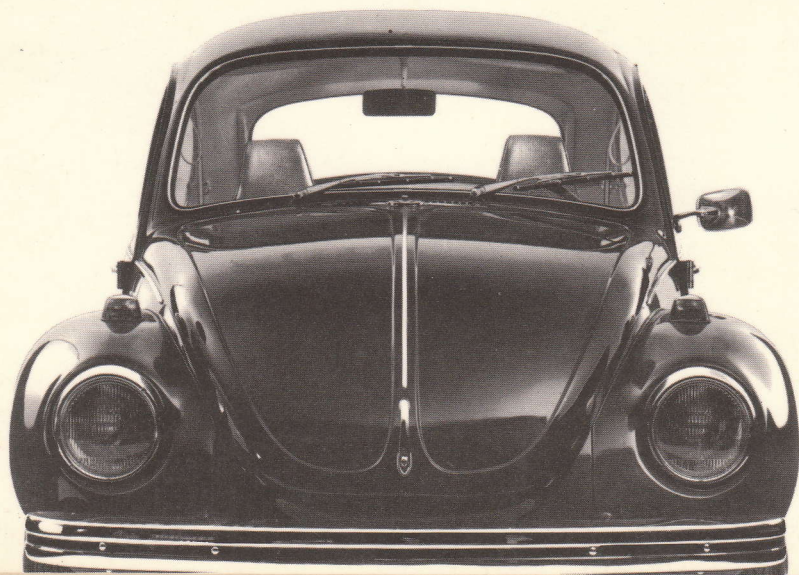
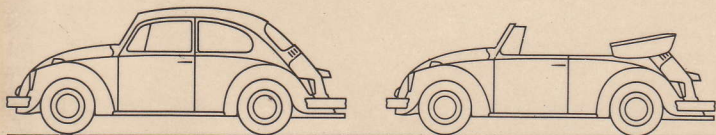


Instruction Manual

VW 1302



Instruction Manual

VW 1302 S

VW 1302



August 1971

V O L K S W A G E N W E R K A G · W O L F S B U R G

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All pictures and text in this instruction manual are based on the VW 1302 S. Where the controls and technical details of the VW 1302 and Convertible models differ considerably, attention is drawn to the difference. Driving the VW Automatic is described in a special section. In addition a number of useful optional extras are also described. Differences in technical equipment and fittings as often required due to local regulations in various countries are not taken into account.

We trust you will appreciate that we must reserve the right to alter, without notice, any of the equipment and specifications illustrated or described in this manual.

Introduction

It is to your advantage to get to know your new car quickly so that you will be able to start off on your first trip with complete confidence. For this reason you should read the first part of this booklet, which deals with the operation of your Volkswagen, very carefully.

The second part tells you everything about winter driving, trailer towing and care of the car and also contains some do-it-yourself tips. There is also some information on the proper sort of fuel and oil to use, how to carry out oil changes and lubricate the car and a collection of interesting technical data.

When you have studied the manual, and we strongly recommend you to do so, you will know how to operate your car properly. You will then be entitled to expect many years of reliable and economical service from your car regardless of weather, road conditions and mileage run. In this connection we should like to mention the VW Service Record which is the second important publication that you receive with the vehicle.

The Service Record tells you exactly what points you have to watch to maintain the roadworthiness of your car and explains the Volkswagen Diagnosis and Maintenance System. It also contains the Warranty Voucher for your car and the conditions on which this voucher is issued.

Always have the Service Record with you when you take the vehicle to a VW workshop, it helps to establish proper contact with the workshop staff.

In your own interests: Have your Volkswagen serviced as laid down in the Service Record right from the start. Proper treatment and complete proof of all maintenance work carried out can be of vital importance if you should have occasion to make a claim under warranty.

Test wiring and socket

VW technology never stands still. Your new Volkswagen has numerous improvements which will help to maintain its reputation as one of the most reliable and economical automobiles.

But not only the vehicle itself has been improved still further – the Volkswagen Diagnosis and Maintenance System is also continuously being modified to keep it in line with technical developments.

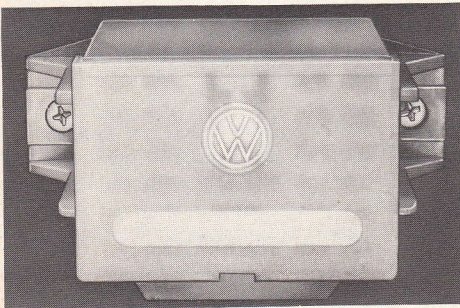
Advanced electronic test instruments which can check many points in the Diagnosis program automatically – without the help of the test mechanic – will be introduced. The results of these checks are printed on the test report simultaneously.

To do this, the vehicle is connected to the electronic system of the diagnosis stand by means of a special socket in the engine compartment.

Your Volkswagen is ready for this new system. The vehicle has a special wiring network which is connected to the multi-point socket in the engine compartment shown here.

This socket is used to connect the vehicle to the diagnosis stand. Please ensure that the lid of the socket is always closed.

The Volkswagen Diagnosis and Maintenance System is a good thing. It is the most modern automobile servicing system in use today and every effort is being made to keep it constantly in step with technical developments.



Concerning your safety

(Well worth reading before or after studying the rest of the manual.)

For years now our engineers have been leading the field in the development of safe automobiles.

Your Volkswagen is the product of this experience:

Your vehicle is equipped with all the safety features of design and trim which are necessary and which we consider practical. All for your safety, your protection and, in addition, to reduce the danger to other road users if the worst comes to the worst.

As an interested reader you will soon realize, without knowing a great deal about technical matters, that numerous details of your vehicle are designed in such an elaborate way to offer you the highest possible degree of primary and secondary safety.

Here are just a few of these safety features:

- Independent suspension at front and rear. Suspension struts at front, double-joint axle at rear, positive wheel location, uniform roadholding.
- Good weight distribution due to front luggage compartment, no sagging at rear, headlamp settings always correct even when vehicle is fully loaded.
- Front disc brakes, no fading, smooth uniform braking of front wheels.
- Dual circuit brake system.
- Large, brilliant tail and turn signal lights, back-up lights on request.
- Hazard warning lights.
- Pneumatic windshield washer and two-speed wipers.
- Safety cell passenger compartment, front and rear ends designed to absorb impact energy.
- Large, soft control knobs for driver and passenger, clearly marked with symbols.
- Anchorages for three-point safety belts at front and rear.
- Safety steering column; energy-absorbing steering wheel hub.
- Firmly fixed individual front seats, backrest and seats fully adjustable. Backrests locked to prevent them tilting forward.
- Padded sun visors.
- Large outside driving mirror, hinged to yield on impact. Inside mirror falls out on impact.
- Recessed door inner controls, inner locking knobs.
- Side protection plates also designed as running boards.
- Rounded door outer handles with built-in impact proof press buttons.
- Rotary latch, anti-burst door locks.

You will agree that your Volkswagen has a lot of built-in safety.

It is now up to you to drive safely. Bear the following points in mind:

- drive carefully and defensively
- watch the traffic well ahead
- judge your speed and braking distances properly particularly when tire adhesion is reduced due to rain or snow and ice
- keep your vehicle in good mechanical condition by having regular maintenance checks carried out by specialists
- make use of the "Volkswagen Diagnosis and Maintenance System". This system has been developed specially to cater for the higher safety requirements of modern road traffic.

For everyday use there are also a few safety measures which no responsible driver should forget:

Before getting behind the wheel –

- check that the tires are in good condition and correctly inflated
- ensure that all windows are clean, particularly in the winter
- check that the headlamps, tail lamps and turn signals are clean
- check that the lights are working. The headlamps, turn signals and brake lights work only when the ignition is switched on.

Before moving off –

- adjust the driving seat so that you are comfortable and can reach all the controls without effort
- set inside and outside mirrors properly
- put your safety belt on and ask all your passengers to do the same
- check that the dual circuit brake warning light is working (if fitted). Ignition must be switched on first
- check windshield wipers (ignition on) and windshield washer
- check that all doors are properly shut.

Before getting into traffic stream –

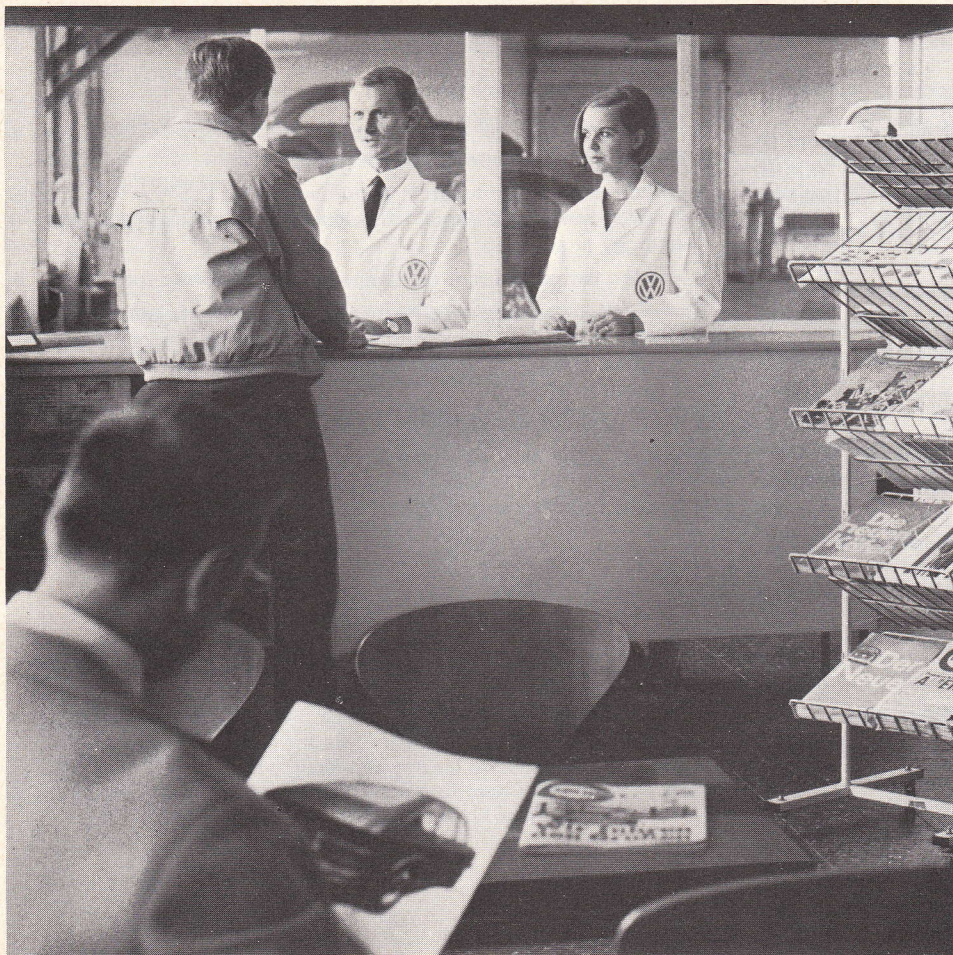
- check the brakes – after having a good look in the mirror
- make sure that the handbrake is right off.

When on the move –

- keep a safe distance behind preceding vehicle
- give signals in good time when turning or changing lanes
- don't drive at top speed when it is dark
- switch the low beams on in good time at dusk so that you can be seen by other road users. This also applies in the daytime when it is foggy or snowing
- use fog lamps and rear fog lamps according to regulations
- remember that you have hazard warning lights to use if your car breaks down on a busy road. Always try to get the vehicle off the road as quickly as possible when this happens. Place warning triangle on road.
- don't continue driving when you feel tired
- always allow for the carelessness of other road users.

When leaving the vehicle –

- protect it against misuse and theft by removing ignition key and locking the steering. Close the windows, lock the doors and take steps to stop car rolling away especially when parking on gradients.



**There are two good things
about VW all over the world.
The Volkswagen. And the
Volkswagen Service.**

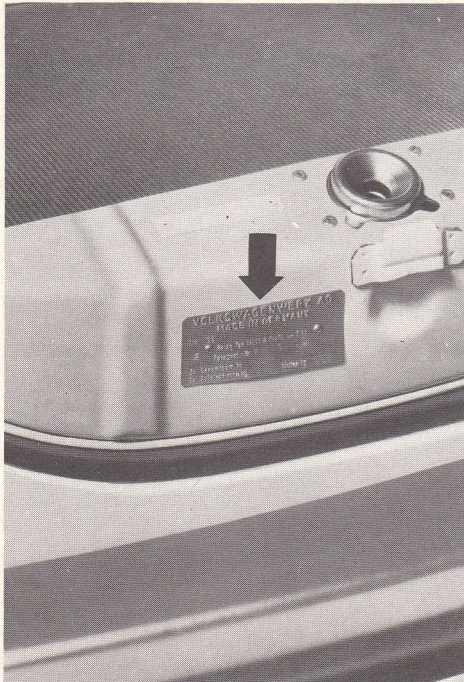
You will find VW specialists everywhere. Not just within a radius of a few thousand miles but in 140 different countries. In more than 9000 authorised VW concerns.

You can rest assured that you will find VW Service everywhere – as reasonably priced and reliable as at home. We know, because we supply all VW concerns with everything they require. From the smallest replacement part to the largest specials tool.

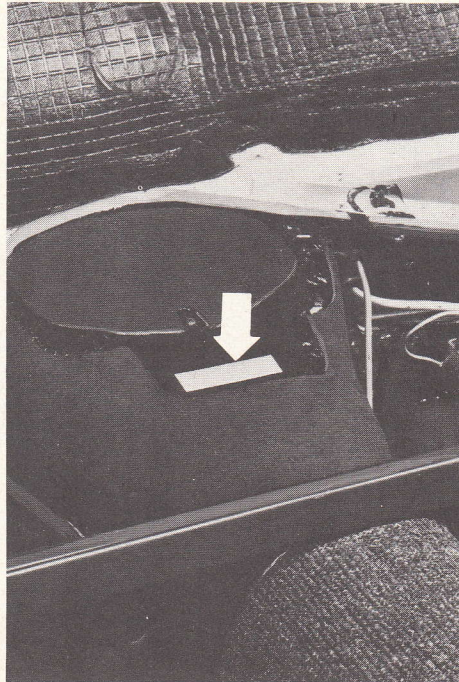
We don't just wish you pleasant motoring – we do something to keep it that way.

Identification plate, chassis number and engine number

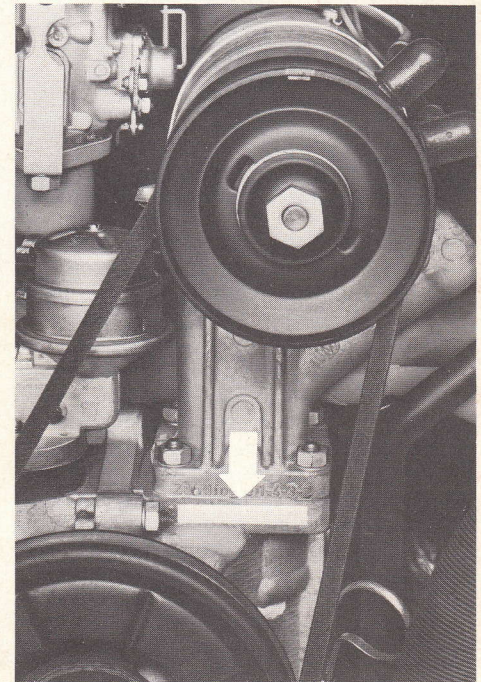
The identification plate is underneath the front hood near the lock.



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



The engine number is on the crankcase flange for the generator support.

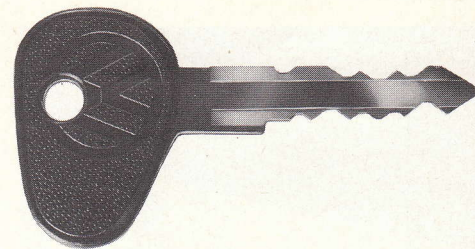


Keys

Only one key is required to open the doors, start the engine and operate the lock* in the engine compartment lid.

It is a good idea to note the number of the key under the plastic cap. If you should lose the key, you can then obtain a replacement from your VW Dealer by quoting this number.

The other key is for the lock in the glove box lid*.

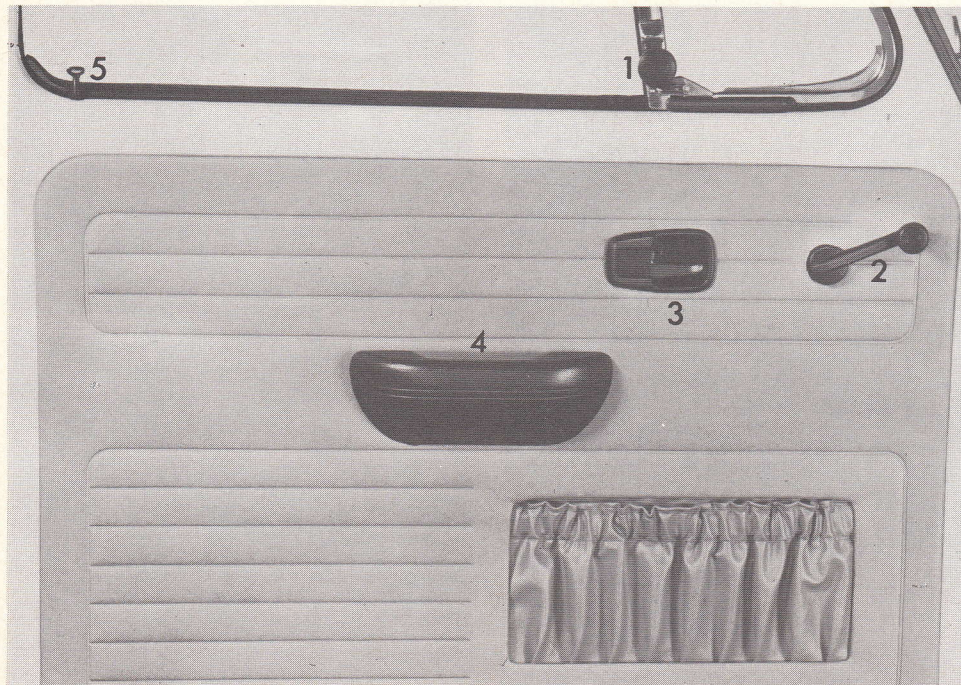


* Optional extra

Doors

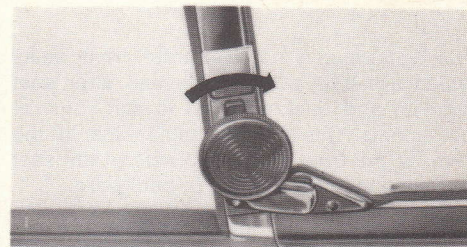
Before closing the door it is advisable to open a window slightly. The door will then be easier to close because the air can escape from inside the body.

