PORSCHE

914 6

USA

OWNER'S MANUAL

914/6

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USA

Contents

PORSCHE

914-6

OPERATING INSTRUCTIONS

USA

Because safe driving is important to you, we suggest that you read this carefully; that you maintain your Porsche properly and that you get into the habit of following the check list below, each time you use your Porsche.

Before getting behind the wheel:

1 – Make sure that the tires are inflated properly.

2 – Watch the tread wear indicator on the tires. Look for bruises.

3 – See that all windows are clean and unobstructed.

4 – Check that headlight and tail light lenses are clean.

5 – Check that all lights are functioning properly.

6 – Check turn signal lamps and indicator light with the ignition on.

In the driver's seat:

1 – Position seat for easy reach of controls.

2 – Adjust inside and outside mirrors for unobstructed rear view.

3 – Fasten seat belts.

4 – Check brake warning light (ignition on).

5 – Check brake.

6 – Make sure that all doors are locked.

While you are driving:

1 – Always drive defensively. Expect the unexpected.

2 – Use signals to indicate turns and lane changes.

3 – Turn on headlights at dusk.

4 – Follow at a safe distance. A good rule of thumb is to allow a minimum of one car length for each 10 mph.

5 – Reduce speed during night hours and inclement weather.

6 – Observe speed limits and obey highway signs.

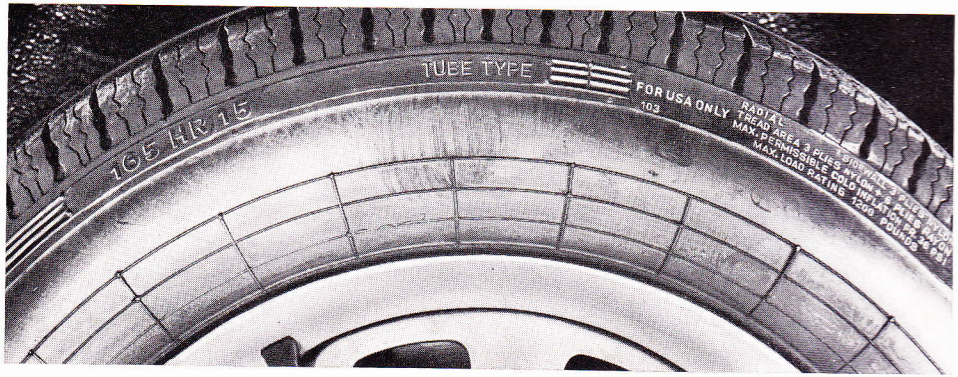
7 – When tired, get off the highway, stop and rest.

8 – Use emergency lights when stalled or stopped for repairs.

9 – Pull hand brake lever when vehicle is parked.

MANUFACTURED BY **Dr. Ing. h. c. F. PORSCHE KG** 01/70
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
914

This sticker assures you that your Porsche complies with all Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was produced.



The tires of your Porsche conform to the Federal Motor Vehicle Safety Standards.

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

Before driving the car, please check the following:

Tire pressure

Fuel level

Lights

Brakes

Starting Cold Engine

1. Shift into neutral.
2. Switch the ignition on.
3. Fully depress the accelerator pedal two or three times.
4. Slightly touch the accelerator pedal and turn the ignition key clockwise to the stop to engage the starter.

In cold weather it is of advantage to fully disengage the clutch when starting the engine to reduce the drag imposed upon the starter. If necessary, depress the throttle pedal a few times more than stated above in order to enrich the starting mixture even more.

Starting Warm Engine

1. Shift into neutral.
2. Switch the ignition on.
3. Keep the accelerator pedal in idling position or only slightly depressed, and engage starter.

Do not "pump" with the accelerator pedal unnecessarily since this squirts gasoline into the induction system and may flood the engine.

