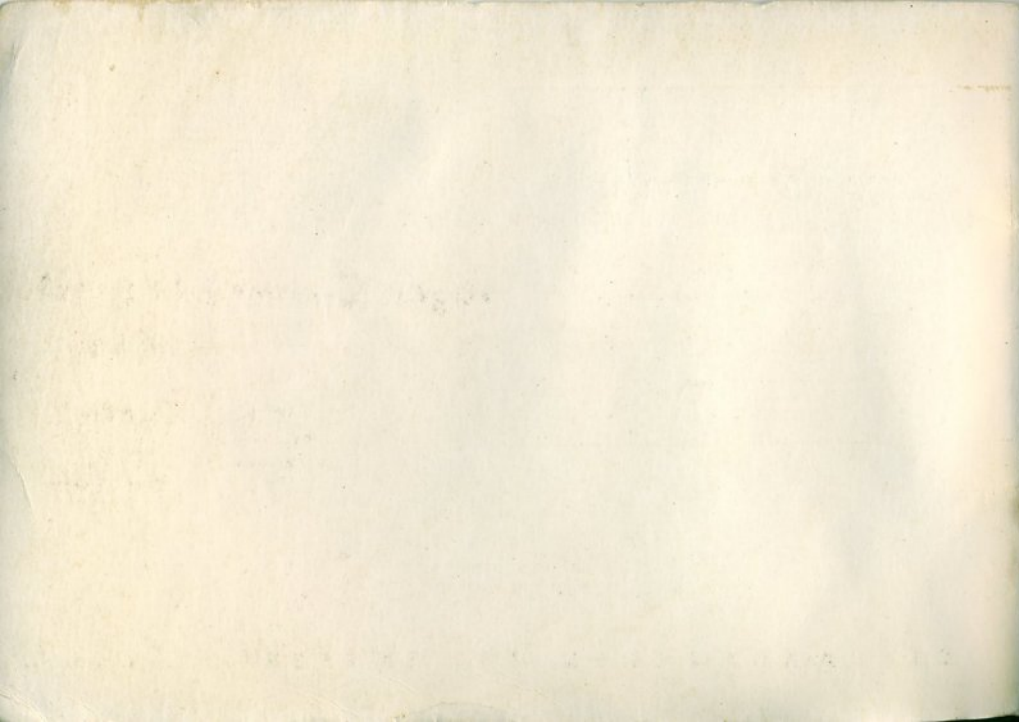


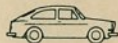
# Owner's Manual





# Volkswagen Owner's Manual

1971 Models



Volkswagen  
Typ 3



Volkswagen  
Squareback Sedan

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

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

Every two years.

But now we have a better way.

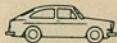
In the future we'll change the brakefluid when it's necessary for safe operation.

After a brakefluid analysis.

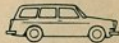
Every 18000 miles or once a year.

# Volkswagen Owner's Manual

1971 Models



Volkswagen  
Typ 3

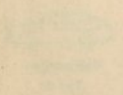


Volkswagen  
Squareback Sedan

Volkswagen Owner's Manual

1960-1966

Volkswagen  
of America, Inc.  
P.O. Box 100  
West Chester, Ohio



# 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.



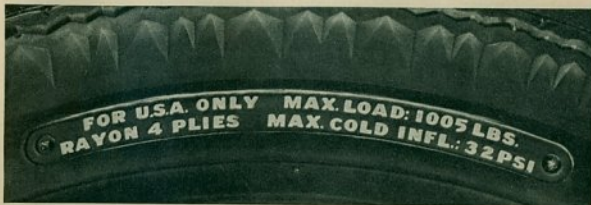


MANUFACTURED BY VOLKSWAGENWERK AG  
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANU-  
FACTURE SHOWN ABOVE.

0870



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.



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All pictures are of the Volkswagen Type 3 with the Manual Transmission and the text is based on this vehicle. Where the controls, equipment and technical data of the Squareback Sedan and the Automatic Transmission differ considerably, it is indicated.

Specifications are subject to alteration 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.

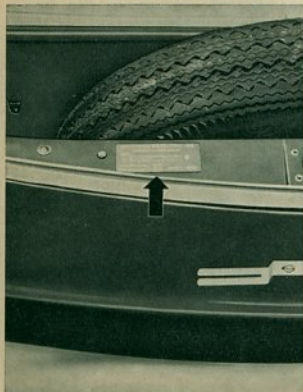
This brings us to the Volkswagen Maintenance Record — which you also receive with the car. The Record explains what VW Diagnosis and Maintenance is all about. And tells you how to keep your VW in top driving condition. Always have the Volkswagen Maintenance Record with you when you take the vehicle to 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. The 10 digit number after the words "Fahrgest. Nr." is the chassis number. It describes the model number, model year and serial number of the vehicles as shown in this sample:

31    1    2000736  
└──┬──┘ └──┬──┘ └──┬──┘  
Model Year Serial Number



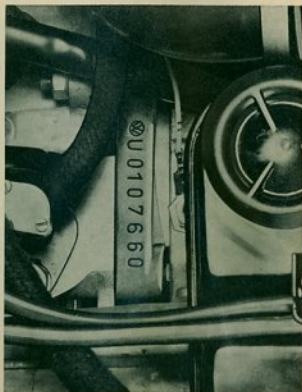
## The chassis number

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 between the Ignition distributor and the engine oil breather near the crankcase joint.



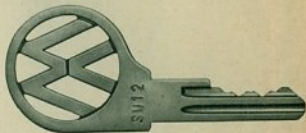
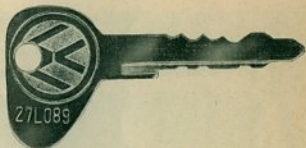
## Operation

### Keys

Only one key is required to start the engine and to unlock and lock the doors and the rear luggage compartment lid of the Squareback Sedan.

This key locks the glove compartment.

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 - Vent wing lock

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



### 2 - Window crank

### 3 - Inside door handle

### 4 - Armrest and door closing grip

### 5 - Locking knob

The doors cannot be opened from inside or outside unless the locking knobs are raised.

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 press the locking knob down and pull the trigger in the outer handle as you close the door. The vehicle is then locked.

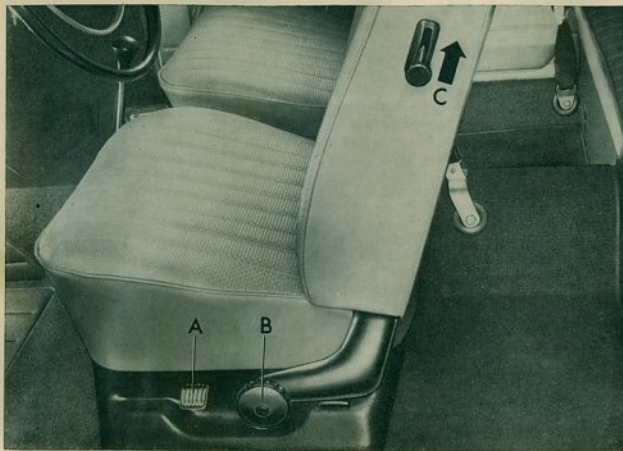
If the door closes by itself after the locking knob has been depressed, it will not lock because the locking knob will spring up automatically. This is an additional safety measure to prevent you from being locked out if the door should slam shut while the key is still inside the vehicle.



## 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 – A – on the 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 eight different angles by turning the large knob – B –. Try them out until you find the angle which suits you best.



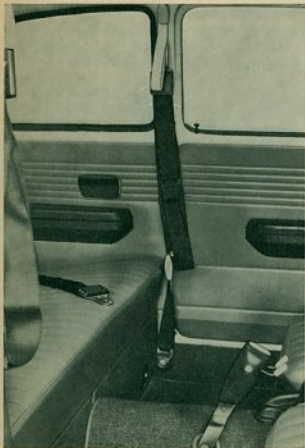
As a safety feature, the backrests of the front seats are secured against tilting forward. To release the lock, just pull the knob – C – on the side of the backrest upward.



