

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

# Care of car

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

In the winter, all parts of the vehicle are subjected to even more severe climatic conditions and corrosive salt solutions. It is advisable to clean and wax the vehicle more often at this time of the year.

The items listed below will help you preserve the built-in beauty of your Volkswagen. Compounded especially for use on your VW, they are available at your local Authorized Volkswagen Dealer. Detailed instructions on how to use the various products are imprinted on the individual containers.

Application	Volkswagen Product
Car Washing, Convertible Top Cleaning, Upholstery Cleaning, Whitewall Tire Cleaning	All Purpose Cleaner — ZVW 243 101
Paint Polishing and Paint Waxing	Combination Car Cleaner and Wax — ZVW 241 109
Paint Polishing	Paint Polish — 000 096 001
Paint Waxing	Classic Car Wax — ZVW 246 101
Care and Cleaning of Chrome Parts	Chrome Cleaner and Protection — 000 096 061
Preservation of Chrome Parts	Chrome Preservative — 000 096 067
Windshield Cleaning	Windshield Washer Anti-Freeze & Solvent — ZVW 241 101
Paint Touch-up	Touch-up Paint, all colors

## Washing

Wash vehicle with clear water but do not wash it in direct sunshine.

Rinse sponge often to avoid scratching the paintwork.

If the dirt cannot be removed with clear water, All Purpose Cleaner or a suitable shampoo can be added. Afterward, rinse all traces of the cleaner off with clear water and then wipe the vehicle dry to avoid water spots.

## Waxing

Wax your car as often as possible.

The paint should be rewaxed when water remains on the surface in large patches and does not form beads and roll off.

If paint is cleaned with Combination Car Cleaner and Wax it need not be waxed afterwards.

## Polishing

Should only be done if paint has lost shine and gloss cannot be brought back with wax. After treatment with polish the vehicle must be waxed.



### **Paint touch-up**

Minor paint damages, such as scratches, stone chips and the like, can easily be touched up with a paint stick available at your Authorized VW Dealer.

In the spare wheel compartment you will find a sticker showing a number. This is the code number for the paint color of the vehicle.

### **Removing tar spots**

Treat paint surfaces with a tar remover as soon as possible. After treatment rinse off traces of remover with soap powder solution (water and shampoo).

### **Removing insects**

Dried on insects can be cleaned off paint with an insect remover.

Wash surfaces afterwards.

### **Parking under trees**

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

### **Care of chromed parts**

Chrome parts should be treated with a chrome cleaner or polish. To give lasting protection in the winter, the chrome parts can be coated with Volkswagen's Chrome Cleaner and Protection.

### **Cleaning windows**

Windows can normally be cleaned with a sponge and warm water and dried with a chamois. Do not use this chamois for the paintwork because traces of paint cleaner and polish will cause streaks on the windshield.

These streaks can only be removed with a good windshield cleaner. Do not forget to clean the wiper blades.

### **Windshield wiper blades**

The blades should be taken off from time to time and cleaned with a hard brush and alcohol or a strong detergent solution. During long dry periods they tend to get clogged with tar splashes, oil and insects. New blades should be fitted as often as necessary.

### **Door and window weatherstrips**

Weatherstrips must be undamaged and supplied to ensure that they seal properly. To retain the original flexibility of the rubber, coat the weatherstrips with talcum powder or silicone spray occasionally.

### **Airing the body**

If the vehicle is left in a closed garage for long periods, the garage and car interior should be aired from time to time to prevent the formation of mould and damp stains inside the vehicle.

### **Cleaning cloth upholstery**

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

### **Cleaning leatherette**

The leatherette parts of the headlining, side trim panels and seats can be cleaned best with a soft cloth or brush. When very dirty use Volkswagen's All Purpose Cleaner. Use only a dry foam cleaner on the leatherette of the seats and backrests because the material used for these parts is air-permeable and liquid cleaners would penetrate into the textile backing.

Grease or paint spots should be wiped off, when possible, before they dry. Once dry, they can be removed by rubbing carefully with a cloth moistened with benzine or alcohol. Shoe polish marks can be removed with turpentine but be careful because this will damage the dust repellent surface of the leatherette if applied too long. After cleaning, rub the material dry with a soft cloth. So-called preservatives are not suitable for leatherette because they do not soak into the material and merely collect dust that will soil your clothing.

### **The front seats**

If the front seats become hard to slide, the runners should be lubed lightly at top and bottom after being cleaned with a cloth. For removing and installing the seats see page 40.

### **Convertible top**

The top does not require any special care. It is important, however, to clean the plastic material regularly. When very dirty, the top can be cleaned with a soap powder solution or Volkswagen's All Purpose Cleaner. A hard brush will help to remove dirt from the grained surface of the material but care must be taken at the edges to avoid scratching the paint with the bristles. After washing the top, the complete vehicle must be rinsed thoroughly with clear water.

Spots in the top material must never be removed with paint thinner, chlorine-based spot removers or similar solutions, as this will damage the material. Stubborn spots can be removed by wiping with a cloth moistened with benzine and then rinsing well with a lukewarm soap solution.

The pivot points of the top linkage should be cleaned occasionally and a few drops of oil applied. Afterward the joints should be wiped dry to ensure that oil does not drip on to the top material.

Noises caused by friction between the window frames of the Convertible and the rubber weatherstrips can be eliminated by rubbing in some talcum powder or silicone spray.

## Tires

In addition to checking pressures regularly, the following points should be remembered in connection with tires:

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

The original equipment tires on your Volkswagen are provided with built-in tread wear indicators to assist you in determining when your tires have been worn to the point of needing replacement. These indicators are molded into the bottom of the tread grooves and will appear as approximately 1/2-inch wide bands when the tire tread depth becomes 1/16 of an inch. When the indicators appear in two or more adjacent grooves, tire replacement due to tread wear is recommended.

We advise you, however, not to let the tires wear down to this extent. Tires with treads in this condition cannot grip the road surface properly at high speeds on wet roads. If you notice that the tires are wearing unevenly, get advice from your Authorized VW Dealer.

For maximum safety it is best to replace all 4 tires at the same time. If this is not possible, at least replace tires in pairs, either front or rear. Do not combine tires of different construction or tread pattern.

Brand new tires do not possess maximum traction. They should, therefore, be driven with moderate speed for the first 60 miles.

Uneven tire wear is not always due to improper wheel alignment. It is often the result of individual driving habits such as cornering at high speeds. If the tire pressure is not checked regularly, abnormal tire wear can result.

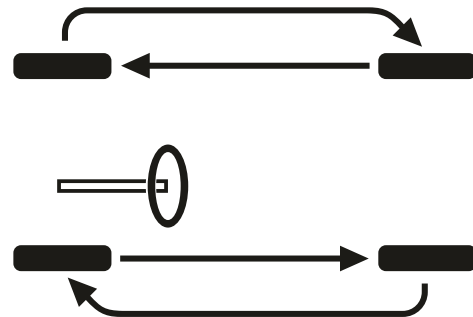
To avoid having to replace tires earlier than necessary, it is recommended that the wheels be exchanged according to the sketch below.

Afterwards the tire pressure must be corrected. The wheel bolts must be torqued diagonally to 110 ft. lbs.



**Tread still good**

**Tread worn out**



# Do-it-yourself tips

Just in case you have to carry out a repair yourself we have included some information on the next few pages which should help you.

All other repairs should always be performed by an Authorized Volkswagen Dealer. Whenever you see the familiar VW sign on the roadside, you can be sure of expert advice and quick, efficient assistance.

## Removing and installing seats

### Removing front seats

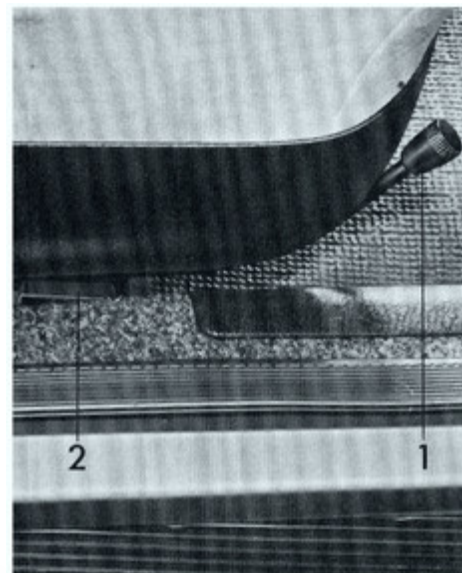
To protect floor covering put paper in front footwell.

Lift adjustment lever (1) and move seat forward until it touches the leaf spring (2).

Depress the leaf spring (2) with a screwdriver and while lifting adjusting lever (1) slide seat forward approximately 1 ½".

Disconnect tension spring (3).

Now slide seat all the way forward and lift it out.