Note

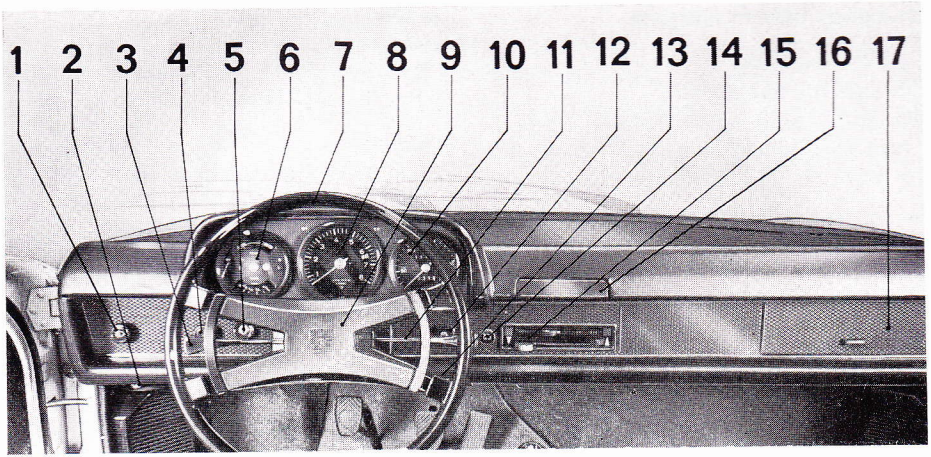
The starter motor should not be operated longer than 15–20 seconds at a time. If the engine has failed to start, repeat the start procedure after resting about 20 seconds. Once the engine has started, release the ignition key without delay; the key will return into its normal position.

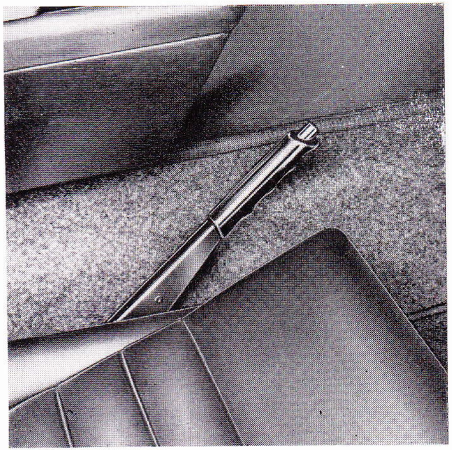
Break-In Rules

Continued excellence of performance and economy depend to a great degree upon the treatment and handling given during the first 600 miles of operation. It cannot be overemphasized that not only the engine will benefit from proper break-in, but the car as a whole. During this crucial period, the car must not be driven at full power over extended distances, nor should it be driven too slow (with the exeption of the 1 st gear, do not drive at less than 1500 rpm if at all possible). The general rules are as follows:

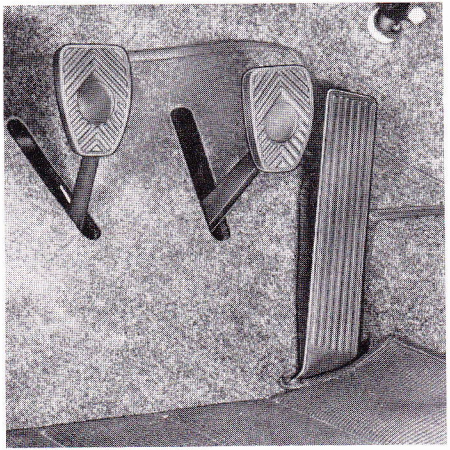
1. Maximum engine speed during the first 600 miles must not be in excess of 5000 rpm.
2. Increase the maximum applied engine speed by 500 rpm between odometer readings of 600 and 1000 miles, meaning not to exceed 5500 rpm. Drive brisqly, change speeds frequently, use full throttle for short spurts only.
3. Increase maximum engine rpm to 6000 between odometer readings of 1000–1200 miles.
4. Bear in mind never to lug the engine with heavy throttle at low engine speeds, a rule which applies not only during break-in but at all times.
5. Upon reaching the odometer reading of 1200 miles, you can subject the car to full throttle operation.

A special distributor rotor with an integral governor prevents an overspeeding of the engine under load by limiting the engine speed to 6500 rpm. The red line on the tachometer dial serves as an optical limit-reminder.