## Seat Belts

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

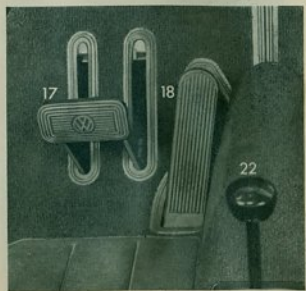
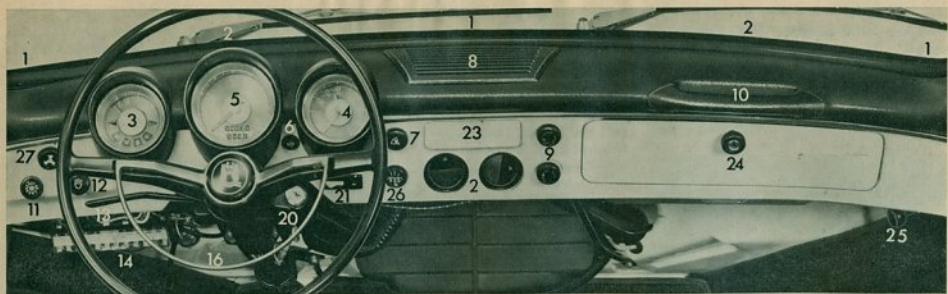
**Do not wear the belts loosely.**

**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 - Fresh air vents ..... (page 18)
  - 3 - Fuel gauge with warning lamps ..... (page 13)
  - 4 - Clock ..... (page 13)
  - 5 - Speedometer ..... (page 14)
  - 6 - Brake warning light ..... (page 28)
  - 7 - Windshield wipers and washer ..... (page 14)
  - 8 - Loudspeaker grille
  - 9 - Fresh air control knobs ..... (page 18)
  - 10 - Grab handle
  - 11 - Emergency flasher switch ..... (page 14)
  - 12 - Light switch ..... (page 14)
  - 13 - Turn signal and dimmer switch lever ..... (page 14)
  - 14 - Fuse box ..... (page 48)
  - 15 - Clutch pedal ..... (page 30/31)
  - 16 - Horn ring
  - 17 - Brake pedal ..... (page 31)
  - 18 - Accelerator pedal ..... (page 30/31)
  - 19 - Hand brake lever ..... (page 14)
  - 20 - Steering/ignition lock ..... (page 15)
  - 21 - Switch for rear window defogger ..... (page 15)
  - 22 - Gearshift lever ..... (page 15)
  - 23 - Ashtray ..... (page 15)
  - 24 - Glove compartment knob, lockable ..... (page 15)
  - 25 - Tank flap release knob ..... (page 28)
  - 26 - Control knob for Auxiliary Heater (Optional equipment) ..... (page 23)
  - 27 - Knob for fresh air fan ..... (page 18)



### 3 - Fuel gauge

When the needle is on the "R" mark, there is about one gallon of fuel left in the tank - time to refuel at the next opportunity.

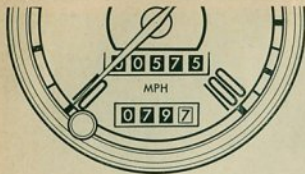
In addition, the fuel gauge contains the following warning lights:

- |                        |                       |
|------------------------|-----------------------|
| a - red                | - oil pressure        |
| b - red                | - generator           |
| c - blue               | - headlight high beam |
| d - light green arrows | - turn signals        |
| e - dark green         | - parking lights      |

### 4 - Clock

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



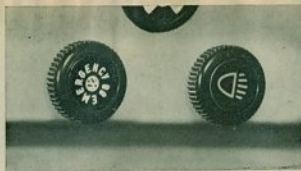


### 5 - Speedometer

In addition to the 5 digit odometer the speedometer dial contains a 4 digit trip mileage recorder reading to one tenth of a mile. To reset the mileage recorder to zero turn the button in the speedometer to the right.

### 7 - 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.



### 11 - 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.

### 12 - Light switch

Pull the knob to the first stop to switch on parking and side marker, license plate, tail and instrument lights and - on vehicles with Automatic Transmission - the light for the selector lever console. A green warning lamp lights up in the fuel gauge dial. To turn on the headlights pull the knob out all the way with the ignition turned on. At this time the green warning lamp for the parking lights will go out. 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.



### 13 - 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. A blue warning light in the fuel gauge dial shows when high beam is switched on.

### 19 - Hand brake

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



## 20 - 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 - Starting

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

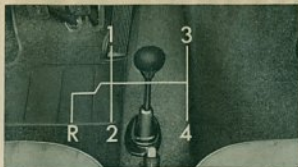
### Important

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.

## 21 - Switch for rear window defogger

With the ignition switched on, the rear window defogger is activated by this switch. The green control lamp near the switch 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.

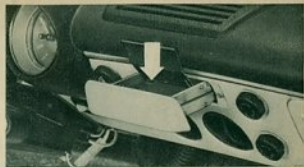


## 22 - Gearshift lever for Manual Transmission

(for Automatic Transmission 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.



## 23 - Ashtray

Remove ashtray by depressing leaf spring and pulling ashtray out.

## 24 - 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 lid can be locked. This prevents access to the front luggage compartment and spare wheel.



## 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 visors out of the center mounting and swing them toward the door windows to prevent glare from the sides.

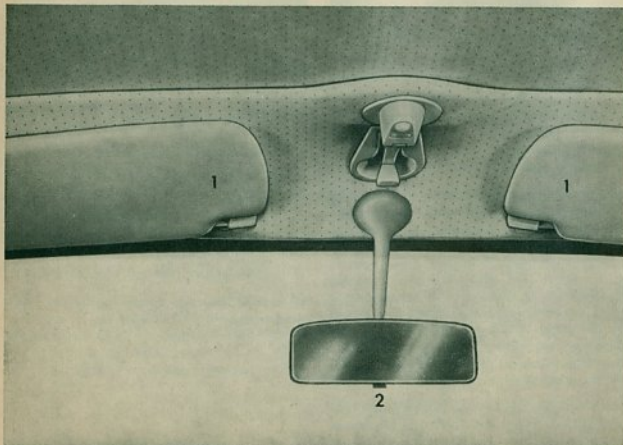
The right hand sun visor incorporates a vanity mirror.

### 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. It can be set to the anti-glare position by the switch at the lower portion of the mirror.



### 3 - Rear ashtrays

They are removed by opening them and lifting them out of housing at the bottom first. To insert, hook the ashtray on to the leaf spring at the top first and then press in at the bottom.

### 4 - Assist straps and coat hooks



### 5 - Interior light

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

There are three positions:

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

## Ventilation

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

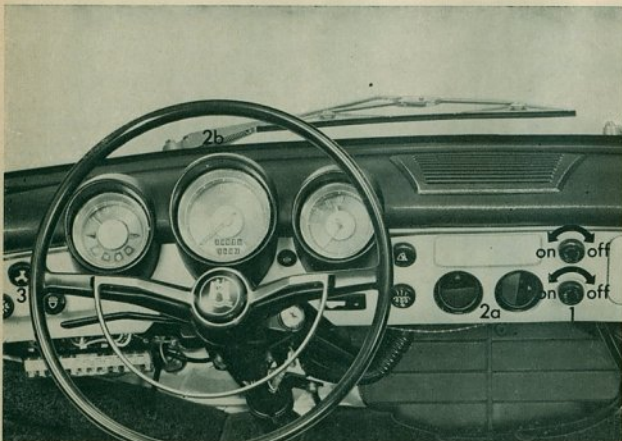
### 1 – Fresh air control knobs

The flow of fresh air coming from the two vents at the lower edge of the windshield and from the two outlets below the ashtray on the instru-

ment panel can be controlled separately on each side (upper knob: right, lower knob: left) by turning these 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 outlets

Volume and the direction of the air can be controlled separately by flaps in the outlets – 2 a.

To open outlet – press against one side of flap.  
To close outlet – close flap.

The air flow can be controlled by turning the outlet and the flap in the desired directions. When the flaps are closed the entire volume of fresh air flows through the vents – 2 b – at the windshield.