- 1 – Vent wing fastener
- 2 – Window crank
- 3 – Lock release lever*
- 4 – Armrest and door closing grip
- 5 – Safety knob* for lock



To open the vent wing, turn the knob until the locking lug points to the front, then swing the fastener forward.

The doors cannot be opened from inside with the lock release lever until the safety knobs have been lifted.



In order to ensure that the doors can be opened from outside in an emergency, do not press down the locking knobs* when the vehicle is in motion.

When leaving the vehicle, just press the safety knob* down and depress the latch in the outer handle as you close the door. The vehicle is then locked.

If the door closes on its own after the safety knob* has been depressed, it will not lock itself because the safety knob* springs 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.

* On the Convertible there is a small locking lever above the release lever (3) instead of the locking knob (5).

Seats

The Volkswagen has separate front seats which are built so that you can alter seat position and backrest rake to suit your requirements. This is quite simple – just lift the lever at the front right-hand side of the seat and slide the seat forward or backward.

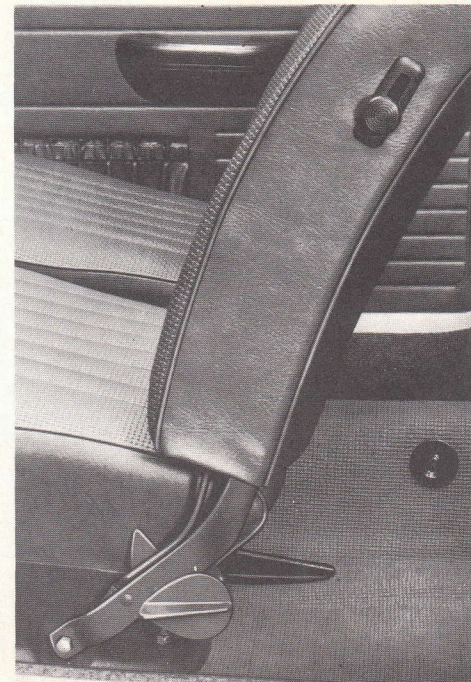
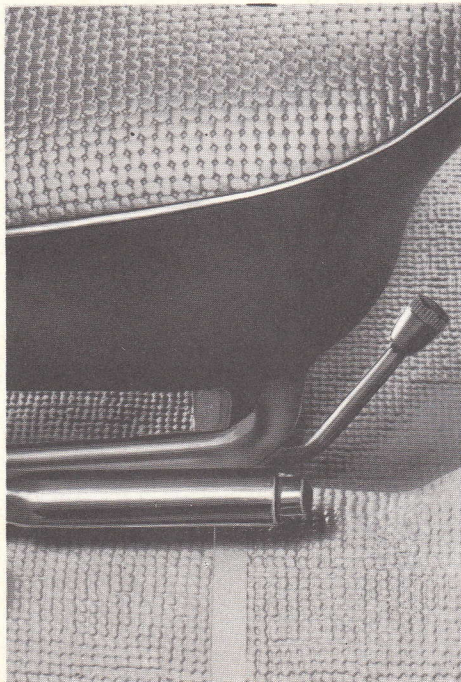
Make sure that the lever engages properly after adjusting the seat so that the seat does not move while you are driving.

The runners are slightly inclined so that the seat is raised as it goes forward.

The backrest rake can also be set to various angles with the aid of the small lever at the back of the seat frame.

The backrests have safety catches which prevent them from tilting forward when the brakes are applied very hard. The catches can be released by pulling up the knob in the side of the backrest.

Front seats with built-in head supports on the backrests are available as optional extras.



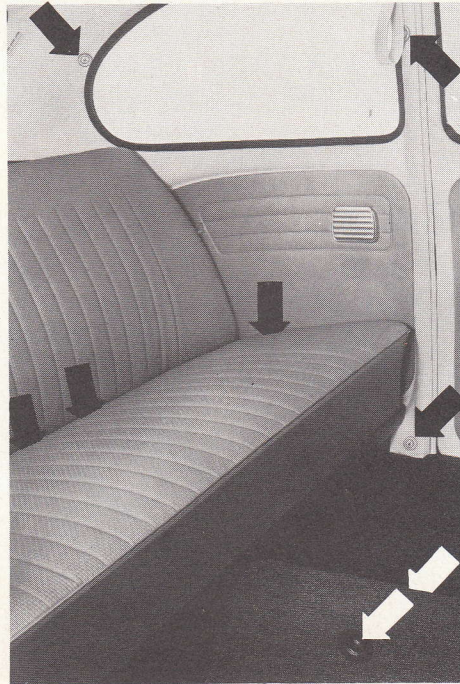
Safety belts

The front seats and the two outer places on the rear seat can be fitted with shoulder or lap belts or combined shoulder/lap belts.

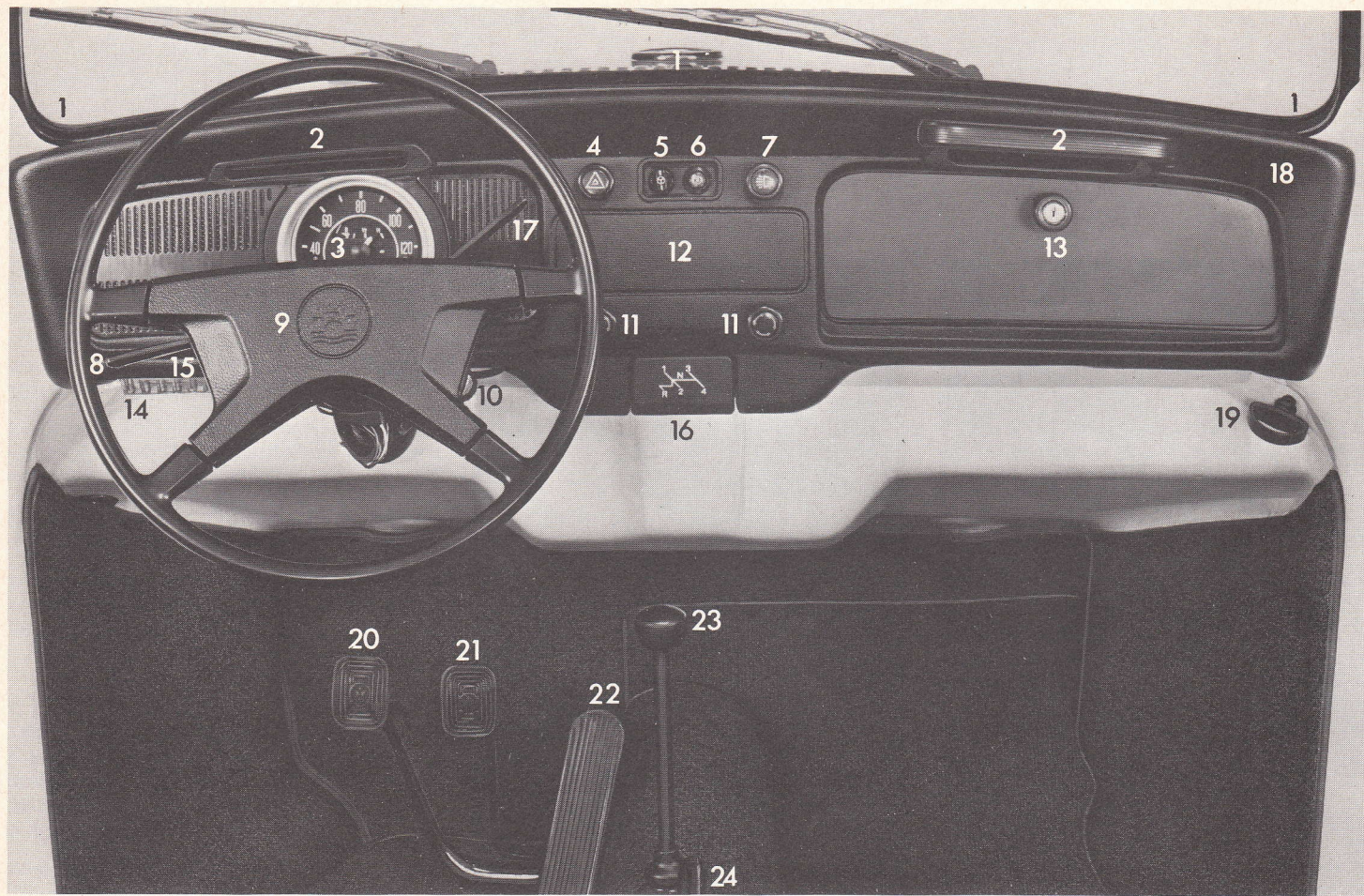
The belts for the driver and front passenger are secured to the lock pillar and on the side of the frame tunnel in the rear footwell.

The belts for the passengers at the rear are attached to the left and right side panels and in the center of the luggage compartment floor under the seat. There are two further mounting points in the roof pillars behind the quarter windows.

Threaded plastic plugs are fitted in the tapped holes for the belt securing screws. These threaded plugs must **not** be used to secure the safety belts.



Instrument panel, hand and foot controls



Even when this is not your first Volkswagen you should study the instrument panel and try out the controls with the ignition switched on.

- 1 – Defroster vents
- 2 – Adjustable defroster and fresh air vents (page 24/25)
- 3 – Speedometer with fuel gauge and warning lights (page 16)
- 4 – Emergency light switch (page 16)
- 5 – Switch for fresh air fan* (page 25)
- 6 – Dual circuit brake warning light* (page 30)
- 7 – Lighting switch (page 16)
- 8 – Turn signal and dimmer lever (page 17)
- 9 – Horn pad
- 10 – Steering/ignition lock (page 17)
- 11 – Fresh air control knobs (page 25)
- 12 – Plate over radio aperture
- 13 – Glove compartment lid knob, lockable* (page 17)
- 14 – Fuse box (page 54)
- 15 – Switch for heated rear window* (page 17)
- 16 – Ashtray (page 17)
- 17 – Lever for wipers and washer (page 18)
- 18 – Instrument panel padding*
- 19 – Tank flap release loop (page 30)
- 20 – Clutch pedal
- 21 – Brake pedal
- 22 – Accelerator pedal
- 23 – Gearshift lever (page 18)
- 24 – Handbrake (page 18)

On your vehicle the emergency light switch (item 4) is on the right of the ashtray

* Optional extra



Speedometer

The following warning lamps are in the speedometer dial:

- a – green – parking lights*
- b – green – heated rear window**
- c – red – generator and cooling
- d – green arrows – turn signals
- e – red – oil pressure
- f – red – ATF temperature***
- g – blue – high beams

Fuel gauge

When the needle is at the end of the "R" mark there are about 5 liters (1 gallon) of fuel left in the tank – time to refuel at the next opportunity.

* Compulsory in some countries otherwise not connected.

** Optional extra, see page 17

*** On vehicles with automatic transmission, see page 36

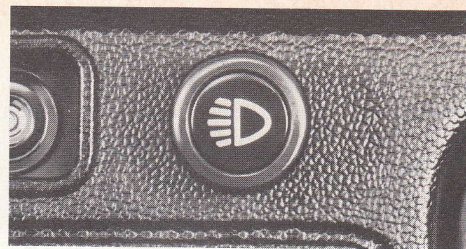


Emergency light system

To switch on, pull knob out. (A warning lamp in the knob comes on.)

When the system is switched on, all four turn signals flash at the same time. The system is used to warn other road users of a dangerous situation when moving or that the vehicle has broken down and is stationary. Regulations governing the use of this type of warning system vary from country to country.

The emergency light system remains in operation when ignition is switched off.



Lighting switch

Pull the knob out to the first stop to switch on the parking, license plate, tail lights and the instrument lights. Pulling the knob out to the next stop, switches the headlamps on as well.

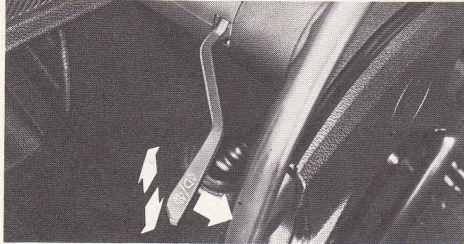
The instrument lights are controlled in brightness by turning the lighting switch.

Please note:

To prevent the battery from being run down unnecessarily if you park the vehicle and forget to switch the headlamps off and to ensure that the full battery capacity is always available for starting, the headlamps are now wired through the steering/ignition lock:

- the headlamps work only when the ignition is switched on
- the headlamps go out when starting the engine

The parking lights and other lights operated by the lighting switch are not affected.



Turn signal and dimmer lever

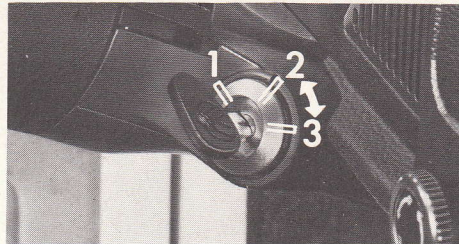
- Lever up – right turn signals.
- Lever down – left turn signals.

The turn signals are cancelled automatically after taking the corner.

Lifting the lever towards the steering wheel switches the headlamp beams up and down.

A blue warning light in the speedometer dial shows when the headlamp high beams are switched on. In the daytime or when only the parking lights are on, the lever serves as a **headlamp flasher**.

To signal slight changes in direction such as when lane changing, the lever need only be moved until a slight resistance is felt and held in this position (the warning lamp must blink). When released, the lever springs back to the central position automatically.



Steering/ignition lock

If the key is difficult to turn in the lock or cannot be turned at all, turn the steering wheel to and fro slightly to release the locking pin.

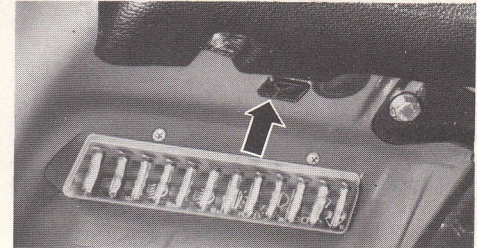
- 1 – Ignition off – Steering locked
Key can be pulled out
- 2 – Ignition on
- 3 – To start*

The steering is not locked until the key has been pulled out and the wheel turned until the locking pin engages.

Important

Remove key from lock only when vehicle is stationary.

* In order to ensure that the full battery capacity is available when starting the engine, the headlamps, wipers, fresh air fan and heated rear window are switched off automatically when the starter is operated.



Heated rear window**

This switch is for the heatable rear window but it only works when the ignition is switched on. A green warning lamp in the speedometer dial (see page 16) shows when the window is switched on.

As soon as the rear window is clear, switch the heater element off to reduce the load on the battery.

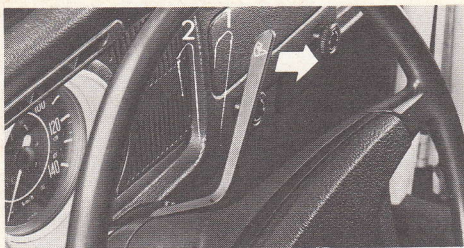
Glove box

To open the glove box lid turn the knob to the left. On the Convertible, the knob is lockable.

Ashtray

To remove ashtray, press the leaf spring down and pull ashtray out.

** Optional extra



Lever for wipers and washer system

Wipers slow-

Lift lever to first position (1)

Wipers fast-

Lift lever to second position (2)

Wipers off

Press lever right down

The blades park automatically when switched off.

If you just lift the lever briefly to the pressure point of the first position (1) the wipers will make at least one complete stroke.

To operate washer

Pull lever towards steering wheel – water is sprayed as long as lever is held.

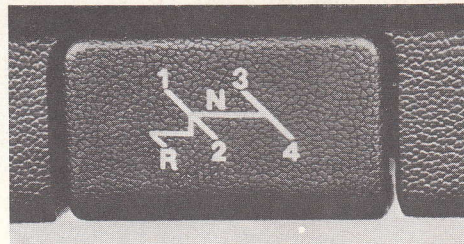
If your car has a wiper delay switch and a wash-wipe device, the lever has two further functions:

Wiper delay switch on

Press lever down from central position: The wipers make one stroke to and fro about every 10 seconds.

Wash-wipe device

Only when lever is in central position: Pull towards steering wheel. Water sprays on to windscreen. When you release the lever, the wipers make two or three strokes to and fro.



Gearshift lever for manual transmission

(see page 35 for VW Automatic)

Shift into reverse gear only when the vehicle is standing still. Reverse gear is fitted with a lock so that it 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.

Handbrake

To release the handbrake, pull the lever up slightly first, and then depress the locking knob.

* Optional extra

**They go to "school" with VW.
So that you feel as safe with your
VW all over the world as you do
at home.**



Every year 50000 specialists are trained in VW service schools.

Mechanics, foremen, service advisers from every corner of the world. In small groups of 8 - 10 they get to know the most modern procedures.

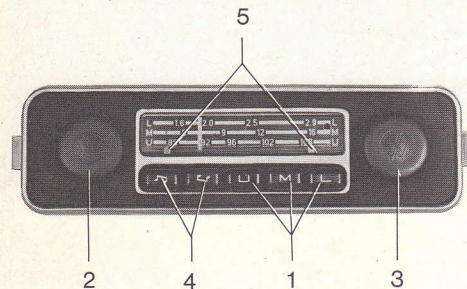
By continuous training at their place of work they extend their knowledge and keep it right up to date.

Result of this training: precision in servicing - and less time spent on the work.

For it is not sufficient for a VW workshop simply to produce quality. It does so at reasonable prices.