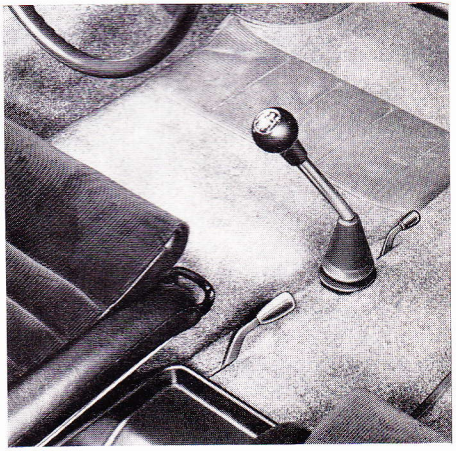




Handbrake



Foot Pedals



Gearshift Lever, Heater Control Lever and Hand throttle lever

Instrument panel

1 Light switch

2 Knob for front compartment lid

3 Turn indicator, dimmer and headlamp flasher switch

4 Emergency light switch

5 Ignition starter switch and steering lock

6 Combined instrument

7 Steering wheel

8 Speedometer

9 Horn push

10 Tachometer (revolution counter)

11 Windshield wiper/washer switch

12 Cigarette lighter

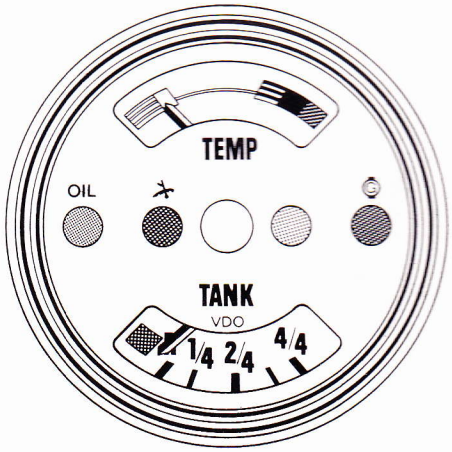
13 Trip mileage reset knob

14 Switch for heated rear window (optional)

15 Fresh air and warm air control lever

16 Ashtray

17 Glove box



Instruments

(please check at regular intervals on a journey)

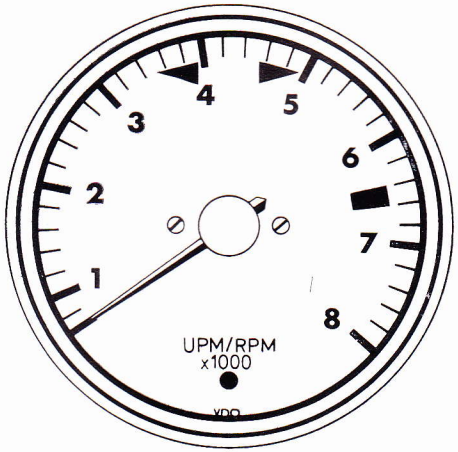
Combined instrument

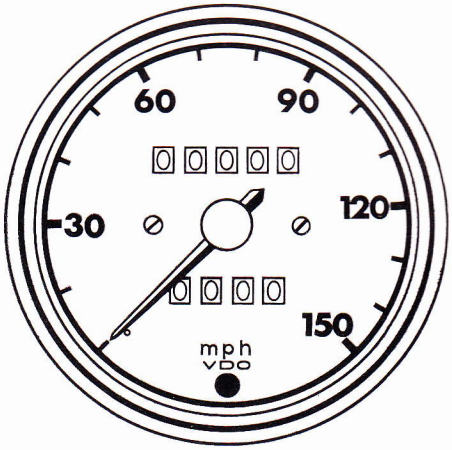
The combined instrument contains the fuel gauge, engine oil thermometer, alternator warning light, oil pressure warning light, oil temperature warning light (Sportomatic only) and brake warning light. All these function only when the ignition is switched on.

The **fuel gauge** also contains a red warning light which is illuminated when only about 1.6 US gal./1.3 Imp. gal./6 liters remain in the tank.

The needle of the **engine oil thermometer** should normally stay in the white color zone. If it enters and remains in the red zone, lower your speed and consult an authorized Porsche Audi dealer.

Incorrect ignition timing or a slipping V-belt can sometimes cause the oil temperature to rise excessively.





Tachometer

The transistorized tachometer operates on the pulse count principle and shows engine speed in revolutions per minute (rpm), working only when the ignition is switched on. A special distributor rotor with an integral governor limits the engine speed to 6500 rpm and prevents overspeeding the engine under throttle loads.

The red mark on the tachometer dial has been provided as an optical reminder. Also located on the tachometer dial are the control lights for the directional signals and the high beam indicator.

Speedometer

The speedometer indicates speed in miles per hour. The odometer counts total miles driven and cannot be turned back by hand. The trip mileage counter, located in the lower part of the dial, can be turned back to zero at any time by a knob under the instrument panel. Also located on the dial face is a warning light indicating that parking lights are on.

Warning Light

Oil Pressure Warning Light (green)

The oil pressure warning light is in the combination instrument. It lights up when the ignition turned on: it goes off when the running engine has reached the proper oil pressure. Should it light up while driving, it indicates a malfunction in the lubricating system, this case the car must be stopped at once and the oil level checked. If the oil level is normal, the cause of the malfunction must be corrected immediately. An occasional flickering of the control light at idle speeds and normal operating temperature, is of no significance.