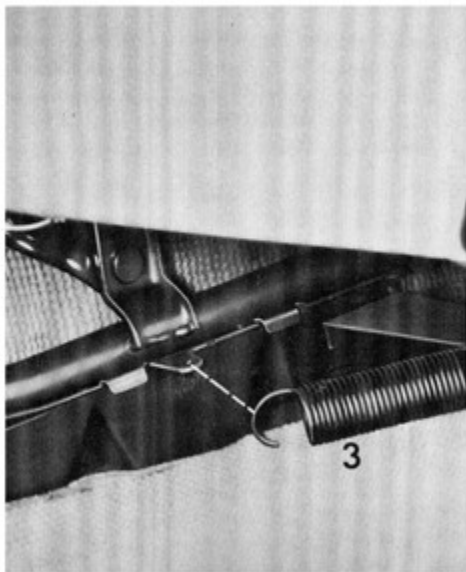
### Installing front seats

Position seat in front of runners.

Lift seat slightly and insert guide in runner on the tunnel side.

Insert the second guide in the outer runner by pulling seat frame slightly toward the door.

With adjusting lever raised slide seat backward until tension spring can be installed. Now sit in the seat and adjust it to your most comfortable position.



### Removing and installing rear seat

Raise seat and pull forward slightly. Tilt it on one side and remove.

Lift seat into car holding it diagonally. Position front edge on rear seat support. Push back of seat down, sliding it past the backrest until it is correctly positioned. Take care of the seat belts!

To reach the jack and battery, it is sufficient to fold the front of the seat upward.



## Changing wheels

Apply the hand brake.

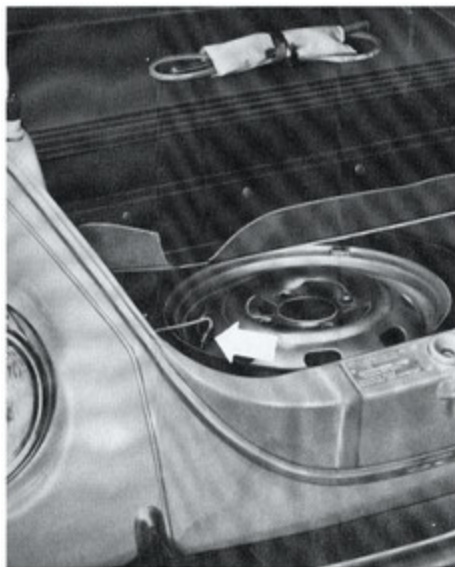
Lift rear seat (see page 41) and take out the jack. Block the wheel opposite the defective wheel. Before taking out the spare wheel, disconnect the hose leading to the windshield washer container (big arrows).

On the Volkswagen Sedan 111 lift the spare wheel so that you have better access to the two wedges (small arrows) holding the washer container in the rim. After removing the wedges, the container can be taken off.

Take off hub cap with remover and jack bar by hooking the remover into the holes in the edge of the cap and levering against the wheel rim with the jack bar.

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

Volkswagen Sedan 111



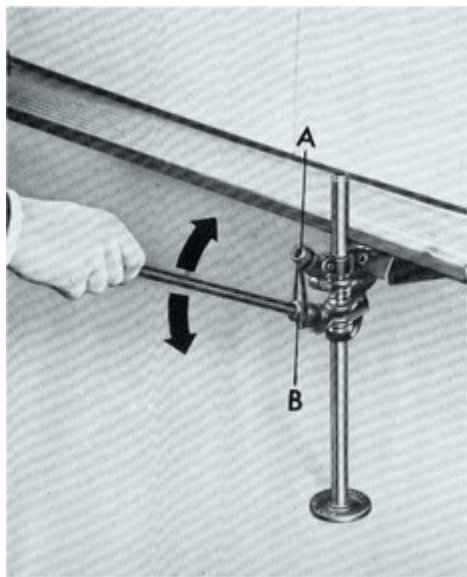


Insert jack into socket and push the jack tube down until it touches the ground. Place bar in upper link - A - of jack and raise vehicle by pumping handle up and down.

**Note:**

The jack is a tool for changing a wheel only. If you work under the car, place a suitable support under car frame.

Unscrew wheel bolts and take wheel off. Place spare wheel against drum and raise or lower vehicle until a hole in the wheel is roughly in line with a threaded hole.



Insert a bolt and tighten it only so far that the wheel can be swung around to align the other holes.

Insert remaining bolts.

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

Place bar in lower link - B - of jack and lower the vehicle by pumping handle up and down.



Insert bar into wrench and tighten the wheel bolts diagonally to 110 ft. lbs. Have it checked at a service station with a torque wrench because correct tightness of the wheel bolts is important for safety.

Install hub cap with a blow of the hand.

Be sure to check the pressure in the tire you have just put on. For correct tire pressure see page 66.

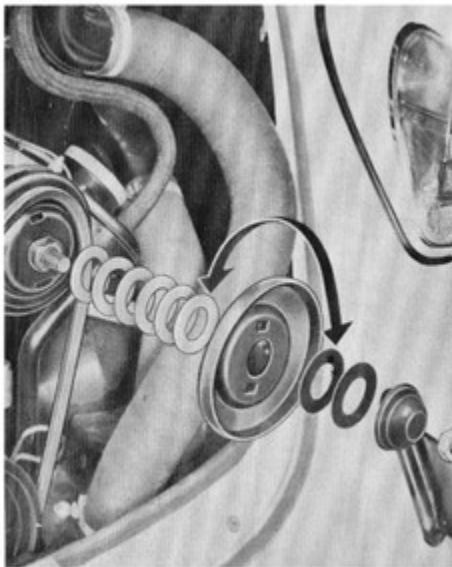
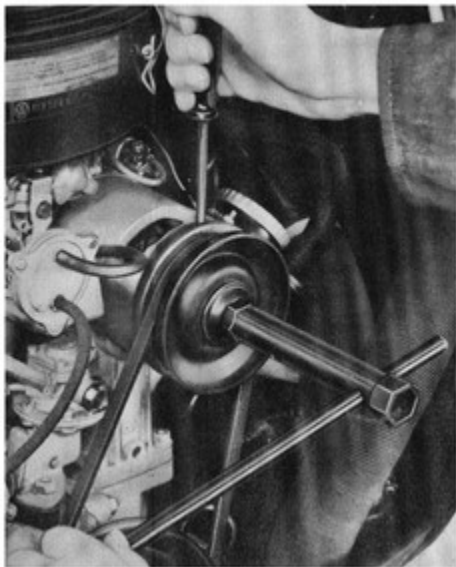




## Adjusting or replacing V belt

To adjust the belt, remove the rear part of the pulley on the generator. When loosening and tightening the nut, place a screwdriver through the cut-out in the front half of pulley and support the screwdriver in the bottom of the notch at the generator housing. To fit a new belt, the cover plate for the crankshaft pulley must also be removed after taking out the three screws.

The belt tension is adjusted by varying the number of washers between the pulley halves. Taking washers out increases the tension, putting them in decreases it. Extra washers are stored on the outside of the pulley half.



The V belt tension is correct when the belt can be pressed inward about .6 in. at the center. The belt must not be too tight or too slack. A new belt may stretch slightly at first. It should be checked after about 600 miles and the tension corrected if necessary.

### Hint:

Although the life expectancy of the V belt of your VW is very high, you should always carry a replacement belt in the car.

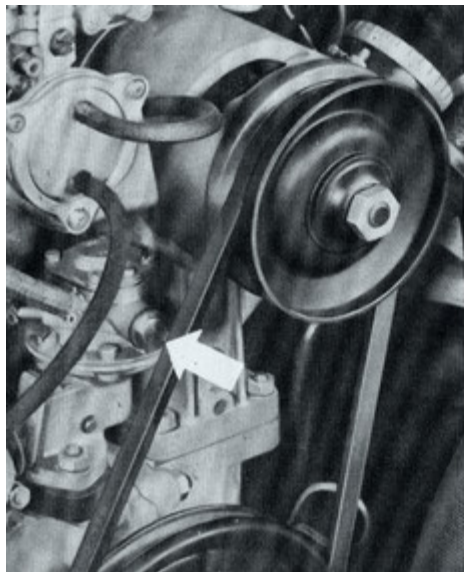
## Cleaning fuel pump filter

Remove plug and take filter out.

Reinstall plug immediately to prevent fuel leakage.

Wash filter in clean benzine and blow it out.

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



## Cleaning or replacing spark plugs

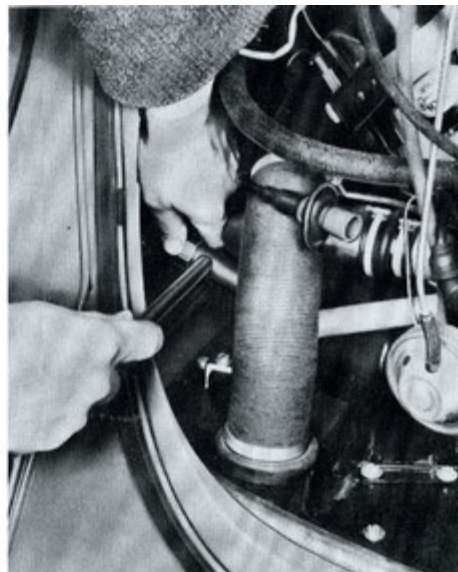
Pull connector off.

Remove plug with socket wrench and bar.