VW Automobile Radios

are also available as optional extras. The models are called "Emden", "Wolfsburg", "Hannover" and "Ingolstadt". If you have selected one of these sets for your car, note the following:



Emden

1 – 3 wave band press buttons:

U = VHF (87.6–108 Mc/s)

M = Medium wave (515–1620 kc/s)

L = Long wave (150–290 kc/s)

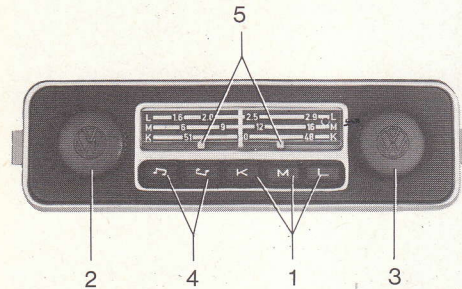
2 – Rotary knob on left: "Off-on" and volume

3 – Rotary knob on right: Tuning

4 – Two control press buttons:
left = bass, right = treble

5 – Two station markers

At the back of set: Socket for tape recorder and connection for automatic aerial.



Wolfsburg:

1 – 3 wave band press buttons

K = Short wave (5.9–6.35 Mc/s)

M = Medium wave (515–1620 kc/s)

L = Long wave (150–290 kc/s)

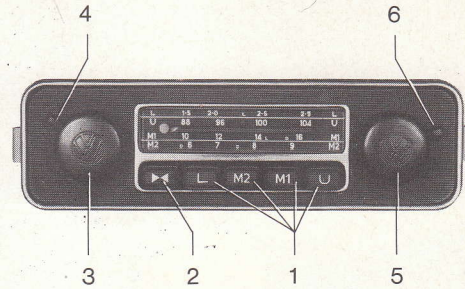
2 – Rotary knob on left: "Off-on" and volume

3 – Rotary knob on right: Tuning

4 – Two tone central press control:
left = bass, right = treble

5 – Two station markers

At the back of set: Socket for tape recorder and connection for automatic aerial.



Hannover

Four wave band press buttons:

–U = VHF (87.6–104 Mc/s)

2 x M = Medium wave (515–1620 kc/s)

(M₁ = 515–920 kc/s)

(M₂ = 900–1620 kc/s)

L = Long wave (150–270 kc/s)

2 – One press button: Automatic station seeker

3 – Rotary knob on left: "On-off" and volume

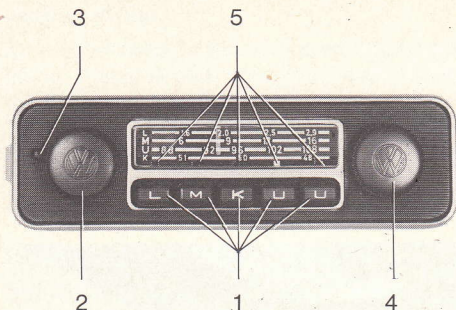
4 – Slide under left knob:

Tone control – down = bass, up = treble

5 – Rotary knob on right: Tuning

6 – Switch under right knob: Sensitivity switch for station seeker

At the back of set: Sockets for tape recorder, station seeker remote control and connection for automatic aerial.



Ingolstadt (mono)

- 1 – Five waveband press buttons
 - 2 x U = VHF (87.6–108 Mc/s)
 - K = Short wave (5.9–6.35 Mc/s)
 - M = Medium wave (515–1620 kc/s)
 - L = Long wave (150–290 kc/s)
 - 2 – Rotary knob on left: “On-off” and volume
 - 3 – Switch under left knob:
 - Tone control – down = bass, up = treble
 - 4 – Rotary knob on right: Tuning
 - 5 – Five markers on lower edge of scale:
 - Shows the wavelength of the station button depressed.
- At the back of set: Socket for tape recorder and connection.

Function of knob for automatic station seeker:

Pressing the left button starts the **automatic station seeker** which then tunes in to the nearest station on the selected waveband. If started again the station seeker automatically finds the next nearest station.

Station retention: When a waveband is changed, the set remains tuned to the last station which was tuned by hand.

The telescopic aerial requires a certain amount of care otherwise it will get stiff and is then liable to bend when being pushed down.

From time to time, after washing the vehicle, the aerial should be wiped dry with a clean cloth and coated lightly with chrome grease (Order No. 000096067).

Use only a 2 ampere fuse (VW Part No. 111035307) in the radio connecting cable.

In built-up areas and hilly districts the VHF reception is often of poor quality.

If local regulations require it, do not forget to obtain a radio license before using your car radio.

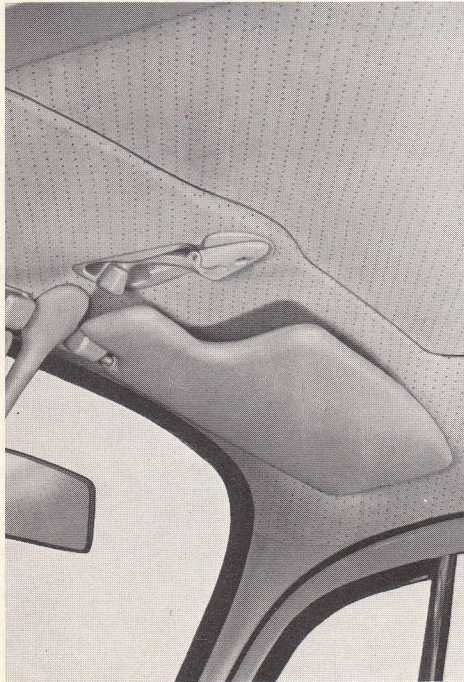
Function of station buttons: Tune in exactly to the station required with the righthand knob. Pull the press button of the appropriate waveband out and then press it in again. This fixes this station to this button so that it can be selected again by just pressing the button. This can be done with any station desired.

Interior trim

Sun visors

You can pull the driver's sun visor out of the center mounting and swing it towards the door windows to prevent dazzle from the side.

The passenger's sun visor on the Convertible has a make-up mirror built into it.



Rear view mirrors

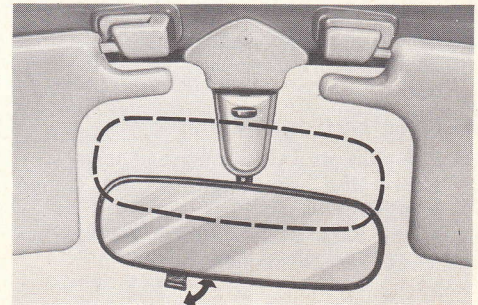
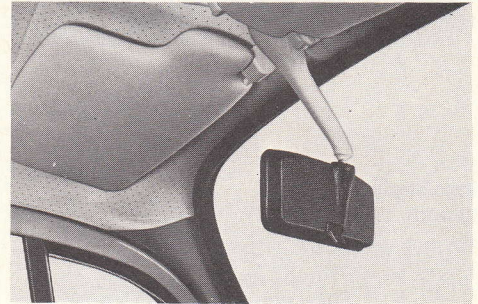
Inner and outer mirrors are specially mounted so that they can be set to give clear vision to the rear at all times.

The interior mirror arm has a safety mounting and falls out on impact. To install arm again, just press it firmly into mounting.

A **non-dazzle mirror** is available as an optional extra. A small button at the bottom of the mirror alters the angle of the mirror glass to stop dazzle:

Button pressed forward – anti-dazzle position
Button pressed to rear – normal position.

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



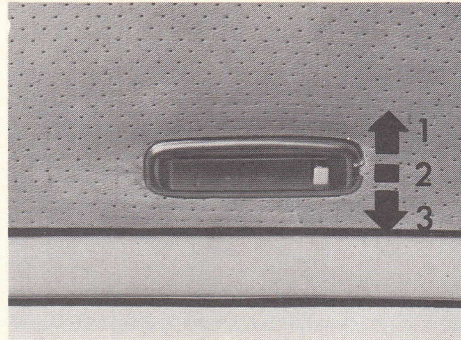
Ashtray at rear

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

Interior lighting

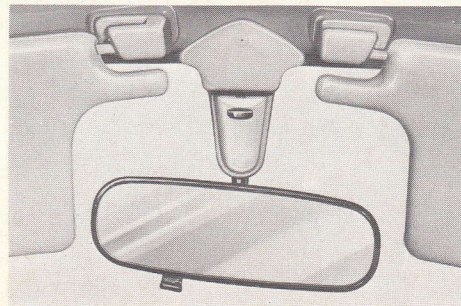
Switch positions:

- 1 – Light on only when doors are open
- 2 – Light off
- 3 – Light on



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

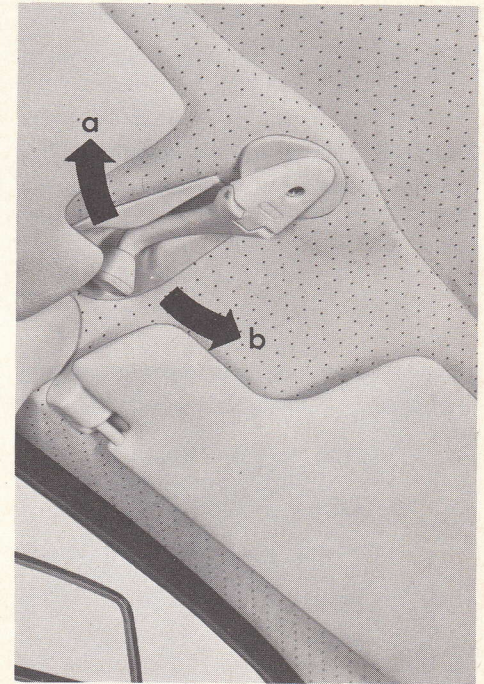
- Right – Light off
- Center – Light on
- Left – Light on only when doors are opened.



Sliding roof

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 first then turn it back slightly until it can be folded into the recess.

- a – Open roof
- b – Close roof



Heating

Heating control lever (1)

Lever up – heating on
Lever down – heating off

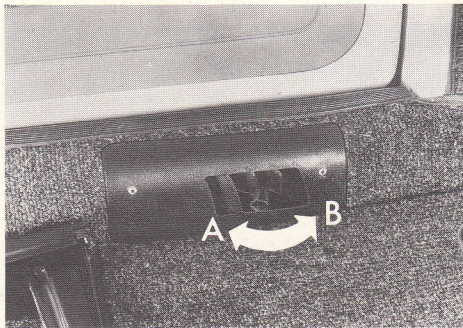
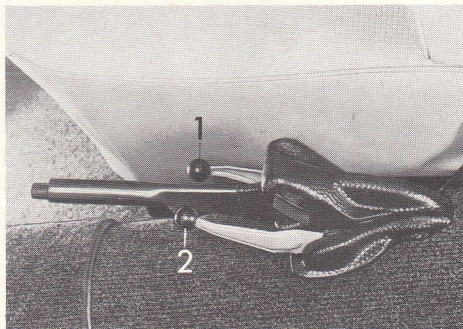
Control lever for heating in rear footwell (2)

Lever up – flaps open
Lever down – flaps closed

Control lever for heating in front footwell

There is a lever on the heater outlet on each side:

Lever to rear (A) – admits warm air
Lever forward (B) – cuts warm air off



Defroster and fresh air vents

Lever to right – air flow to passenger compartment
Lever to left – air flow to windshield

The windshield can be de-iced quickest by directing all the warm air to the vents in the instrument panel

- Close footwell outlets with levers
 - Close fresh air supply
 - Move lever for combined defroster and fresh air vents to the left.
- When the ice has thawed, switch on fresh air supply (or fan*) to dry the wet glass quickly.

As soon as the windshield is clear, open the footwell outlets fully so that the interior of the body heats up as quickly and uniformly as possible.

* Optional extra

Fresh air ventilation

The ventilation system of the Volkswagen is based on the ram effect of the wind when vehicle is in motion. The body is ventilated even when all windows are closed because the stale air can escape through the slots behind the rear side windows.

The fresh air can be regulated with two rotary knobs and two adjustable outlets:

Knobs

Turning to the left – admits air

Turning to the right – reduces air flow

The fresh air is cut off completely when the knobs are turned fully to the right past the slight pressure point.

Switch for two-speed fan *

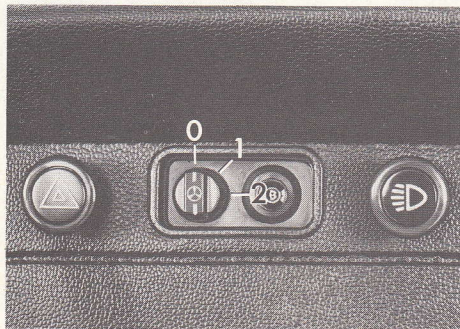
The fan gives good ventilation when vehicle is stationary or moving slowly.

Switch at 0 – fan off

Switch at 1 – fan runs slowly

Switch at 2 – fan runs fast

* Optional extra

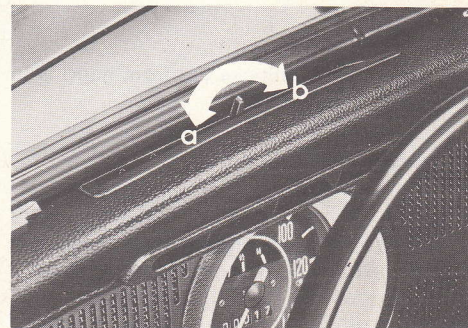


Adjustable outlets

Lever to the right – directs air to passenger compartment

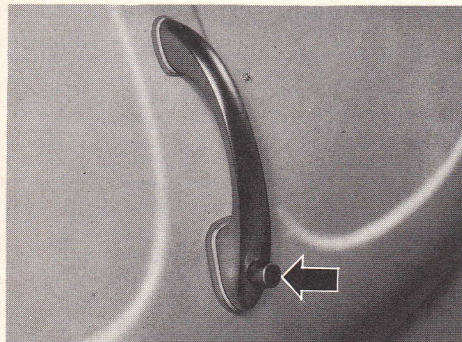
Lever to the left – directs air to windshield

When the lever is in an intermediate position the air is distributed in both directions



Luggage compartments

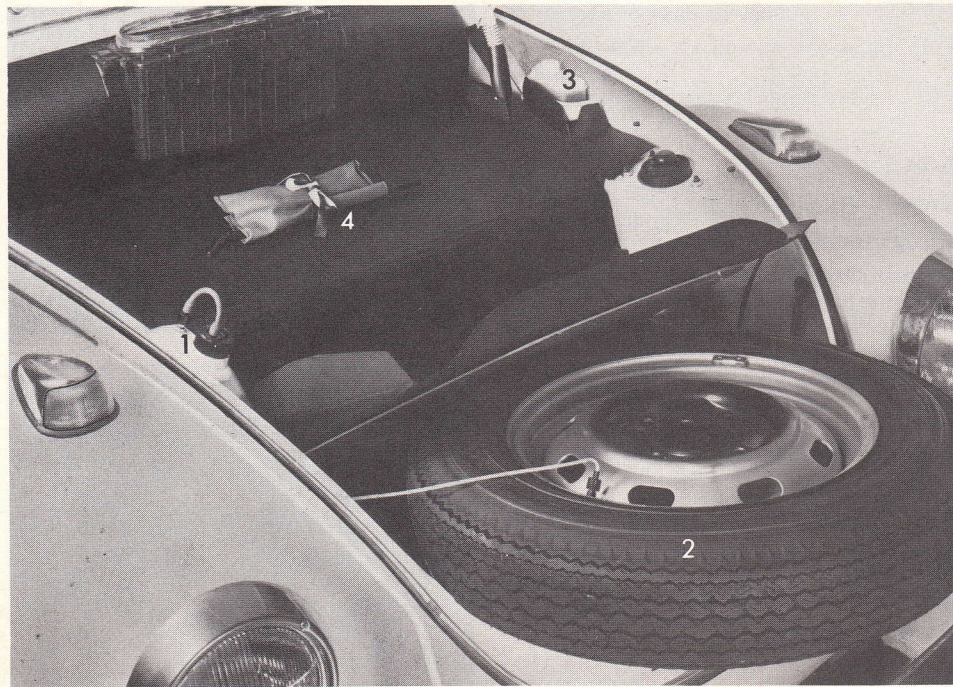
Whether you are taking a lot of luggage with you or not, please load the front luggage compartment first, using the heaviest pieces of luggage if possible. A well distributed load means good roadholding so take advantage of the possibilities offered by the Volkswagen with its two luggage compartments.

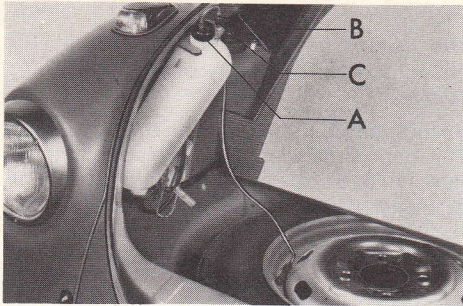


The lever which unlocks the front hood is in the glove compartment:

To release – pull lever.

The hood springs up slightly when the knob is pulled and can be opened fully by pressing the button in the hood handle. To close the hood, press it down firmly until you hear a click.





1 – Container for windshield washer

The windshield washer works with the air pressure from the spare wheel (max. 42 psi). A valve in the container cap cuts off the flow of air to the washer when the pressure in the spare wheel has dropped to about 28 psi. This ensures that the spare wheel is always usable.

Filling the container:

Take cap (A) off and fill container until it overflows.

It is advisable to add a cleaning solution to the water as clear water alone is not adequate to ensure that the windshield is cleaned quickly and properly. If enough of this cleaning agent is put in it also acts as an anti-freeze solution in the winter. The order number of the VW cleaning agent is given in "Care of Car" section on page 44.

Methylated spirits can also be used as an anti-freeze agent. In this case a mixture of 1 part meths to 3 parts water will protect the water from freezing down to about -12°C (10°F).

Methylated spirits will not clean the windshield as thoroughly as the special cleaning solution.

Checking and correcting air pressure

Screw valve cap (B) off and inflate spare wheel through valve (C) to 42 psi. Screw cap on again.

2 – Spare wheel

The spare wheel supplies the air pressure for the washer via a connecting hose. The pressure in the spare wheel should therefore be checked regularly (max. 42 psi) as described at point 1 "Checking and correcting air pressure".

3 – Brake fluid reservoir

The fluid should always be level with the joint round the container. If the level drops below the joint after the vehicle has been in use for some time, have your VW Dealer check the brake system.

Brake fluid is hygroscopic. Too high a water content in the brake fluid becomes detrimental to the entire brake system after a period of time so the brake fluid must be renewed every two years. Afterwards the system must be bled.