Alternator Warning Light (red)

The alternator warning light indicates alternator operation, fan belt condition, and cooling blower operation. The lamp will light up as soon as the ignition is switched on, and will go off as engine speed increases. If the light should flicker or go fully on while driving, it may be an indication of a loose or broken fan belt necessitating adjustment or installation of a new belt. However, the cause may also lie in a defective voltage regulator in which case it will be necessary to have the defect corrected in a reputable shop equipped for this task.
The alternator warning light is located in the combination instrument.

Turn Signal Indicator (green)

The turn signal indicator lights are located in the tachometer and light up simultaneously with the turn signals. A faster flashing rate indicates malfunction of the turn signal lamps.

High Beam Warning Light (blue)

The high beam warning light comes on as soon as the high beams are switched on. It is located in the lower part of the tachometer.

Parking Light Indicator (green)

The parking light indicator is located in the speedometer. The lamp lights up when the parking lights are switched on; it goes off automatically when the headlamps are switched on.

Brake Warning Light (red)

The brake warning light is in the combination instrument. It should light up when the ignition is turned on. When the engine is running the light should not stay alight unless:

the handbrake was not completely released;

brake fluid level in the reservoir has dropped;

a brake circuit has failed.

Warning: If the light does not come on when the ignition is switched on, or stays alight when the engine is running, you must take the car to a repair shop for brake system examination without delay.

Clutch pedal

Correct free travel at the pedal is 15–20 mm (0.6–0.8 in.). To check, pull the pedal away from the floor. (For checking and adjusting clutch operating clearances, see page 59.)

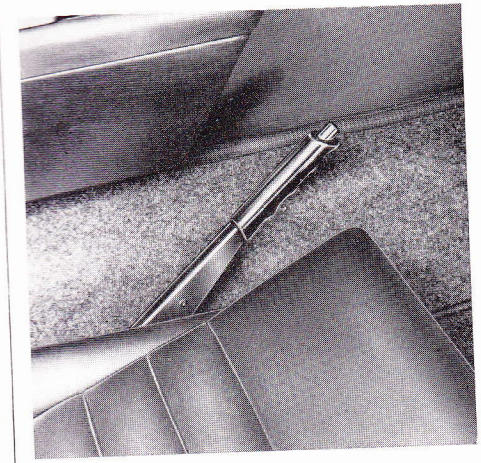
Brake pedal

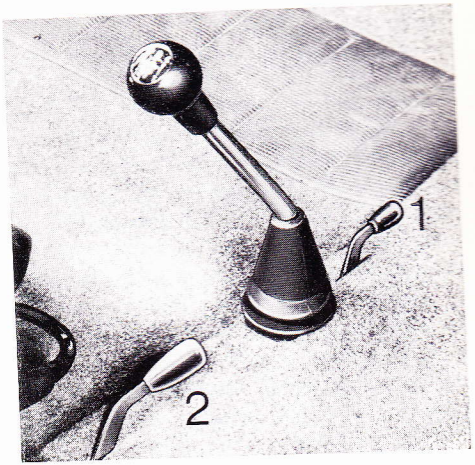
Since the brake system is self-adjusting, free travel at the brake pedal will remain constant provided that the system has been correctly bled to remove air bubbles. Pedal travel up to the point actual brake actuation may be 30–50% of the total range of movement.

If the brake pedal can be depressed farther than this, the brake system should be checked and bled if necessary.

Hand brake

The hand brake is applied and locked on automatically by pulling the lever up.
To release the hand brake, first pull the lever up slightly, at the same time pushing in the release button. Then lower the lever fully, keeping the button pressed in.
The hand brake warning lamp in the combined instrument is intended to prevent excessive rear brake friction pads caused by driving the car with the hand brake partially applied.





1 Hand throttle lever
2 Heater control lever

Hand throttle

The engine idle speed can be raised by pulling the lever up (for cold starting).

Heater control lever
(engine heat supply)

It the heater control lever is moved up, the warm air supply passage is opened.
By pressing the lever down the supply of warm air can be cut off (see page 29).