Dirty plugs should be cleaned with a sand blaster but in an emergency, the carbon can be removed with a wood chip. Do not use a wire brush. The plugs should also be clean and dry on the outside in order to avoid shorting and tracking. The gap can be set by bending the outside electrode. The gap should be .028 in.

Take care not to crossthread the plugs when inserting them. Tighten them firmly, but do not overtighten.

New plugs should be fitted every 12,000 miles.



**Authorized VW Dealers use a new service system specially developed for the VW.**

Lots of service stations say they can repair Volkswagens and a lot of them really can.

But they cannot offer you VW Diagnosis and Maintenance — our new service system.

Instead of giving every VW the same basic maintenance, we now treat each one as an individual.

This means your VW is thoroughly checked by a specially trained Diagnostician using special testing equipment. And that means your car gets just the maintenance it needs. No more, no less.

And **you** get a Test Report — so you know the exact condition of your VW.

It's something you should know about the car you drive.



## Adjusting headlights

It is best to check the headlight alignment with a regulation screen or aiming device. If none is available, proceed as follows:

Check tire pressures, correct if necessary, and park vehicle on level surface squarely facing a wall or screen 25 feet in front of the headlights. The driver's seat must be loaded with one person or a weight of 154 lbs.

Measure height (a) from ground to center of headlights and draw a horizontal line (H) on

screen at this height the full width of the vehicle.

Opposite the center of each headlight, draw vertical lines (V) intersecting the horizontal. These lines should correspond to the measurement "b" in the sketch below. Drawing a vertical line for the center of the vehicle might help aligning vehicle with screen.

Loosen the screw in the center below the headlight and take the trim ring off.

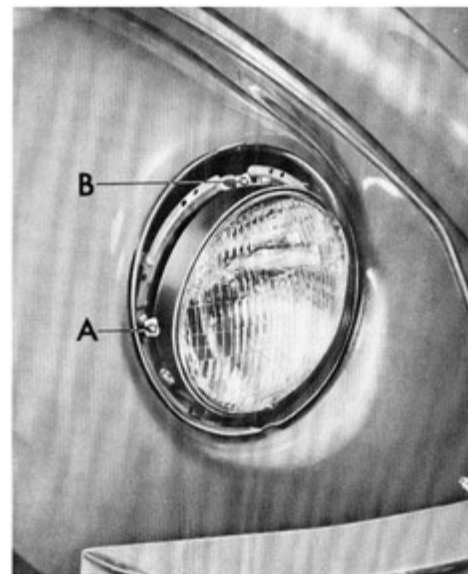
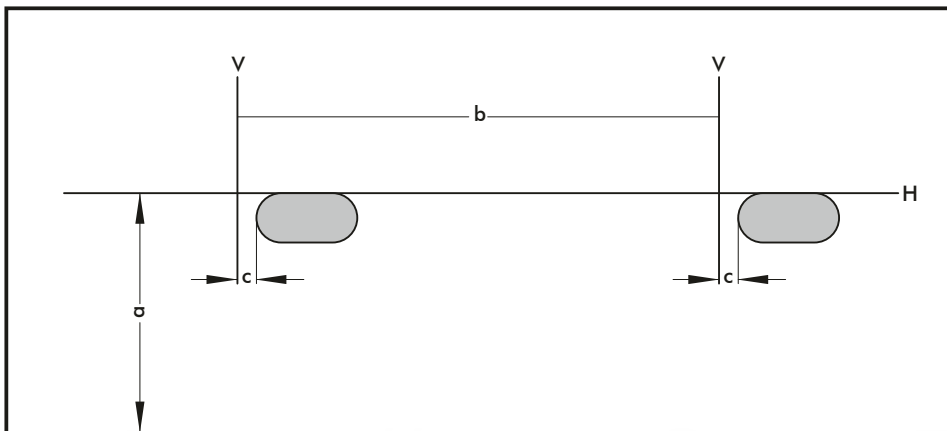
Aim the headlights individually by turning the two aiming screws with low beams switched on. Cover up the second headlight.

The headlights are correctly aimed when the top edge of the high intensity zone is on the horizontal line H and the left edge is 2 in. to the right of the vertical line V.

Check with your State Bureau of Motor Vehicles for variations from these specifications.

a = Height of headlamp center from floor  
b = Distance between headlamps (45.3 in., Volkswagen Sedan 111 : 41.1 in.)  
c = 2 in.

A — Lateral aim  
B — Vertical aim



## Bulb chart

	U.S. Replacement bulbs	VW Part No.
Sealed beam (headlights) . . . . .	6012	111 941 261 A
Front turn signals/parking lights . . . . .	1034	N 17 738 2
Side marker lights . . . . .	57	N 17 717 2
Rear turn signals . . . . .	1073	N 17 732 2
Stop/tail lights . . . . .	1034	N 17 738 2
Back-up lights . . . . .	1073	N 17 733 2
License plate light . . . . .	89	N 17 719 2
Instrument and warning lights . . . . .	—	N 17 722 2
Warning lights for emergency flasher, brake operation, rear window defogger, Automatic Stick Shift and Auxiliary Heater . . . . .	—	N 17 751 2
Interior light: Sedan . . . . .	211	N 17 723 2
Convertible . . . . .	—	N 17 725 2

## Replacing bulbs

### Headlights

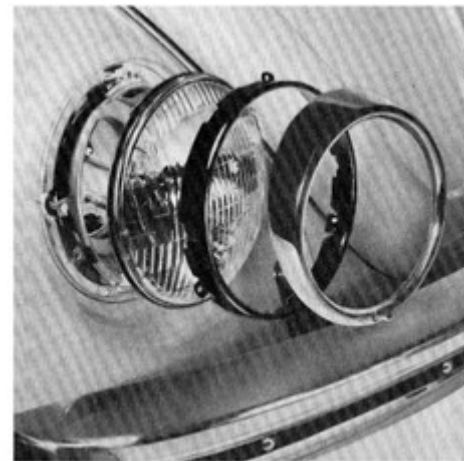
Your Volkswagen is equipped with double filament seven inch sealed beam units. Should it become necessary to replace a unit, loosen screw in the center below the headlight and take off the trim ring.

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

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

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

Check headlight settings.



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

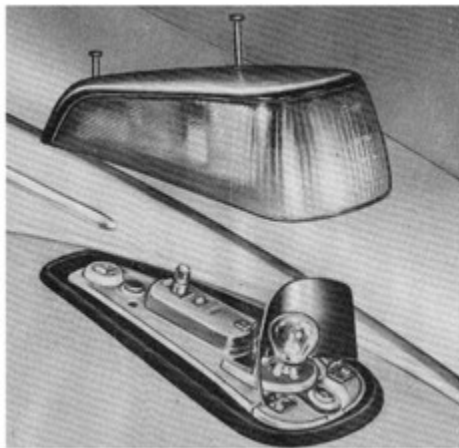
Remove two Phillips screws.

Take off housing and lens.

Press bulb into holder lightly, turn and take out.

Install new bulb.

When fitting housing, ensure that gasket is located properly.



### Rear turn signal, stop/tail light or back-up light bulbs

Unscrew three Phillips screws so that the lens can be taken off.

Bulb positions:

Top — turn signal

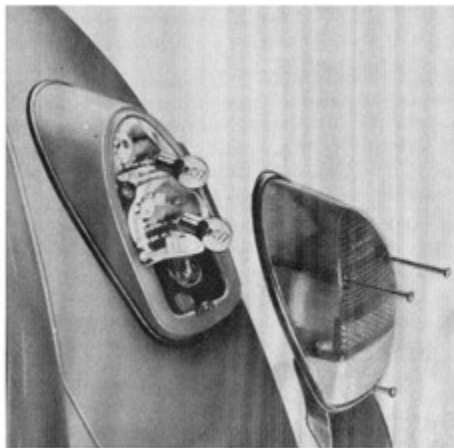
Center — stop/tail light

Bottom — back-up light

Press bulb lightly into holder, turn and take out.

Install new bulb.

Tighten lens securing screws evenly but do not overtighten.



### License plate light bulb

Open rear hood.

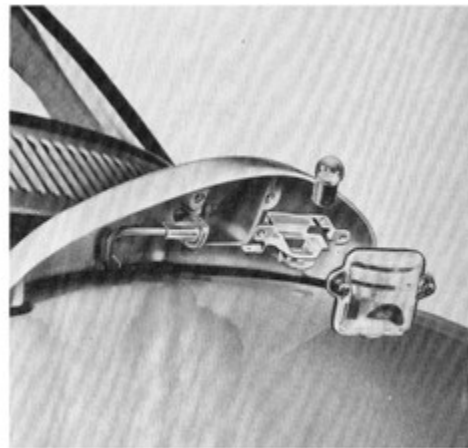
Remove screws on each side of lens and take off lens with bulb holder.

Pull bulb holder out of lens.

Press bulb lightly into holder, turn and take out.

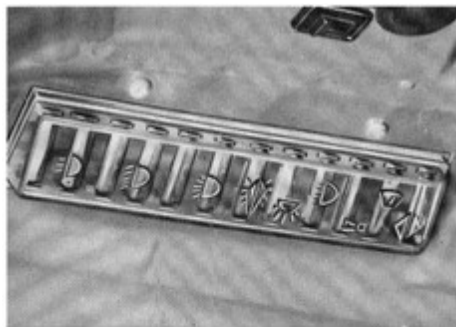
Install new bulb.