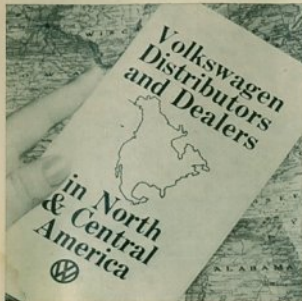
### 3 – Fresh air fan

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 — high speed (II)

The fan can reach its full efficiency only when the fresh air control knobs are turned completely 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>	6300 George Palmer Highway
<b>New Hampshire</b>	Wilmington, Massachusetts 01887	<b>Tennessee</b>	(East) 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</b>	D. C.
<b>Illinois</b>	Volkswagen North Central Distributor, Inc.	<b>Delaware</b>	Volkswagen Atlantic, Inc.
<b>Iowa</b>	3737 Lake Cook Road	<b>Pennsylvania</b>	Gulph & Brooks Roads
<b>Minnesota</b>	Deerfield, Illinois 60015		King of Prussia, Pennsylvania. 19406.
<b>North Dakota</b>	(312) 272-5500		(215) 265-2900
<b>South Dakota</b>		<b>Arizona</b>	Volkswagen Pacific, Inc.
<b>Wisconsin</b>		<b>California</b>	11300 Playa Street
<b>Kentucky</b>	Midwestern VW Corporation	<b>(South)</b>	Culver City, California 90230
<b>Ohio</b>	1125 Kinnear Road	<b>Nevada</b>	(213) 391-6274 (Santa Monica line)
	Columbus, Ohio 43212	<b>(South)</b>	(213) 870-3381 (Los Angeles line)
	(614) 486-9641	<b>Hawaii</b>	
<b>Indiana</b>	Import Motors, Ltd., Inc.	<b>Alaska</b>	Riviera Motors, Inc.
<b>Michigan</b>	P.O. Box 2008 (2660 28th St., S.E.)	<b>Idaho</b>	2400 S. E. Fifth St.
	Grand Rapids, Michigan 46501	<b>Montana</b>	Beaverton, Oregon 97005
	(616) 949-7788	<b>Oregon</b>	(503) 646-3111
<b>Florida</b>	Volkswagen Southeastern Distributor, Inc.	<b>Washington</b>	
<b>Georgia</b>	P.O. Box 2274 (155 E. 21st St.)	<b>Colorado</b>	Volkswagen South Central Distributor, Inc.
<b>South Carolina</b>	Jacksonville, Florida 32203	<b>New Mexico</b>	P.O. Box 2207
	(904) 355-1684	<b>Oklahoma</b>	(Austin Highway at O'Connor Road)
<b>Alabama</b>	International Auto Sales & Service, Inc.	<b>Texas</b>	San Antonio, Texas 78206
<b>Louisiana</b>	P.O. Box 29127, Michoud Station	<b>Wyoming</b>	(512) OLFfield 5-4410
<b>Mississippi</b>	4200 Michoud Blvd.	<b>California</b>	Reynold C. Johnson Company
<b>Tennessee</b>	New Orleans, Louisiana 70129	<b>(North)</b>	7100 Johnson Industrial Drive
<b>(West)</b>	(504) 254-1500	<b>Nevada</b>	Pleasanton, California 94566
<b>Connecticut</b>	World-Wide Volkswagen Corporation	<b>(North)</b>	(415) 828-6700
<b>New Jersey</b>	Greenbush Road	<b>Utah</b>	
<b>New York</b>	Orangeburg, New York 10962	<b>Arkansas</b>	Volkswagen Mid-America, Inc.
	(914) 359-5000	<b>Kansas</b>	8325 Page Blvd.
		<b>Missouri</b>	St. Louis, Missouri 63114
		<b>Nebraska</b>	(314) 429-2141



## 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:

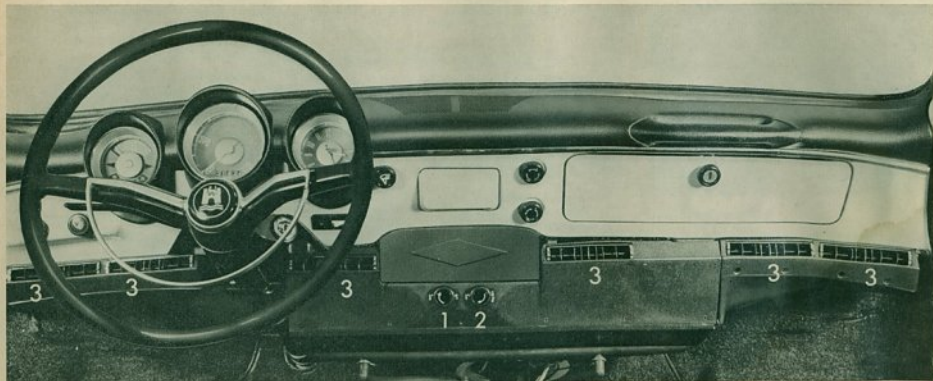
- 1st position - HIGH
- 2nd position - MEDIUM
- 3rd position - LOW

#### 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 condenser located behind spare wheel well should be checked periodically for cleanliness. If clogging in any area exists, wash condenser with water.

If 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

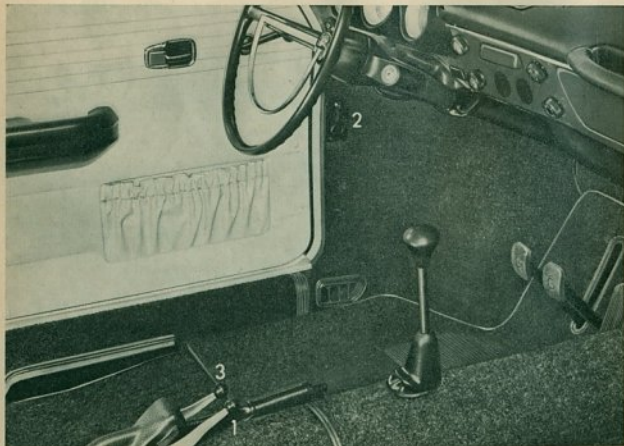
## 1 - Heating control lever

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.

### Hint:

Defrosting the windshield will be more effective, when the knobs for the front footwell heating - 2 - and the lever for the rear footwell heating - 3 - are pushed downward.



## 2 - Heater control slides in front footwell

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

Knob up - open  
Knob down - 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 first 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 pre-heat 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.

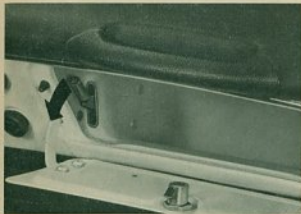
Heat output .....	8 000 BTU/h
Fuel .....	Gasoline
Fuel consumption .....	approx. .7 pint/h
Current consumption ....	40 Watts

## 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 hood springs up slightly under spring pressure and can be opened fully when the safety hook near the lock has been pressed upward.

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



### 1 – Container for windshield washer fluid

As soon as the cap of the container is loosened, 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.

### 2 – Jack

Operation of the jack is described together with wheel changing on page 43.

### 3 – 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 (Squareback Sedan 56 psi). To do this unscrew hose from valve of the spare tire. 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 29 psi (Squareback Sedan 36 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 64.

### 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**.

### 5 – Tools

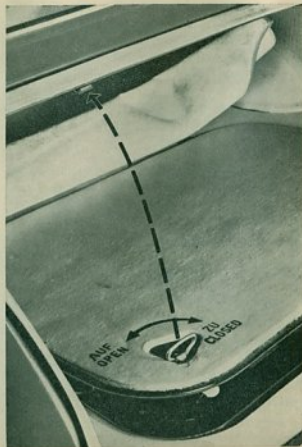
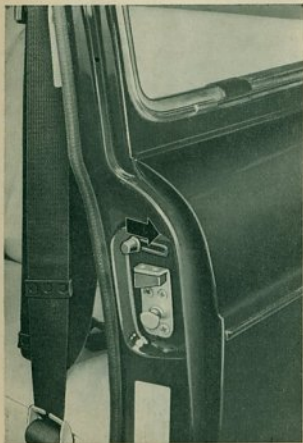
In the tool roll you will find:

- 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 and 13 mm
- 1 socket wrench for wheel bolts and spark plugs
- 1 bar for socket wrench (spark plugs)
- 1 long bar for socket wrench (wheel bolts – bar is also used to operate the jack)



The rear hood of the Volkswagen Type 3 is opened with the lever in the lock pillar of the left door. Here is another large luggage compartment which is illuminated. The lamp only lights up when the vehicle lights are on and goes out when the hood is closed.

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



The rear luggage compartment of the Square-back Sedan is accessible through a lid, which is opened by pressing the knob under the license plate. Then grasp the edge of the lid underneath the lock and lift the lid until it is held in the fully open position by the torsion springs. Do not let the lid fly up on its own as this may strain the hinges.

