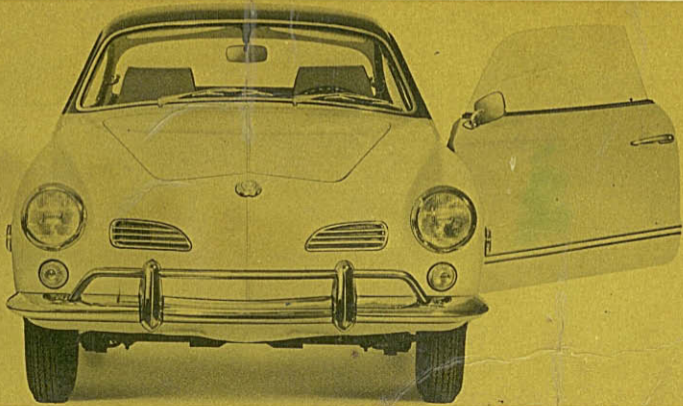


Owner's Manual



No warranties, express or implied, as to Volkswagen vehicles sold in the United States are made either by Volkswagen of America, Inc. or by the manufacturer or by the selling dealer, except the following warranty by Volkswagen of America, Inc.

Warranty for new Volkswagen vehicles

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

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

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

**Maintenance and validation
by owner required to keep
warranty in effect**

2. In order to keep this warranty in effect, the owner must do two things:
FIRST: The owner must have the vehicle maintained and serviced as prescribed in the Volkswagen Maintenance Schedule. (See page 54).
SECOND: Every twelve months during the warranty period the owner must obtain from an authorized United States Volkswagen dealer a Validation Stamp on the Maintenance Card to show that the vehicle has been maintained and serviced in accordance with the Volkswagen Maintenance Schedule. Validation will be made upon presentation of bills or other evidence sufficient to satisfy the dealer that the required service and maintenance have been performed. The validated Maintenance Card must be submitted whenever a claim is made under this warranty.

Items not covered by warranty

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



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Warranty outside United States and Canada

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

No other warranties made

5. This warranty is in lieu of all other express or implied warranties of VWoA, the manufacturer and the selling dealer, including any implied warranty of merchantability or fitness for any particular purpose. Neither VWoA nor the manufacturer assumes, or authorizes any person to assume, on its behalf, any other obligation or liability.

Let us explain the warranty . . .

Volkswagen of America, Inc. is proud of the quality of automobiles it imports. It warrants new vehicles for a period of 2 years or 24,000 miles from the date of purchase, whichever comes first. In general the complete vehicle including battery and tires is covered under the provisions of the Volkswagen New Vehicle Warranty. It will be honored by any Authorized Volkswagen Dealer in all 50 States, the District of Columbia and Canada.

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

In order to keep the warranty in force, you as the owner of the vehicle have certain responsibilities. It is important that the vehicle be maintained properly. To facilitate record keeping, this booklet provides on pages 56 to 58 space for listing maintenance services and oil changes as they are performed. **Maintenance services should be performed by Authorized Volkswagen Dealers. They offer with their factory-trained Volkswagen mechanics and special tools, fast, efficient service in accordance with Volkswagen quality standards.**

Validation is a requirement of the Volkswagen New Vehicle Warranty. One year after the date of delivery, the warranty must be validated for the second year. This can be done at any Authorized Volkswagen Dealership in the USA or Canada. For that purpose, you should present to the Authorized Volkswagen Dealer the maintenance record for your vehicle. Provided that maintenance services and oil changes were performed in accordance with Volkswagen specifications, dated bills of other than Authorized Volkswagen Dealers will be accepted as proof that these services were performed on time.

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

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

Maintenance services and oil changes

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

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

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

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

Wiper blades – life expectancy will vary widely depending on climatic conditions and extent of use. You are the best judge to decide when they should be replaced.

Light bulbs and fuses – are service items.

Paint, chrome, convertible top, trim and other appearance items – are affected by normal wear and exposure. Proper care of these items can add to their appearance and durability. (Imperfections are normally apparent during New Vehicle pre-delivery inspection. For your protection, please report any imperfection to your Dealer immediately after you notice it.)

Tires and batteries – are subject to wear. If there is a defect you pay only for the amount of use you have gotten. An adjustment for tires is based on the remaining tread depth, for batteries on time used based on 36 months of service. This is known as the pro-rata method of adjustment.

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Getting acquainted

It is advisable

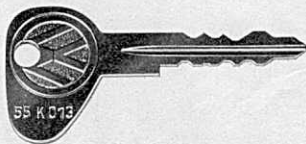
to read this Owner's manual carefully. You will then get to know your new car quickly and will be able to start off on your first trip with complete confidence. As you will notice your Volkswagen has many features designed with your safety in mind.

The first part of this manual deals with the operation of your Volkswagen. Everything about winter driving, tips on care of the vehicle and numerous points on carrying out small repairs and adjustments are given in the second half. It further contains information on lubrication and maintenance, and some interesting technical data.

At the front of the book is the warranty voucher and the terms of warranty, and at the back, a punchcard for the free-of-charge maintenance service and a maintenance schedule. An easy-to-use maintenance record provides a stamping field, so you can tell at a glance when a maintenance service is due. The stamps in the squares show that the oil changes and maintenance services have been carried out regularly.

Only one key

is required to open the doors and start the engine. Be sure the key number is recorded in the front of the manual. If you should lose the key, you can obtain a replacement from your Authorized Volkswagen Dealer.



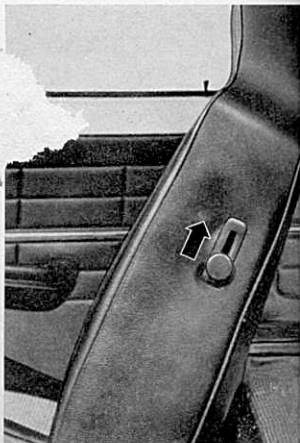
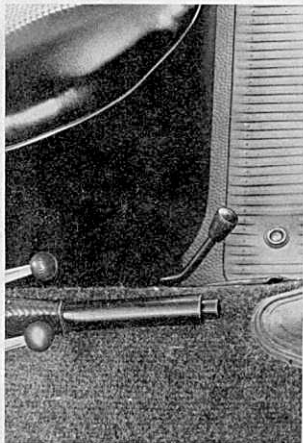
Sit down and make yourself comfortable

When driving, you must be comfortable. That is why 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 righthand side of the seat and slide the seat forward or backward. After adjusting,

be sure the seat is securely locked in position. The runners are slightly inclined so that the seat is raised as it goes forward.

The backrest angle can also be set to various angles. Try them out until you find the angle which suits you best.

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



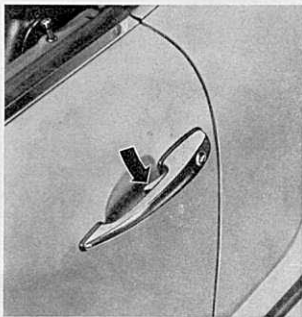
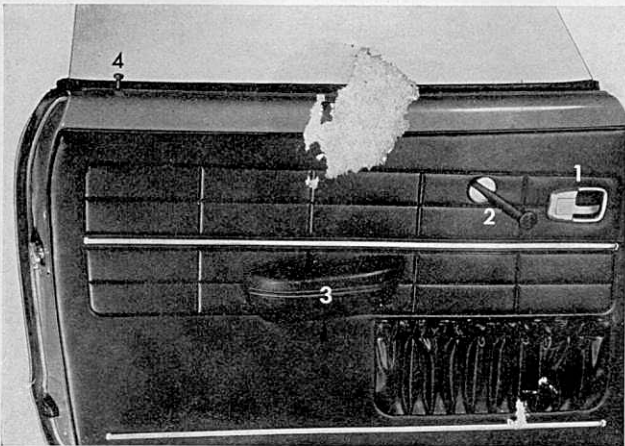
Before closing the door from inside . . .

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 – Inside door handle**
- 2 – Window crank**
- 3 – Armrest and door closing grip**
- 4 – Locking knob**

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

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



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

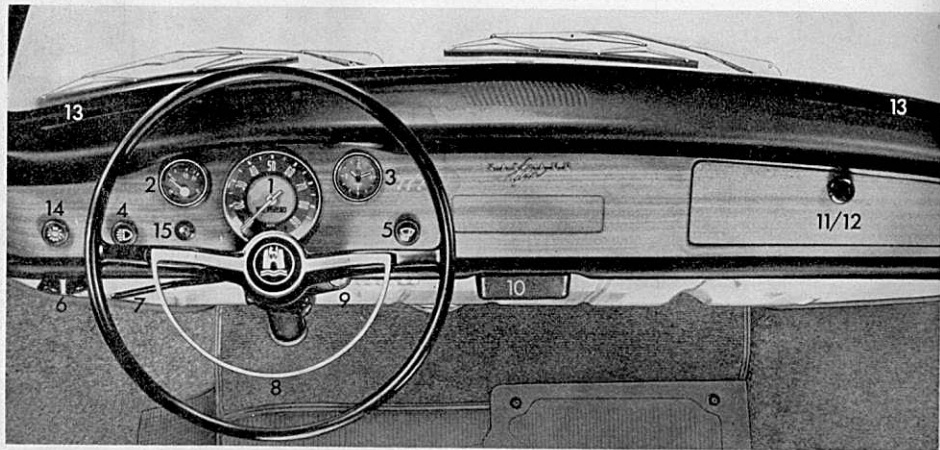
In front of you - the instrument panel

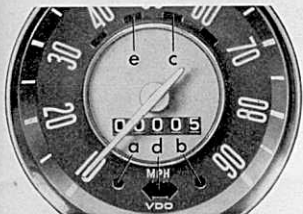
Even if it is not your first Volkswagen, just have a quick look at the dash and try out the various knobs and levers with the ignition switched on:

1 - Speedometer

The following warning lamps are in the speedometer dial:

- | | |
|------------------|------------------------------------|
| a - green | - oil pressure |
| b - red | - generator and cooling |
| c - blue | - headlamp high beam |
| d - green arrows | - turn signals |
| e - red | - temperature Automatic Stickshift |





2 – Fuel gauge

When the needle is on the "R" mark, there is about 1 gallon of fuel left in the tank – time to refuel at the next opportunity.

3 – Clock

The clock is electrically operated. The hands can be set by pressing in and turning the knob in the center of dial.

4 – Light switch

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

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

5 – Windshield wipers and windshield washer system

The two-speed wipers are controlled by turning the switch. They park automatically when switched off. The button in the switch knob controls the windshield washer.