Shifting Gears

The fully synchronized transmission permits shifting into any gear without manipulating the accelerator pedal or "double-clutching". Make sure that the clutch pedal is fully pushed in and the selected gear fully engaged. The following maximum engine speeds must not be exceeded when downshifting (applies to standard gear ratios only):

5-speed transmission

5th to 4th gear = 5100 rpm
4th to 3rd gear = 4800 rpm
3rd to 2nd gear = 4300 rpm
2nd to 1st gear = 3600 rpm

Shift Pattern

1st gear – Left rearward over the spring guide
2nd gear – Straight forward off the spring guide
3rd gear – Straight back
4th gear – Right forward
5th gear – Right rearward
Reserve – Left forward over the spring guide

Sportomatic (optional)

The advantages of the "sportomatic" can be explained with only a few points:
Either the footbrake or the hand brake must be on when a gear is engaged in a stationary car. This necessary because the convertor does not interrupt the transmission entirely even when the engine is only idling. The car tends to move slowly, to creep. The lower the gear or the higher the revs, the stronger the tendency to creep.

To select a gear, the connection from engine to gearbox must be interrupted. This is effected by means of a separator clutch which automatically disengages as soon as the selector lever is moved in the direction of a gear.

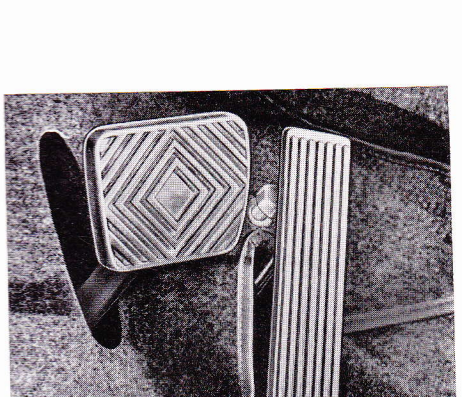
The gear lever should therefore only be touched to change gear. Should the gear lever be moved unintentionally, while driving, the engine, freed of working load, reaches high revs, and would put a heavy strain on the clutch when it is re-engaged by releasing the gear lever.

There is no clutch pedal. You must therefore be careful when changing gears not to step on the brake.

The brake pedal is wider so that you can brake with the left foot too, when maneuvering the car.

Starting the Engine

The engine can only be started with the gear lever in the neutral and parking position.



Speed ranges

The torque delivered by the engine is multiplied by the torque converter to continuously suit the driving load for any given time. It is therefore possible to drive off in all gears and to reduce the driving speed down to zero.
For optimal acceleration and engine braking, however, the most suitable gears should be selected. Use the tachometer to check the max. permissible engine speed.

The following limits are not to be exceeded when changing down:

D4 to D3 speed range = 4900 rpm
D3 to D speed range = 4700 rpm
D to L speed range = 4200 rpm

L range: Straight forward off the spring guide.

D range: Straight back, for starting off and accelerating.
Also for driving in city traffic.

D3 range: Right forward, for driving under normal conditions.

D4 range: At right rear for driving on clear roads and high speeds.

Reverse: Press to the left over the spring guide and then pull straight back.

1 Gearshift lever
2 Hand throttle lever

Park: Press to the left over the spring guide and then push straight forward; driving wheels are locked.

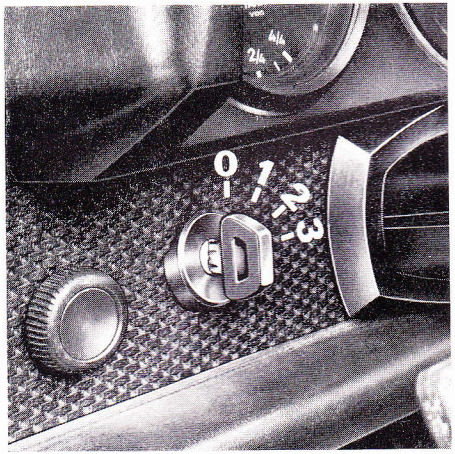
Oil Temperature Warning Light

Should the torque convertor become overheated as a result of heavy work, such as slow hill-climbing in heavy traffic, the oil temperature warning light comes on in the combination instrument.
By changing down to a lower gear the oil cools quickly and the warning light will go out.

Towing

(see also page 69)

With the gear lever in neutral the car can be towed any distance at any speed.
For towing to start, move the gear lever to speed range L. A speed of about 20 mph is enough to turn over the engine.



Steering lock with ignition / starter switch

There are 4 key positions:

0 – Steering locked; all electric circuits wired through the ignition switch are turned off. In this position the turn indicator lever can be moved up or down to switch on overnight parking lights on the left or right side of the car.