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

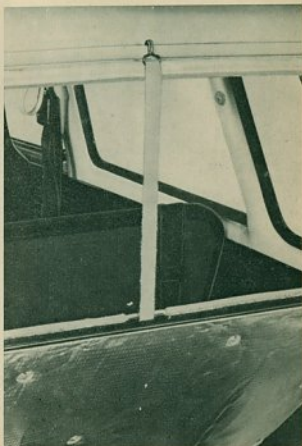
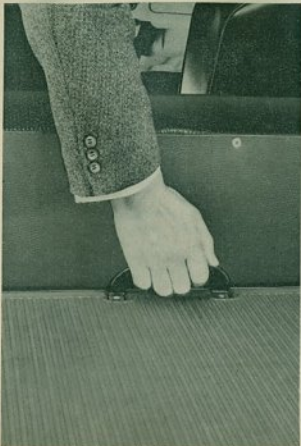
Do not operate vehicle with the rear luggage compartment lid open.

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

When the seat has been tipped forward, the seat cushion and backrest are held together

by two retaining pins. In the normal position, a retaining device automatically prevents the backrest from tilting forward.

To get to the engine, roll forward the floor covering and lift the lid after turning the handles. The lid can be held up by attaching the hook of the strap to the rain gutter or it can be taken out completely.





## 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 instrument panel when the ignition is switched on (see also page 13). The tank holds approximately 10.6 gal. The filler neck is located in the right front fender. The flap opens if you pull the release on the right hand side underneath the instrument panel.

**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 otherwise the dipstick reading will be inaccurate. 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 various oil viscosities are given on page 54.

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 lights in the fuel gauge dial flash much faster than usual or go out. The brake lights work only when the brake pedal is depressed. The back-up lights must be checked with the igni-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 a long trip or at least once a week. The specified tire pressure can be found in the table on page 64 and also on the label inside the glove compartment lid.

#### Two more important points:

- 1 - If the vehicle is used 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 60.
- 2 - Do not drive your car with a disconnected battery. On the other hand, both terminals must be taken off before quick-charging the battery in the vehicle. Failure to do this can lead to damage to the electronic components of the electrical equipment, especially to the control unit of the fuel injection system.

## Starting the engine

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

**First** depress accelerator pedal fully, then switch on the ignition and start the engine. This holds true for the engine being cold or after having attained operating temperature and also for low or high outside temperatures. The amount of fuel and air required for starting is automatically supplied by the fuel injection system with which your Volkswagen is equipped.

On the Manual Transmission depress clutch pedal in the winter, 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 fuel gauge will come on when the ignition is switched on. As soon as the engine starts, these lights will go out.**

### Red warning light for generator

If this light comes on when you are driving, the generator has stopped charging. 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, stop at once because 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	0-15 mph
2nd gear	10-35 mph
3rd gear	20-55 mph
4th gear	30 mph and up

When a particular traffic situation makes it essential to move rapidly, you can accelerate up to 43 mph in 2nd gear and up to 60 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:

10 and 20 mph in 2nd gear
20 and 35 mph in 3rd gear
30 and 60 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.

The friction value of the brake pads can be reduced if water reaches the brake discs during heavy rains for instance. Although the discs dry immediately, a lag in braking action may be noticeable after applying the brakes. Reduced traction of the tires during rain adds to this condition.

Therefore take care when driving and remain at a safe distance behind the vehicle in front, particularly when roads are wet and slippery.

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

That just about covers the operating 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 Transmission be sure to read the following pages:



## VW Automatic Transmission



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

Remember the following two basic rules.

1. Apply the hand or foot brake before selecting a driving range. The torque converter does not completely interrupt power even at idling speeds, and your car may start rolling.
2. Do not accelerate while selecting a driving range. At this time the engine must run at idling speed so that no undue stress will be placed on the automatic clutches in the transmission.

If the selector lever is accidentally moved into neutral position (N) while driving, take your foot off the accelerator pedal and wait until the engine speed has dropped to idling before selecting a driving range.

### The selector lever

The selector lever has 6 positions:

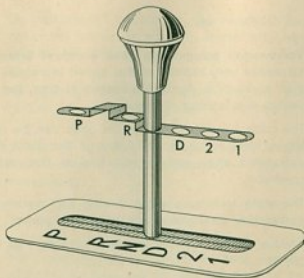
P = Parking lock

R = Reverse

N = Neutral

D = Drive

2 = } Lower driving ranges  
1 = }



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

### The driving ranges

The Automatic Transmission has 3 forward driving ranges and one reverse.

#### In position D

all three gears are engaged automatically according to driving conditions ranging from starting to top speeds. On acceleration the vehicle moves forward in first gear and depending on engine load (accelerator position part or full throttle) and the driving speed, second and third gear are engaged automatically. With decreasing speed the transmission automatically shifts down to the lower gears.

#### In position 2

the transmission will not shift into third gear. Therefore this position should not be used when you drive faster than 60 mph. Below 60 mph position 2 can be selected without releasing the accelerator.

#### Position 1

is needed only on rare occasions. In this case the transmission will not shift into second or third gear. Therefore, do not drive faster than 40 mph in this range.



### **The reverse driving range**

should be selected only when the vehicle is stationary and without depressing the accelerator. To select reverse you must lift the lever slightly.

### **Accelerator "kickdown"**

When depressing the accelerator pedal you will find resistance at the full throttle position. By applying greater pressure the pedal can be pushed beyond this point to the kickdown position. If you maintain the kickdown position the transmission shifts into the next gear only after the engine has reached the speed of the greatest out-put (approximately 40 mph in second, 60 mph in third gear). This means maximum acceleration. If you need maximum acceleration when passing, the kickdown will shift the automatic transmission down to second gear when driving below 55 mph and down to first gear when driving below 35 mph.

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

### **Starting the engine**

is only possible when the selector lever is in Neutral. As long as one of the driving ranges or the parking lock is engaged a safety switch prevents the engine from being started. For further details on starting see page 30.

### **Moving off**

Before selecting a driving range the foot or hand brake must be applied to prevent the vehicle from rolling. Normally you start to drive in the following sequence:

Apply hand brake or foot brake.

Move selector lever to position D.

Release brakes and accelerate.

### **Stopping**

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

### **Parking**

When you park your car apply the hand brake and move the selector lever to position P. It is necessary to move the lever through reverse, then lift it to the parking position. The transmission is then mechanically locked.

The parking position may only be engaged when the vehicle is stationary.

### **Maneuvering**

When maneuvering the vehicle it is important to remember that positions Reverse and Drive may only be selected when the car is stationary and with the engine running at idling speed.

### **Mountain driving**

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

### **Towing**

Should it become necessary to tow your Volkswagen the towing speed should not exceed 30 mph and the towing distance should not be longer than 30 miles because the transmission will not be adequately lubricated due to the lack of oil pressure normally provided when the engine is running.

These limitations do not apply if the vehicle is lifted at the rear or if the drive shafts are disconnected. For further hints about towing see page 51.

### **Emergency starting**

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

## Winter operation

Do not, under any circumstances, try to influence the heating of the vehicle by covering up the louvers in the rear fenders. These louvers must always be clear so that air can flow into the fuel injection system 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  $\frac{5}{32}$ " (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.

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

On the Volkswagen Type 3 the specific characteristics of winter tires can be improved by raising the tire pressures to 3 psi 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

wintery. 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>) on the Volkswagen Type 3 applies to these tires also.

### Snows 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 54. If you drive mostly short distances and in city traffic, especially in the winter, we recommend that you have the engine oil changed at 1,500 miles intervals. At other times, these additional changes are unnecessary and uneconomical.

In areas with arctic climate and temperatures below  $-13^{\circ}$  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 it is necessary to use the thinner SAE 80 transmission oil.

In areas with arctic climate and temperatures below  $-13^{\circ}$  F, ATF (Automatic Transmission Fluid) can be filled into the transmission and final drive. This does not apply to the final drive of the Automatic Transmission. 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.

Before having a quick-charge performed, disconnect both battery cables to avoid serious damage to the electronic components of the electrical equipment, especially to the control unit of the fuel injection system.

Further details are given on page 50.