6 – Fresh air ventilation

The two knobs on the lower edge of the instrument panel control the flow of fresh air separately for each side through the defroster vents – 13 – at the bottom of the windshield.

Knobs to front – on

Knobs to rear – off

By operating the heating and the fresh air ventilation at the same time you can admit a mixture of warm and fresh air into the vehicle.

7 – Turn signal switch

Lever up – right turn signal

Lever down – left turn signal

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

Pull dimmer switch toward steering wheel to **raise or lower headlight beams**. A blue warning light in the speedometer dial shows when the headlamp high beams are switched on.

8 – Horn ring

9 – Ignition switch

10 – Ashtray

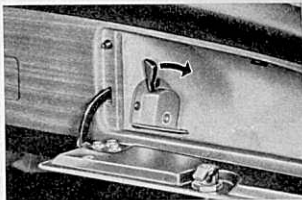
To remove ashtray, press leaf spring down and pull ashtray out.

11 – Glove compartment

To open turn knob to the left.

Inside the glove compartment is the release lever – 12 – for front hood.

On the Convertible the glove compartment can be locked. This prevents access to luggage and spare wheel by unauthorized persons while the top is down.



12 – Release lever for front hood

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

13 – Defroster vents

14 – Emergency blinker switch

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

15 – Warning light for dual circuit brakes

See explanation page 15.

Above the windshield

1 – Sun visors

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

2 – Rear view mirrors

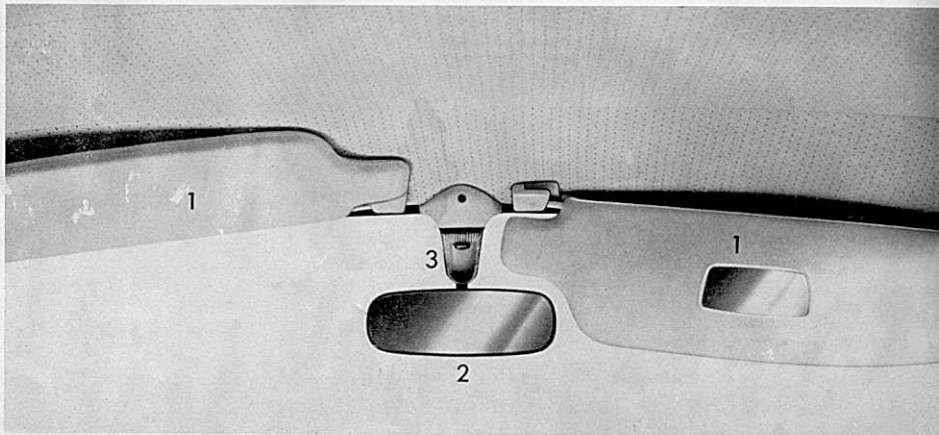
Inside and outside mirrors are adjustable so that they can be set to give clear vision to the rear at all times.

The inside rear view mirror is rimmed with plastic for safety and designed to detach under impact. The outside mirror is hinged to fold flat upon contacting anything.

3 – Interior light

Switch positions:

- Right – Interior light on
- Center – Interior light off
- Left – Light only on when doors are open



In the footwell and between front seats

1 – Clutch pedal

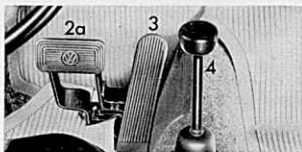
(Four speed synchromesh transmission only)

2 – Brake pedal

Vehicles with four speed synchromesh transmission.

2a – Brake pedal

Vehicles with Automatic Stickshift.



3 – Accelerator pedal

4 – Gearshift lever

Detailed instructions on Automatic Stickshift are given on page 19.

5 – Handbrake

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

6 – Heating control lever

Lever up – heat on

Lever down – heat off

The heating will be more effective if you open one of the rear windows slightly because the fan can then force the warm air into the body interior more easily.

7 – Heater control slides in front footwell

The flow of warm air into the front footwell can be controlled separately on each side by means of slides over the outlets.

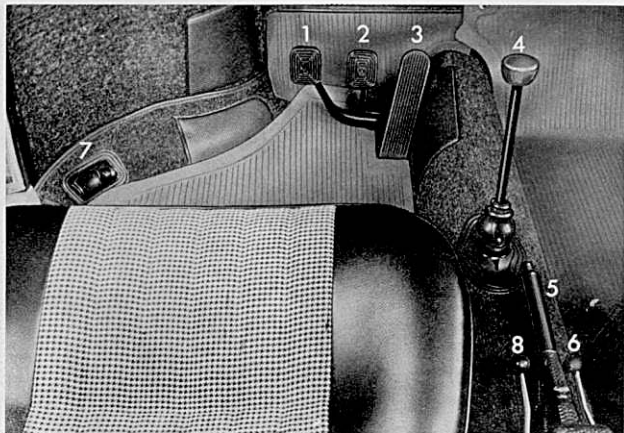
8 – Control lever for heating in rear footwell

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

Lever up – heat on

Lever down – heat off

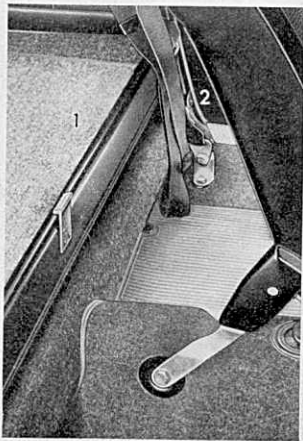
At low temperatures it is advisable to leave the rear outlets closed when first moving off. This increases the flow of air to the windshield to prevent steaming up when humidity is high. As soon as the windshield is clear, the rear footwell outlets should be opened so that the interior of the body heats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



Behind you

1 – Rear luggage compartment

There is a second luggage compartment behind the jump seat. To stow luggage, just fold the backrest forward. You can leave the back rest in this position if you are in need of additional luggage space. In the normal upright position, the back rest is secured to the parcel shelf by a plastic retaining plate.



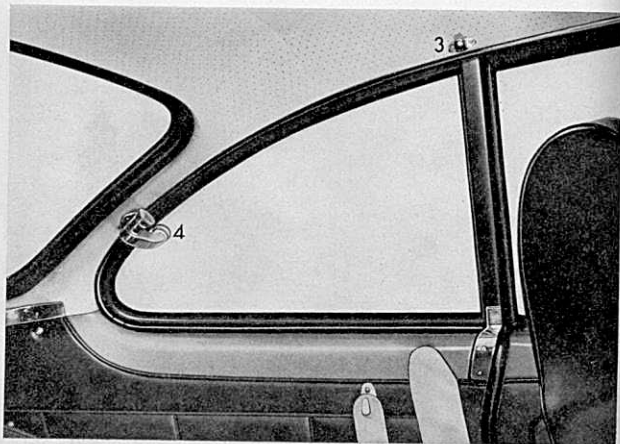
2 – Knob for engine compartment

The lid for the engine compartment is unlocked with the knob near the left lock pillar. The lid is held in the open position by springs. To close the lid, press down on the license plate lamp housing until you hear a click.

3 – Coat hooks

4 – Hinged quarter window

The windows can be opened as required after releasing the fastener. We recommend that you make full use of these windows, particularly under unfavorable weather conditions. They assure ventilation of the vehicle interior and, therefore, prevent the windows from fogging.



Seat Belts

Each of the seats in your Volkswagen Karmann Ghia is equipped with a seat belt. All occupants of the vehicle should wear the belts at all times.

Each of the front seats is equipped with a combination lap/shoulder belt that is completely adjustable to fit different sized people and to allow for seat and backrest adjustment. When not in use, the lap section of the belt

retracts and the belt should be hung on the hook behind the door by means of the hole in the buckle tongue. This prevents the belt from lying about and getting dirty and keeps the belt handy.

Operation: After sitting down and adjusting the seat and backrest positions, pull the belt by drawing across in front of you to the center of

the car. Insert the buckle tongue into the opening in the housing on the center tunnel and press it in lightly. A click will be heard when the buckle locks. Be sure the belt is not twisted. Pull lap belt through buckle until belt is completely unrolled from retractor and belt fits snugly across lap. Take up any slack by moving slide. Adjust shoulder belt by pulling belt until it fits snugly across chest. Take up any slack by moving slide. To lengthen either section of the belt, release buckle from housing, hold buckle at a right angle to belt and pull belt through buckle. No further adjustment should be necessary if the same person uses the seat belt each time.

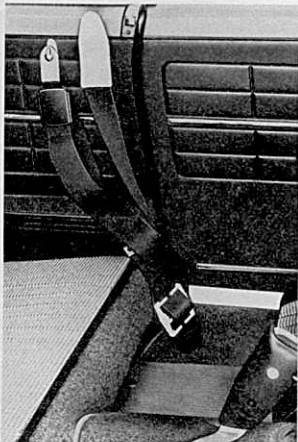
To release the belt, pull the unlocking lever on the tunnel housing upward. Only a light pull and a small movement of the lever is necessary.

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

Cleaning: To keep belts clean, wash belts with mild detergent without removing from vehicle. Dry belts in the shade and do not allow lap belts to retract until completely dry. Do not bleach or dye the belts or use any other material to clean the belts because some of these agents can weaken the webbing.

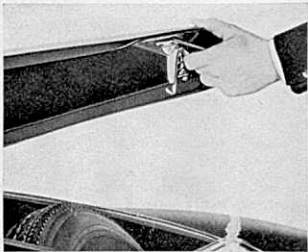
Check buckles, retractors and fittings periodically to make sure they function correctly and belts to ensure that the webbing has not been damaged.

Now let us have a look...



... in the front luggage compartment

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



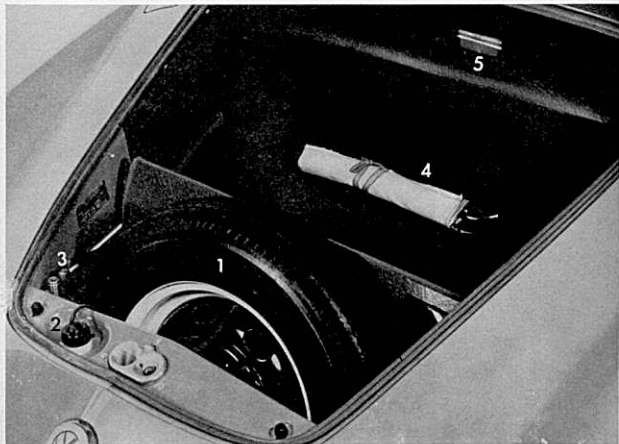
The release lever for front hood is located inside the glove compartment. The hood springs up slightly first under spring pressure and can be opened fully when the safety hook near the lock has been pressed up.