When installing, ensure that the cable grommet fits properly.

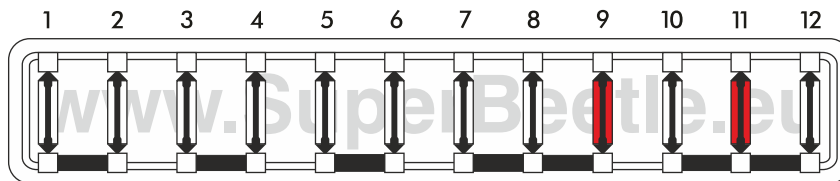


## Replacing fuses

The fuse box which has a transparent cover with embossed symbols is located under the instrument panel near the steering column. In vehicles equipped with air conditioner the fuse box is located in the front luggage compartment behind the instrument panel cover.



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



⇄ 8amp.

⇄ 16amp.

- 1 Fuel gauge, Warning lights in speedometer, Turn signals
- 2 Windshield wipers, Warning lights for dual circuit brake system, Automatic Stick Shift and Rear window defogger (**switch current**)

- 3 Stop lights, Horn
- 4 Emergency flasher system
- 5 —
- 6 Interior light, Buzzer alarm

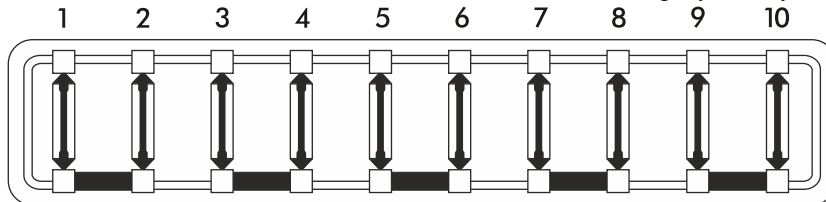
- 7 High beam left, High beam warning light
- 8 High beam right
- 9 Low beam left
- 10 Low beam right
- 11 Tail light left
- 12 Tail light right, Parking and side marker lights, License plate light

- 1 Turn signals, Horn, Warning lights for Automatic Stick Shift and Rear window defogger (**switch current**), Fuel gauge

- 2 Windshield wipers, Stop lights, Brake warning light
- 3 High beam, left High beam warning light

- 4 High beam, right
- 5 Low beam, left
- 6 Low beam, right
- 7 Parking and side marker light, left, Tail light, left

- 8 Parking and side marker light, right. Tail light, right License plate light
- 9 Interior light, Buzzer alarm
- 10 Emergency flasher system



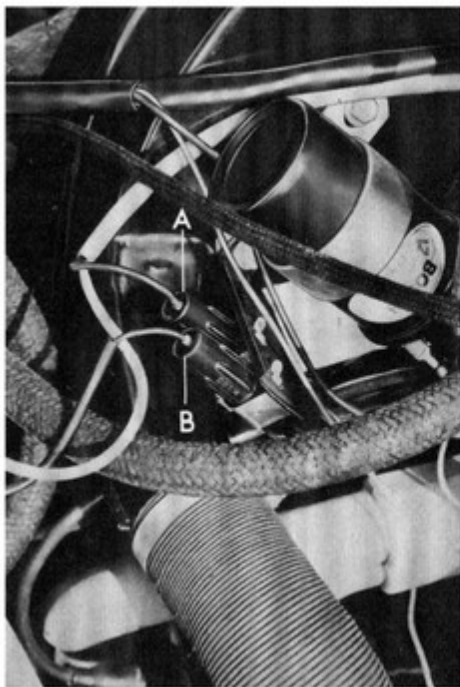
Volkswagen Sedan 111



Two additional 8 amp. fuses in separate fuse holders are located on a support near the ignition coil in the engine compartment:

Fuse — A — for the back-up lights

Fuse — B — for the control valve of the Automatic Stick Shift. If this fuse should ever burn out, the transmission cannot be shifted.



Another 8 Amp. fuse in a separate fuse holder — C — on the left underneath the rear seat is for the **main current** of the rear window defogger.



The fresh air fan has its 8 amp fuse in a separate fuse holder near the fuse box behind the dash board.

## Care of battery

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

When the rear seat is lifted, the filler plugs can be removed from the battery. The electrolyte level should always be in accordance with the mark. If the level is too low, add distilled water.

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

Do not add more distilled water than is necessary because if the level is too high, the electrolyte will overflow when the battery is being charged and cause damage.

The terminals and connections should be kept clean and greased with battery silicon spray or petroleum jelly. Ensure that the ground connection to the body is free of corrosion and tight.

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

### Attention

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

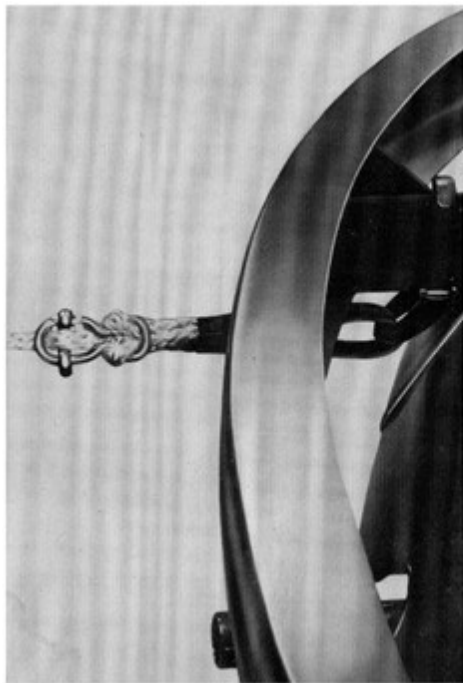
Before having a quick-charge performed on a battery installed in a vehicle, disconnect both terminals to avoid serious damage to the electronic components of the electrical equipment.



## Towing

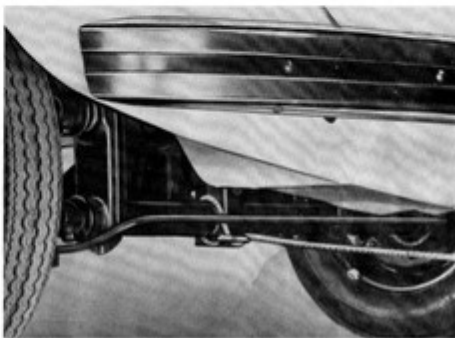
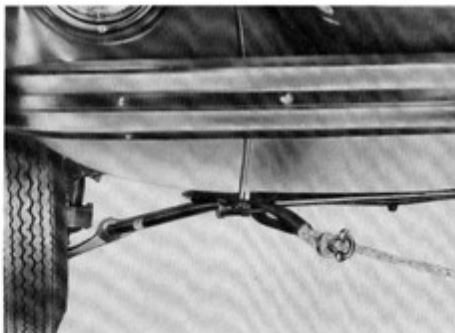
**At the rear** a towing eye is fitted underneath the bumper.

It must be taken care that no undue or sudden stress will be applied. When towing on rough roads, it is possible that undue stress will cause damage to the body.



**At the front** the Volkswagen Sedan 113 and the Convertible has another towing eye at the front axle.

On the Volkswagen Sedan 111 the tow rope should be attached to the lower axle tube as near to the frame head as possible.



The driver of the towing vehicle must be particularly careful when starting off and shifting. The driver of the vehicle that is being pulled must take care to keep the tow rope taut.

On page 33 you will find hints to observe when towing with vehicles equipped with the VW Automatic Stick Shift.

**Always observe state laws and municipal ordinances governing towing.**

Volkswagen Sedan 111

## Here is what to do when trouble troubles you

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

Should you ever encounter difficulty in starting your engine or have trouble on the road, there are a few simple repairs which you can make to get your VW going again. Locate the problem and probable cause of the trouble in the guide on the following pages and follow the directions on what to do.