4 – Tools

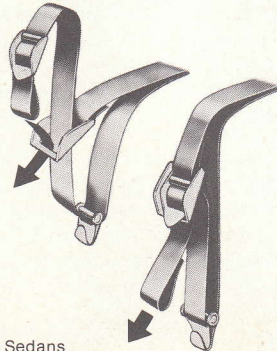
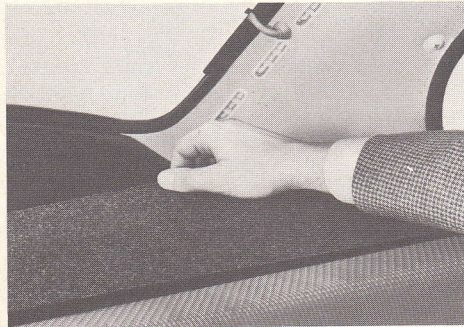
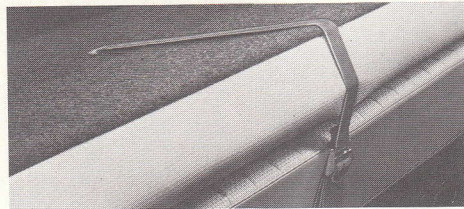
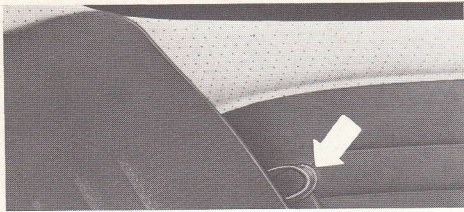
Rear luggage compartment

The rear luggage compartment is easy to get at if you fold the backrest of the rear seat down. To do this, release the backrest lock by pulling the loop at the side of the seat. The lock engages automatically when the backrest is folded back again.

The rear luggage compartment can be closed with a cover which is secured to the backrest:

- Fold backrest forward
- Lift the cover until the straps are tensioned and press the backrest slowly to the rear. When the backrest is folded forward, the cover falls down of its own accord.

If you wish to carry large pieces of luggage, you can secure the rear backrest in the down position by hooking a strap* under the seat support and so increase the size of the luggage compartment.



* Only on the Sedans

The backrest can be pulled down to an almost horizontal position by tensioning the retaining strap.

Ensure that the strap is connected properly: The looped end must be passed through the buckle as shown in the illustration otherwise the strap cannot be tensioned.

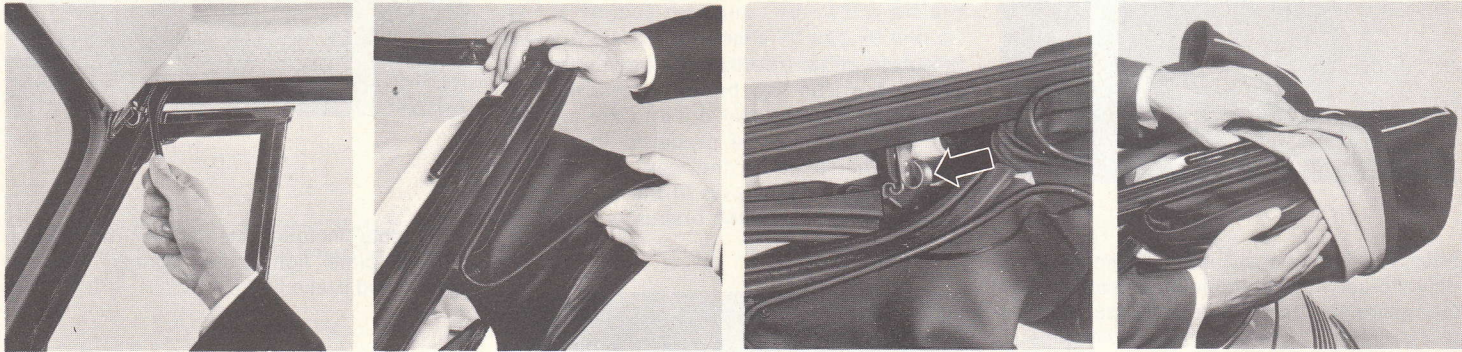
Convertible top

Open the top only when it is dry and clean because sharp particles of grit can damage the top material.

To open top

Swing down the two locking levers at the front above the vent wings, disengage the hooks and fold top to the rear. Push the headlining inwards and pull the top material and padding out of the hinges. Fold locking levers against top. Press top linkage together until the small side catches engage. When pulling the protective boot over the top from rear to front, lift the top material up on both sides as otherwise there will be friction marks. Secure boot with press buttons.

Before fitting a **tonneau cover*** on a vehicle with headrests, the front seats and backrests must be moved as far to the rear as possible as otherwise the tonneau cover will not fit properly.



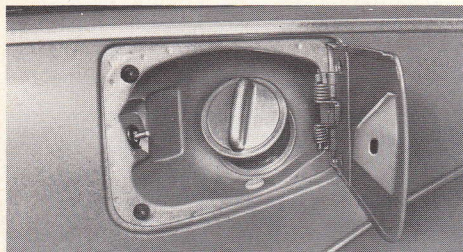
To close top

Wind rear side windows down and take protective boot off. Press top down slightly and unhook the catches. Fold the top forward and pull the locking levers down. From inside the vehicle, pull the top down on to the windshield frame, engage the retaining hooks and tension the top by swinging the locking levers to the rear.

* The tonneau cover provides a practical means of keeping the vehicle interior clean when the top is open. It also protects the vehicles from petty thieves when it is parked with top open: Tonneau covers are available as an optional extra and also subsequently as a VW part.

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



Fuel: The fuel gauge in the instrument panel only works when the ignition is switched on (see page 16). The tank holds about 42 liters (9.2 gallons). The tank contains an expansion chamber with a capacity of about 3 liters, which must not be filled with fuel. The tank is full when the fuel is up to the filler neck.

The tank filler neck is under a flap on the right above the front fender.

To release the flap, pull the loop on the right under the dashboard.

To close the fuel tank: Turn the cap in a clockwise direction until a click is heard.

The brakes should be applied once or twice just after moving off to see that they are working properly.

1 – Please remember that all brakes are subject to a certain amount of wear. It may be necessary to have the brake system checked in a VW workshop in between the normal maintenance services. This applies particularly to vehicles which are driven frequently in city traffic and for short distances only.

2 – If the pedal free travel suddenly increases, one of the two brake circuits may be defective. You can still drive to the nearest VW workshop but be prepared for longer braking distances on the way. This is also shown by the lighting up of the dual circuit warning lamp* when the brakes are applied.



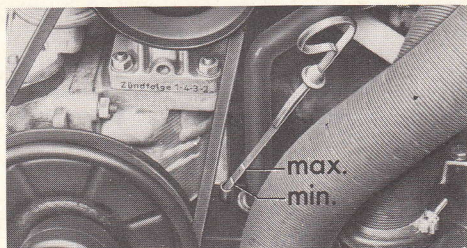
The dual circuit brake warning lamp* should be checked from time to time by switching on the ignition. If lamp does not light up, or does not go out when the engine is started, there is a defect in the electrical system. Take the vehicle to the nearest VW workshop.

The lights include headlamps, rear lights, license plate light, turn signals, back-up lights* and brake lights.

The headlamps, turn signals, brake lights and back-up lights must be checked with the ignition on. If a turn signal is defective, the warning lamp in the speedometer dial flashes much quicker than usual. The brake lights should work when the brake pedal is depressed and the back-up lights when reverse is engaged or the selector lever on the Automatic is at "R".

* Optional extra

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 vehicle. Wait at least 5 minutes to give the oil in the engine time to drain down into the bottom of the crankcase.

When topping up, always use a good brand of gasoline engine HD oil. Details of the various oil viscosity grades are given on page 60.

Correct tire pressures are essential in the interests of vehicle safety.

Pressures which are too low or too high will reduce the service life of the tires and have a detrimental effect on vehicle roadholding.

Even though the tubeless tires on your vehicle retain their inflation pressures for a long time the pressures should always be checked before starting a long trip and normally at least about once a week.

All the various pressures you will need are given in the list on pages 70 and 79 and on a small sticker fixed to the lid of the glove box.

Starting the engine

Before turning the ignition key, make sure that the gear shift lever is in neutral.

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

At temperatures below freezing point or when engine is cold, depress the accelerator pedal fully once and then release it slowly so that the automatic choke can work. Then switch ignition on and start immediately. Declutch so that the starter only has to turn 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 straight away.

Do not race the engine while it is still 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 because there is a non-repeat lock in the switch which prevents the starter from being operated when the engine is running and thus being damaged.

The warning lamps in the speedometer dial which come on when the ignition is switched on, go out when the engine starts.

If the red light for the generator comes on when driving, stop at once and check the belt which drives the generator (see page 79). When this belt breaks, the engine cooling ceases to work.

If the generator stops charging for any other reason, you can drive on but try to get the vehicle into a workshop as soon as possible because the battery will soon run down.

However, if the red warning light for the oil pressure flickers or comes on when driving, stop at once because the flow of lubricating oil in the engine may be restricted or interrupted. Check the oil level first. Should the cause of the trouble be elsewhere, you are advised to get expert assistance.

An occasional flickering of the warning light at idling speed after a spell of fast driving is quite harmless if the light goes out when accelerator is depressed.

**Be careful when running the engine in confined spaces.
Danger of poisoning!**

Driving hints

There are no running-in restrictions for the Volkswagen so you can drive at full speed from the first day.

Please note that new tires do not give maximum adhesion and should be run-in for a 100 km at medium speed. New brake linings should be run-in as well. Avoid emergency stops, as far as possible, during the first 200 km.

The permissible speed ranges for the various gears of the 4 speed manual transmission are:

		1.6 liter engine	1.3 liter engine
1st gear	kph	0-25	0-25
	mph	0-15	0-15
2nd gear	kph	20-55	20-50
	mph	12-34	12-31
3rd gear	kph	35-90	35-85
	mph	22-56	22-53
Top gear	kph	50-130	50-125
	mph	31-81	31-78

When a particular traffic situation makes it essential to move rapidly, you can accelerate up to 60 kph (37 mph) in 2nd gear and up to 100 kph (62 mph) in 3rd gear for brief periods only. Bear in mind, however, that full throttle acceleration puts fuel consumption up 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 not to mention increased tire and brake lining wear.

You can drive very economically between

20 and 45 kph in 2nd gear (12 and 28 mph),
35 and 70 kph in 3rd gear (22 and 43 mph),
50 and 100 kph in top gear (30 and 62 mph).

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 moving off and changing gear. He always depresses the clutch fully when changing gear, he changes down into the appropriate gear in queues and city traffic instead of slipping the clutch and never uses the clutch pedal as a "rest" for his left foot.

Similar instructions apply to the gear lever. Don't form a habit of resting your hand on the gear lever knob when driving, like some drivers do, particularly in town traffic. The pressure of your hand is transmitted to the forks in the gearbox and can cause premature wear on the flanks of the forks in time. After changing gear, hand off the gear lever!

Volkswagen automobiles have first class brakes which can stop the vehicles in the shortest possible distance. But do not forget that the braking distance increases very rapidly as the speed increases. At 100 kph for example it is four times longer than at 50 kph. Apply the brakes in good time whenever possible but do not use too much force as locked wheels increase the braking distance.

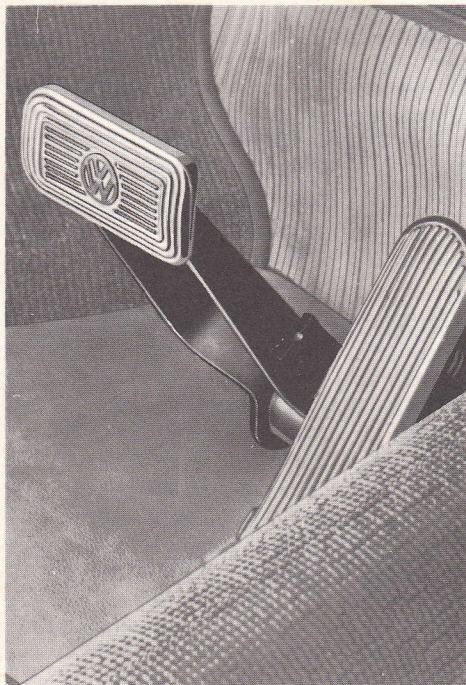
Water reduces the coefficient of friction of the brake linings. The brake discs particularly are liable to get wet when driving through water and when washing the vehicle. They dry quickly when the brakes are applied but this retards the full braking force slightly. In addition to this, the tire adhesion is reduced on wet roads. We cannot do anything about this either. You can, however, take care when driving, remain at a safe distance behind the preceding vehicle particularly when roads are wet and slippery. Safety first is the motto.

When going down steep hills, the engine is the best brake. Change down before starting to descend the hill and use the brakes as a reserve. Do not apply brakes continuously when used, depress the pedal hard at short intervals and then release it.

VW Automatic*

When driving the VW Automatic there are only a few points you should know about in order to enjoy all the benefits of the Selector Automatic.

First of all there are three basic rules to get used to:



1 – On the Volkswagen with the VW Automatic there is a torque converter between the engine and transmission and this also functions as a clutch for moving off.

Because of this you should apply the handbrake or footbrake on selecting a driving range when the vehicle is stationary. This is necessary because there is still some transmission of power even when the engine is just idling. In consequence the car tends to move slowly or to “creep”. The lower the driving speed selected or the higher the idling speed the more the car will creep.

2 – When selecting a driving range, the transfer of power from the engine to the transmission is interrupted by a shift clutch which automatically disengages the moment you move the selector lever towards one of the driving ranges. You should therefore touch the selector lever only to change the driving range. If you grip the lever while you are driving and accidentally move it you will disengage the clutch. This would take the load off the engine which would race suddenly and put a great strain on the shift clutch when it reengages as soon as you let go of the selector lever again.

3 – When changing to another driving range, remember not to “de clutch” from force of habit or you may accidentally apply the brakes. Remember, your VW Automatic has no clutch pedal. Instead the brake pedal is much broader than it used to be so that you can brake with your left foot if you want to do so, for example when you are parking in a confined space.

* Optional extra

The driving ranges

Your VW Automatic has three forward driving ranges and one reverse. They have been designed in such a way that you will very quickly know which driving range is the correct one to use to give the best advantages under the traffic conditions at the time.

Driving range L—load range is seldom needed. It is necessary for moving off on steep slopes with a full load or trailer. This range is also recommended for particularly slow driving over difficult ground. Speeds from 0 to 55 (50) kph (0–35/31 mph)* can be obtained.

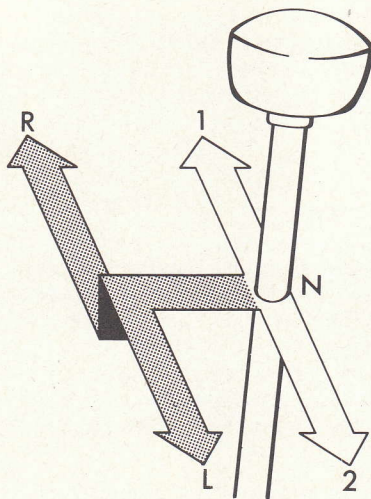
Driving range 1—moving off and acceleration range—covers 0 to about 90 (85) kph (0–55/53 mph)*. This range is also recommended for use in heavy city traffic, slow moving lines of vehicles and whenever maximum acceleration is required for overtaking.

Driving range 2 is the normal range which should always be used on the open road. Even in town traffic which is moving freely, although the speeds are relatively low, you can still drive in comfort in this range with your VW Automatic.

The reverse driving range should, as usual, only be engaged when the vehicle is stationary. The selector lever must be depressed to get past the stop to engage this range.

The neutral position of the selector lever lies between driving ranges 1 and 2 which are the ones you will use most. To select driving range L or R the selector lever has first to be pressed to the left.

Starting the engine is only possible when the selector lever is in neutral. Apart from this, starting up with the VW Automatic is as described on page 32 of this Instruction Manual.



Moving off

Before selecting a driving range depress the footbrake slightly or apply the handbrake. The reasons for this have already been explained. It is usual to move off in driving range 1 as follows:

Apply handbrake or depress footbrake slightly

Push selector lever forwards into position 1 and let go immediately

Release brakes and accelerate

If you like quiet, smooth driving—which saves fuel—we recommend that you select driving range 2 at about 30–40 kpm (18–25 mph) soon after moving off. This is quite simple:

Release accelerator

Put selector lever in position 2 and depress accelerator again

In this range you can drive at practically all speeds right down to a crawl. The torque converter in the transmission changes the power from the engine in an infinitely variable ratio according to conditions prevailing.

If you like sporty driving and want to take full advantage of the acceleration capacity of your vehicle you can stay in driving range 1 right up to 90/85 kph (55/53 mph)* and then select driving range 2. This mode of driving does, of course, use a little more fuel.

* The second figures are for the 1.3 liter engine

Stopping

Release accelerator and brake gently. Keep foot lightly on footbrake or apply the handbrake so that the car does not creep. To move off again it is only necessary to accelerate. If the car is not fully laden and is not on a slope you can start away again in driving range 2. There is, of course, more acceleration available in driving range 1.

Driving downhill

If you want to make full use of the braking power of the engine, just as with a conventional transmission, you should select a lower driving range.

Parking

Please note that the vehicle is not prevented from rolling by engaging a driving range. Always use the handbrake when parking.

Maneuvering

When maneuvering in confined spaces it is advisable to use the driving ranges Reverse and L. Remember that you may select reverse only when the vehicle is stationary and the engine is idling.

Warning lamp in the speedometer

If, on some occasion, you have to drive for a prolonged period under heavy load conditions, such as when pulling a trailer in a long string of traffic on a hill, the red warning lamp

in the speedometer may light up (see page 16). This means that the temperature of the fluid in the converter has risen considerably. To speed up the cooling rate you must select the next lower driving range. The lamp will then soon go out. However, if the lamp does not go out in driving range L, stop at the next opportunity as otherwise the torque converter may be damaged by overheating. The temperature of the fluid in the converter will soon drop if the engine is allowed to continue running at an increased idling speed.

Trailer towing

is possible without restriction with the VW Automatic. However, it is better to use driving range L for moving off with this extra load and to select a lower range in ample time on gradients.

Tow starting

If, contrary to expectations, the engine of your VW Automatic does not start up on some occasion, the car can be towed at a speed of about 25 kph (15 mph). Select driving range L for this.

Push starting is not possible because the transmission of power through the torque converter is not sufficient at a walking speed.

An 8 ampere fuse for the control valve of the Automatic is located in the engine compartment. When this fuse blows, the driving ranges can no longer be selected.