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

1 – Spare wheel

It also serves as an air supply for the windshield washer container, therefore, the spare tire pressure should occasionally be checked and inflated to 43 psi. The air flow from the spare tire to the washer container will be

interrupted if the tire pressure ever falls below 25 psi. This is done automatically by means of the filler cap valve. As a result, the spare tire will always have the required pressure should it be needed.



2 – Container for windshield washer

As soon as the filler cap of the container is opened, the air supply from the spare tire to the windshield washer container is interrupted by means of a valve in the filler cap. The washer container can be filled completely with washer fluid. It is advisable to add a cleaning solution, such as Volkswagen's Windshield Washer Anti-Freeze and Solvent, to the water as clear water alone is usually 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 a mild anti-freeze solution in the winter.

Follow the directions on the container for the amount to be used.

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

3 – Jack

Operation of the jack is described, together, with wheel changing, on page 28.

4 – Tools

In the tool bag you will find

- 1 fan belt
- 1 wheel cap remover
- 1 pair of combination pliers
- 1 screwdriver with reversible blade for slotted and Phillips screws
- 1 open-end wrench 8 mm and 13 mm
- 1 socket wrench for plugs, fan pulley and wheel bolts
- 1 socket wrench 13 mm
- 1 bar for socket wrench (is also used to operate the jack)

5 – Brake fluid reservoir

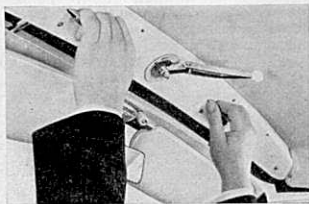
The brake fluid level should always be above the protruding edge near the top of the container. If the brake fluid level ever falls below this edge, the complete brake system should be thoroughly examined by your Authorized VW Dealer.

Brake fluid is water absorbent and should, therefore, be renewed every 5 years by an Authorized VW Dealer.

Now you know your vehicle fairly well.

Further hints on what to do before moving off and when on the move are given on pages 15 to 20. If you own a Convertible, read the next page first.

When the sun is shining . . .



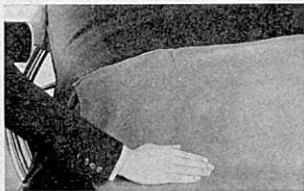
you can open the Convertible top without effort but only open it when it is dry and clean as sharp particles of dirt will damage the material.

First fold the crank down and unlock the top by turning crank one full turn to the right. Then lift the top slightly with the handles. Lay the protective cloth smoothly over the rear

window, and smooth rear window and top material out between the bows while folding the top back slowly.

Before putting on the protective boot and securing it with the press buttons, press the top down lightly on both sides until the small catches engage. The boot should be secured on the inside first and then on the outside.

Please make sure that the top is completely covered by the boot as otherwise there will be friction marks.

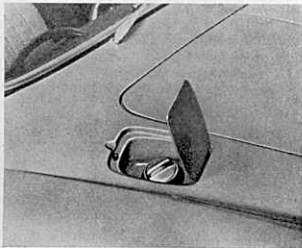


When it rains . . .

you will want to close the top again as quick as possible. Take the protective boot off, press the top down slightly so that the catches can be unhooked and pull the top forward. Pull it down onto the windshield frame with the handles until the locking hooks engage in the recesses. Then lock the top by turning the crank one full turn to the left.

Before moving off, check . . .

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



The fuel

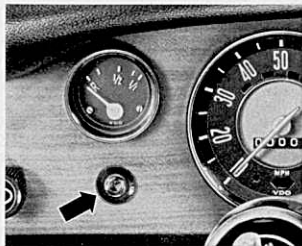
in the tank, when full, is sufficient for 250–280 miles. The filler neck is located above the right front fender.

The choice of fuel is left entirely to you. The Volkswagen will run satisfactorily on all gasolines which fulfill the octane requirements of the engine: (91 octane).

If regular fuels with adequate anti-knock qualities are not available, premium fuels should be used or mixed with the regular fuel.

The brakes

should be checked before driving off. Your Volkswagen is equipped with a dual brake system. Each system, front and rear, can function independently.



An indicator lamp on the instrument panel

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

Push indicator lamp after switching the ignition. If the lamp does not light up, the bulb should be replaced.

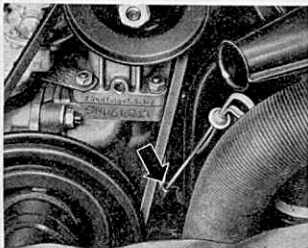
Please bear in mind that brakes are subject to wear. An increase in pedal travel will indicate this wear. Depending on individual operating conditions, the brakes may have to be adjusted between specified maintenance intervals.

The lights include headlights, taillights, license plate light, turn signals, back-up and brake lights.

The turn signals and brake lights must be checked with the ignition on. If a turn signal is defective, the warning lamp in the speedometer dial flashes much faster than usual. The brake lights only work when the brake pedal is depressed, the back-up lights only when reverse gear is engaged.

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

The vehicle must be on a level surface when the oil level is checked so the dipstick reading will be accurate. 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.

To top up the oil level, a well known brand of oil should be selected. Although it is advisable to stick to one brand of oil, using a different brand to replenish the oil will not harm the engine. Details about the proper oil viscosities are given on page 40.

Tire pressures

	Front	Rear
with 1 to 2 occupants	16 psi	24 psi
fully loaded	17 psi	26 psi

For long, high-speed trips, the tire pressures should be increased by 3 psi at front and rear. If you operate your Volkswagen with tire pressures different from those suggested by the manufacturer, the handling characteristics may be impaired. This can also lead to excessive tire wear.

Adherence to the suggested tire pressures will assure you of the best handling characteristics and roadability.

Two more important points:

- 1 - If the vehicle is used mainly in very dusty conditions, the oil bath air cleaner must be checked frequently, even daily if necessary. How this is done is described on page 43.
- 2 - Do not drive your car with a disconnected battery. This may lead to damage to the electronic components of the electrical equipment.

Starting the engine

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

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 so that the automatic choke can work. Then switch ignition on and start immediately. When the weather is very cold, the engine may turn over slowly during starting. In this case depress the clutch while cranking; if it turns over faster, hold the clutch down until the engine starts. When starting without depressing the clutch, be sure the handbrake is on and the gearshift in neutral.

As soon as the engine starts, release the ignition key so that the starter is switched off. Do not try to warm the engine up by letting it idle with the vehicle stationary – drive off immediately.

Do not race the engine while it is still cold.

If the engine does not start the first time or stalls when declutching, 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 lights in the speedometer will come on when the ignition is switched on. As soon as the engine starts, these lights will go out. Stop at once if one of these lights comes on when driving:

Red warning light for generator and cooling:

Check the belt that drives the generator. If this belt breaks, the engine cooling fan also stops working. The proper way to fit a new belt is described on page 29.

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

Green warning light for oil pressure:

If this warning light comes on when driving the flow of lubrication oil in the engine may be interrupted. Check the oil level first. Should the cause of the trouble be elsewhere, contact your nearest Authorized Volkswagen Dealer.

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



... it runs ... and runs ... and runs ...

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

1st gear:	0-15 mph
2nd gear:	10-35 mph
3rd gear:	20-55 mph
4th gear:	30 mph and up

When a particular traffic situation makes it essential to move rapidly, you can accelerate up to 37 mph in 2nd gear and up to 58 mph in 3rd gear for brief periods only. Bear in mind,

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

You can drive very economically between:

10 and 25 mph in 2nd gear
20 and 35 mph in 3rd gear
30 and 60 mph in 4th gear

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

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.

Volkswagen automobiles have excellent brakes which can stop the vehicles in the shortest possible distance. But do not forget that the

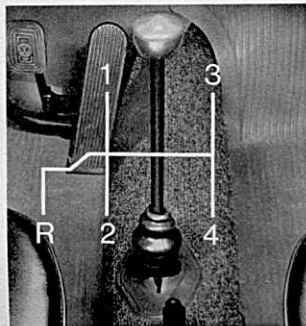
braking distance increases very rapidly as the speed increases. At 60 mph for example, it is four times longer than at 30 mph. Apply the brakes in good time whenever possible, but do not use too much force - locked wheels increase the braking distance.

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

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

That just about covers the operating of the car and how to drive it properly. From page 21 on you find the tips for winter driving, breakdowns and all there is worth knowing about the lubrication and maintenance of the vehicle.

Before driving a vehicle with Automatic Stickshift be sure to read the following pages:



VW-Automatic Stickshift

At first Glance

the difference between your Volkswagen and all other Volkswagens is the lack of a clutch pedal. But driving with the Automatic Stickshift is simpler and shifting easier. We suggest you carefully read the following instructions to familiarize yourself with the operation of the transmission.

The Automatic Stickshift

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

Driving ranges

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

Neutral

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

Starting

With the hand brake set, move the shift lever to Neutral and start the engine. Move the shift lever into the range you wish to use, normally Range 1, and then release the hand brake. It is important to release the brake after shifting because, under certain conditions, the vehicle may creep when a driving range is selected. After shifting, be sure to remove your hand from the gearshift lever to allow the clutch to engage.

Low Range

or the load range is not normally used in day to day driving. It is only used to get the car moving on steep slopes with a full load or when descending a very steep hill to take advantage of the additional engine braking. Low is also recommended for particularly slow driving over rough ground. Speeds from 0–35 mph can be obtained in this range.

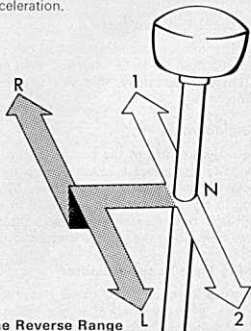
Driving Range 1

is for starting and accelerating, and covers the speed range from 0–35 mph. Under normal driving conditions, the vehicle is started in this range before shifting to Range 2. Range 1 is also recommended for use in city traffic,

slow moving lines of vehicles and whenever maximum acceleration is required for passing. If the vehicle is in Range 2, you may downshift into Range 1 at any speed under 55 mph.

Driving Range 2

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



The Reverse Range

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

Shifting

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

If you like quiet, smooth driving,

which saves fuel, we recommend that you shift to Range 2 soon after starting off at about 20 to 25 mph.