**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, 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 behind the jack 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**

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



## 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.

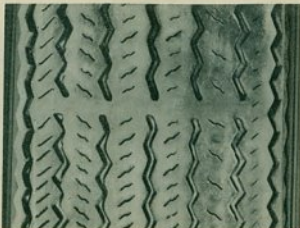
We advise you, however, not to let the tires wear down to this extent. Tires with treads in this condition cannot grip the road surface properly at high speeds on wet roads. If you notice that the tires are wearing unevenly, get advice from your Authorized VW Dealer.

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.

Tread still good



Tread worn out

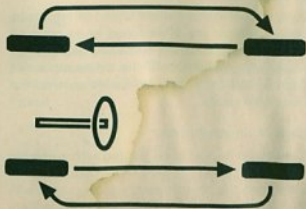


Brand new tires do not possess maximum traction. They should, therefore, be driven with moderate speed for the first 60 miles.

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.



**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.



## Do-it-yourself tips

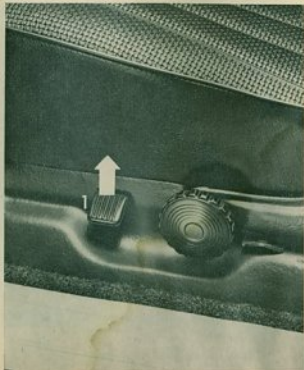
Just in case you have to carry out a repair yourself we have included some information on the next few pages which should help you.

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

Lift adjusting lever (1) and move seat forward until it touches the leaf spring (2). Depress the leaf spring with a screwdriver and while lifting the adjusting lever (1), slide seat out of runners pushing the rug under the guide on the tunnel side.



## Installing front seats

Position seat in front of runners. Lift seat slightly and insert guides into runners. Lift adjusting lever and slide seat to correct position.



## Removing and installing rear seat

To remove, lift seat off pegs on seat support and pull forward. To install, slide rear edge of seat in position, then push front edge of seat onto pegs of support.

## Changing wheels

Apply the hand brake and block the wheel opposite the defective wheel.

Before taking out the spare wheel, disconnect the hose - arrow - leading to the windshield washer container.

Take off hup 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.



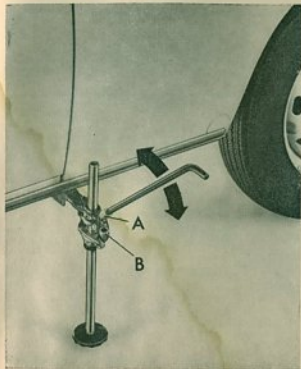


Insert jack into socket and push the jack tube down until it touches the ground. Place bar in **upper link -A-** of jack and **raise** vehicle by pumping handle up and down.

**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 in position and raise or lower vehicle until a hole in the wheel is roughly in line with a threaded hole.



Insert the 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.

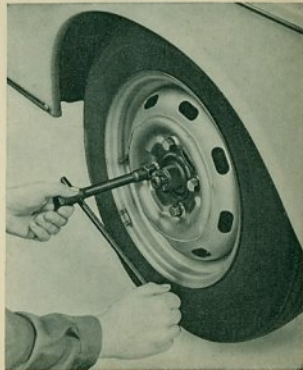
Insert bar in **lower link -B-** of jack and **lower** the vehicle by pumping handle up and down.



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 64.



## Cleaning or replacing spark plugs

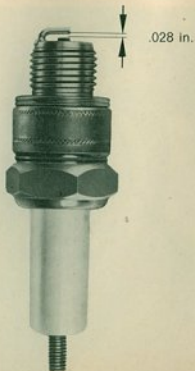
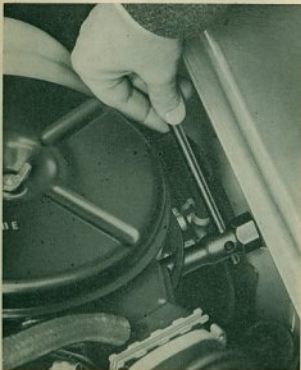
Pull connector off.

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 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.



## 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 be 49.6 inches apart. 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.

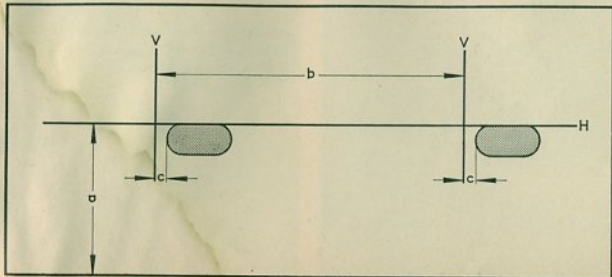
Aim the headlights individually by turning the two aiming screws with low beams switched on. Cover up the second headlight.

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 (49.6 in.)  
c - 2 in.

A - Lateral aim  
B - Vertical aim



## Bulb chart

Bulb for	US Replacement bulbs	VW Part No.
Sealed beam (headlights) .....	6012	111 941 261 A
Front turn signal/parking lights .....	1034	N 17 738 2
Side marker lights .....	57	N 17 717 2
Rear turn signal .....	1073	N 17 732 2
Stop / tail lights .....	1034	N 17 738 2
Back-up lights .....	1073	N 17 733 2
License plate light (Volkswagen Type 3) .	89	N 17 719 2
License plate lights (Squareback Sedan) ..	67	N 17 718 2
Instrument and warning lights .....	—	N 17 722 2
Warning lights for emergency flasher system, dual-circuit brake system, rear window defogger and Auxiliary Heater .	—	N 17 751 2
Interior light, luggage compartment light ...	—	N 17 723 2
Selector lever console light (Automatic Transmission only) .....	—	N 17 751 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.

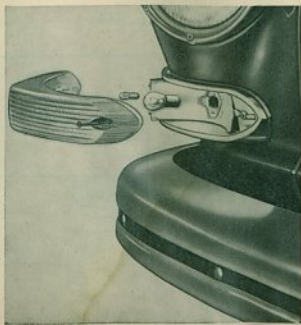
Take off lens.

Press bulb into holder lightly, turn and take out.

Install new bulb.

Ensure that gasket is located properly when installing.

Do not overtighten screws.



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

Unscrew two Phillips screws and remove lens.

Bulb positions:

Top - turn signal light

Center - stop/tail light

Bottom - back-up light

Press bulb into holder lightly, turn and take out. Install new bulb.

When inserting the stop/tail light bulb, the retaining pin nearest to the bulb glass must be downward.

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



### License plate light bulb

#### 1 - Volkswagen Type 3

Open rear hood.

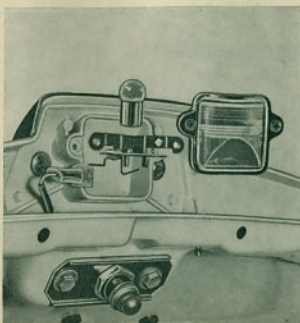
Remove screws on each side of lens and take off lens with bulb holder.

Pull bulb holder out of lens.

Press bulb into holder lightly, turn and take out.

Install new bulb.

When installing, ensure that the cable grommet fits properly.



#### 2 - Squareback Sedan

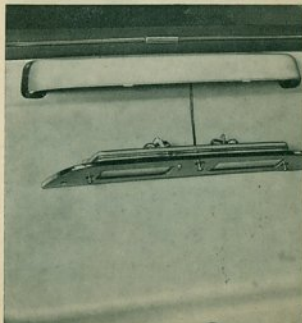
Open rear door.

Loosen 3 Phillips screws so that you can remove the insert together with the bulb holder.

Press bulb lightly into holder. Turn and take out.

Install new bulb.

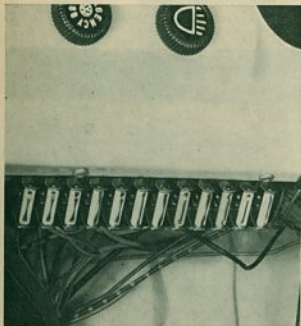
During re-assembly make sure that the rubber gasket is properly seated.





## Replacing fuses

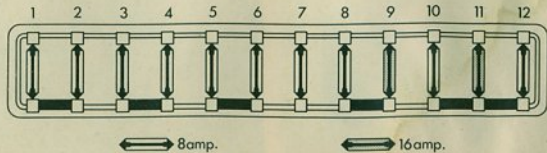
The fuse box which has a transparent cover with embossed symbols is located under the instrument panel on the left.