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

**Note: The adjustment of idling, ignition timing and — on vehicles with Manual Transmission — throttle positioner requires special equipment and training. 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	<ol style="list-style-type: none"> <li>1. Run down or dead battery</li> <li>2. Loose connection <ol style="list-style-type: none"> <li>A. At battery</li> <li>B. At starter</li> <li>C. At connections behind dash board</li> </ol> </li> <li>3. Starter defective</li> <li>4. On vehicles with Automatic Stick Shift: The gear shift lever is not in Neutral</li> </ol>	<ol style="list-style-type: none"> <li>1. A. Manual Transmission: Push to start the vehicle (before doing so put in 3rd gear and turn on ignition. At a speed of approximately 20 mph. depress accelerator pedal and release clutch slowly). Have battery charged and cause of high current consumption checked. B. Automatic Stick Shift: Push to start the vehicle (turn on ignition, shift into driving range L. When towing or pushing, the engine should start at a minimum speed of 15 mph.). Have battery charged and cause of high current consumption checked.</li> <li>2. Make sure that all connections are tight. <ol style="list-style-type: none"> <li>A. Check both cable connections on battery and grounded end of ground strap.</li> <li>B. Check connections at solenoid, mounted on starter, under right rear of vehicle.</li> <li>C. Check push-on connectors behind dash board.</li> </ol> </li> <li>3. Have vehicle started by pushing (see paragraph 1) and take it to nearest Authorized VW Dealer.</li> <li>4. Shift to Neutral.</li> </ol>
VW will not start: engine turns over	<ol style="list-style-type: none"> <li>5. Loose connection in ignition system</li> <li>6. Loose connection in primary circuit to coil</li> <li>7. If spark is present at black coil cable, trouble is in ignition system</li> </ol>	<ol style="list-style-type: none"> <li>5. Check for loose connections at coil, distributor and spark plugs.</li> <li>6. Turn on ignition. Remove thin black cable from Ignition coil, hold it by insulation and strike it against blower housing or other ground, <b>being careful of gasoline and its fumes.</b> If no spark, electricity does not reach coil from battery. Check push-on connectors behind dash board. If there is still no spark, see the nearest Authorized VW Dealer.</li> <li>7. Check in this sequence: <ol style="list-style-type: none"> <li>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.</li> <li>B. If sparks are visible between contacts disconnect high tension cable from center connection of distributor cap. With starter cranking the engine point cable to a metal object in the engine leaving a gap of approximately 1/4". Strong arching sparks should appear. If there are no sparks, contact your nearest Authorized VW Dealer.</li> </ol> </li> </ol>

Problem	Probable Cause	What To Do
VW will not start: engine turns over	<p>8. If spark is fairly good at plugs, trouble is most likely in fuel system</p> <p>A. Caused by improper starting procedure. If the gas pedal is depressed too often, the accelerator pump in the carburetor injects too much gasoline</p> <p>B. Carburetor may be flooded, float or needle valve may be sticking</p>	<p>C. If sparks appear at high tension cable, the distributor cap should be cleaned inside and outside. Reconnect high tension cable. Remove all spark plugs. If plugs are clean and dry, reconnect ignition cables to spark plugs and bring spark plugs 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. See your Authorized VW Dealer if the above steps did not ensure proper ignition.</p> <p>D. Dirty or wet spark plugs should be cleaned and dried. Install new plugs if necessary. Unburned gasoline on plug electrodes points to excessive fuel supply.</p> <p>8. Check fuel system in the following sequence:</p> <p>A. Depress gas pedal completely and operate starter for a prolonged period. If engine does not start, remove and dry spark plugs, turn over engine with plugs removed for approximately 30 seconds. Reinstall plugs and start engine.</p> <p>B. Tap around outside of carburetor with wooden or plastic tool handle. Wait a few minutes and try starting again as described at 8A.</p>
Engine stalls shortly after starting	<p>9. Poor fuel supply</p> <p>10. Automatic choke does not open, excessive fuel supply</p>	<p>9. See paragraph 12 through 14.</p> <p>10. Check whether choke valve is in vertical position after ignition has been switched on for 2-5 minutes (depending on outside temperatures). Cover for choke unit must be hot. If choke valve is binding in a closed position, open at fast idle cam and if necessary, retain with wire. See your Authorized VW Dealer.</p>
Engine stalls while vehicle is driven	<p>11. Defect in ignition system</p> <p>12. Fuel supply is exhausted</p> <p>13. Fuel pump filter may be clogged</p> <p>14. Gasoline may be contaminated by water, dust or dirt</p>	<p>11. See paragraph 5 through 7.</p> <p>12. Check whether any gasoline is left in tank.</p> <p>13. After removing the screw plug, the fuel filter can be taken out for cleaning.</p> <p>14. See your VW dealer for cleaning of all components of the fuel system.</p>
Red warning light for oil pressure comes on while you are driving	<p>15. If light goes on, the oil pressure is too low</p>	<p>15. 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.</p>
Red warning light for generator and cooling comes on while you are driving	<p>16. If light goes on, V belt may be torn or generator does not charge</p>	<p>16. If belt drives generator without slipping, switch off all unnecessary electrical equipment (radio, etc.). Drive to nearest VW dealer as otherwise the battery will soon run down. If belt is broken, replace it before driving on because engine cooling fan is no longer working.</p>
Vehicles with Automatic Stick Shift: Lever cannot be shifted	<p>17. Control valve fuse burned out</p>	<p>17. Replace fuse (see page 50). Check cable connections on control valve located on the left in the engine compartment.</p>

# Fuel and lubricants

## Fuel

Your Volkswagen will run satisfactorily on regular fuels which fulfill the octane requirements of the engine (91 Octane). If regular fuels with adequate anti-knock qualities are not available, premium fuels should be used or mixed with the regular fuel.

## Engine oil

Always use a name brand oil labeled "For Service MS" for the engine of your Volkswagen.

Engine oils are graded according to their viscosity. The proper grade to be used in your engine depends on existing climatic or seasonal conditions.

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

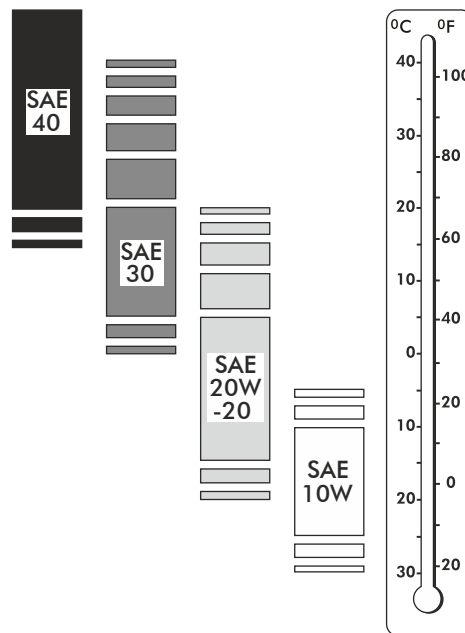
Tropical climate	Hot season		SAE 40
	Cool season		SAE 30
Moderate climate	Summer		
	Winter	At average outside temperature of above 5° F	SAE 20 W-20
		At average outside temperatures not lower than —13° F	SAE 10 W*

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

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

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

## Temperature ranges of SAE grades



## **Transmission oil and ATF (Automatic Transmission Fluid)**

Transmission and final drive are both lubricated with hypoid oil:

SAE 90                      In general all year round.

SAE 80                      In areas with cold climate.

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

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

The torque converter of the Automatic Stick Shift requires ATF all year round.

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

## **Lubricant additives**

No additives should be mixed with fuel or lubricating oils and fluids.

## **Grease**

1. **Multi-purpose grease with a lithium base** should be used for the front axle of the Volkswagen Sedan 111 and door hinges.
2. **Silicon spray or petroleum jelly** should be used for the battery terminals and posts.



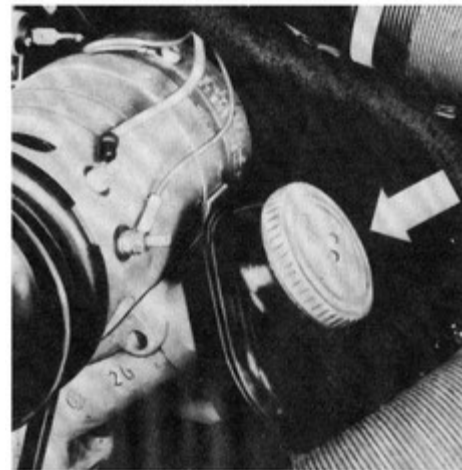
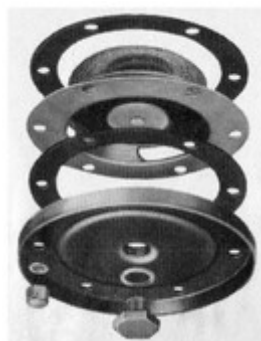
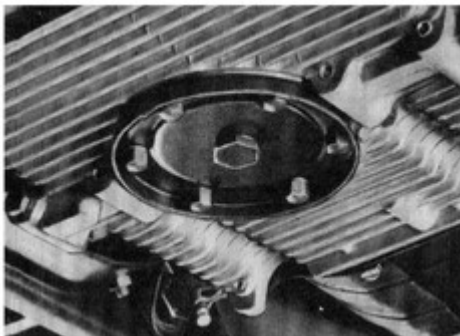
# Lubrication

## Engine

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

The oil is drained, when warm, by removing the plug in the oil strainer cover plate. Flushing is not necessary but the strainer must be removed and cleaned at every oil change. The gaskets and the copper washers under the cap nuts must always be renewed. The engine is then filled with 5.3 US pints of oil — labeled "For Service MS".