If you want to drive fast

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

Driving downhill

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

Warning light in speedometer

If you drive for a long time under heavy load conditions, such as when pulling a trailer up a hill, and the red transmission warning light in the upper part of the speedometer goes on, shift to a lower driving range. The light indicates that the transmission fluid has reached too high a temperature and shifting down will cool

it off. The light will then go out. If it lights again, shift down to a still lower range.

Stopping

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

Towing

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

Push starting

If the engine should ever fail to start, the low driving range should be used in such instances and the vehicle moved at a minimum speed of 15 mph.

Some basic rules

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

When it snows and freezes

Your car has two features which you will appreciate in the winter: Air cooling and heating. You can leave your car out in the bitter cold without fear – the aircooled engine will always start readily and supply warm air for the interior of the body.

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

Tires with badly worn treads are very dangerous, particularly in the winter, so ensure that they are replaced in time.

M + S tires with special heavy treads give good traction in snow and slush. They can be fitted to all four wheels but never use them on the front wheels only.

Better still are M + S tires with spikes which increase the safety margin even on hard snow and ice. These tires should always be fitted on

all four wheels. Check your state laws before using spiked tires.

If M + S tires are mounted, they should have the same ply rating as tires of the original equipment.

The specific characteristics of winter tires can be improved by raising the tire pressures to 3 psi above the normal operating pressure for the tire concerned. This inflation pressure then covers the recommended pressure increase of 3 psi for fast highway driving. M + S tires with spikes should be run at moderate speeds when new in order to give the spikes 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.

Snow chains can be fitted to normal and winter tires on the rear wheels only. Only thin chains which do not stand clear of the tire tread and inner side wall more than 1/2 inch including tensioner, are suitable. When driving over long stretches of road which are free of snow, the chains should be removed because they serve no useful purpose and merely damage the tires and wear out quickly.

Engine oil of SAE 30 grade will tend to thicken at temperatures around freezing point and may cause difficult starting. As soon as winter temperatures are expected, change to a thinner grade of engine oil. Details of the various oils to be used are given on page 40.

If you drive mostly short distances and in city traffic, especially in the winter, we recommend that you have the engine oil changed at shorter intervals, say every 1500 miles. At other times, these additional changes are unnecessary and uneconomical.

In countries with arctic climates and temperatures below about -15° F, the engine oil should be changed every 750 miles.

Transmission oil of SAE 90 grade can generally be used all year round. Only in countries with arctic climates is it necessary to use thinner SAE 80 transmission oil.

When the temperature is below -15° F for long periods, it is advisable to use Automatic Transmission Fluid (ATF) in the transmission. The vehicle must only be run with this fluid during the cold period. As soon as the temperature rises to near freezing point, this fluid must be replaced by SAE 80 or SAE 90 transmission oil.

The battery not only tends to drop in capacity as the temperature drops, it also has to work much harder in the cold weather. Current consumption is higher when starting and the lights are on longer. A really cold battery which may not be fully charged has only a fraction

of the capacity that a battery at normal temperature has, and this is fatal when trying to start a cold engine. If the car is only driven short distances and in city traffic, the battery may have to be charged from an external source from time to time. For more details see page 35.

The spark plugs should not have excessively large gaps especially in the winter. The gap is normally .028 in., but when the weather is very cold, the gap can be temporarily reduced to .016-.020 in. to facilitate starting.

Door locks can freeze 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 beforehand. A frozen lock can be opened by warming the key well before inserting it. An anti-freeze solution or glycerine should then be squirted into the lock cylinder as soon as possible.

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

Ice on windows can be removed quickly by using Volkswagen's Spray D-Icer—Part N. ZVW 241 113.

A clean, smart car looks better

We have provided your vehicle with paintwork which is not only extremely durable and has a very high gloss, but which also has a long service life. This has been achieved by special chemical treatment of the body metal and the use of a four layer synthetic resin paint technique.

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

In the winter all parts of the vehicle are subjected to even more severe climatic conditions and the effect of corrosive salt solutions. It is advisable to clean and wax the vehicle more frequently in this period.

Every Authorized VW Dealer has stocks of car cleaning materials. These materials have been tested by us and found to give the best results. The order numbers of these materials are given on page 25.

Never wash, wax or polish the car in the sunshine.

Before waxing and polishing, the vehicle must be washed and dried thoroughly.

Wash a newly painted vehicle frequently with clear water particularly in the first two or three months as this will help to harden the paintwork. Use a soft sponge or hose brush for the body, a long handled brush for the wheels and plenty of water. Spray the body panels and wheels with a fine soft spray first to loosen the dirt, then start at the top and wash downwards. Rinse the sponge out frequently to avoid scratching the paint.

Later on, the vehicle should always be washed when it is dirty. The longer the dirt is left on the paint the greater is the risk of it damaging the glossy finish. The dirt particles can have a chemical effect on the paint surface or they can cause scratches if rubbed into the paint. If the dirt cannot be removed with clear water, a suitable shampoo can be added to the water. Afterward, rinse all traces of the shampoo off with clear water and then use a chamois to dry the vehicle to avoid water spots.

Waxing should be carried out for the first time after about 8 to 10 weeks. Waxing is a means of putting back into the paint certain substances which keep it flexible and are lost in the course of time due to weathering and washing particularly when you use a detergent. The wax coating seals the pores of the paint and makes it water-repellent.

The paint should be re-waxed when water remains in large patches on the surface and does not form beads and roll off. Regular waxing will ensure that the paint retains its original high gloss for a long time.

Another way of waxing the paint is to use a wash-and-wax solution. This is easier than waxing in the normal way. Just wash the vehicle first then put the wash-and-wax solution in a bucket of water and apply it to the paintwork. All that remains is to wipe the paint until it is dry. This type of wax will only protect the paint adequately if it is used every time the vehicle is washed and the interval between washes is not more than two or three weeks.

Polishing should only be done when the paint has lost its gloss due to weathering or lack of proper care and the gloss can no longer be restored by waxing in the normal way. After treatment with polish, wax the paint thoroughly to retain the gloss which has been obtained.

Tar spots tend to penetrate into the paint in a very short time. They should be removed as soon as possible, preferably with a tar remover. Afterward, the area concerned should be washed with a solution of shampoo and water and rinsed well to remove all traces of tar remover.

Insects tend to stick on the front of the vehicle and on the windshield in the summertime. These should also be washed off the paint as soon as possible. When really dried on, the insects can be removed with an insect remover. The paintwork should also be washed, rinsed and leathered off afterward.

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

Chrome parts should be treated with a chrome cleaner or polish. To give lasting protection in the winter, the chrome parts can be coated with one of the patent chrome protection compounds which form a hard film. The best way to apply these compounds is by spraying. The film can be removed by washing with kerosene, then washing with shampoo and rinsing to remove all traces.

The windows can be cleaned with a sponge and clear water. Always use a special clean leather to dry the windows. This leather must not be used on the paintwork in any circumstances as most paint cleaners and polishes contain ingredients which will cause unpleasant streaks to appear on the windshield when it rains, even if only the smallest trace is present. These streaks can only be removed with a good windshield cleaner. Do not forget to clean the wiper blades.

The windshield wiper blades should be taken off from time to time and cleaned with a hard brush and alcohol or a strong detergent solution. During long dry periods they tend

to get clogged with tar splashes, oil and insects. New blades should be fitted as often as necessary.

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

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

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

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

Car care materials for the Volkswagen

Since beauty is "skin-deep", your Volkswagen has been given a pretty deep skin. Four layers, as a matter of fact. (Each coat of enamel sprayed on, sanded and baked individually.) The items listed below will help you preserve the built-in beauty of your Volkswagen. Compounded especially for use on your VW, they are available at your local Authorized Volkswagen Dealer. Detailed instructions on how to use the various products are imprinted on the individual containers.

Application	Volkswagen Product
Car Washing, Convertible Top Cleaning, Upholstery Cleaning, Whitewall Tire Cleaning	All Purpose Cleaner – ZVW 243 101
Paint Polishing and Paint Waxing	Combination Car Cleaner and Wax – ZVW 241 109
Paint Polishing	Paint Polish – 000096001
Paint Waxing	Paint Preservative – 000096011
Care and Cleaning of Chrome Parts	Chrome Cleaner and Protection – 000096061
Windshield Cleaning	Windshield Washer Anti-Freeze & Solvent – ZVW 241 101
Paint Touch up	Touch up Paint, all colors
Removing ice from windows	Spray De-Icer-ZVW 241 113

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

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

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

Airing the body. If the vehicle is left in the garage for long periods, the garage and car doors must be opened from time to time to prevent the formation of mold and damp stains inside the vehicle.

The front seats. If the front seats get hard to slide, the runners should be lubed with dry stick lubricant at top and bottom after being cleaned with a cloth. The seats can be removed to do this by pushing them forward out of the runners.

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



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

Tires should be replaced when the tread depth is down to $\frac{1}{16}$ in. because this is the absolute limit for safe usage. 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. If you notice that the tires are wearing unevenly, get advice from your Authorized VW Dealer.

Just in case . . .

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

All other repairs should always be performed by an Authorized VW Dealer. The Volkswagen service organization offers you a wide spread network of authorized dealers staffed by skilled mechanics and equipped with all the special tools and appliances required. Whenever you see the familiar VW sign on the roadside, you can be sure of expert advice and quick, efficient assistance.

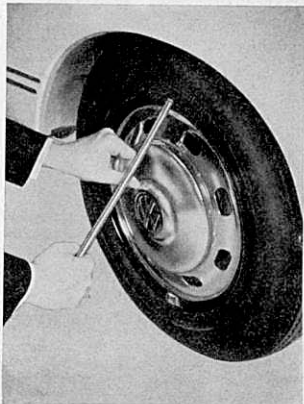
Wheel changing

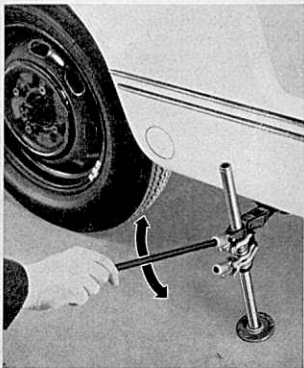
Before taking out the spare wheel, disconnect the hose leading to the valve of the spare wheel.

Apply the hand brake.