1 – Steering unlocked. All electric circuits wired through the ignition will now operate, except for the brake, turn and back-up lights and the fresh air blower.

2 – Ignition on, steering unlocked. All electric circuits can be switched on. The red alternator and green oil pressure warning lamps will come on while the engine is stopped.
The brake warning light also flashes, and does not go out until the engine is running and the handbrake is fully released (assuming that the brake system is not defective).

3 – The starter operated by turning the ignition key fully to the right. As soon as the engine has fired, release the key at once. It will spring back to the "ignition on" position.
While the starter is cranking the engine the circuits for headlights and wiper motor are interrupted.

The starter should not be operated for more than 15–20 seconds at a time. If a second attempt is necessary, observe a short pause first. The ignition must first be turned off: a starter repeat lock in the ignition switch is designed to prevent a second operation of the starter while the engine is still turning.
The ignition key can only be withdrawn in the "0" position.
When the ignition key is turned back to the "0" position the steering lock will not engage until the key is withdrawn.

Light switch

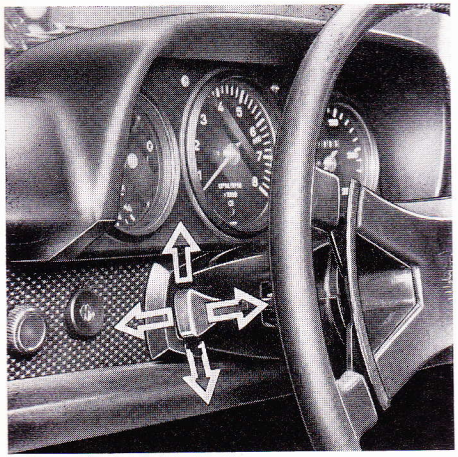
The two position pull-twist light switch should be pulled out as far as the first stop to switch on the parking lights. When the switch is pulled out to the second stop, both parking and high or low pop-up headlamp beams are switched on.
To change from low to high beam or back, operate the combined turn indicator dimmer/ headlamp flasher lever on the steering column.

Instrument lights

The instrument lights come on automatically when parking lights or headlamps are turned on.
The intensity of illumination can be varied progressively from dim to bright by turning the light switch.

Emergency Flasher

All four turn signals will flash in unison when the emergency warning light switch is pulled.
This system is used to warn approaching drivers when the car has to be stopped in traffic due to an emergency.
This system can be switched on independently and without regard to the position of the ignition switch. It is possible that regulations as to the use of this system may vary from one state to another.



Turn indicator / dimmer / headlamp flasher lever

With the ignition switch in position "0" the lever can be moved to the "right turn" position to operate the right side overnight parking lights, and to the "left turn" position for the left side parking lights. The overnight parking lights are formed by the front side light and the corresponding rear light.

Turn indicator / dimmer / headlamp flasher lever

Operation of headlamp flasher

Main light switch position	Dimmer switch position	Headlamp beams in use
Off	—	Long-range headlamps* (pop-up headlamps closed)
On (1st stop = parking lights)	—	Long-range headlamps* (pop-up headlamps closed)
On (2nd stop = headlamps)	Low beam	High beams and long-range headlamps*
	High beam	—

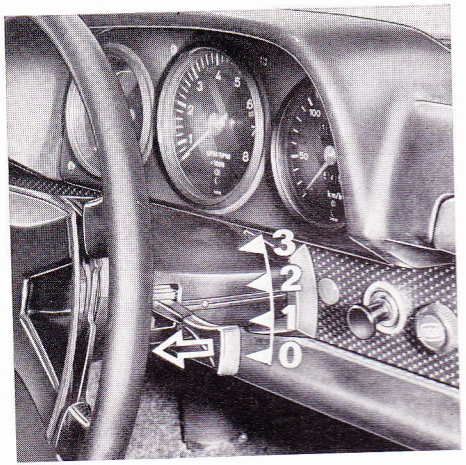
* This wiring is supplied as standard. Regulations applicable in certain countries may call for modification to the wiring.

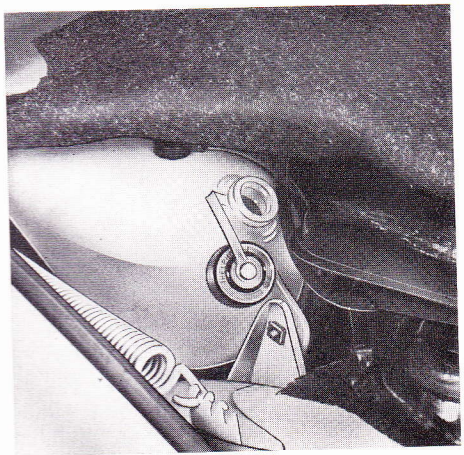
The changeover is controlled by a relay.