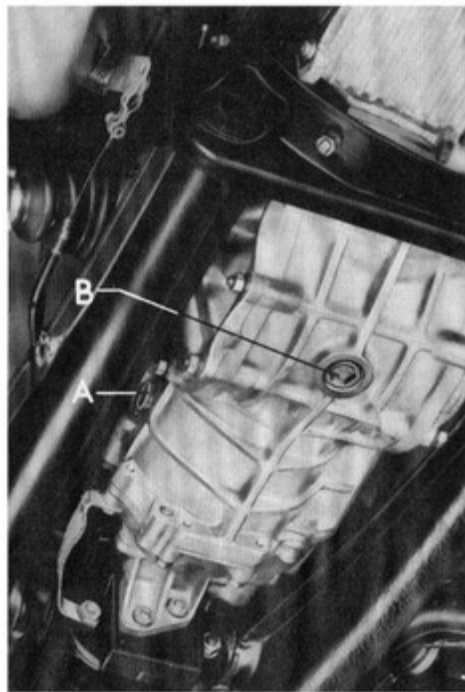
Due to its detergent properties the fresh oil will look very dark after the vehicle has been running for only a short time. This need not worry you, and under normal operating conditions there is no reason whatever to change the oil at shorter intervals than every 3,000 miles. We do recommend more frequent oil changes — every 1500 miles — in the winter if you drive mostly short distances and in city traffic. If you drive only a few hundred miles a month under these conditions, it is advisable to have the oil changed every 6 to 8 weeks. In areas with arctic climate where average temperatures are below  $-13^{\circ}\text{F}$  the oil should be changed every 750 miles.



## Manual Transmission and Automatic Stick Shift

Transmission and final drive are combined in one housing and both are lubricated with the same hypoid oil. The oil should be up to the edge of the filler hole (A).

The transmission oil is only changed at 600 miles by your Authorized VW Dealer. Should it later on become necessary to change the oil be-



cause of a considerable and prolonged change in temperature (see page 57), proceed as follows.

Drain the old oil when warm. The magnetic oil drain plug on the four speed synchromesh transmission (B) must be cleaned carefully. On vehicles with Automatic Stick Shift, the transmission oil pan has to be removed and the oil pan gasket must be replaced.

The Manual Transmission requires 5.3 US pints of quality hypoid oil. The transmission of the Automatic Stick Shift has a capacity of 6.3 US pints.

Sometimes the oil runs into the transmission housing very slowly. If one attempts to put the oil in too quickly, it may overflow and give the impression that the housing is already full although only 2-3 pints have been put in. It is essential to the service life and silent running of the transmission that the correct amount of oil is used.

The oil level in the transmission should be checked every 6,000 miles. At the same time the transmission should be checked for leaks and, on vehicles with Automatic Stick Shift, the mounting bolts (C) of the transmission oil pan have to be checked for tightness.

**On vehicles with Automatic Stick Shift, the ATF in the torque converter does not have to be changed, but the level should be checked every 6,000 miles with engine switched off.**

An ATF tank filler (D) with a dipstick attached to its cover is provided for this purpose on the right side in the engine compartment. The fluid level should be between the two marks on the dipstick and should never fall below the lower mark. If necessary, fill up with ATF and check for leaks.

See page 57 for ATF specifications.

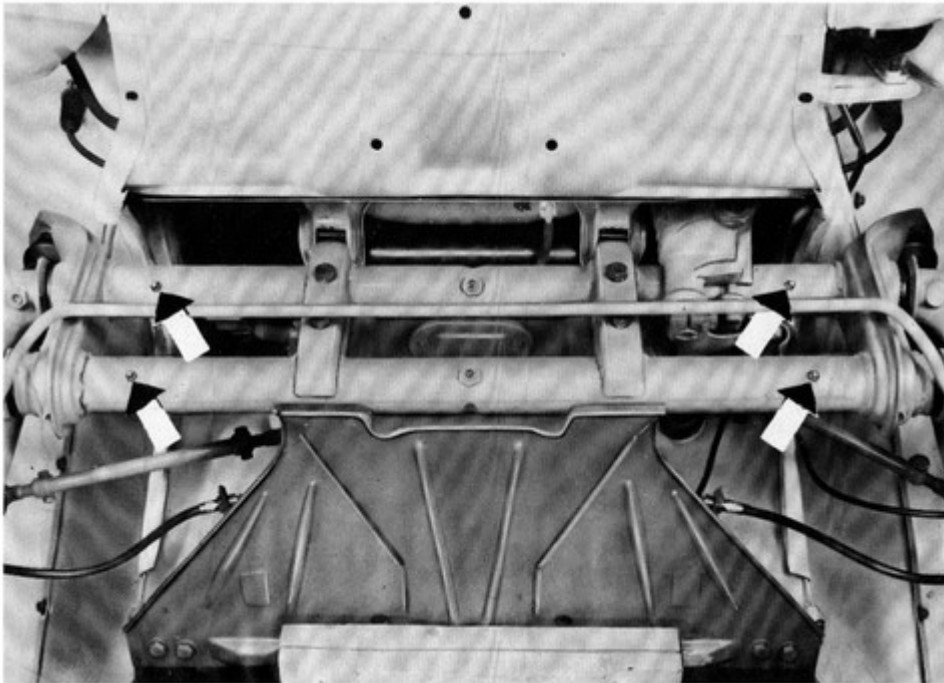


## Front axle

(Applies to the Volkswagen Sedan 111 only. The front axle of the Volkswagen Sedan 113 and the Convertible does not have to be lubricated.)

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

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



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

If the vehicle is driven less than 6,000 miles per year, the front axle must be lubricated once a year.

## Hinges and locks

The door hinges as well as the door and hood locks should be lubricated every 3,000 miles.

To lubricate the door hinges, your Authorized VW Dealer uses a grease gun with a tapered nozzle. After removing the plastic plug the grease is applied at the top of the hinge.



The door locks are lubricated with a few drops of oil after the plug has been removed from the access hole.

The hood locks are lubricated lightly.



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

## Air cleaner

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

All the dust present in the air drawn in by the engine is retained by the filter element in the upper part of the air cleaner and washed out by the oil in the lower part when the vehicle is in motion. In time, this forms a layer of sludge at the bottom of the lower part. When there is only about  $\frac{5}{16}$  in. of oil above this sludge layer, the lower part must be cleaned and filled with fresh oil. To accomplish this the air cleaner must be removed:

Pull crankcase ventilation hose — A — off the air cleaner.

Remove hose — B — of the activated charcoal filter in the fuel system.

Loosen clip — C — on hose for preheated intake air and pull hose off connection on air cleaner.

Loosen screw — D — in air cleaner support bracket.

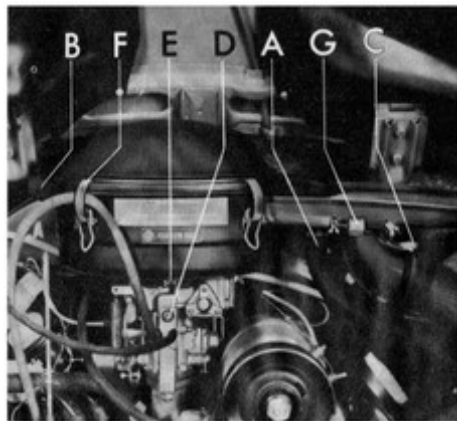
Loosen air cleaner clamp screw — E — and remove air cleaner from carburetor. Keep air cleaner in upright position to avoid spilling oil.

Release the clips — F — and take top part of air cleaner off. The top part must not be put down with the filter element upwards.

Clean bottom part carefully and fill to the mark with fresh engine oil. The quantity of oil required is .8 pint. SAE 30 grade oil should be used all year. In areas with arctic climate use SAE 10 oil all year.

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

Check that the weighted control flap — G — for the crankcase ventilation is always free to move.



When installing the air cleaner, ensure that the gap between the intake pipe and the fan housing is uniform, so that the screw — D — of the air cleaner support bracket can be inserted. Tighten the cleaner clamp screw — E — carefully, but do not overtighten it. Ensure that the hose — B — for the activated charcoal filter is properly connected; interchanging of hoses impairs the operation of the filter system.

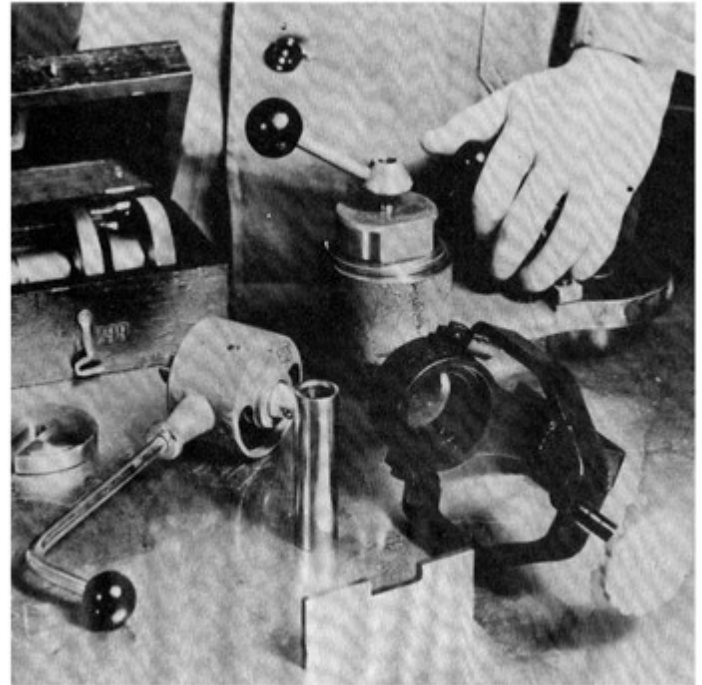
**In any authorized VW dealer's service department, you get VW Specialists who know VW's intimately.**

A VW Specialist works on VW's. Period.