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

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



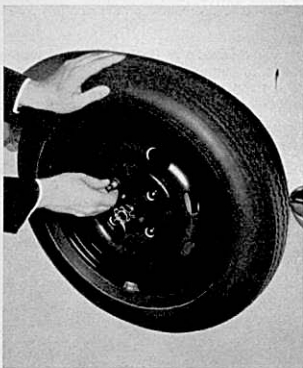


Insert jack into square hole under body and push the jack tube down until it touches the ground.

Place bar in upper link of jack and raise vehicle by moving bar up and down.

Unscrew wheel bolts and take wheel off.

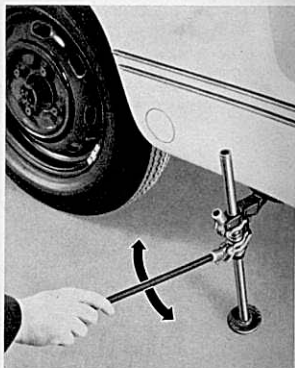
Place spare wheel in position and raise or lower vehicle as necessary until the holes in the wheel are roughly in line with the threaded holes.



Insert one bolt and tighten it until the wheel can be swung round to align the other holes with the threaded holes.

Insert remaining bolts.

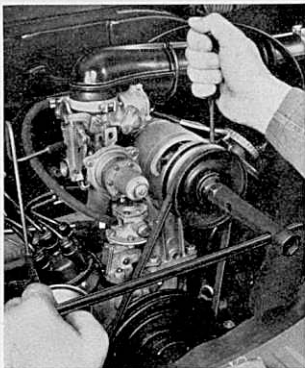
Tighten bolts until the wheel, centered by the spherical shape of the bolt heads, contacts evenly all round.



Place bar in lower link and lower the vehicle by moving bar up and down.

Tighten the wheel bolts diagonally at 95 ft. lbs. Correct tightness of the wheel bolts is important for safety.

Place trim ring in wheel and install hub cap with a blow of the hand. Be sure to check the pressure in the tire you have just put on. For correct tire pressure see page 16 or 48.

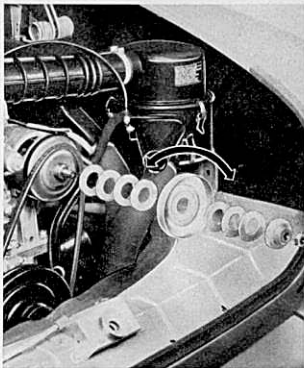


Adjusting or replacing the fan belt

The fan belt tension is correct when the belt can be pressed inward about .6 in. at the center. The belt must not be too tight or too

slack. A new belt may stretch slightly at first so it should be checked after about 600 miles and the tension corrected if necessary.

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



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

Hint:

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

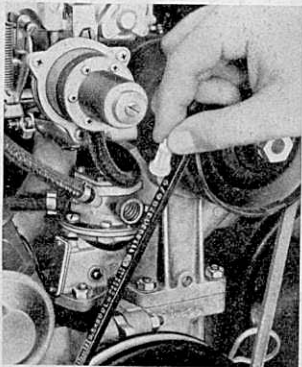
Cleaning fuel pump filter

Remove plug and take filter out.

Reinstall plug immediately to prevent fuel leakage.

Wash filter in clean benzine and blow it out.

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



Removing and installing spark plugs

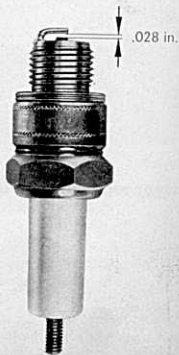
Pull connector off.

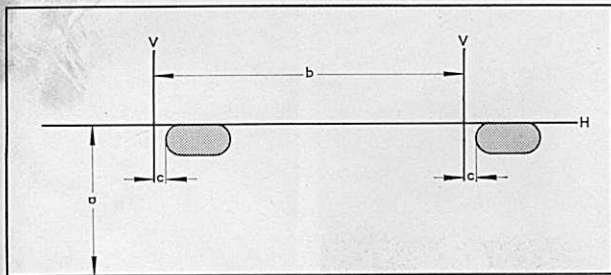
Screw plug out with socket wrench and bar.

Dirty plugs should be cleaned with a sand blaster but in an emergency, the carbon can be removed with a chip of wood. Do not use a wire brush. The plugs should also be clean and dry on the outside as well in order to avoid shorting and tracking. The gap can be set by bending the outside electrode. The gap should normally be .028 in., but when the weather is very cold it can be reduced to .016-.020 in. temporarily to facilitate starting.

Take care not to crossthread the plugs when inserting them, and tighten them firmly, but not overtight.

New plugs should be fitted every 12000 miles.

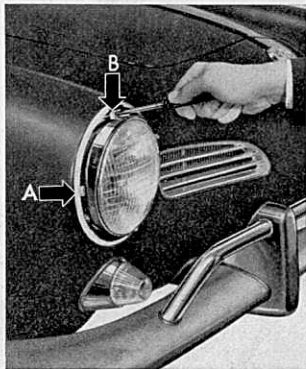




a = Height of headlamp center from floor
 b = Distance between headlamps (48.8 in.)
 c = 2 in.

A – Lateral aim

B – Vertical aim



Headlight adjustment

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

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

Measure height (a) of center of headlights from ground and draw a horizontal line (H) on screen at this height the full width of the vehicle.

Opposite the center of each headlight, draw vertical lines (V) intersecting the horizontal. These lines should be 48.8 in. apart. Drawing

a vertical line for the center of the vehicle might help aligning vehicle with screen.

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

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

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

Check with your State Bureau of Motor Vehicles for variations from this dimension.



Bulb replacement

Sealed-Beam 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 unit, ensure that the three glass lugs engage properly in the support ring.

Check headlight settings.

Front turn signal and parking light bulb

Loosen two Phillips screws and take lens off.

Press bulb into holder lightly, turn and take out.

Install new bulb.

When fitting lens, ensure that gasket is located properly.



Rear turn signal, stop and tail light bulbs

Unscrew two Phillips screws and remove lens.

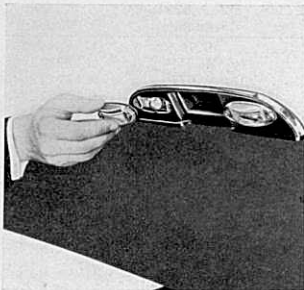
Bulb positions:

- Top – turn signal
- Center – stop
- Bottom – tail

Press bulb lightly into holder, turn and take out.

Install new bulb.

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



License plate light bulb

Open rear hood.

Remove screws on each side of lens and take off lens.

Press bulb lightly into holder, turn and take out.

Install new bulb.

When installing, ensure that the gasket fits properly.



Back-up light bulb

Unscrew the two lens securing screws until the rim and lens can be taken off.

Take reflector out of housing.

Press bulb lightly into reflector, turn and take out.

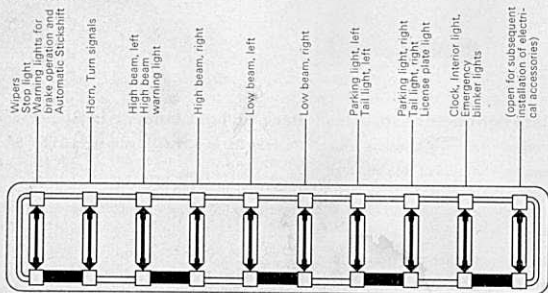
Install new bulb.

When fitting rim, ensure that rubber seal is located properly.

Bulb Chart

	U.S. Replacement Bulb	VW Part Number
Headlight	6012	11 941 261 A
Parking Light / Turn Signal	1034	N 177382
Tail Light	67	N 177182
Stop Light	1073	N 177322
Rear Turn Signal	1073	N 177322
License Plate Light	67	N 177182
Back-up Light	1073	N 177332
Interior light	—	N 177172
Speedometer, clock, fuel gauge, warning lights	—	N 177512
Warning lights for emergency flasher and brake operation	—	N 177512

Fuse box

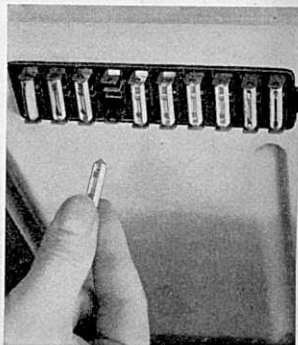


Two additional fuses are located on the fan housing in the engine compartment: The 8 Amp. fuse in the holder located above the generator protects the back-up lights. There is an additional 8 Amp. fuse above the ignition coil for the control valve of the Automatic Stickshift. If this fuse should ever burn out, the transmission cannot be shifted.

Replacing fuses

The fuse box is located under the instrument panel near the steering column. The transparent lid on the fuse box has symbols embossed on it showing the various circuits.

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 ampere fuses on the vehicle.



Checking battery

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

Batteries with casings of light colored plastic do not have securing straps. They are secured to the floor plates with two small brackets. The cover is pressed on.

Attention

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

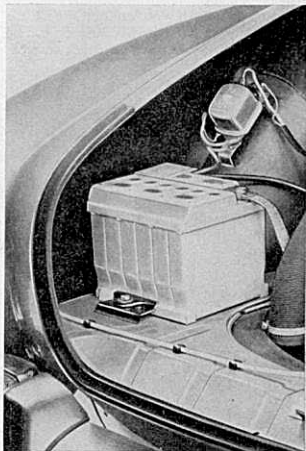
To check the electrolyte level, remove the plugs. The electrolyte should always be just over the tops of the plates. If the level is too low, it must be topped up with distilled water.

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

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

The terminals and connections should be kept clean and greased with battery terminal grease. Ensure that the ground connection to the body is free of corrosion and tight.

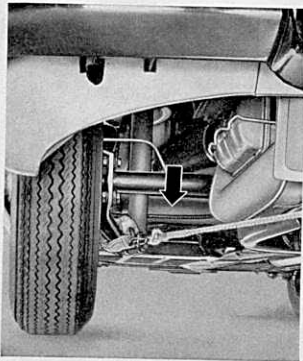
If you store your vehicle for a prolonged period, it is advisable to take the battery to an Authorized Volkswagen Dealer. A battery which is not in constant use will discharge itself in time and this can cause permanent damage to the plates if the battery is not checked about every four weeks and charged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



Towing

a – Vehicles with four speed synchromesh transmission:

Just in case you wish to attach a towrope to your vehicle, please note that the bumpers are not suitable for this purpose. This is because of the inherent shock loadings during engagement and disengagement of the manually operated clutch. If you do not expect the towing effort to be excessive, the rope can be attached at the rear to a lower shock absorber bracket.