**So that you know where to take
your car for servicing:
Every VW workshop displays
the VW sign.**

Many other workshops would like to have you as a customer but they are not good enough for your VW.

Workshops not authorized by VW cannot offer you the sort of service which you get at a VW shop.

The Volkswagen Diagnosis and Maintenance system, for example.

Trained mechanics with special tools. Rationalized procedures developed by the VW factory. In short – the economic way of keeping your VW in tiptop, roadworthy condition. Year after year.

Winter operation

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

Tires with badly worn treads are very dangerous particularly in the winter so ensure that they are replaced in good time. Winter tires are no longer fully effective when the tread has worn down to a depth of 4 mm.

M + S tires with special heavy treads give good roadholding in snow and slush. Better still are M + S tires with studs which increase the safety margin even on hard snow and ice. Winter tires should always be fitted on all four wheels.

Even when fitting winter tires, the specified carcass strength must be adhered to. Always note the PR details on the tire walls when buying winter tires.

The specific characteristics of winter tires can be improved by raising the tire pressures to 0.2 kg/cm² (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. M + S tires with studs should be run at moderate speeds when new in order to give the studs time to settle.

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

Radial ply tires are also good in winter conditions. If conditions are not too severe these tires can be fitted instead of M + S tires. M + S and M + S studded tires of the radial ply type have the very best characteristics for winter use. The pressure increase of 0.2 kg/cm² (3 psi) recommended for normal winter tires is also applicable to radial ply winter tires.

Snow chains: Only thin chains which do not stand clear of the tire tread and inner side wall more than 15 mm including tensioner, are suitable.

The chains offered as VW accessories are of this type. Contrary to winter tires, snow chains are usually only fitted on the driving wheels. If, in exceptional cases, it is necessary to fit chains on the front wheels as well, the steering

should not be locked hard over as otherwise the chains may rub on the stabilizer. This applies particularly when chains are fitted on winter tires. When driving over long stretches of road which are free of snow, the chains should be removed. They serve no useful purpose here but merely damage the tires and wear out quickly.

Engine oil of SAE 30 grade will tend to thicken at temperatures around freezing point and may cause difficult starting. As soon as winter temperatures are expected, change over in good time to a thinner grade of engine oil. Details of the various oils to be used are given on page 60.

If you only drive mainly short distances and in city traffic in the winter we recommend that you have the engine oil changed at 2500 km (1500 miles) intervals. Should you only drive a few hundred miles a month under these conditions, it is advisable to have the oil changed every 6 to 8 weeks. At other times these additional changes are unnecessary and uneconomical.

In areas with arctic climates and temperatures below about -25° C (-13° F) the engine oil should be changed every 1250 km (750 miles).

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

In areas with arctic temperatures (below -25° C/-13° F) ATF (Automatic transmission fluid) can be used in the transmission. When the temperature rises, the ATF **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 the cold weather. Quite apart from the higher current consumption when starting and using the lights more often, there are numerous other electrical items used mainly in the winter, such as heated rear windows and heater boosters. A really cold battery which may in any case not be fully charged has only a fraction of the capacity that a battery at normal temperature has and this is fatal when trying to start a cold engine. Particularly if the car is only driven short distances and in city traffic, the battery should be charged from an external source from time to time. Before quick charging the battery in the vehicle, disconnect both terminals to avoid damage to the electronic components in the electrical system. Further details are given on page 55.

The spark plugs should not have excessively large gaps especially in the winter. The gap is normally 0.7 mm (.028 in.).

The chassis is exposed to very arduous conditions particularly in the winter. The steadily increasing use of chemicals to de-ice the roads produces solutions which attack even the most durable paintwork after a time. The underside of the Volkswagen is sprayed with a waxbased compound to protect it from these influences. It is advisable to examine the protective film at the beginning of the winter and have it repaired by respraying so that the full protective effect is retained. Do not apply oily anti-corrosion compounds to the wax-coated surface.

Door locks can freeze up in winter if water gets into the lock when washing the vehicle, so do not aim the water jet directly at the locks. It is a good idea to cover the keyholes up beforehand.

A frozen door lock can be thawed out easily by using a lock de-freezing agent such as offered in the VW car care materials. This solution has a preservative effect so that the lock cylinder is not damaged even if the solution is used often. It does not damage paintwork either.

Door lock de-freezer, 000 096 106
plastic bottle (100 cc)

Door lock de-freezer spray, 000 096 107
(16 cc – pocket size)

Refill for 000 096 107 000 096 108
(300 cc)

Frozen windows can be sprayed with defroster spray. After the spray has worked for a short period, the ice can be wiped off.

Defroster spray (300 cc) 000 096 109

Icing on the inside of the windows can be prevented with a defroster cloth:

Rub windows when there is a danger of frost.

Defroster cloth 000 096 110

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.

Trailer towing

Towing a trailer places a considerable strain on the body, transmission, clutch and brakes of the towing vehicle.

In order to avoid damage to your Volkswagen, please note the following instructions and driving rules which are also written with road safety in mind:

- Do not exceed the maximum trailer weight specified for the vehicle.
- The towing bar must be fitted in accordance with the instructions from the Volkswagen factory.

Towing bars which are installed in the factory as optional extras or service installed as VW accessories in a VW workshop, fulfil these conditions. Other towing bars should be installed exactly as described in the instructions supplied with them.

Check whether local regulations require the fitting of a towing bar to be recorded in the vehicle documents.

The operation of the trailer turn signals must be shown on the instrument panel with a special warning lamp. When the VW trailer turn signal/emergency light relay is used, the warning light only works when the trailer is equipped with 21 watt bulbs. One pin in the 7 pin trailer socket (terminal 54 g) is left free for additional current supply (lights for trailer). Please remember the battery capacity when using the lights.

- The pressure of the trailer draw bar on the ball of the towing bar must be 25–40 kg (55–88 lbs.) and the permissible rear axle load must not be exceeded.

- A second outside driving mirror is essential in most cases. If the trailer is wider than the vehicle, both outside mirrors should be on extending telescopic arms so that a good view to the rear is always obtained.

- Always drive at a moderate speed. In many countries there are speed restrictions for vehicles towing trailers.

- Ensure that the tires have good treads and that the inflation pressures are correct. Keep tires inflated to the pressures for maximum load. If the vehicle is fitted with studded tires in the winter, trailers with brakes should also be equipped with studded tires.

- Use the clutch carefully when towing. Do not accelerate more than necessary when moving off and never slip the clutch longer than necessary.

- Use brakes in good time and as gently as possible. Practise braking properly with a trailer with over-run brakes: Apply brakes gently at first then brake rapidly. In this way you can avoid the jerking which is caused by locked trailer wheels.

- Change down in good time when going uphill and downhill.

- Trailer towing always puts the fuel consumption up. This is due to the extra weight and the higher rolling and air resistance.

- If driven properly your VW will climb any normal road gradient when towing a trailer. But do not demand the impossible. The hill climbing figures given are for the vehicle with two occupants – but without trailer and it is obvious that these figures must be reduced considerably according to trailer weight.

- Furthermore, the engine output decreases as the height increases due to the drop in atmospheric pressure. When high mountain passes have to be climbed do not tow a trailer of the maximum permissible weight.

Trailer towing with the VW Automatic

For trailer towing the VW Automatic has certain advantages which become apparent when moving off, when climbing hills and when driving in long columns of vehicles.

If the vehicle is driven properly, the torque converter completely eliminates jerking when moving off. There is also no jerking when driving and when changing the drive range and this is beneficial to the engine, the transmission and the tires on the driving wheels. In the section about "Driving the VW Automatic" on page 36 there are some more instructions on trailer towing which you should also read.

We should like to give you a few more tips on trailer towing on gradients which will help to increase road safety and avoid damage to the transmission:

The fluid in the torque converter can get too hot if a driving range which causes too much slip is selected when moving off and driving.

Overheating will not occur, however, if you

- always move off in the "L" drive range and accelerate to at least 20 mph before selecting the next drive range (1).
- Select the next lower drive range immediately if the warning lamp in the speedometer dial lights up while vehicle is in motion.

- **It is correct** to select drive range L on long downhill stretches in order to make full use of the engine braking force and thus relieve the brakes.
- **It is wrong** to hold the vehicle and trailer on a slope a long time by accelerating the engine with a drive range selected instead of applying the hand or foot brakes. Prolonged slipping of this nature will cause the fluid in the torque converter to heat up excessively and this can damage the seals in the transmission.

Care of car

Even the finest paint requires regular and proper care if it is to retain its gloss over the years. This is easy to understand if you stop to think that the paint is continuously exposed to the influence of sunlight, rain, industrial fumes, soot, dust and dirt.

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

Every VW Dealership has stocks of car cleaning materials for the Volkswagen. These materials have been tested by us and found to give the best results. The order numbers of these materials are given here.

Washing

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

Rinse sponge often to avoid scratching the paintwork.

If water alone is not adequate, add a shampoo to the water and apply with a sponge or soft brush.

Then rinse vehicle well and dry with a leather.

Tin of shampoo 000096112
(300 cc)

Sponge 000096151

Leather 000096155

Auto-cloth 000096150

Brush 000096157

Washing gloves 000096153

Nylon washing gloves 000096160

Waxing

Wax as often as possible. This will prevent dirt from sticking to the paint and industrial grime from penetrating into the paint.

Wax paint after washing and rub until paint shines again or just put wash/wax solution in second lot of water regularly. Wash with this solution and dry with leather.

Tin of wax 000096011
(250 cc)

Tin of wax 000096012
(1000 cc)

Tin of wash/wax solution 000096121
(150 cc)

Tin of wash/wax solution 000096122
(250 cc)

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.

If paint is cleaned with polishing wax it need not be waxed afterwards.

Tin of paint polish 000096001
(250 cc)

Tin of paint polish 000096002
(1000 cc)

Tube of polishing wax 000096021
(210 grams)

Bag of polishing cotton 000096161
(200 grams)

Bag of polishing cotton 000096162
(500 grams)

Patching up paint damage

Small marks in the paint such as scratches or stone damage can be repaired with genuine VW touch-up brushers or spray cans before the marks rust. A sticker in the luggage compartment gives the color designation and number of the original finish.

Removing industrial grime

Treat paint surfaces with industrial grime remover as soon as possible.

The solution must be rinsed off very thoroughly. Pay particular attention to seams and joints.

Bottle of industrial grime remover.

(500 cc) 000 096 091

Removing tar spots

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

Tin of tar remover 000 096 051
(150 cc)

Tin of tar remover 000 096 052
(250 cc)

Removing insects

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

Wash surfaces afterwards.

Clean dirty windshields with insect sponge.

Tube of insect remover 000 096 081
(80 grams)

Insect sponge 000 096 083

Parking under trees

Vehicles which have been parked under certain trees in the summer are often found to

be covered with small sticky spots. These spots can be removed fairly easily with a shampoo solution if not left on too long. It is advisable to wax the paint again afterwards.

Care of chromed parts

Before applying chrome cleaner, the parts must be washed and dried thoroughly.

Then clean with chrome polish from tube.

The chrome paste contains a preservative so that it cleans and protects the chromed parts.

Liquid chrome protector should be used to prevent corrosion of parts for a long period. Apply with spray gun where possible. Protective film remover is used to remove the film.

Tube of chrome polish 000 096 061
(80 grams)

Tube of chrome paste 000 096 067
(80 grams)

Tin of chrome protective film . . . 000 096 063
(500 cc)

Tin of chrome protective film
remover 000 096 167
(500 cc)

It is advisable to use spray gun 000 096 064 to apply chrome protective film and remover.

Cleaning leatherette

If not very dirty, clean with soft cloth or brush. If very dirty, clean air-permeable leatherette with liquid plastic cleaner. Apply with absorbent plain cloth. After cleaning, rub area dry with a soft cloth.

Non-permeable plastic material can be cleaned with plastic cleaning paste.

Plastic cleaning paste 000 096 071
(200 grams)

Liquid plastic cleaner 000 096 073
(500 cc)

Cleaning cloth upholstery

Clean with vacuum cleaner or a medium hard brush.

Spots or marks can be removed with liquid plastic and cloth cleaner: apply by moistening a clean, plain cloth with cleaner and rubbing spot with a circular movement and working inwards.

Plastic and cloth liquid cleaner . 000 096 072
(500 cc)

The convertible top does not require any special care. It is important however, to clean the plastic material regularly. Spots and marks can be removed best with our plastic cleaner.

Paint thinner, chlorine based spot removers or similar solutions are unsuitable for this purpose as they damage the plastic material.

The hinges of the top linkage should be cleaned occasionally and a few drops of oil applied. Afterwards it is advisable to wipe the joints dry so that oil does not drip on to the top material.

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

Cleaning windows

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

Insects can be removed with the insect sponge and other dirt, oil deposits etc. with window cleaner.

Remove silicon and grease with "A'silic" powder:

Sprinkle powder on glass and rub it off.

Silicon remover in the washer water also helps to keep the windshield clean.

Bottle of window cleaner 000096105
(200 cc)

Sachet of window cleaner 000096101
(35 cc)

Insect sponge 000096083

Anti-mist cloth 000096165

Glass cleaner 000096152

"A'silic" powder 000096075
(125 cc)

Silicon remover 000096093
(120 cc bottle)

Windshield wiper blades

Blades which are clogged with oil and insects should be removed and cleaned with a hard brush and a detergent solution. The blades should be replaced once or twice a year according to condition.

Door and window weatherstrips

To keep weatherstrips flexible and intact, rub them occasionally with talcum powder or glycerine.

The front seats

If the front seats become hard to slide, the runners must be greased lightly at top and bottom after being cleaned with a cloth. To do this the seats can be removed. (See page 48 "Removing and installing seats").

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.

**In a VW concern you get
Genuine Volkswagen
Spare Parts,
Genuine Volkswagen
Exchange Parts,
Genuine Volkswagen
Accessories.
All with a guarantee.**

Genuine Volkswagen spare parts are the proper parts for your VW.

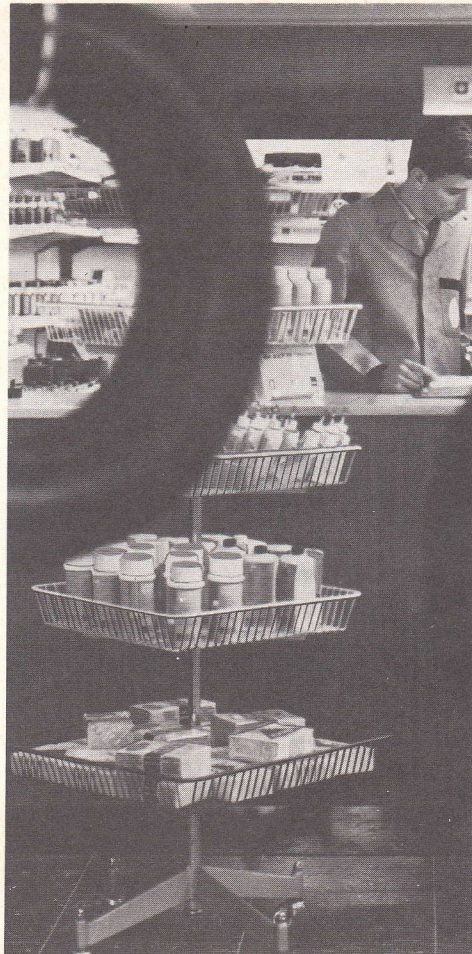
Genuine Volkswagen exchange parts too.

What is the difference? The price. Genuine Volkswagen exchange parts are cheaper. Often 50% or more. Because we take the old parts in part payment and recondition them.

Genuine Volkswagen accessories too have been examined and tested by VW.

You will get the same guarantee on all these as on every part of a new VW: up to 10000 km or 6 months.

VW values quality. You too?



The tires

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

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

Tires should be replaced when the tread depth is only 1 mm all round and on full tread width because this is the absolute limit for safe usage. The original tires on your Volkswagen are provided with built-in tread wear indicators.

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 has worn down to 1.6 mm.

There are from 4 to 6 of these bars according to make of tire. When the indicators appear in two or more adjacent grooves, this is a clear sign that the tire is worn almost down to the permissible limit. A tire which is worn to this extent should be replaced as soon as possible.

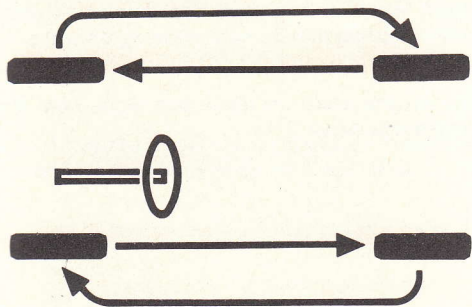


We advise you however not to let the tires wear down to this extent as tires with treads in this condition cannot grip the road surface properly when driving at high speeds on wet roads. It is advisable for safety reasons, whenever possible, to renew all four tires at

the same time, or at least to fit pairs on the axles. For the same reason, use only tires of the same make and tread. New tires should be run-in at a reasonable speed for about 100 km because when first fitted they do not give maximum adhesion. If you notice that the tires are wearing unevenly, get advice from your VW workshop.

Uneven tire wear is not always caused by incorrect wheel alignment or some vehicle condition. It is often due to a particular style of driving such as rapid cornering. Incorrectly inflated tires also wear unevenly in time.

In order to avoid having to replace the tires sooner than necessary in such cases, we recommend that the wheels are changed round as shown here – without altering the direction of rotation. The pressures must then be corrected and the bolts tightened diagonally to 15 mkg (108 ft. lb.).



For smooth running at high speeds and long tire life it is essential that the wheels are balanced statically and dynamically. As the wheels can get out of balance after being in use for some time due to natural tire wear, the wheels should be balanced again every 10000 km (6000 miles). Furthermore, a wheel should always be balanced again when a tire has been repaired. This also applies to balanced wheels when a tire has lost pressure due to a faulty valve.

Many vehicle owners prefer to use radial ply tires because they appreciate the positive characteristics of these tires such as longer service life, increased skid resistance, better cornering properties, short braking distances and lower roll resistance. These owners are prepared to accept the fact that these tires tend to roll somewhat harder due to their construction and this in turn causes a certain amount of drumming inside the body.

Tubeless radial ply tires may only be used on the Volkswagen together with the standard safety type wheel rims (hump type). This must be noted when changing wheels. If in doubt, consult your VW dealer.