Switch positions (steering/ignition lock in "ignition on" position)

Lever up	right turn indicator flashing	
Lever down	left turn indicator flashing	
Lever towards instrument panel	High beam headlamps	Main light switch must be pulled out to 2nd stop
Lever towards steering wheel rim	Low beam headlamps	

The headlamps are flashed by pulling the dimmer switch lever gently up from the low beam position towards the steering wheel rim. The headlamps will remain on for as long as the lever is in the upper position.





Prolonged operation of the wipers on a dry windshield will scratch the glass, and should therefore be avoided. Check wiper blades frequently and replace at least once a year. The washer liquid reservoir is located in the front luggage compartment and holds approx. 2 US quarts.
During the cold season of the year, please follow the instructions for cold weather operation on page 31.

Windshield wiper and Washer switch

The combined wiper and washer switch has four positions:

0 = off, wipers parked
1 = slow
2 = medium
3 = fast

The electric windshield washer pump is operated by pulling the switch lever towards the driver.

With the wiper switch in position 0, two washer stages can be obtained:

1st pressure: windshield sprayed with liquid.

2nd pressure: windshield sprayed, wipers operate at fast speed (position 3).

With the wiper switch in positions 1 through 3, only one pressure setting is available. The washer operates without affecting the wiper speed. When the lever is released it automatically stops the windshield washer.

Cigarette Lighter

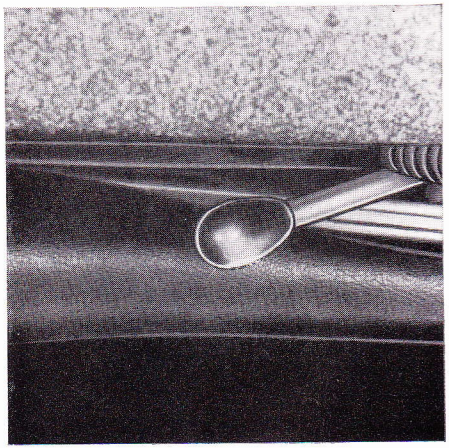
The heating coil in the lighter begins to heat up when the lighter is pushed in. Upon reaching the proper temperature the lighter automatically snaps out of its holder and can be withdrawn for use.

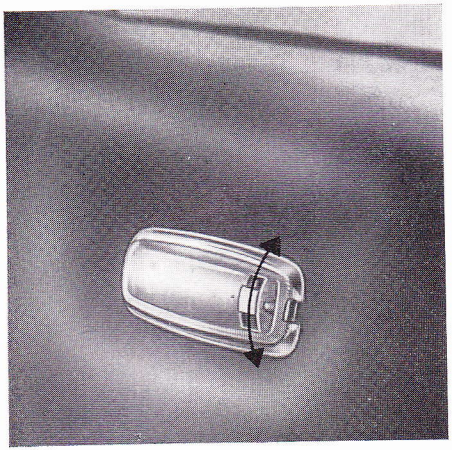
Switch for Heated Rear Window

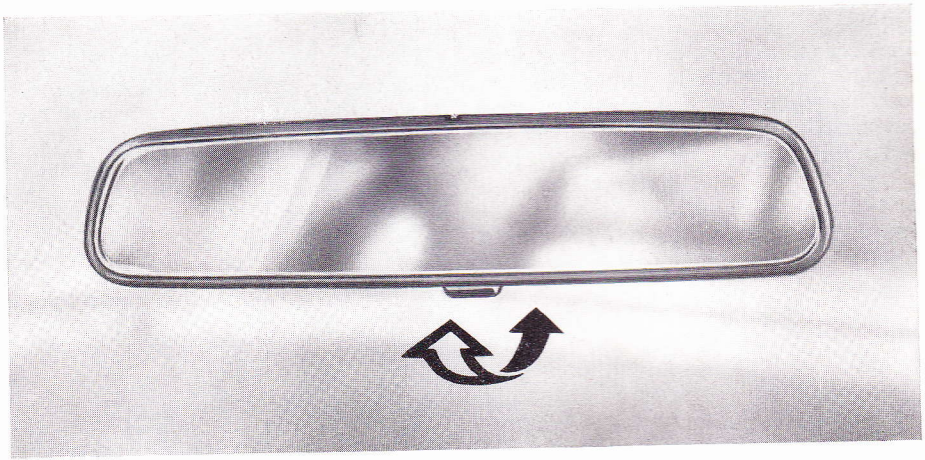
The electric rear window heating system can be switched on by a push-pull switch on the instrument panel. The heating element greatly reduces fogging or icing even in adverse weather.