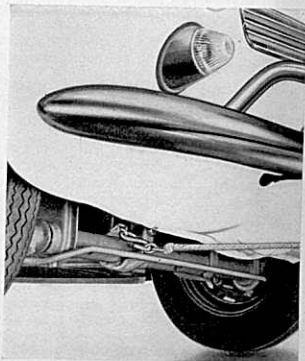
Otherwise we advise you to use the cross tube (arrow) which houses the torsion bar for the rear suspension. Neither of these points are very easy to reach but it prevents damage to your vehicle.

b – Vehicles with Automatic Stickshift:

Due to the cushioning effect of the torque converter during starting and shifting, a towrope may be attached to one of the rear bumper brackets. It is important to start out gradually. Avoid jerky movements when towing. Keep towrope taut!

When towing another vehicle or a trailer always start in driving range L. When driving uphill, shift in time to a lower driving range.

At the front, the rope should be attached to the lower axle tube as near to the frame head as possible.



Here is what to do when trouble troubles you

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

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

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

Note: The adjustment of idling, ignition timing and — on vehicles with four speed synchromesh transmission — throttle positioner requires special equipment and training. We suggest that you consult your authorized VW Dealer.

Problem	Probable Cause	What To Do
VW will not start: engine will not turn over or turns over too slowly	1. Run down or dead battery 2. Loose connection A. At battery B. At starter C. At connections behind dash board 3. Starter defective 4. On vehicles with Automatic Stickshift: The gear shift lever is not in Neutral	1. A. Four speed synchromesh transmission: Push to start the vehicle (turn on ignition, put in third gear at a speed of approximate 20 mph. Release clutch slowly). Have battery charged and cause of high current consumption checked. B. Automatic Stickshift: Push to start the vehicle (turn on ignition, shift into driving range L. When towing or pushing, the engine should start at a minimum speed of 15 mph.). Have battery charged and cause of high current consumption checked. 2. Make sure that all connections are tight A. Check both cable connections on battery and grounded end of ground strap B. Check connections at solenoid, mounted on starter, under right rear of vehicle C. Check push-on connectors behind dash board 3. Have vehicle started by pushing (see paragraph 1) and take it to nearest Authorized VW Dealer. 4. Shift to Neutral
VW will not start: engine turns over	5. Loose connection in ignition system 6. Loose connection in primary circuit to coil 7. If spark at black coil cable, trouble is in ignition system	5. Check for loose connections at coil, distributor and spark plugs. 6. Turn on ignition. Remove thin black cable from ignition coil, hold it by insulation and strike it against blower housing or other ground, being careful of gasoline and its fumes. If no spark, electricity does not reach coil from battery. Check push-on connectors behind dash board. If still no spark, see the nearest Authorized VW Dealer. 7. Check in this sequence: A. Turn on ignition, remove distributor cap and turn engine by the fanbelt until the ignition points are closed. Open and close ignition points several times with a nonmetal object. A visible and audible spark will appear between the points. If this is not the case, the cables on ignition coil and distributor should be checked for tightness. If even then no spark is visible, see your nearest Authorized VW Dealer. B. If spark appears at points, remove high tension wire from center of distributor, cap and hold it against a metal part of the engine at a distance of approximately $\frac{1}{4}$ ". Switch on ignition and turn over engine or open ignition points as described under A. A strong blue spark must appear. If this is not the case, see your Authorized VW Dealer.

Problem	Probable Cause	What To Do
VW will not start: engine turns over	<p>8. If spark is fairly good at plugs, trouble is most likely in fuel system</p> <p>A. Caused by improper starting procedure. If the gas pedal is depressed too often, the accelerator pump in the carburetor injects too much gasoline</p> <p>B. Carburetor may be flooded, float or needle valve may be sticking</p>	<p>C. If a spark appears at high tension cable, the distributor cap should be cleaned inside and outside. Reconnect high tension cable. Remove all spark plugs. If plugs are clean and dry, reconnect ignition cables to spark plugs and bring spark plugs in connection with metal (ground). Hold cable with dry piece of cloth to avoid shock. A spark should appear between spark plug electrodes when the engine is turned over. If not, clean and dry ignition cables and spark plug connectors and check that ignition cables are tight in distributor cap and plug connectors. See your Authorized VW Dealer if the above steps did not ensure proper ignition.</p> <p>D. Dirty or wet spark plugs should be cleaned and dried. Install new plugs if necessary. Unburned gasoline on plug electrodes points to excessive fuel supply.</p> <p>8. Check fuel system in the following sequence:</p> <p>A. Depress gas pedal completely and operate starter for a prolonged period. If engine does not start, remove and dry spark plugs, turn over engine with plugs removed for approximately 30 seconds. Reinstall plugs and start engine.</p> <p>B. Tap around outside of carburetor with wooden or plastic tool handle. Wait a few minutes and try starting again as described at 8A.</p>
Engine stalls shortly after starting	<p>9. Poor fuel supply</p> <p>10. Automatic choke does not open, excessive fuel supply</p>	<p>9. See paragraph 12 through 14.</p> <p>10. Check whether choke valve is in vertical position after ignition has been switched on for 2-5 minutes (depending on outside temperatures). Cover for choke unit must be hot. If choke valve is binding in a closed position open at fast idle cam and, if necessary, retain with wire. See your Authorized VW Dealer.</p>
Engine stalls while vehicle is driven	<p>11. Defect in ignition system</p> <p>12. Fuel supply is exhausted</p> <p>13. Fuel pump filter may be clogged</p> <p>14. Gasoline may be contaminated by water, dust or dirt</p>	<p>11. See paragraph 5 through 7.</p> <p>12. Check whether any gasoline is left in tank.</p> <p>13. After removing the screw plug, the fuel filter can be taken out for cleaning.</p> <p>14. See your VW dealer for cleaning of all components of the fuel system.</p>
Green warning light comes on while you are driving	<p>15. If green light goes on, the oil pressure is too low</p>	<p>15. Stop at once and check oil level. Add oil as necessary. If the oil level is sufficient and green light goes on during driving, contact the nearest Authorized VW Dealer before driving on.</p>
Red warning light comes on while you are driving	<p>16. If red light goes on, V belt may be torn or generator does not charge</p>	<p>16. If belt drives generator without slipping, switch off all unnecessary electrical equipment (radio, etc.). Drive to nearest VW dealer as otherwise the battery will soon get run down. If belt is broken, replace it before driving on.</p>
Vehicles with Automatic Stickshift: Lever cannot be shifted	<p>17. Control valve fuse burned out</p>	<p>17. Replace fuse (see page 34). Check cable connections on control valve located on the left in the engine compartment.</p>

Proper lubrication . . .

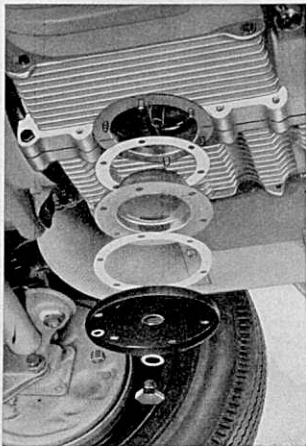
means regular and careful lubrication. Page 54 shows you at which intervals the various points require attention.

Engine

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

The oil is drained, when warm, by removing the plug in the oil strainer cover plate. Flushing is not necessary but the strainer must be removed and cleaned at every oil change. The gaskets and the copper washers under the cap nuts must always be renewed. The engine is then filled with 5.3 US pints of HD oil (4.4 Imp. pints) — labeled "For Service MS".

Due to the detergent properties of 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 3000 miles. We only recommend more frequent oil changes — every 1500 miles — in the winter if you drive mostly 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 about -13°F the oil should be changed every 750 miles.



Some more information about oil

Always use a branded HD oil labeled "For Service MS" for the engine of your Volkswagen. The quality of oil produced by reputable firms is so good that the choice of brand is entirely up to you. The Volkswagen engine makes no special demands in respect of oil quality which cannot be met by the well-known and popular brands. It is suggested that you select "your" brand of oil at the first oil change at 600 miles and that you stick to this brand if possible.

The classification of oil into various viscosity grades is shown by the designations SAE 30, SAE 20 W / 20 and so on. The viscosity of a lubricant indicates its resistance to flow at a given temperature. The VW engine only requires two different viscosity grades which are used, according to season of year, as follows:

SAE 30 In warm seasons and all year round in countries with hot climates.

SAE 20 W / 20 In the winter.
or

SAE 10 W *) In areas where the average temperature is below 5° F.

SAE 5 W *) In countries with arctic climates and temperatures below -13° F.

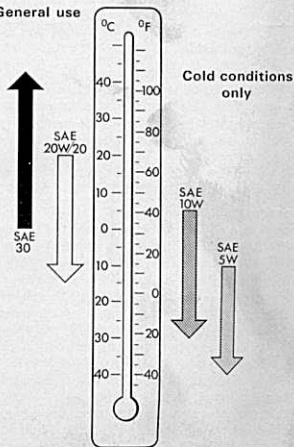
*) Avoid driving at high speeds for long periods if using SAE 10 W oil and the outside temperature is above 32° F or if using SAE 5 W oil when the temperature is above 5° F.

All SAE grades cover a temperature range of about 60° F and the ranges of two neighboring grades overlap by at least 30° F. Brief variations in temperature between seasons can therefore be disregarded. For the same reason, it is also alright to mix oils of different viscosities when oil has to be added between oil changes and the viscosity of the oil in the engine no longer corresponds to the actual temperature.

No additives of any sort should be mixed with HD oil.

Temperature ranges of SAE grades

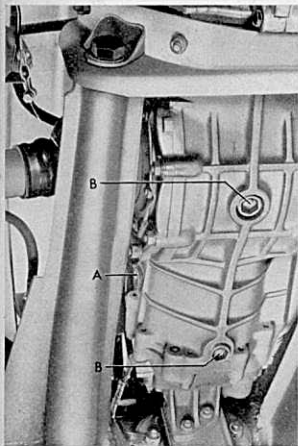
General use



Transmission

Transmission and differential 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).

At oil changes, the old oil should be drained when warm. The magnetic oil drain plugs – two on the four speed synchromesh trans-



mission (both B) and one only on Automatic Stickshift (C) – must be cleaned carefully. Fill up 5.3 US pints on four speed synchromesh transmission and 6.3 US pints on Automatic Stickshift of quality SAE 90 hypoid oil. Only in countries with arctic climates is it necessary to use the thinner SAE 80 transmission oil.