In the interests of vehicle safety it is essential to ensure that the tire pressures are correct and uniform on each axle when radial ply tires are fitted. Note the pressures recommended for radial ply tires in the list on page 70 of this manual and have the pressures checked regularly. All our other instructions on looking after tires also apply, without exception, to radial ply tires.

Do-it-yourself tips

Just in case you have to deal with a small defect or a breakdown yourself one of these days we have included some information on the next few pages which should help you.

All other repairs should always be carried out by one of our service stations. 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

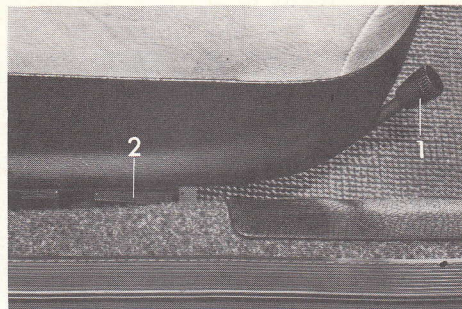
Taking front seats out

Lift lever (1) and push seat forward until frame contacts stop spring (2).

Press spring (2) down with screwdriver, keep lever (1) lifted and push seat forward about one inch over the spring.

Unhook return spring (3).

Push seat forward out of runners.



Hold lever up and push seat back until the return spring can be hooked in again without tension.

Sit on the seat, lift lever and move seat to correct position.

Putting front seats back

Place seat in front of runners (on a piece of paper to stop grease from seat guides getting on the carpet).

Lift seat slightly and install seat guide in runner on tunnel side first.

Pull seat towards door side and install second guide on outer runner.



Removing and installing rear seat cushion

Lift cushion and pull it forward slightly. Then lift cushion on one side and take it out at an angle.

Place cushion in vehicle at an angle, push it behind the seat support at the front first and then press it down past the backrest at the rear.

The cushion need not be taken out to get at the jack or battery just lift it up at the front

Wheel changing

Apply the hand brake firmly.

Take jack out from underneath rear seat. (see page 48 "Rear seat")

Take spare wheel and tools out of front luggage compartment:

Before spare wheel can be lifted out, the windshield washer hose must be unscrewed.

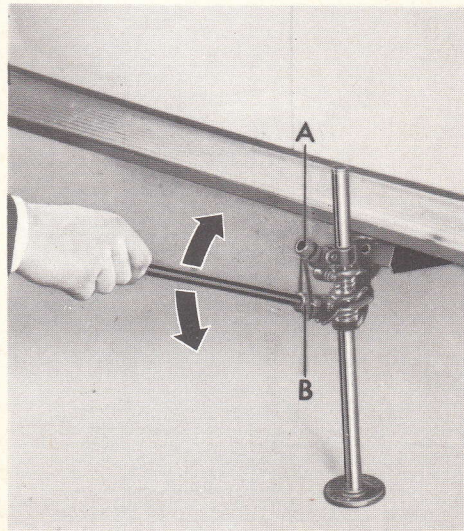
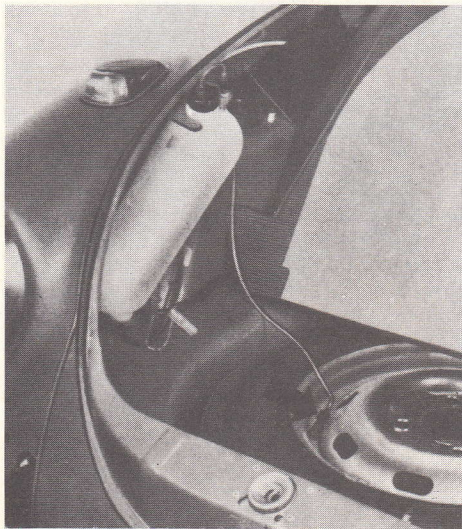
Remove wheel cap with remover and jack bar by hooking the remover into the holes in the edge of the cap and levering against the wheel rim with the jack bar.

If your vehicle tool kit contains a bar with a flat end, the wheel cap is removed with this bar.

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

Insert jack into square hole under sill panel:

A – Place lever in upper joint and lift vehicle.
B – Place lever in lower joint and lower vehicle.



The screw-type jack is operated by turning the crank:

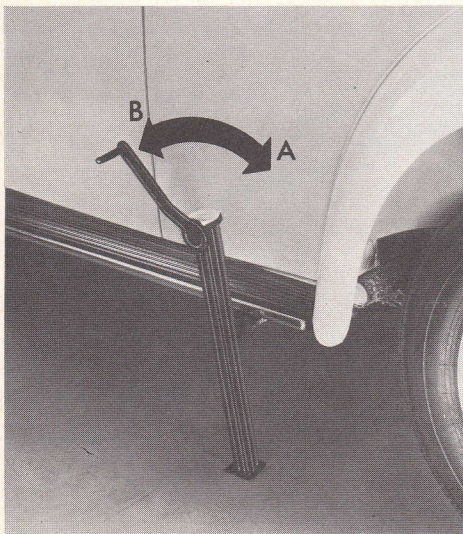
A – turn to right to lift vehicle.

B – turn to left to lower vehicle.

Unscrew wheel bolts and take wheel off.

Place spare wheel in position and raise or lower vehicle as necessary until a hole in the wheel is roughly in line with one of the threaded holes.

Insert one bolt and tighten it until the wheel can be moved round this point.



Raise vehicle again slightly and move wheel until the other bolts can be inserted. Tighten bolts first using wrench without bar and while tightening move wheel to and fro so that it is centered on the hub or brake drum by the rounded shape of the bolt heads.

Insert bar into wrench to obtain maximum leverage as shown below and tighten bolts evenly and diagonally.

Install wheel cap by giving it a smart blow with the hand.



Have the torque of the wheel bolts checked with a torque wrench as soon as possible after changing a wheel. The correct torque is 108 lb. ft. (15 mkg).

Do not forget to correct the air pressure in the wheel which has been fitted. The pressures are given on page 70. Have the damaged tire repaired as soon as you can.



Aiming the headlights

If a headlight aiming device is not available, proceed as follows:

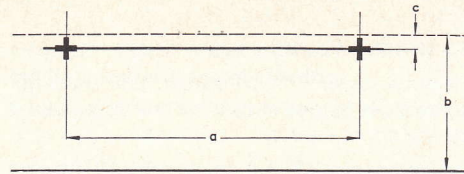
1 – Headlight bulb

Position the vehicle on a level surface 5 m (16 ft. 5 in.) away from a vertical wall.

The center of the rear seat must be loaded with one person or a weight of 70 kg (154 lbs.).

The tire pressures must be correct.

Draw two crosses with setting lines on the wall to the measurements in sketch 1. The longitudinal center line of the vehicle must be aligned exactly with the center between the two crosses and at right angles to the wall.



Sketch 1

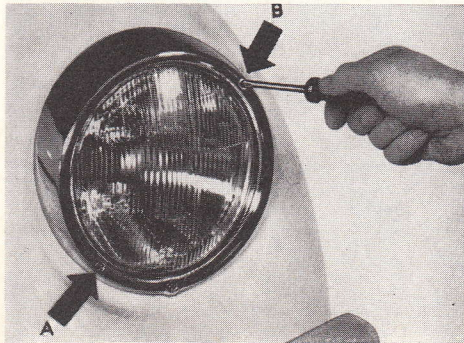
a = 1150 mm (45.3 in.)
b = Height of headlight center from ground.
c = 50 mm (2 in.) at a distance of 5 m (16 ft. 5 in.) from screen.

Aim the headlights individually by turning the screws—A—and—B—in the headlight rim with low beam switched on. Cover up the second headlight.

The headlights are correctly aimed when the light-dark border line is horizontal on the adjusting line to the left of the cross and the angle in the light-dark border line is exactly on the cross.

A – Lateral aim

B – Vertical aim



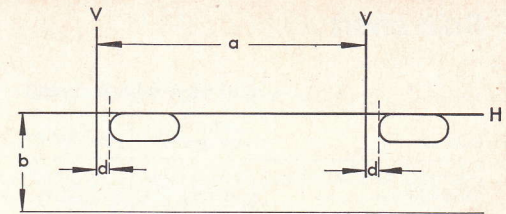
2 – Sealed Beam unit

On Volkswagen with Sealed Beam headlights use sketch 2 and aim beams as follows:

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

Draw three setting lines on the wall to the measurement in sketch 2. The longitudinal center line of the vehicle must be aligned with the center between the two vertical lines and at right angles to the wall.

Loosen the screw in the center at the bottom of the trim ring and take the ring off.



Sketch 2

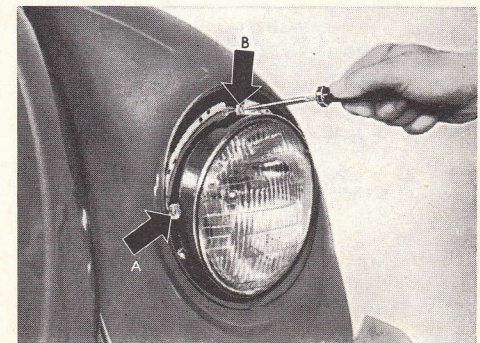
a = Distance between headlights = 45.3 in.
b = Height of headlights centers from ground at a distance of 25 ft. from screen.
d = 50 mm (2 in.)

Aim the headlights individually by turning the two aiming screws—A—and—B—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.

A – Lateral aim

B – Vertical aim



Bulb chart

V = volts, W = watts

Bulb for	German designation	Part No.
Headlight	A 12 V 45/40 W	N 17 7053
Parking light	HL 12 V 4 W	N 17 7172
Brake/tail light	SL 12 V 21/5 W	N 17 7382
Back-up light*	RL 12 V 21 W	N 17 7322
Licence plate light	G 12 V 10 W	N 17 7192
Speedo, warning lamps	J 12 V 2 W	N 17 7222
other warning lamps	W 12 V 1.2 W	N 17 7512
Interior light	K 12 V 10 W	N 17 7232
Turn signal, front and rear	RL 12 V 21 W	N 17 7322

If your car is equipped with Sealed Beam headlights, the deviations from the above chart are as follows:

Sealed Beam unit	6012 (US)	111941261 A
Front turn signal/ parking light	SL 12 V 21/5 W	N 17 7382

We advise you to always carry a set of spare bulbs on the vehicle. These sets can be obtained from every VW workshop.

* Optional extra

Replacing bulbs

1 – Headlight bulb

Remove lower Phillips screw. Lift headlight away from fender at bottom first then take it off the lug at the top.

Pull connector off, but do not take off the side light and ground cables.

Press ring against reflector, turn it to left and take off.

Fit new bulb.

Do not touch glass part of new bulb with bare fingers – use a piece of clean paper or cloth. The lugs on the bulb holder must engage in the cut-out in the reflector.

Install ring so that the contact strip is on the base of the side light bulb.

Install connector. Install headlight. When installing, insert the screw first then press the headlight over the top lug and tighten the screw.

Check headlight setting.

2 – Sealed Beam

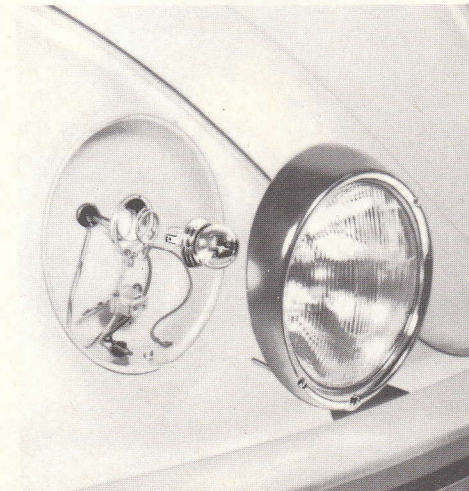
A double filament, type 2, seven inch sealed beam unit is used. Should it become necessary to replace the unit, loosen screw in the center below the headlight and take the trim ring off.

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

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

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

Check headlight settings.



Front turn signal bulb

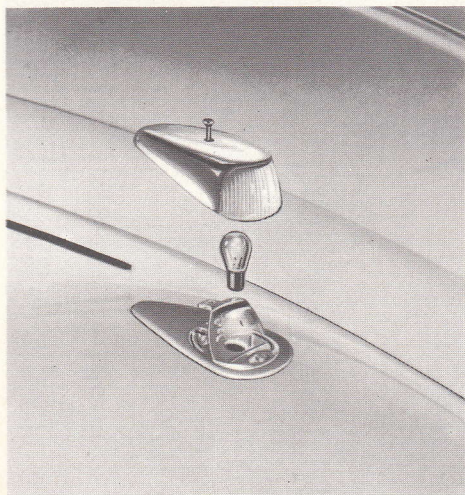
(with Sealed Beam equipment: front turn signal/parking light bulb)

Remove Phillips screw.

Take housing and lens off.

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

When fitting housing, ensure that gasket is located properly.



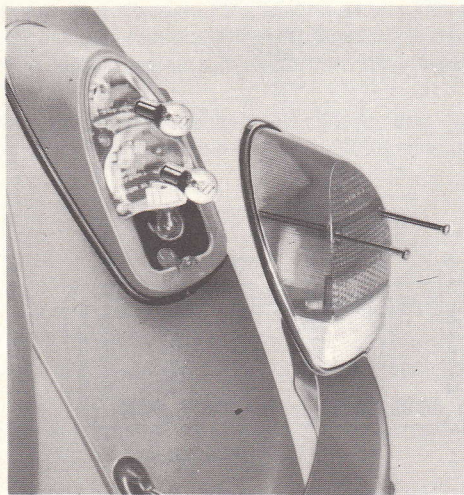
Rear turn signal, brake and tail light or back-up light* bulbs

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

Press bulb lightly into holder, turn and take out.

Top – turn signal
Center – brake and tail
Bottom – back-up light

When inserting the brake and tail light bulb, the retaining pin nearest to the bulb glass must be downwards. Tighten lens securing screws evenly but do not overtighten.



Licence plate light bulb

Open rear hood.

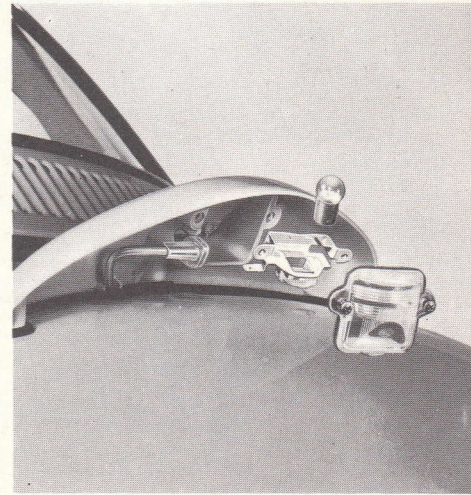
Remove screws on each side of lens and take off lens with bulb holder.

Pull bulb holder out of lens.

Press bulb lightly into holder, turn and take out.

Install new bulb.

When installing, ensure that the cable grommet fits properly



* Optional extra

Replacing fuses

The fuse box which has a transparent cover is located under the instrument panel near the steering column.

There are two more fuse holders in the engine compartment for

back-up lamps* and the control valve of the VW Automatic* (when this fuse blows the driving ranges cannot be selected).

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 system.

It is advisable to always carry a few spare 8 and 16 ampere fuses on the vehicle.

** There is an 8 ampere fuse under the rear seat the heated rear window main current.

1 Tail light, right
Parking light, right
Parking light, left
Licence plate light

2 Tail light, left

3 Low beam, right

4 Low beam, left

5 High beam, right

6 High beam, left
High beam warning light

7 Free

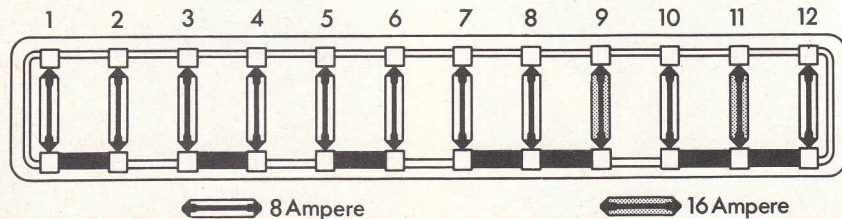
8 Emergency light system

9 Headlamp flasher
Interior lamp

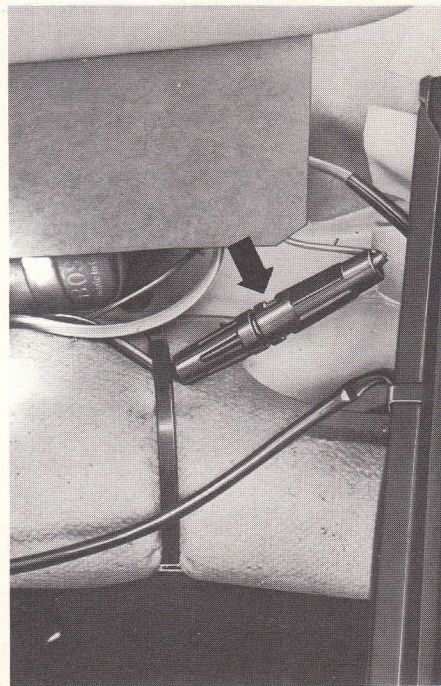
10 Windshield wiper motor
VW Automatic*
Heated rear window*
(switch current)
Fan*

11 Horn
Brake light

12 Turn signals
Fuel gauge
Warning light for dual circuit
brakes*



* Optional extra



Care of battery

The battery should be checked regularly because the ability of the engine to start readily depends to a large extent on the condition of the battery. To get at the battery, just lift the rear seat (see page 48).

To check the acid level, remove the plugs. The acid should be kept exactly on the mark. When the level is below the mark top up with **distilled** water. The acid level drops mainly when the vehicle is driven frequently without lights, due to the dissociation of the water used to dilute the acid, and to a lesser extent, to evaporation. In the summer the acid level should be checked about every 8 days. In the winter it need not be checked so often. The terminals and connections must be kept clean and greased with terminal grease. Ensure that the ground connection makes metal to metal contact with the body.

If you lay the vehicle up for a prolonged period have the battery checked and charged in a VW workshop every four weeks as otherwise it will discharge itself in time and this will damage it.