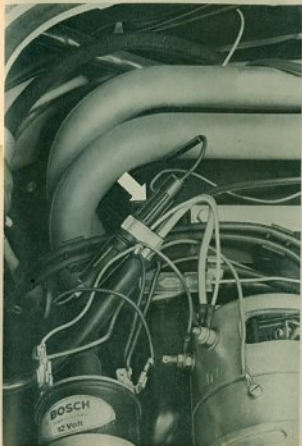
When a fuse blows it is not sufficient to merely replace it with a new fuse. The cause of the short circuit or overload must be established. On no account should fuses be patched up with tin foil or wire as this can cause serious damage elsewhere in the electrical circuits. It is advisable to always carry a few spare 8 and 16 amp fuses in the vehicle.

### Fuse box

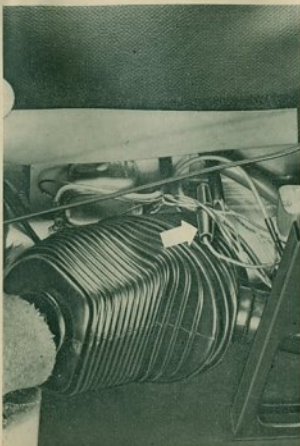
- |                                                                                                           |                                                                                       |                                                                 |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 1 Tail light, right<br>License plate light<br>Luggage compartment light<br>Parking and side marker lights | 6 High beam, right                                                                    | 10 Stoplights<br>Turn signals<br>Horn, Brake warning light,     |
| 2 Tail light, left                                                                                        | 7 Electric fuel pump for fuel injection<br>(No other equipment may be attached here!) | 11 Windshield wipers                                            |
| 3 Low beam, left                                                                                          | 8 Emergency flasher system<br>Interior light                                          |                                                                 |
| 4 Low beam, right                                                                                         | 9 Buzzer alarm                                                                        |                                                                 |
| 5 High beam, left<br>High beam warning light                                                              |                                                                                       | 12 (open for subsequent installation of electrical accessories) |



The 8 amp fuse for the back-up lights is located in a separate fuse holder at the ignition coil in the engine compartment.



Another 8 amp fuse in a separate fuse holder 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 holder behind the fuse box.

## 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 lot of driving are advised to check the battery at least every week.

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

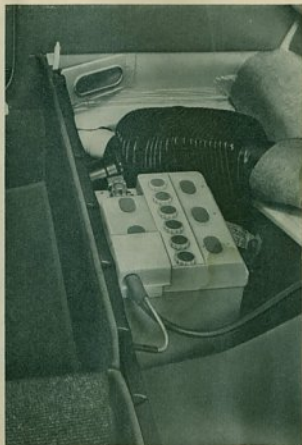
The terminals and connections should be kept clean and greased with battery silicon spray or petroleum jelly. Ensure that the ground connection to the body is free of corrosion and tight.

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 battery cables to avoid serious damage to the electronic components of the electrical equipment, especially to the control unit of the fuel injection system.



## Towing

Towing eyes are fitted underneath the rear bumper and at the front axle.

At the rear care must be taken 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.

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 some more very important hints to observe when towing with vehicles equipped with Automatic Transmission.

Always observe state laws and municipal ordinances governing towing.

## 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 four 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 and ignition timing 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>Run down or dead battery.</li> <li>Loose connection               <ol style="list-style-type: none"> <li>At battery</li> <li>At starter</li> <li>At connector block on steering column under dash board.</li> <li>At light switch or fuse box.</li> </ol> </li> <li>Starter defective.</li> <li>On vehicles with Automatic Transmission: The selector lever is not in Neutral.</li> </ol>	<ol style="list-style-type: none"> <li> <ol style="list-style-type: none"> <li>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.</li> <li>Automatic Transmission: Have battery quick-charged (see important hint on page 50, last paragraph) or changed. When impossible, please contact the nearest Authorized VW Dealer.</li> </ol> </li> <li>Make sure that all connections are tight.               <ol style="list-style-type: none"> <li>Check both cable connections on battery and grounded end of ground strap.</li> <li>Check connections at solenoid, mounted on starter, under right rear of vehicle.</li> <li>Check push-on connectors for tightness.</li> <li>Check push-on connectors at back of light switch and on fuse box.</li> </ol> </li> <li>Have vehicle started by pushing and take it to nearest Authorized VW Dealer. Note: Do not attempt to start engine by pushing or towing vehicles equipped with Automatic Transmission.</li> <li>Shift to Neutral.</li> </ol>
VW will not start; engine turns over.	<ol style="list-style-type: none"> <li>Loose connection in Ignition system.</li> <li>Loose connection in primary circuit to coil.</li> </ol>	<ol style="list-style-type: none"> <li>Check for loose connections at coil, distributor and spark plugs.</li> <li>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 there is no spark, electricity does not reach coil from battery. Check push-on connectors on steering column under dash board for tightness, and connectors at fuse box. If there is still no spark see the nearest Authorized VW Dealer.</li> </ol>



PROBLEM	PROBABLE CAUSE	WHAT TO DO
	<p>7. If spark is present at black coil cable, trouble is in ignition system.</p> <p>8. If spark is fairly good at plugs, trouble is most likely in fuel system.</p> <p>A. Caused by improper starting procedure.</p> <p>B. Engine flooded.</p> <p>C. Fuse for electrical fuel pump is blown.</p>	<p>7. Check in this sequence:</p> <p>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.</p> <p>B. If sparks are visible between contacts disconnect high tension cable from center connection of distributor cap. With starter cranking the engine point cable to a metal part of the engine leaving a gap of approximately 1/4". Strong arching sparks should appear. If there are no sparks, contact your nearest Authorized VW Dealer.</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). <b>Hold cable with dry piece of cloth to avoid shock.</b> 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. Before turning on the ignition and starting the engine depress the accelerator pedall</p> <p>B. Check all electrical connections in engine compartment. If engine still does not start, switch off the electrical fuel pump by taking fuse 7 out of the fuse box (see page 48). Depress accelerator pedal fully and start engine. Keep engine running until it stalls automatically. Install fuse and start engine is usual. If engine still does not start, see your Authorized VW Dealer.</p> <p>C. Replace fuse. If it blows again, see your Authorized VW Dealer.</p>
Engine stalls shortly after starting.	9. Poor fuel supply.	9. See paragraphs 11 and 12.
Engine stalls while vehicle is driven.	<p>10. Defect in ignition system.</p> <p>11. Fuel supply is exhausted.</p> <p>12. Fuel filter may be clogged, gasoline may be contaminated by water or dirt.</p>	<p>10. See paragraph 5 through 7.</p> <p>11. Check whether any gasoline is left in tank.</p> <p>12. 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.	13. If light goes on, the oil pressure is too low.	13. Stop at once and check oil level. Add oil as necessary. If the oil level is sufficient and light goes on during driving, contact the nearest Authorized VW Dealer before driving on.
Red warning light for generator comes on while you are driving.	14. If light goes on, V belt may be torn or slipping or generator does not charge.	14. Switch off all unnecessary electrical equipment (radio, etc.). Drive to nearest VW dealer as otherwise the battery will soon run down.

# Fuel and lubricants

## Fuel

Your Volkswagen will run satisfactorily on regular fuels which fulfill the octane requirements of the engine (90 Octane). If regular fuel 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:

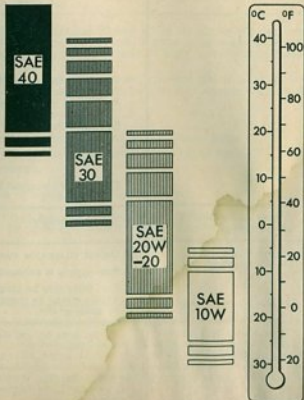
Tropical climate	Hot season		SAE 40
	Cool season		SAE 30
Moderate climate	Summer		
	Winter	At average outside temperature of above 5° F	SAE 20 W - 20
At average outside temperatures not lower than — 13° F		SAE 10 W *	

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

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

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

## Temperature ranges of SAE grades



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

### **A – Manual Transmission**

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  $-13^{\circ}$  F.

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

### **B – Automatic Transmission**

The final drive has to be lubricated only with hypoid oil SAE 90.