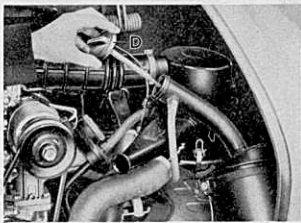
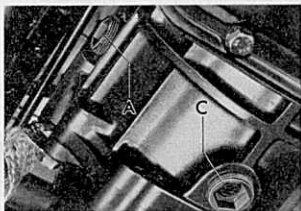
The oil sometimes runs into the transmission housing very slowly. If one attempts to put the oil in too quickly, it may overflow and give the impression that the housing is already full although actually only about 2–3 pints have been put in. It is essential to the service life and silent running of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

The oil level in the transmission should be checked every 6000 miles. At the same time the transmission should be checked for leaks.

Additives should not be used with hypoid oil.

On vehicles with Automatic Stickshift the ATF level in the torque converter should be checked every 3,000 miles with engine switched off.

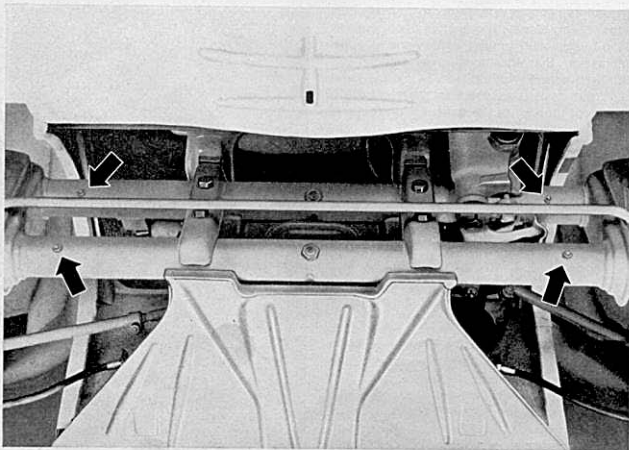
An ATF tank filler (D) with a dipstick attached to its cover is provided for this purpose on the right side in the engine compartment. The fluid level should be kept between the two marks on the dipstick and should never fall below the lower mark. If necessary, fill up with automatic transmission fluid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



Front axle

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

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



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

If the vehicle is driven less than 6000 miles per year, the front axle must be lubricated once a year.

Air cleaner

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

All the dust present in the air drawn in by the engine is retained by the filter element in the upper part of the air cleaner and washed out 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 $\frac{3}{16}$ " 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:

Loosen clip - A - on intake elbow and take elbow off.

Pull crankcase ventilation hose - B - off.

Loosen clip - C - on hose for preheated intake air and pull hose off.

Hold screw - D - for warm air control flap cable with a pair of pliers and loosen hexagon nut.

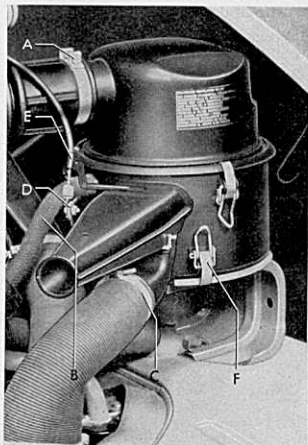
Loosen screw - E - on outer cable retainer and pull cable out.

Release clips - F - securing cleaner to bracket and take cleaner off.

Loosen the three upper clips, take cleaner upper part off and put it down with the filter element downward.

Clean bottom part carefully and put in .95 pint of fresh engine oil. SAE 30 oil should be used all the year except in countries with arctic climates where SAE 10W oil should be used all the year. The top part does not normally need cleaning. If the filter element has become so dirty due to delayed cleaning of the bottom part 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.

After assembling the cleaner, secure it to the bracket in the engine compartment with the two clips. Before connecting the cable for the warm air control flap, check that the flap moves freely. Then push the outer cable into the retainer and the cable into the clamp screw as far as they will go and secure both properly. Tighten intake elbow clip carefully.

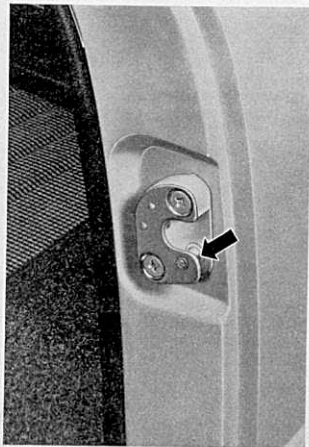


Doors and hoods

The door hinges do not require any lubrication. The friction surfaces of the striker plates should be lubricated lightly as and when required.

The hood hinges should be oiled and the hood locks greased lightly.

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





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Approved Accessories
Accessoires Agréés
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Accesorios Aprobados
Utprovade Tillbehör
Acessórios Aprovados
Beproefde Accessoires

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

VW EXCHANGE PARTS are also replacement parts for your Volkswagen just like the Genuine VW Parts. They are covered by the same Warranty conditions as Genuine VW Parts and are available in every VW Dealership. But there is one difference: The price. VW Exchange Parts are less expensive than Genuine VW Parts but exactly the same in quality. The exchange parts are not new parts, but parts which have been reconditioned in the Volkswagen factory. That is why you have to hand in the old repairable part to get an exchange part.

APPROVED VOLKSWAGEN ACCESSORIES are not just any old accessories. They have either been designed especially for the Volkswagen or selected from the vast range of accessories available and tested for use on the Volkswagen in the Volkswagen factory. The trademark "Approved Accessories" is your guarantee for material quality, good workmanship and reliability.

Approved VW accessories are supplied by your Authorized VW Dealer who will also install them for you if necessary. You can fit many of the accessories yourself.

Genuine Volkswagen parts, new and rebuilt, and approved Volkswagen accessories are covered by a warranty guaranteeing them to be free of defects in material and workmanship for a period of 6 months or 6000 miles whichever comes first.

Please consult your Authorized Volkswagen Dealer on all questions concerning repairs. He will be pleased to advise you and your vehicle will be in good hands.

Technical data

Engine

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

Oil bath air cleaner with thermostat controlled air pre-heating. Exhaust emission control system.

Bore	3.27 in. (83 mm)
Stroke	2.72 in. (69 mm)
Capacity	91.10 cu. in. (1493 cc)
Compression ratio	7.5:1
Maximum output SAE	53 bhp. at 4200 rpm.
Maximum torque SAE	78.1 lb. ft. at 2600 rpm.
Valve clearance with engine cold	Intake and exhaust .004 in. (0.10 mm)
Fuel consumption ¹⁾	Four speed synchromesh transmission: Automatic Stickshift:
	U.S. - 27.5 miles per gallon U.S. - 26.1 miles per gallon
	Metric - 8.5 liters per 100 km Metric - 9.0 liters per 100 km
	Imp. - 33 miles per gallon Imp. - 31.4 miles per gallon
Fuel rating	91 Octane (Regular)
Oil consumption	U.S. - 1.7-3.4 pints per 1000 miles
	Metric - 0.5-1.0 liters per 1000 km
	Imp. - 1.4-2.9 pints per 1000 miles

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

Power transmission

a - Four speed synchromesh transmission:

Single plate, dry clutch. Clutch pedal free play: .4-8 in. (10-20 mm).

Baulk synchronized four-speed gearbox and bevel gear differential in one housing.

Gear ratios: 1st gear 3.80:1, 2nd gear 2.06:1, 3rd gear 1.26:1, 4th gear 0.89:1, Reverse gear 3.61:1.

Differential ratio: 4.125:1.

Swing axles.

b - Automatic Stickshift:

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

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

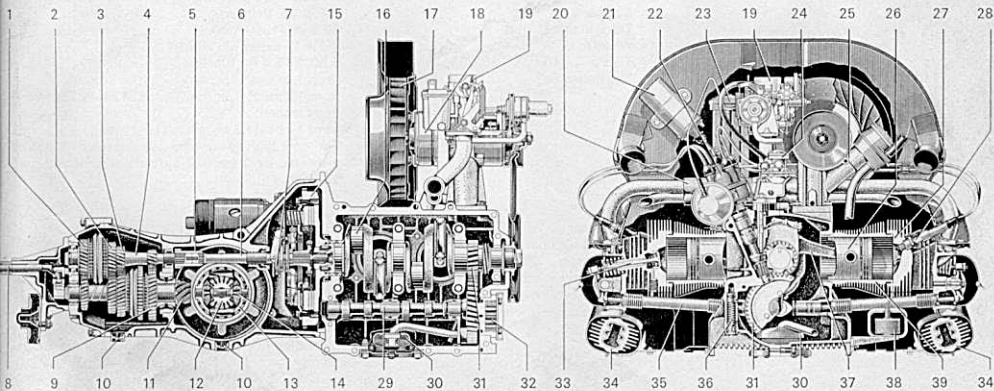
Differential ratio: 4.375:1

Drive shafts with two constant velocity joints per shaft.

Engine with four speed synchromesh transmission

- | | |
|------------------------------|--|
| 1 - 4th gear | 14 - Differential pinion |
| 2 - 3rd gear | 15 - Flywheel |
| 3 - 2nd gear | 16 - Crankshaft |
| 4 - Drive shaft, front | 17 - Fan |
| 5 - Reverse gear | 18 - Generator |
| 6 - Drive shaft, rear | 19 - Carburetor with throttle positioner |
| 7 - Clutch release bearing | 20 - Intake manifold |
| 8 - Transmission shift lever | 21 - Ignition coil |
| 9 - 1st gear | 22 - Distributor |
| 10 - Oil drain plugs | 23 - Oil cooler |
| 11 - Drive pinion | 24 - Fuel pump |
| 12 - Differential side gear | 25 - Oil filler and breather |
| 13 - Differential housing | 26 - Piston |

- | |
|--------------------------------|
| 27 - Cylinder head |
| 28 - Spark plug |
| 29 - Camshaft |
| 30 - Oil strainer |
| 31 - Camshaft drive gears |
| 32 - Oil pump |
| 33 - Valve |
| 34 - Heat exchanger |
| 35 - Push rod tube |
| 36 - Oil pressure relief valve |
| 37 - Connecting rod |
| 38 - Thermostat |
| 39 - Cylinder |



Chassis

Platform frame with tunnel-shaped center member — Front axle bolted to frame head, engine/transmission unit bolted to frame fork — Independent suspension: double cranked trailing arms at front, swing axles with trailing arms at rear — On vehicles with Automatic Stickshift: independent rear wheel suspension by trailing arms and diagonal links. Torsion bar springing, double-acting telescopic shock absorbers, stabilizer at front. On vehicles with four speed synchromesh transmission equalizer spring at rear. Roller steering with maintenance free tie-rods and hydraulic steering damper. Hydraulic four-wheel dual circuit foot brakes, disc brakes at front. Mechanical hand brake effective on rear wheels.