Every so often he takes time off and gets a refresher course at one of our VW training centers.

So he learns to fix Volkswagens before he starts working on your car. Rather than while he's working on your car.

We think it's better that way.





# Technical data

## Engine

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

Bore .....	3.36 in. (85.5 mm)
Stroke .....	2.72 in. (69 mm)
Capacity .....	96.6 cu. in. (1584 cc)
Compression ratio .....	7.5 : 1
Maximum output SAE .....	60 bhp. at 4400 rpm.
Maximum torque SAE .....	81.7 lb. ft. at 2500 rpm.
Valve clearance with engine cold .....	intake and exhaust .004 in. (0.10 mm)
Fuel consumption <sup>1)</sup> Manual Transmission:	Automatic Stick Shift:
U.S. — 26.1 miles per gallon	U.S. — 24.7 miles per gallon
Metric — 9.0 liters per 100 km	Metric — 9.5 liters per 100 km
Imp. — 31.3 miles per gallon	Imp. — 29.7 miles per gallon
Fuel rating .....	91 Octane Regular
Oil consumption .....	U.S. — 1.7—3.4 pints per 1000 miles
	Metric — 0.5—1.0 liter per 1000 km
	Imp. — 1.4—2.8 pints per 1000 miles

<sup>1)</sup> Measured consumption plus 10%, with half load at a steady  $\frac{3}{4}$  of maximum speed on level road.

## Power transmissions

### a — Manual Transmission:

Single plate, dry clutch. Clutch pedal free play: .4—.8 in. (10-20 mm). Baulk synchronized four-speed gearbox and bevel gear differential in one housing. Gear ratios: 1st gear 3.80:1, 2nd gear 2.06:1, 3rd gear 1.26:1, 4th gear 0.89:1, Reverse gear 3.61:1. Differential ratio: 4.125: 1. Drive shafts with two constant velocity joints per shaft.

### b — Automatic Stick Shift:

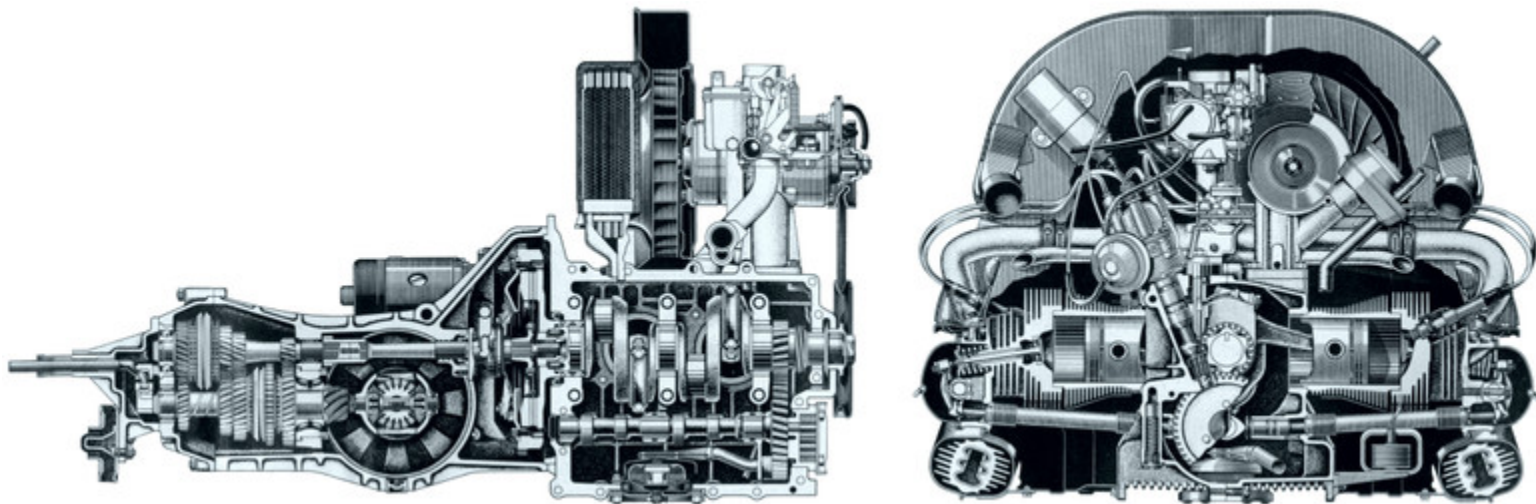
Hydrodynamic torque converter with three speed synchromesh transmission, combined with final drive in one housing.

Gear ratios:     Driving range L: 2.06 : 1,     Driving range 1: 1.26 : 1,  
                    Driving range 2: 0.89 : 1,     Reverse range: 3.07 : 1.

Differential ratio: 4.125: 1. Drive shafts with two constant velocity joints per shaft.



## Engine with Manual Transmission



## Chassis

Volkswagen Sedan 113 and Convertible			Volkswagen Sedan 111	
Platform frame with tunnel-shaped center member, engine/transmission unit bolted to rear frame fork.			Platform frame with tunnel-shaped center member, front axle bolted to frame head, engine/transmission unit bolted to rear frame fork.	
Independent wheel suspension: At front with suspension struts incorporating shocks absorbers and coil springs, attached to frame head by track control arms and stabilizer. Rear wheel suspension with trailing arms and diagonal links.			Independent wheel suspension: torsion arms at front, trailing arms and diagonal links at rear.	
Springing: coil springs at front, torsion bar springs at rear, telescopic shock absorbers both front and rear.			Torsion bar springing, telescopic shock absorbers, stabilizer at front.	
Roller steering with maintenance free tie-rods and hydraulic steering damper. Hydraulic dual-circuit foot brakes, mechanical hand brake effective on rear wheels.				
Wheelbase .....	95.3 in. (2420 mm)		94.5 in. (2400 mm)	
Turning circle diameter .....	31.5 ft. (9.6 m)		36 ft. (11 m)	
Track at front .....	53.1 in. (1375 mm)		51.6 in. (1310 mm)	
Toe-in, unladen .....	.08 to .26 in. (2.0 to 6.5 mm)		.07 to .21 in. (1.8 to 5.4 mm)	
Camber, unladen .....	1° 30'		30° ± 20'	
Track at rear .....	53.2 in. (1352 mm)		53.1 in. (1350 mm)	
Wheels .....	4 J X15 safety rim wheels			
Tires, tubeless .....	Bias Ply Tires 5.60 -15 / load capacity 970 lbs. at 32 psi			
Tire pressures, cold	front	rear	front	rear
with 1 or				
2 occupants	16 psi (1.1 kg/cm <sup>2</sup> )	27 psi (1.9 kg/cm <sup>2</sup> )	16 psi (1.1 kg/cm <sup>2</sup> )	24 psi (1.7 kg/cm <sup>2</sup> )
fully loaded	19 psi (1.3 kg/cm <sup>2</sup> )	27 psi (1.9 kg/cm <sup>2</sup> )	17 psi (1.2 kg/cm <sup>2</sup> )	26 psi (1.8 kg/cm <sup>2</sup> )

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

## Electrical system

Voltage .....	12 volts	
Battery .....	45 Ah	
Starter .....	0.7 bhp, with Automatic Stick Shift 0.8 bhp.	
Generator .....	max. 360 watts, early cut in	
V belt size .....	9.5 X 905 mm	
Ignition distributor .....	with combined vacuum and centrifugal spark advance	
Firing order .....	1 — 4 — 3 — 2	
Basic ignition timing .....	5° after TDC — engine at operating temperature at 900 rpm <sup>1)</sup>	
Contact breaker gap .....	.016 in. (0.4 mm)	
Spark plugs .....	Bosch W 145 T 1, Beru 145/14	or plugs with similar values from other manufacturers
Plug thread .....	14 mm	
Plug gap .....	.028 in. (0.7 mm)	

<sup>1)</sup> Check ignition timing only with stroboscopic light, vacuum hoses attached.

## Dimensions and weights

	Volkswagen Sedan 113	Volkswagen Convertible	Volkswagen Sedan 111
Length .....	161.8 in. (4110 mm)	161.8 in. (4110 mm)	158.6 in. (4030 mm)
Width .....	62.4 in. (1585 mm)	62.4 in. (1585 mm)	61.0 in. (1550 mm)
Height .....	59.1 in. (1500 mm)	59.1 in. (1500 mm)	59.1 in. (1500 mm)
Ground clearance .....	5.9 in. ( 150 mm)	5.9 in. ( 150 mm)	5.9 in. ( 150 mm)
Unladen weight (ready for use) ....	1918 lbs. ( 870 kg)	2028 lbs. ( 920 kg)	1807 lbs. ( 820 kg)
Permissible load .....	882 lbs. ( 400 kg)	794 lbs. ( 360 kg)	838 lbs. ( 380 kg)
Gross vehicle weight .....	2800 lbs. (1270 kg)	2822 lbs. (1280 kg)	2645 lbs. (1200 kg)
Permissible front axle load .....	1117 lbs. ( 530 kg)	1190 lbs. ( 540 kg)	1080 lbs. ( 490 kg)
Permissible rear axle load .....	1675 lbs. ( 760 kg)	1675 lbs. ( 760 kg)	1609 lbs. ( 730 kg)
Permissible roof and trailer weights:			
Roof weights <sup>1)</sup> .....	110 lbs. ( 50 kg)		110 lbs. ( 50 kg)
Trailer without brakes .....	882 lbs. ( 400 kg)	882 lbs. ( 400 kg)	882 lbs. ( 400 kg)

<sup>1)</sup> Applies only to roof rack mounted to rain gutters. Distribute load evenly!