Automatic Transmission and torque converter require ATF all year round.

All ATF's labeled with Dexron® and a five digit number preceded by the letter "B" can be used. Suitable products are supplied by all well-known mineral oil firms.

## **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.
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 U.S. pints of oil labeled "For Service MS". Due to its detergent properties, the fresh oil will look 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 mainly 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.





# Transmission

## 1 - Manual Transmission

Transmission and final drive are combined in one housing and both are lubricated with 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 because of a considerable and prolonged change in temperature (see page 55), proceed as follows. Drain the old oil when warm. The magnetic oil drain plug (B) must be cleaned carefully and 5.3 U.S. pints of good quality hypoid oil put in.

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.

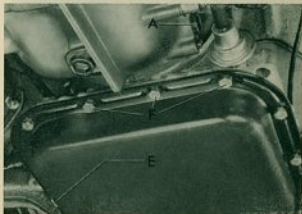
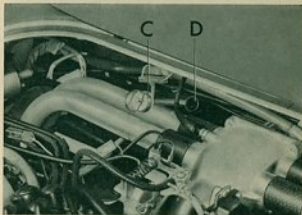
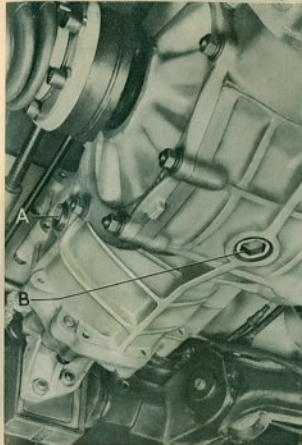
## 2 - Automatic Transmission

The torque converter and the transmission are lubricated with Automatic Transmission Fluid (ATF). The final drive requires hypoid oil SAE 90 only.

**Every 6,000 miles** the ATF level has to be checked. A dip stick (C) is used which also serves as a cover for the filler neck (D). It is located in the engine compartment. To get a true reading, the dip stick should only be pulled out with the engine idling, the selector lever in Position N (hand brake applied) and the ATF warm.

The correct ATF level is very important for proper functioning of the transmission; therefore, the level should be checked carefully. Before measuring the level, the dip stick should be pulled out and wiped off with a clean piece of cloth. The ATF level must not

be above or below the two marks. Please keep in mind that the difference between the lower and the upper mark is only 1 U.S. pint. To add ATF, a clean funnel with an approximately 20" (50 cm) long hose should be used. Before inserting the dip stick, make sure that the ring-shaped handle of the dip stick is inserted vertically as otherwise proper functioning of the transmission cannot be assured.





## Front axle

Every 30,000 miles the complete ATF filling has to be changed. If vehicle is operated under heavy duty conditions such as trailer towing, constant stop and go traffic, continuous mountain driving and extremely high outside temperature change ATF every 18,000 miles. If in doubt, consult your Authorized VW Dealer. After taking out the drain plug (E), the oil pan and oil strainer should be removed and cleaned. Although the complete system contains 12 U.S. pints ATF, the quantity to be changed is only about 6 U.S. pints. The rest of the ATF remains in the torque converter. The oil pan should be installed with a new gasket. The oil pan screws (F) are to be tightened evenly to 7 ft. lbs. (1 mkg).

First fill in 5.3 U.S. pints ATF (see page 55 for ATF specifications).

With the engine running, the selector lever should be moved once to all positions. Afterwards the ATF level should be checked on the dip stick with the selector lever in position N. The ATF now should reach up to the lower point of the dip stick. After a short test-drive, the transmission will be warm and ATF should be added until it has reached the required level.

### Important

When installing the oil pan and filling up the ATF, absolute cleanliness is necessary.

The vehicle may not be towed and the engine should not be idling when there is no ATF in the transmission.

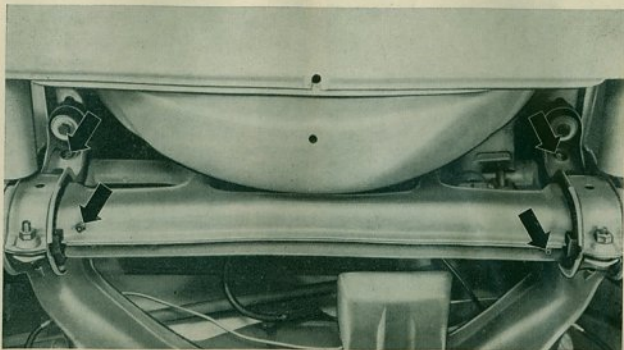
The transmission oil in the final drive does not have to be changed, but the level should be checked every 6,000 miles. The oil should be up to the edge of the filler hole (A).

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 multipurpose grease. The grease 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.

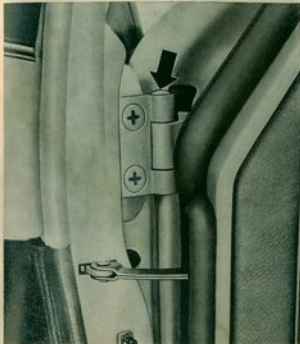


## Hinges and locks

Above the door hinge pin is a small oil chamber which is sealed with a plastic plug. At least every three months, the amount of oil in the chamber should be checked after lifting the plug with a screwdriver. The chamber should be filled with SAE 30 engine oil. Press plug in and wipe off excess oil with a cloth.

The door lock should be given a few drops of engine oil through a hole in the end of the door which is normally sealed with a plug.

The hood locks are lubricated lightly.



The lock cylinder is treated with graphite as necessary. The key can be dipped into graphite and then turned in the lock a few times.

## Air cleaner

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

All the dust present in the air drawn in by the engine is retained by the filter element in the upper part of the air cleaner and washed out 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  $\frac{3}{16}$  of oil above the sludge layer, the lower part must be cleaned and filled with fresh oil. To accomplish this, the air cleaner must be removed:

Release clip -A- on intake pipe and pull bellows from pipe.

Pull crankcase breather hose -B- off air cleaner intake pipe.

Pull hose -C- for auxiliary air control valve off air cleaner top part.

Loosen Phillips head screw -D- of clamp for elbow connector on intake air distributor.

Remove hose -J- of the activated charcoal filter in the fuel system.

Remove air cleaner after loosening wing screw -E-. Keep air cleaner in upright position to avoid spilling oil.

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

Clean lower part of cleaner carefully.

Fill cleaner to mark with .85 U.S. pint of fresh engine oil. SAE 30 oil should be used all the year except in areas with arctic climate where SAE 10 W oil should be used.

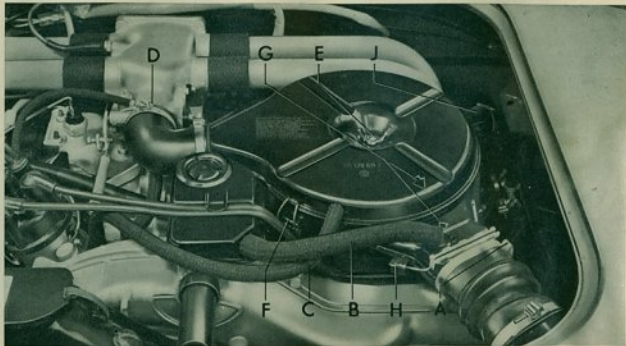
The top part does not normally need cleaning. If due to delayed cleaning of the bottom part or oil shortage the filter element has become so dirty that the air inlet holes on the underside are partly blocked, the encrusted dirt should be scraped off with a wood chip.

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

When installing the cleaner, ensure proper fit of bellows on intake pipe of air cleaner and elbow connector of intake air distributor.

Ensure that the hose -J- for the activated charcoal filter is properly connected; interchanging of hoses impairs the operation of the filter system.

Check, that the weighted flap -H- of the crankcase ventilation moves freely.