Wheelbase	94.5 in. (2400 mm)
Turning circle diameter	37 ft. (11.25 m)
Track at front	51.6 in. (1310 mm)
Toe-in	.08 to .18 in. (2 to 4.5 mm) unladen
Camber	30' ± 15' unladen
Track at rear	53.3 in. (1350 mm)
Wheels	4 J × 15 safety rim wheels
Tires	5.60 S 15 4 PR tubeless
Tire pressures	With 1 or 2 occupants: front 16 psi (1.1 kg/cm ²), rear 24 psi (1.7 kg/cm ²) Fully loaded: front 17 psi (1.2 kg/cm ²), rear 26 psi (1.8 kg/cm ²) For long, high speed trips, the pressures should be increased by 3 psi (0.2 kg/cm ²) at front and rear.

Electrical system

Voltage	12 volts				
Battery	44 Ah				
Starter	0.7 hp				
Generator	max. 360 watts, early cut in				
Ignition distributor	with vacuum spark advance				
Firing order	1-4-3-2				
Basic ignition timing	TDC — engine at operating temperature				
Contact breaker gap	.016 in. (0.4 mm)				
Spark plugs	<table border="0"> <tr> <td>Bosch W 145 T 1</td><td rowspan="3">} or plugs with similar values from other manufacturers</td></tr> <tr> <td>Beru 145/14</td></tr> <tr> <td>Champion L 95 y</td></tr> </table>	Bosch W 145 T 1	} or plugs with similar values from other manufacturers	Beru 145/14	Champion L 95 y
Bosch W 145 T 1	} or plugs with similar values from other manufacturers				
Beru 145/14					
Champion L 95 y					
Plug thread	14 mm				
Plug gap	.028 in. (0.7 mm)				

Dimensions and weights

Length	163.0 ins. (4140 mm)
Width	64.3 ins. (1634 mm)
Height	52.4 ins. (1330 mm)
Ground clearance	5.9 ins. (150 mm)
Unladen weight (ready for use)	1918 lbs. (870 kg)
Permissible load	727 lbs. (330 kg)
Gross vehicle weight	2645 lbs. (1200 kg)
Permissible front axle load	1102 lbs. (500 kg)
Permissible rear axle load	1565 lbs. (710 kg)
Permissible trailer weights	
Trailer with brakes	1100 lbs. (500 kg)
Trailer without brakes	880 lbs. (400 kg)

Capacities

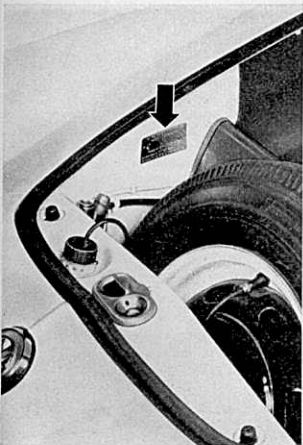
Fuel tank	10.6 U.S. galls (40 liters; 8.8 Imp. galls)
Engine	5.3 U.S. pints (2.5 liters; 4.4 Imp. pints)
Rear axle and transmission	5.3 U.S. pints (2.5 liters)
On vehicles with Automatic Stickshift:	
Torque converter circuit approx.	7.6 U.S. pints ATF (3.6 liters; 6.3 Imp. pints)
Rear axle and transmission approx.	6.3 U.S. pints Hypoid oil (3.0 liters; 5.3 Imp. pints)
Brake system approx.	.53 U.S. pints (0.25 liter; .44 Imp. pints)
Oil bath air cleaner approx.	.95 U.S. pints (0.45 liter; .79 Imp. pints)
Windshield washer approx.	3.6 U.S. pints (1.7 liter; 3 Imp. pints)
	operating pressure 43 psi (3 kg/cm ²)

Performance

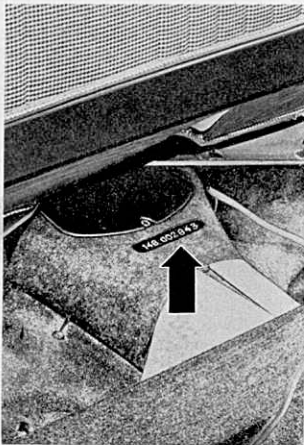
	Four speed synchromesh transmission	Automatic Stickshift
Maximum and cruising speed	82mph. (132 kph)	80mph. (128 kph)
Acceleration time from 0-50 mph (0-80 kph)	approx.13 seconds	approx.15 seconds
Climbing ability		
1st gear	45%	Driving range L 36%
2nd gear	23%	Driving range 1 22%
3rd gear	13%	Driving range 2 15%
4th gear	8%	

The identification plate is found under the front hood beside the spare tire. The 9 digit number after the words "Fahrgest. Nr." is the chassis number. It describes the model number, model year and serial number of the vehicle as shown in this sample:

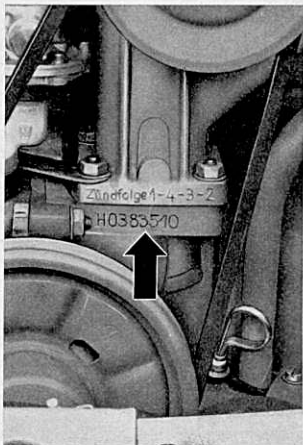
14 8 000001
Model Year Serial Number



The Chassis Number is found on the frame tunnel under the rear seat.



The Engine Number is on the generator support flange.



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Lubrication and maintenance

A. The free maintenance service at 600 miles – W 1 – consists of the following *:

Oil Change

- 1 – Engine: Change oil, clean oil strainer. Check for leaks.
- 2 – Transmission: Change oil, clean magnetic drain plugs. Check for leaks.
- 3 – Windshield washer: Check fluid.

Maintenance Service

The Mechanic:

- 1 – Check rear axle shaft nuts, tighten if necessary.
- 2 – Check V-belt, adjust if necessary.
- 3 – Check contact points, lubricate distributor.
- 4 – Check and adjust valve clearance.
- 5 – Check and adjust clutch pedal free-play. (Four speed synchromesh transmission only.)
- 6 – Check dust seals and proper fit of plugs in ball joints. Check dust seals on tie rod ends. Check tie rods, tighten if necessary.

- 7 – Check tire pressures. Check wheel bolts, tighten if necessary.
- 8 – Check brake system for damage and leaks, check brake fluid level, add if necessary. Adjust foot and hand brakes.
- 9 – Check operation of electrical system and headlight adjustment.

In addition, on vehicles with Automatic Stickshift:

- 10 – Rear axle: Check bolts on universal joints, tighten if necessary.
- 11 – Drive shafts: Check boots for leaks.

The Service Adviser (Quality Control)

During roadtest:

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

After roadtest:

Adjust ignition timing with stroboscopic light. Check and adjust idling. Check throttle positioner for correct functioning (does not apply to vehicles with Automatic Stickshift). Check cylinder head covers for leaks.

* Lubricants and fluids are paid by the customer.

B. An oil change service every 3,000 miles – WS 5 – consists of:

- 1 – Engine: Change oil, clean oil strainer. Check for leaks.
- 2 – Door and hood locks, door hinges: Lubricate.
- 3 – Battery: Check, add distilled water if necessary, clean and grease terminals.
- 4 – Windshield washer: Check fluid.

In addition, on vehicles with Automatic Stickshift:

- 5 – Check ATF level, fill up if necessary. Check torque converter circuit for leaks.

C. A lubrication and maintenance service every 6,000 miles -W10- consists of:

Lubrication Service:

- 1 – Engine: Change Oil, clean oil strainer. Check for leaks.
- 2 – Transmission: Check oil level, add if necessary. Check for leaks.
- 3 – Front end: Lubricate.

- 4 - Door and hood locks, door hinges: Lubricate.
- 5 - Carburetor linkage: Oil.
- 6 - Air cleaner: Check, clean lower part if necessary and fill with fresh oil.
- 7 - Battery: Check, add distilled water if necessary. Clean and grease terminals.
- 8 - Windshield washer: Check fluid.

In addition, on vehicles with Automatic Stickshift:

- 9 - Check ATF level, fill up if necessary. Check torque converter circuit for leaks.

Maintenance Service

The Mechanic:

- 1 - Check V-belt, adjust if necessary.
- 2 - Clean fuel pump filter.
- 3 - Check contact points, replace if necessary, lubricate distributor.
- 4 - Check and adjust valve clearance.
- 5 - Check spark plugs, check and adjust plug gap. Check compression.
- 6 - Check control flap for carburetor pre-heating.
- 7 - Check rubber valve for crankcase ventilation, replace if necessary. Check exhaust system for damage.

- 8 - Check and adjust clutch pedal free-play. (Four speed synchromesh transmission only.)

- 9 - Check dust seals and proper fit of plugs in ball joints. Check dust seals on tie rod ends. Check tie rods, tighten if necessary.

- 10 - Check axial play of lower ball joints.

- 11 - Check front wheel camber and toe-in.

- 12 - Steering gear: Check and adjust play between roller and worm.

- 13 - Check tires for wear and damage, check tire pressures.

- 14 - Check brake system for damage and leaks, check brake fluid level, add if necessary. Adjust foot and hand brakes. Check brake switch and warning light for correct operation.

- 15 - Check thickness of brake linings and pads.

- 16 - Check operation of electrical system and headlight adjustment.

- 17 - Check wiper blades and replace if necessary.

In addition, on vehicles with Automatic Stickshift:

- 18 - Rear Axle: Check bolts on universal joints, tighten if necessary.

- 19 - Drive shafts: Check boots for leaks.

- 20 - Servo clutch: Check clearance on clutch servo rod and adjust, if necessary.

- 21 - Control valve: Clean air filter.

- 22 - Shift lever: Check and clean contacts, replace if necessary. Adjust clearance.

The Service Adviser (Quality Control)

During roadtest:

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

After roadtest:

Adjust ignition timing with stroboscopic light. Check and adjust idling. Check throttle positioner for correct functioning (does not apply to vehicles with Automatic Stickshift). Check cylinder head covers for leaks.

D. In addition, every 30,000 miles the transmission oil is changed - W10-, the front wheel bearings are repacked - W 50 - and - on vehicles with Automatic Stickshift - the rear wheel bearings are cleaned and lubricated. Also remove and install both brake drums and rear axle shafts-W51.