## Capacities

Fuel Tank .....	11.1 U. S. gal. ( 42 liters; 9.2 Imp. gal.)
Volkswagen Sedan 111 .....	10.6 U.S. gal. ( 40 liters; 8.8 Imp. gal.)
Engine .....	5.3 U.S. pints (2.5 liters; 4.4 Imp. pints)
Transmission and final drive .....	5.3 U.S. pints (2.5 liters; 4.4 Imp. pints)
On vehicles with Automatic Stick Shift:	
Torque converter circuit .....	approx. 7.6 U. S. pints ATF (3.6 liters; 6.3 Imp. pints) <sup>2)</sup>
Transmission and final drive ....	approx. 6.3 U. S. pints Hypoid oil (3.0 liters; 5.3 Imp. pints)
Brake system .....	approx. .53 U. S. pints (0.25 liter; .44 Imp. pints)
Oil bath air cleaner .....	approx. .8 U. S. pints (0.4 liter; .7 Imp. pints)
Windshield washer .....	approx. 3.6 U.S. pints (approx. 1.7 liters; 3 Imp. pints)

<sup>2)</sup> Does not have to be changed.

## Performance

	Manual Transmission			Automatic Stick Shift	
Maximum and cruising speed	81 mph. (130 km/h.)			78 mph. (125 km/h.)	
Acceleration time from					
0—50 mph. (0—80 km/h.)	approx. 12.5 seconds			approx. 14.5 seconds	
Climbing ability	Sedan	Convertible		Sedan	Convertible
1st gear	47 %	44.5 %	Driving range L	35.5%	34 %
2nd gear	24 %	23 %	Driving range 1	29 %	27.5 %
3rd gear	13 %	12.5 %	Driving range 2	20.5%	19.5 %
4th gear	8%	7.5 %			

# Index

Accelerating .....	31	Climbing ability .....	67	Foot brake — description .....	13
Air cleaner — cleaning .....	62	Clutch — design .....	64	Fresh air ventilation .....	18
Air Conditioner .....	20	— pedal free-play .....	64	Front axle — description .....	60
Ash trays .....	15/17	Compression ratio of engine .....	64	— lubrication .....	60
Automatic Stick Shift .....	32	Convertible top .....	27	(VW Sedan 111 only) .....	66
Auxiliary Heater .....	23			— technical data .....	66
		Dimensions .....	67	Front hood — knob .....	24
Back-up lights .....	49	Dimming — headlights .....	13	Front seats — adjustment .....	9
Battery — care .....	52	Dipstick — engine .....	29	— removing .....	40
— winter operation .....	35	— Automatic Stick Shift .....	59	Fuel — consumption .....	64
Body — airing .....	37	Doors .....	8	— filter cleaning .....	45
Brakes — application .....	31	— inside handle .....	8	— gauge .....	14
— checking .....	28	— lubrication points .....	61	— tank capacity .....	67
— description .....	66	— locks frozen .....	35	Fuse box .....	50
— fluid reservoir .....	25	Driving .....	31	Fuses — replacing .....	50
Breaking in .....	31	— Automatic Stick Shift .....	32	Gear shifting .....	15
Bulb chart .....	48			Generator .....	66
— replacement .....	48	Economy .....	31	Glove compartment .....	14
Buzzer alarm .....	2/8/14/50	Emergency flasher switch .....	15	Ground clearance .....	67
		Engine — description .....	64	Hand brake .....	15
Carburetor — type .....	64	— design .....	64	— description .....	66
Camber .....	66	— lubrication .....	58	Headlight — switch .....	14
Care of — car .....	36	— number .....	6	— aiming .....	47
— chrome .....	37	— oil change in winter .....	35	Heating — operation .....	22
— convertible top .....	38	— oil change .....	58	Hood lock .....	24
— leatherette .....	38	— oil strainer .....	58	— release lever .....	14
— weatherstrips .....	37	— sectional view .....	65	Identification plate .....	6
Car care — materials .....	36	— technical data .....	64	Ignition — distributor .....	66
Chassis — description .....	66	— type of oil .....	56	— firing order .....	66
— number .....	2/6				

Instrument lights .....	14	Safe driving hints .....	1	Toe-in .....	66
Interior light .....	17	Seat belts front .....	10	Tools .....	25
Jack — operation .....	43	Seat belts rear .....	11	Towing .....	53
Keys .....	7	Seats — adjustment .....	9	Track .....	66
		— removing .....	40	Trailer — permissible weight .....	67
		— maintenance .....	38	Transmission — description .....	64
Lighting .....	29	Shock absorber — design .....	66	— oil change and capacity .....	59
— checking .....	29	Sliding roof .....	16	— sectional view .....	65
Lubricant — additives .....	57	Snow chains .....	34	Trouble shooting .....	54
Luggage compartments .....	24	Spare wheel .....	25	Turning circle .....	66
Maximum — output .....	64	Spark plugs — removing and cleaning .....	45	Turn signal switch .....	13
— speed .....	67	— gap .....	35/66	Upholstery — cleaning .....	38
Oil — consumption .....	64	Speedometer .....	14	Valves — clearance .....	64
— specifications .....	56	Speed ranges .....	31	V belt — adjusting or replacing .....	44
Oil level — engine .....	29	Spots — removal .....	37	Ventilation .....	18
— transmission .....	59	Starting — the engine .....	30	Vent wing .....	8
		— motor .....	66	Warning lights .....	14/30
Paintwork — polishing .....	36	Steering/ignition lock .....	14	— brake operation .....	28
— waxing .....	36	Steering — type .....	66	Washing your car .....	36
— touch-up .....	37	Stop light — checking .....	29	Weights .....	67
Parking lights .....	14	Sun visor .....	16	Wheel base .....	66
Ratios — rear axle .....	64	Suspension — front .....	66	Wheels — changing .....	42
— transmission .....	64	— rear .....	66	— rim size .....	66
Rear axle — description .....	64/66	Technical data .....	64	Windows — cleaning .....	37
— technical data .....	64/66	Tires — inflation pressure .....	66	Window crank .....	8
Rear view mirrors .....	16	— maintenance .....	39	Windshield wiper switch .....	14
Rear window defogger .....	15	— radial ply .....	34	Windshield washer .....	14
Release for fuel tank flap .....	28	— size .....	66	— container .....	25
Reverse gear .....	15	— wear .....	39	Winter operation .....	34
		— winter .....	34		

**An Authorized VW Dealership is your best source for Genuine VW Parts, VW Exchange Parts and Approved VW Accessories.**

GENUINE VW PARTS are the proper replacement parts for the Volkswagen. They guarantee accuracy, quality and reliability. Every part of the Volkswagen is available as a Genuine VW Part and all are of the same high quality as the original parts on the vehicle when it leaves the factory. The Genuine VW Parts are expertly installed at any Authorized Volkswagen Dealership.

VW EXCHANGE PARTS are also replacement parts for your Volkswagen just like the Genuine VW Parts. They are covered by the same Warranty conditions as Genuine VW Parts and are available in every VW Dealership. But there is a difference: The price. VW Exchange Parts cost less than Genuine VW Parts but are of the same high quality. They are parts that have been reconditioned. To get an Exchange Part, you must turn in your old part.

APPROVED VOLKSWAGEN ACCESSORIES are not just any accessories. They have either been designed especially for the Volkswagen or selected from the vast range of accessories available and tested for use on the Volkswagen. Accessories with trademarks "VW emblem within a square" or the "Wolfsburg City Crest" are your guarantee for material quality, good workmanship, reliability, and compliance with Safety requirements.

Approved VW Accessories are supplied by your Authorized VW Dealer. You can easily install many of them yourself, or installation can be made by your Dealer.

**Genuine Volkswagen Parts, new and rebuilt, and Approved Volkswagen Accessories are covered by a warranty guaranteeing them to be free of defects in material and workmanship for a period of 6 months or 6,000 miles, whichever comes first.**

**Please consult your Authorized Volkswagen Dealer on all questions concerning repairs. You can be sure that your vehicle will be in good hands.**

© 1970 Volkswagenwerk Aktiengesellschaft

All rights reserved.

May not be reproduced or translated in whole or in part without the written consent of Volkswagenwerk AG.

Specification subject to alteration without notice.

158.279.23

Printed in Germany 8. 70