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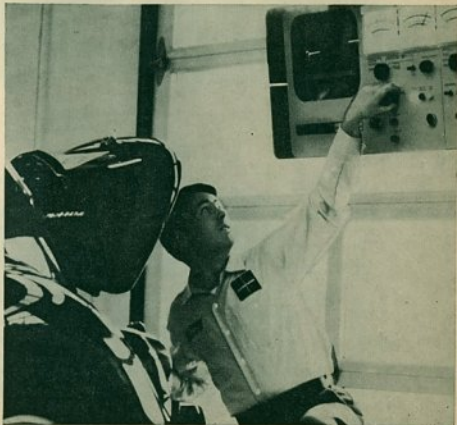
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## Technical data

### Engine

Four cylinder, four stroke, horizontally opposed, flat design, in rear  
Thermostatically controlled air cooling by fan on crankshaft  
Pressure oil feed with gear-type pump. Oil cooler  
Electric fuel pump. Electronic fuel injection. 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.)
Valve clearance with engine cold .....	Intake and exhaust .004 in. (0.10 mm)
Compression ratio .....	7.7 : 1
Maximum output SAE .....	65 bhp. at 4600 rpm.
Maximum torque SAE .....	86.8 ft. lbs. at 2800 rpm.
Fuel consumption *)	Manual Transmission: Automatic Transmission:
	U.S. - 26.4 miles per gallon U.S. - 25.0 miles per gallon
	Metric - 8.9 liter per 100 km Metric - 9.4 liter per 100 km
	Imp. - 31.5 miles per gallon Imp. - 30.0 miles per gallon
Fuel rating .....	90 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 - 2.9 pints per 1000 miles

\*) 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

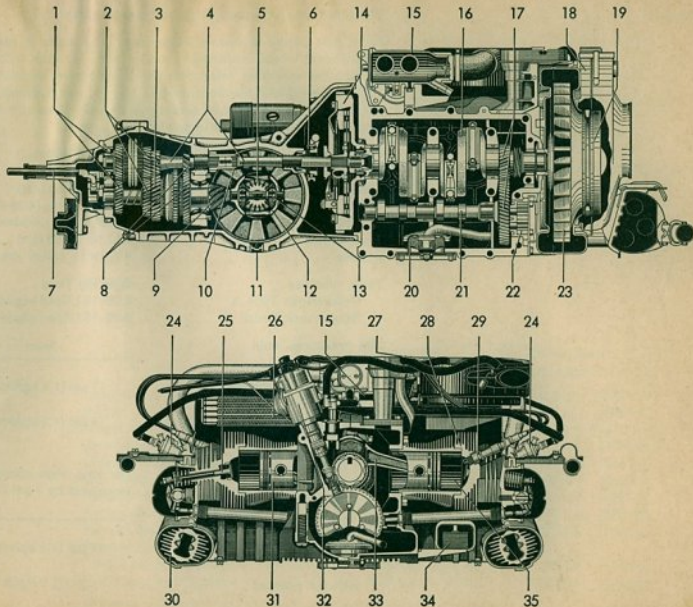
#### b - Automatic Transmission:

Automatic transmission combined with final drive, in one housing  
The transmission consists of a hydrodynamic torque converter and planetary gearing with three forward gears and one reverse  
Planetary gear ratios:  
1st gear 2.65:1      2nd gear 1.59:1      3rd gear 1.0:1      Reverse gear 1.8:1  
Differential ratio 3.67:1  
Drive shafts with two constant velocity joints per shaft



## Engine with Manual Transmission

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



## Chassis

Platform frame with tunnel-shaped center member

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

Independent wheel suspension: torsion arms at front, trailing arms and diagonal links at rear

Torsion bar springing, telescopic shock absorbers, stabilizer at front

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

Footbrakes: Hydraulic, dual circuit system with discs at front

Handbrake: Mechanical, effective on rear wheels.

Wheelbase .....	94.5 in. (2400 mm)
Turning circle .....	36.5 ft. (11.1 m)
Track at front .....	51.6 in. (1310 mm)
Toe-in .....	.16 in.—.24 in. (4 to 6 mm) unladen
Camber .....	1° 20' ± 20' unladen
Track at rear .....	53.1 in. (1350 mm)
Wheels .....	4½ J x 15 safety rim wheels

Tires, tubeless	Bias Ply Tires
Volkswagen Type 3 .....	6.00-15 L/load capacity 1005 lbs. at 32 psi
Squareback Sedan .....	6.00-15 L/load capacity 1080 lbs. at 36 psi

Tire pressures, cold	front	rear
a - Volkswagen Type 3		
with 1 or 2 occupants .....	17 psi (1.2 kg/cm <sup>2</sup> )	26 psi (1.8 kg/cm <sup>2</sup> )
fully loaded .....	18 psi (1.3 kg/cm <sup>2</sup> )	29 psi (2.0 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

b - Squareback Sedan:		
with half payload .....	17 psi (1.2 kg/cm <sup>2</sup> )	26 psi (1.8 kg/cm <sup>2</sup> )
with full payload .....	18 psi (1.3 kg/cm <sup>2</sup> )	36 psi (2.5 kg/cm <sup>2</sup> )

## Electrical system

Voltage .....	12 Volts
Battery .....	45 Ah
Starter .....	0.7 hp
Generator .....	max. 360 watts, early cut in
V belt size .....	9.1 or 9.5 x 1000 mm
Distributor .....	with combined vacuum and centrifugal spark advance
Firing order .....	1 - 4 - 3 - 2
Basic ignition timing .....	TDC, engine at operating temperature
Contact breaker gap .....	.016 in. (0.4 mm)
Spark plugs .....	Bosch W 145 T 1, Beru 145/14, Champion L 88 or plugs with similar values from other manufacturers
Plug thread .....	14 mm
Plug gap .....	.028 in. (0.7 mm)

## Dimensions and weights

	Volkswagen Type 3	Volkswagen Squareback Sedan
Length .....	170.8 in. (4340 mm)	170.8 in. (4340 mm)
Width .....	63.2 in. (1605 mm)	63.2 in. (1605 mm)
Height .....	57.9 in. (1470 mm)	57.9 in. (1470 mm)
Ground clearance .....	5.9 in. (150 mm)	5.9 in. (150 mm)
Unladen weight .....	2226 lbs. (1010 kg)	2282 lbs. (1035 kg)
Max. load .....	882 lbs. (400 kg)	992 lbs. (450 kg)
Permissible total weight .....	3108 lbs. (1410 kg)	3274 lbs. (1485 kg)
Permissible front axle load .....	1278 lbs. (580 kg)	1278 lbs. (580 kg)
Permissible rear axle load .....	1874 lbs. (850 kg)	2072 lbs. (940 kg)
Permissible roof and trailer weights:		
Roof weights <sup>1)</sup> .....	165 lbs. (50 kg)	165 lbs. (50 kg)
Trailer without brakes .....	1025 lbs. (465 kg)	1080 lbs. (490 kg)

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

## Capacities

Fuel tank .....	10.6 U.S. galls (8.8 Imp. galls; 40 liters)
Engine .....	5.3 U.S. pints of engine oil (2.5 liters; 4.4 Imp. pints)
Transmission and final drive .....	5.3 U.S. pints of hypoid oil (2.5 liters; 4.4 Imp. pints)
On vehicles with Automatic Transmission:	
Torque converter and planetary gears .....	Approx. 12 U.S. pints (6 liters; 10.5 Imp. pints) ATF, refill with 6 U.S. pints (3 liters; 5.25 Imp. pints)
Final drive .....	Approx. 2 U.S. pints (1 liter; 1.8 Imp. pint) Hypoid oil SAE 90
Brakes .....	0.53 U.S. pint of brake fluid (0.25 liter; 0.44 Imp. pint)
Oil bath air cleaner .....	Approx. 0.85 U.S. pint engine oil (0.40 liter; 0.70 Imp. pint)
Container for windshield washer .....	Approx. 3.5 pints (1.7 liter) of fluid

## Performance

	Manual Transmission		Automatic Transmission		
Maximum and cruising speed	84 mph. (135 kph.)		81 mph. (130 kph.)		
Acceleration time from 0-50 mph. (0-80 kph.) .....	approx. 11.5 seconds		approx. 14 seconds		
Climbing ability %	Volkswagen Type 3 <sup>1)</sup> Squareback Sedan <sup>2)</sup>		Volkswagen Type 3 <sup>1)</sup> Squareback Sedan <sup>2)</sup>		
1st gear .....	44.0	41.5	Forward	40.0	36.0
2nd gear .....	23.0	21.5	Reverse	26.0	23.0
3rd gear .....	13.0	12.0			
4th gear .....	8.0	7.5			

<sup>1)</sup> with 2 occupants

<sup>2)</sup> with half payload



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