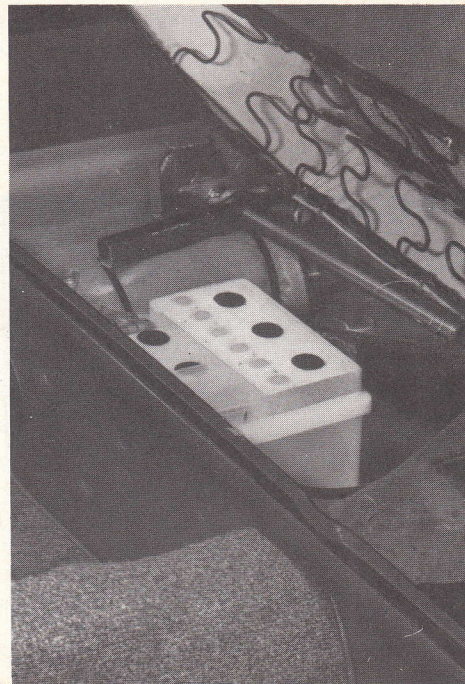
Removing battery

The nut securing the battery can be loosened with the wheel bolt wrench and the jack bar. A 13 mm open-end wrench is required for the battery terminals.

Caution: To prevent short circuits always detach the ground strap (-) first but connect the positive cable (+) first.

A short circuit can cause the battery to heat up very quickly and it may burst. Furthermore, the sparks can ignite the gas generated during the charging process.

To avoid damage to the electrical system never drive the vehicle with the battery disconnected. On the other hand, both terminals must be disconnected before quick-charging the battery.



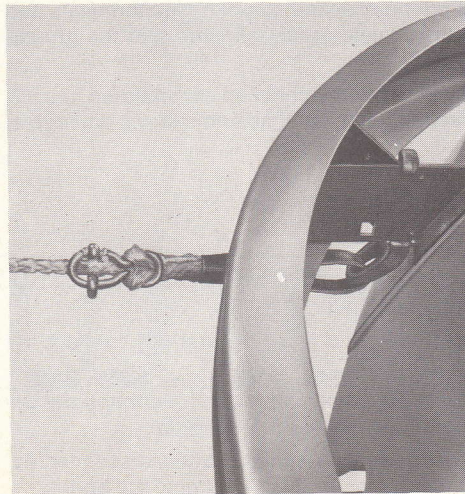
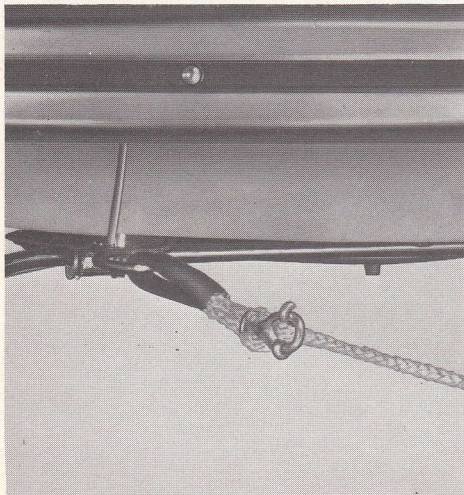
Towing

A towrope can be attached to a towing eye on the frame head at the front and a towing eye on the left bumper bracket at the rear. Ensure that the towing effort is not excessive and that towing is done without jerking. When towing a vehicle on anything except hard roads there is always a risk of the securing parts on the vehicle being overloaded and damaged.

The driver of the towing vehicle must use his clutch very carefully when moving off and changing gear. In this instance it is easier for the driver of a vehicle with automatic transmission because the torque converter between engine and transmission ensures automatically that moving off and gear changing takes place smoothly*. The driver of the vehicle being towed must keep the towrope taut.

The towrope should be slightly elastic in order to reduce the snatching between towing and towed vehicle. Plastic towropes are good in this respect.

* Further instructions for the VW Automatic on towing and being towed are given on page



Starting trouble

Volkswagens are reliable. You can keep your car reliable if you have it checked and maintained with the Volkswagen Diagnosis and Maintenance System.

Apart from this, many VW drivers will be pleased to see that this instruction manual contains a trouble diagnosis chart so that if the engine does stop or fails to start some day, it can be checked and often got running again.

The operations are described as done by a skilled mechanic. The source of trouble is located by checking systematically: There should be fuel in the carburetor, there should be a spark at the plugs – the trouble is soon found. It is really quite easy once you know it is done.

Condition	Possible cause	What to do
A – Starter will not turn engine or turns it too slowly.	1 – Battery run down.	1 – Have battery charged or replaced. Try to start by pushing vehicle (ignition on, clutch out, 2nd gear engaged. When vehicle is rolling, let clutch in quickly). VW Automatic: see next point.
	2 – Battery flat, battery cable oxidized or loose.	2 – Have battery charged or replaced. Try to start by towing vehicle (ignition on, clutch out, 2nd gear engaged. Let clutch in slowly at about 20 mph. VW Automatic: Switch ignition on, engage L range and tow at about 20 mph. Clean battery terminals or tighten them. Important To avoid short circuits, take ground cable (–) off first and connect positive cable (+) first.
	3 – Starter switch, cables or starter defective.	3 – Push vehicle (see point 1) to start engine and see VW Dealer.

condition	Possible cause	What to do
<p>B – Engine will not start even through starter is turning it over quickly.</p> <p>Read instructions in section on "Starting engine" to ensure that correct procedure is being used. Check that there is fuel in the tank. Do not operate starter longer than 5 seconds at a time. Then switch ignition off and wait about 10 seconds before trying again. If engine does not start after 4 or 5 attempts, locate trouble with aid of table.</p>	<p>1 – Defect in ignition system</p> <p>1a – Plugs wet or dirty</p> <p>1b – No current at coil</p> <p>1c – Coil defective, breaker contacts in distributor faulty</p>	<p>1 – Check ignition. Wipe wet cables dry. Pull connector off a plug, and screw connector off cable. Grip cable with piece of dry cloth and hold end about 8 mm from a metal part. Have someone turn engine over (gearshift lever in neutral). A strong spark should jump from end of cable to metal part.</p> <p>1a – If a spark appears, take plugs out. Dry plugs out, clean electrodes with a chip of wood and check gaps. Install new plugs if necessary. If engine still does not start, look for defect in fuel system.</p> <p>1b – If there is no spark when checking as at point 1, pull the thin black cable (terminal 15) off the tab on the coil, switch ignition on and touch cable end briefly to a bare metal part. There should be a spark. If there is no spark, there is a break in the circuit. See VW Dealer.</p> <p>1c – If there is a spark, switch ignition off. Take off distributor cap and rotor. Turn engine by fan belt until points are fully open. The breaker gap should be 0.4 mm (.016 in). Turn engine on until points are closed and push a piece of thick paper to and fro between the points. Switch ignition on again and open and close points several times with a nonmetallic object. A strong spark should appear between the points. If there is no spark, see your VW Dealer.</p>

Condition	Possible cause	What to do
	1d – Distributor cap and rotor damp or damaged	1d – If engine does not start even though there is a spark at the breaker points, wipe cap and rotor with a clean cloth and check for damage, cracks and burning. The carbon brush in the cap must spring up again when pressed in and must not be broken.
	2 – Defect in fuel system	2 – Check fuel system. Screw out the plug on the left of the carburetor float chamber carefully. The fuel must flow freely. Screw plug in again quickly so that the float chamber does not drain dry.
		Caution Catch the fuel which runs out in a cloth. Fire Danger.
	2a – Filter in fuel pump blocked	2a – If fuel does not flow freely, the filter in the fuel pump may be blocked. Take filter out and clean it.
	2b – Fuel pump damaged, float needle valve sticking	2b – If engine does not start when the filter has been cleaned and installed, see VW Dealer.
	2c – Automatic choke not working	2c – If engine does not start, even though there is fuel in carburetor, the automatic choke may not be working. To check choke, take air cleaner off and see if choke valve is closed when engine is cold and open when warm.
		Emergency solution: Start engine from cold with choke open by pumping with accelerator pedal. When engine is warm hold choke valve open with a piece of wire.
	2d – Engine flooded due to pumping accelerator pedal when starting	2d – Try starting with accelerator pedal fully depressed. If necessary, remove spark plugs and dry them out. Turn engine over for about 30 seconds with plugs out then install plugs again.

Fuel and lubricants

Fuel

The Volkswagen will run satisfactorily on all normal commercial fuels which fulfil the octane requirement of the engine which is 91 O.N. If regular fuels with adequate anti-knock qualities are not available, premium fuels should be used or mixed with the regular fuel.

Engine oil

Use only good brands of gasoline engine HD oil for the engine of your Volkswagen.

HD (Heavy Duty) is the internationally used designation for engine oils with certain characteristics. In some countries, however, the suitability of engine oils for certain operating conditions is classified according to the API system (American Petroleum Institute). With this system, HD oils suitable for the Volkswagen engines are designated "MS or SD"

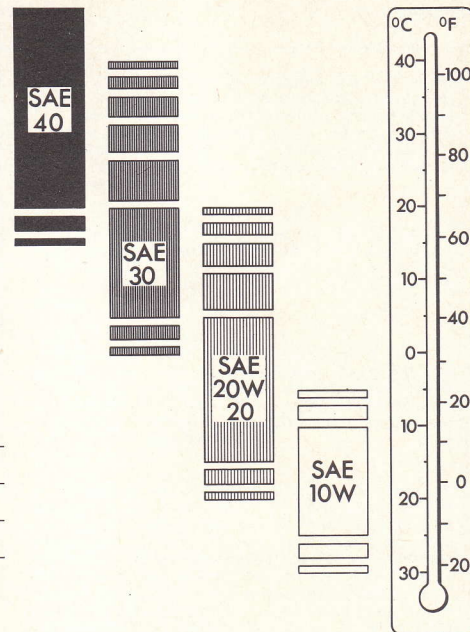
The viscosity of the oil is usually shown by the SAE grades (Society of Automotive Engineers). The viscosity must be matched to the temperature involved and is thus dependent on the climate and on seasonal outside temperatures.

The following table is valid for Volkswagen engines only. It can be seen that the Volkswagen engine normally requires only two different viscosity grades which are selected as follows:

Tropical areas	in hot season		SAE 40
	in cool season		SAE 30
	in summer		
Areas with a temperate climate	in winter	where temperature is not normally below -15°C (5°F)	SAE 20W-20
		where temperature is normally down to -25°C (-13°F)	SAE 10W*

When the temperature is continually below $-25^{\circ}\text{C}/-13^{\circ}\text{F}$ (arctic areas) it is advisable to use SAE 5W*.

* Do not drive at high speeds for long periods when using SAE 10W oil if the outside temperature is above -10°C (14°F) or if using SAE 5W when the temperature is above -20°C (-4°F).



As the operating ranges of neighbouring SAE grades overlap, as shown by shaded parts of sketch, **brief** variations in temperature can be disregarded. For the same reason it is also quite in order to mix oils of different viscosities when oil has to be added and the viscosity of the oil in the engine is no longer correct for the actual temperature.

Transmission oil and ATF (Automatic Transmission Fluid)

Transmission and final drive are combined in one housing and both lubricated with the same hypoid oil (to MIL L 2105 B specifications, additive basis: sulphur-phosphor):

SAE 90	All the year generally.
SAE 80	In areas with low average temperatures.
ATF	In areas with arctic temperatures (below $-25^{\circ}\text{C}/-13^{\circ}\text{F}$).

ATF is a special fluid for automatic transmission but it can be used in the manual transmission and final drive at arctic temperatures.

ATF is used in the torque converter of the VW Automatic all the year.

All AT Fluids which carry the Dexron test mark, for example, Dexron® No. B. 10100, can be used for VW vehicles. Suitable products are supplied by all well-known mineral oil firms.

Lubricant additives

No additives of any kind should be mixed with the fuel or the lubricating oils.

Grease

- 1. Multi-purpose grease with a lithium base** should be used for hood locks and the sliding surfaces of the striker plates.
- 2. Terminal grease** should be used for the battery terminals and posts.

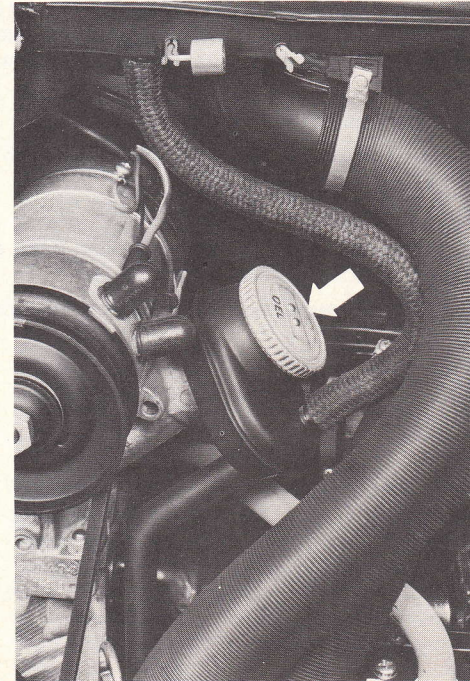
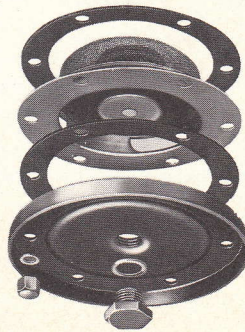
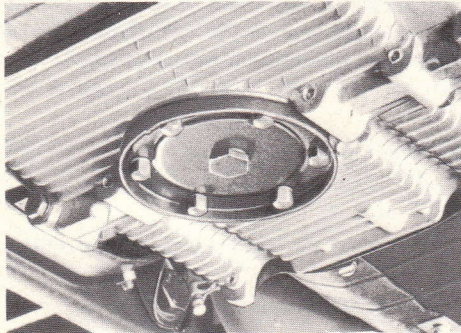
Oil Changing and Lubrication

Engine

Regular oil changes are necessary even if the very best brand of HD 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 2.5 liters of HD oil (5.3 US pints/4.4 Imp. pints).

Due to the detergent properties of the HD oil, the fresh oil will look very dark after the vehicle has been running for only a short time. This need not worry you and under normal operating conditions there is no reason whatever to change the oil at shorter intervals than every 5000 km (3000 miles). We only recommend more frequent oil changes – every 2500 km/1500 miles – in the winter if you drive mainly short distances and in city traffic. If you only drive a few hundred miles a month under these conditions it is advisable to have the oil changed every 6 to 8 weeks. In countries with arctic climates where average temperatures are below $-25^{\circ}\text{C}/-13^{\circ}\text{F}$ the oil should be changed every 1250 km (750 miles).



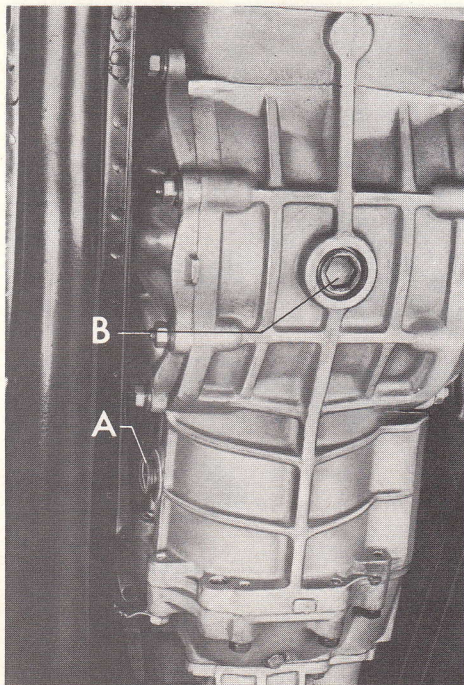
Manual transmission

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

The transmission oil is only changed at 1000 km (600 miles) by your VW workshop. Should it become necessary to change the oil because of a considerable and prolonged change in temperature (see page 61), proceed as follows.

The old oil should be drained when warm. The magnetic oil drain plug (B) must be cleaned carefully and 2.5 liters of good quality hypoid oil put in.

The oil sometimes 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 actually only about 1–1.5 liters have been put in. It is essential to the service life and silent running of the rear axle that the correct amount of oil is used in the transmission.



VW Automatic

Transmission and final drive are both lubricated with the same hypoid oil. The oil should be up to the edge of the filler hole (A). At oil changes, the old oil should be drained when warm. To do this remove the transmission bottom cover after taking out the 14 screws (C).

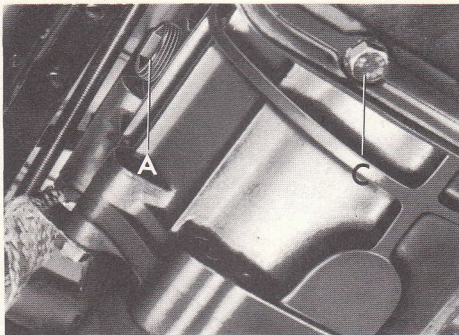
Use only factory approved fluids for topping up (see page 61).

Clean the cover and install it again using a new gasket when possible. Tighten the cover screws uniformly. If a torque wrench is used, the screws should be tightened to 1 mkg (7 lb. ft.). The transmission is then filled slowly with 3 liters of hypoid oil.

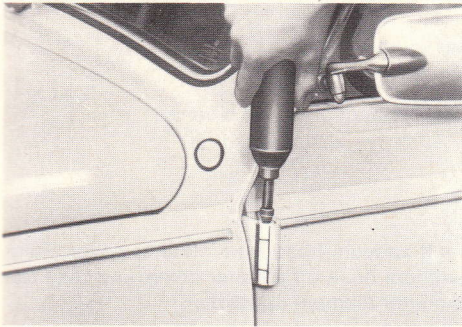
Vehicles with the VW Automatic transmission are fitted with a container which holds the ATF for the torque converter. The filler neck is located on the right side of the engine compartment and the cap has a dipstick (D) attached to it.

The ATF in the converter circuit does not have to be changed.

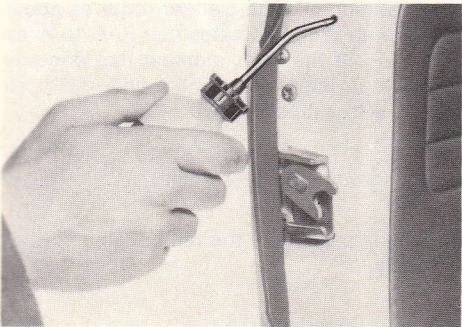
The fluid level should always be between the two marks on the dipstick but must never be allowed to drop below the lower mark. When necessary, have your VW workshop top the ATF up.



Hinges and locks



The door hinges should be lubricated every 10 000 km (6000 miles). VW workshops do this by placing a grease gun with a conical nozzle on the top of the hinge after removing the plastic plug. At the same time a few drops of oil are put into the door locks through a small hole in the end of the door which is normally sealed with a plug.



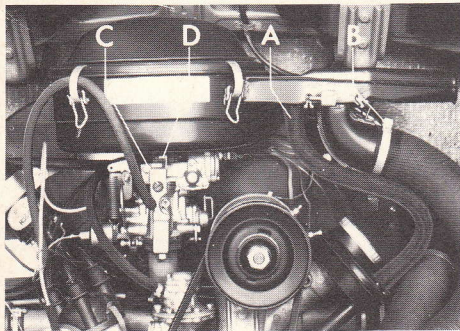
The hood locks are greased lightly if stiff in operation. The lock cylinders are treated with graphite powder as required. It is sufficient to dip the key into the graphite and then turn it to and fro in the lock a few times.

The friction surfaces of the striker plates should be greased lightly when necessary.

Air cleaner

A dirty air cleaner 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 when the vehicle is in motion by the oil in the lower part. In time, this causes a layer of sludge to form at the bottom of the lower part. When there is only 4–5 mm of oil above the sludge layer, the lower part must be cleaned and filled with fresh oil. The cleaner must be removed to do this:



Pull crankcase ventilation hose – A – off air cleaner.

Loosen clip – B – on warm air hose and pull hose off connection on air cleaner.

Remove screw C – in air cleaner support bracket.

Loosen air cleaner clamp screw (D) and detach left vacuum hose from cleaner cover. Take cleaner off carburetor. Release clips; pull right vacuum hose off cleaner cover and take top part off. The top part must not be laid down with the filter element upwards.

Clean bottom part carefully and fill to mark with fresh engine oil. The cleaner requires about 0.4 liter of oil. Use SAE 30 oil all the year. In countries with arctic climates use SAE 10 W all the year. The top part does not normally need cleaning. If the filter element has become so dirty due to delayed cleaning or oil shortage that the air inlet holes on the underside are partly blocked, the encrusted dirt should be scraped off with a piece of wood.

Before installing the cleaner, check that the weighted control flap moves easily.

When installing the cleaner, ensure that the intake pipe is parallel to the fan housing so that the screw in the support bracket can be inserted properly.

Tighten the cleaner clamp screw carefully but do not overtighten it.

Technical data

Engines

Four cylinder, four stroke, horizontally opposed, in rear · Air cooling by fan, thermostatically controlled · Pressure oil feed with gear-type pump · Oil cooler · Mechanical fuel pump · Downdraft carburetor with automatic choke and accelerator pump · Oil bath air cleaner with air pre-heating, thermostatically controlled.

	1.6 liter engine *	1.3 liter engine
Bore	85.5 mm	77 mm
Stroke	69 mm	69 mm
Capacity	1584 cc	1285 cc
Compression ratio	7.5:1	7.5:1
Maximum output DIN	50 bhp at 4000 rpm	44 bhp at 4100 rpm
SAE	60 bhp at 4400 rpm	50 bhp at 4600 rpm
Maximum torque DIN	10.8 mkg at 2800 rpm	8.8 mkg at 3000 rpm
SAE	78 ft. lbs. at 3000 rpm	63.6 ft. lbs. at 2600 rpm
Mean piston speed	9.2 m/s (1806 ft./min.) at 4000 rpm	9.4 m/s (1848 ft./min.) at 4100 rpm
Fuel consumption ¹⁾	9.0 liters per 100 km 31.4 miles per Imp. gallon	8.5 liters per 100 km 33.2 miles per Imp. gallon
Fuel consumption – VW Automatic *	9.5 liters per 100 km 30 miles per Imp. gallon	9.0 liters per 100 km 31.4 miles per Imp. gallon
Fuel rating	91 Octane (Res. F1)	91 Octane (Res. F1)
Oil consumption	0.5–1.0 liter per 1000 km 1.4–2.8 Imp. pints per 1000 miles	0.5–1.0 liter per 1000 km 1.4–2.8 Imp. pints per 1000 miles
Valve clearance with engine cold: inlet and exhaust	0.10 mm (.004 in.)	

¹⁾ Measured consumption plus 10%, with half load at a steady $\frac{3}{4}$ of maximum speed on level road, no wind.

Transmissions

Baulk synchronized four-speed gearbox with bevel gear differential in one housing, single plate dry clutch

Free play at clutch pedal 10–20 mm (.4–.8 in.)

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

Final drive ratio for 1.6 liter engine 4.125:1, 1.3 liter engine 4.375:1, Axle shafts, each with two constant velocity joints

Hydrodynamic torque converter with three stage transmission, housed together with the final drive

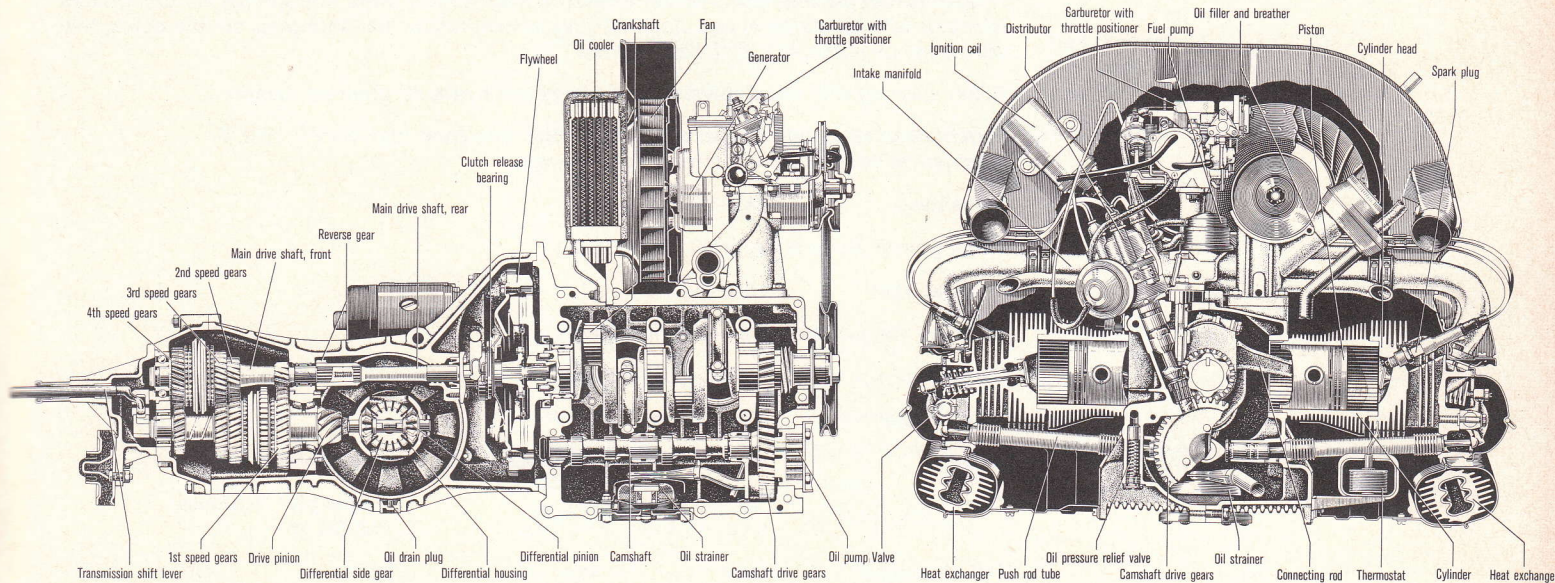
Transmission ratios Driving range L–2.06:1 (2.25:1 with 1.3 liter engine) Driving range 1 –1.26:1
Reverse –3.07:1

Final drive ratio for 1.6 liter engine 4.125:1, for 1.3 liter engine 4.375:1

Axle shafts, each with two constant velocity joints

* Optional extra

Engine with Manual Transmission



Chassis

Platform frame with tunnel-shaped center member

Engine/transmission unit bolted to frame fork

Independent suspension:

Suspension struts connected to frame head by track control arms, coil springs at front. Double-joint axle with longitudinal and diagonal links at rear, torsion bar springing, double-acting telescopic shock absorbers, stabilizer at front

Roller steering with maintenance free tie rods and hydraulic steering damper

Foot brakes: Hydraulic dual circuit system, disc brakes at front on VW 1302 S
Mechanical hand brake effective on rear wheels

Wheelbase 2420 mm (95.3 in.)

Turning circle diameter approx. 9.6 m (31.6 ft.)

Track at front 1379 (54.3 in)

Total toe, not pressed 0.6–4.2 mm unladen

Camber $1^{\circ} 20' \pm 20'$ unladen

Track at rear 1350 mm (53.1 in.)

Wheels 4 J x 15 Perforated wheel discs with drop center rims

Tires	Normal (tubeless)		Radial ply* (tubeless)	
	5.60–15 4 PR		155 SR 15	

Tire pressures**	front		rear		front		rear	
	kg/cm ² (psi)		kg/cm ² (psi)		kg/cm ² (psi)		kg/cm ² (psi)	
With 1 or 2 occupants	1.1	(16)	1.9	(27)	1.3	(18)	1.9	(27)
With 3 to 5 occupants	1.3	(18)	1.9	(27)	1.3	(18)	1.9	(27)

For long, high speed motorway trips the pressures for normal tires should be increased 0.2 kg/cm² (3 psi) at front and rear.

* Optional extra

**These pressures are for cold tires.

Electrical system

Voltage 12 Volt
Battery 36 Ah
Starter 0.7 hp VW Automatic 0.8 hp

Generator max. 30 ampere, early cut in,

V belt 9.5 X 900 LA "DA"
9.5 X 905 LA "DA"
or 9.5 X 905 LA "DA"

Belt tension:

New belt: Deflection¹ 9–11 mm

Used belt: Deflection¹ 11–14 mm

Ignition distributor with vacuum and centrifugal spark advance

Firing order 1–4–3–2

Basic ignition timing 7.5° before TDC at 800–900 rpm*

Contact breaker gap 0.4 mm (.016 in.)

Spark plugs Bosch W 145 T1, Beru 145/14, Champion L 88 A

or plugs with similar
values from other
manufacturers

Plug thread 14 mm

Plug gap 0.7 mm (.028 in.)

¹ At a pressure of about 7.5 kg (firm thumb pressure) in the center between the two pulleys.

* Measure only with stroboscopic lamp, vacuum hose off, engine warm

Dimensions and weights

	Sedan	Convertible
Length	4080 mm (160.6 in.)	4080 mm
Width	1585 mm (62.4 in.)	1585 mm
Height, unladen	1500 mm (59 in.)	1500 mm
Ground clearance	150 mm (5.9 in.)	150 mm
Unladen weight	870 kg (1918 lbs.)	920 kg (2028 lbs.)
Permissible load	400 kg (881 lbs.)	360 kg (793 lbs.)
Gross vehicle weight	1270 kg (2799 lbs.)	1280 kg (2821 lbs.)
Permissible front axle load	530 kg (1168 lbs.)	540 kg (1190 lbs.)
Permissible rear axle load	760 kg (1675 lbs.)	760 kg (1675 lbs.)

Permissible load on roof*

50 kg (110 lbs.) —

Permissible trailer weights **

Trailers with brakes	500 kg (1100 lbs.)	500 kg
Trailers without brakes	400 kg (880 lbs.)	400 kg
Caravans or trailers for carrying boats or gliders – with brakes	650 kg (1430 lbs.)	650 kg

* Use only racks supported in rain channel. The racks offered in the VW accessories range are of this type. Distribute load uniformly.

** Subject to local regulations which may differ.

Capacities

Fuel tank	42 liters (9.2 Imp. galls.)
Engine	2.5 liters (4.4 Imp. pints)
Rear axle and transmission	Initial filling 3.0 liters (5.25 Imp. pints) at oil changes: 2.5 liters
Oil bath air cleaner	approx. 0.40 liter (0.7 Imp. pints)
Windshield washer	approx. 1.6 liter (2.8 Imp. pints)
VW Automatic:	
Converter system	approx. 3.6 liter ATF (6.3 Imp. pints) ATF brand according to factory instructions
Transmission and final drive	3 liters (5.3 Imp. pints) hypoid oil (to factory specifications)

Performance

	1.6 liter engine		1.3 liter engine	
Maximum and cruising speed	130 km/h		125 km/h	
Acceleration 0–80 km/h (50 mph)	approx. 12.5 seconds		approx. 14 seconds	
Climbing ability* (%)	Sedan	Convertible	Sedan	Convertible
1st gear	47	44.5	40	38.5
2nd gear	24	23	20	18.5
3rd gear	13	12.5	11	10.5
Top gear	8	7.5	6.5	6

VW Automatic

Maximum and cruising speed	125 km/h		120 km/h	
Acceleration 0–80 km/h (50 mph)	approx. 14.5 seconds		approx. 16.5 seconds	
Climbing ability* (%)	Sedan	Convertible	Sedan	Convertible
Driving range L	35.5	34	28.5	27
Driving range 1	29	27.5	22	21
Driving range 2	20.5	19.5	16	15

* Measured on good roads, vehicle with two occupants

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Vehicle data quiz

- What sort of fuel does your vehicle require? VW 1302 –1.3 liter engine Regular fuel minimum Octane rating 91, otherwise Premium
VW 1302 S–1.6 liter engine
- What sort of engine oil?
HD oil for gasoline engines
SAE grade (viscosity) according to time of year. Further details on page . . .
In some countries HD oil is known as “MS” or “SD” oil
- What is the difference in quantity between the minimum and maximum marks on the dipstick?
1.25 liters
- How often should the engine oil be changed?
At 1000, 5000 and then every **5000 km**
(600, 3000 and every 3000 miles)
- What sort of oil is used in gearbox and final drive?
SAE 90 Hypoid oil to MIL-L 2105 B specifications (additive basis: Sulphur-phospor)
or **SAE 80** in areas where average temperature is low
- When is the gearbox and final drive oil changed?
Only at 1000 km (600 miles)
- How much brake fluid should there be in the reservoir?
The fluid should be level with the lip round the container.

- Which spark plugs should be used?

Bosch W 145 T 1, Beru 145/14, Champion L 88 A
or plugs with similar values from other manufacturers

- Is the fan belt tension correct?

It should deflect 11–14 mm in the center between the pulleys when pressed firmly with the thumb (about 7.5 kg).

A brand new belt should only deflect 9–11 mm.

Belt designations 9.5 x 900 LA "DA"
 9.5 x 905 LA "DA"
 9.5 x 905 LA "X DA"

- Are the wheel bolts tightened properly?

The torque should be **15 mkg.**

- What are the correct tire pressures?

Normal tires	front	rear
With 1 or 2 occupants	1.1 kg/cm ²	1.9 kg/cm ²
With 3 to 5 occupants	1.3 kg/cm ²	1.9 kg/cm ²

For sustained high speed driving, increase pressure by 0.2 kg/cm² at front and rear

Radial ply tires	front	rear
In general	1.3 kg/cm ²	1.9 kg/cm ²

M and S and M and S studded tires (normal and radial ply)

Increase pressure by 0.2 kg/cm² at front and rear.

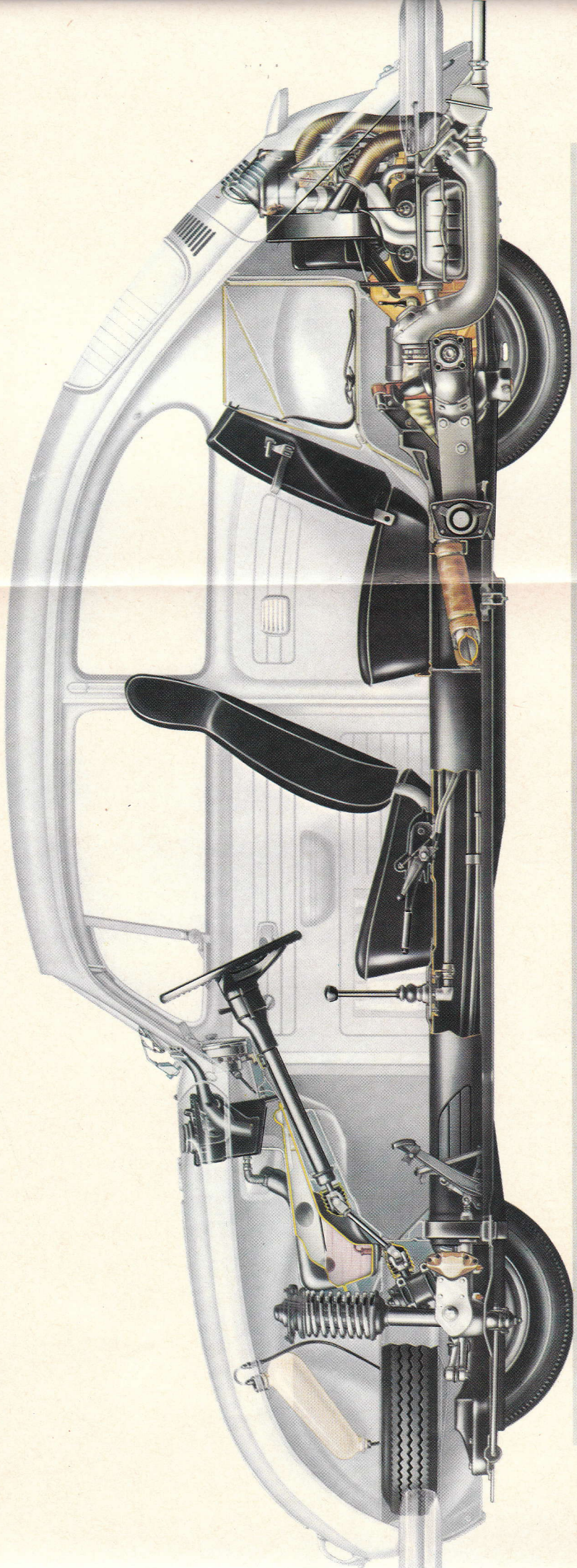
These pressures are for **cold** tires.

The pressures must not be reduced if tires are checked when hot and pressure is higher than specified.

Spare wheel: 3 kg/cm²

- Where are the fuses to be found?

Under the instrument panel on the left near the steering column.



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