Seat Position

The driver seat has forward, backward and height adjustments. After pulling up the locking lever on the inside of the seat, the seat can be pushed backward or forward. The height is adjusted by pulling up the lever on the outer side of the seat.







Interior light

The illustration above shows the interior light. The rocker switch has 3 positions.

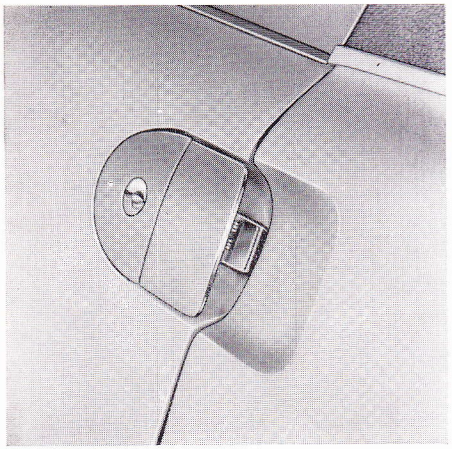
a) Lamp lights automatically when either door is opened.

b) Lamp switched off.

c) Lamps switched on.

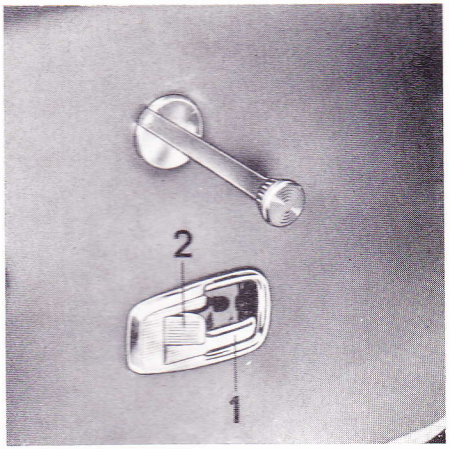
Non-glare Inside Rear View Mirror

The mirror can be adjusted for night driving to reduce glare from lights behind the car by tilting a small knob at the bottom of the mirror frame.



Keys

Two sets of keys are supplied with the vehicle. Each set contains one master key (black handle) which fits all the locks. The second key (red handle) fits only the door locks and ignition lock.



1 Pull-knob
2 Locking lever

Inside Door Handle

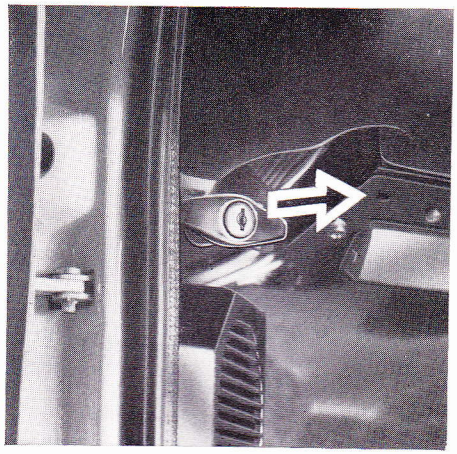
In the paneling of each door is a recessed inside handle. The door is opened by pulling the lever.

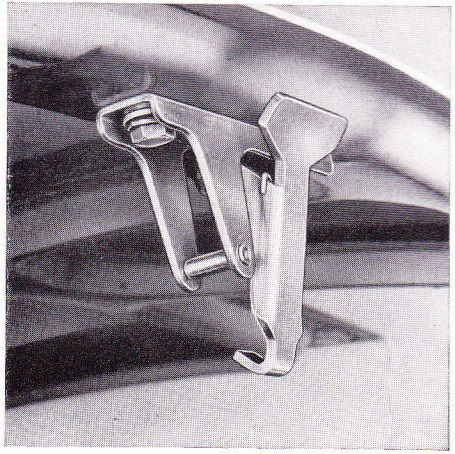
The doors can be locked from inside by pressing the locking knob. If the doors are to be locked from outside without using the key, the locking knob should be pressed and the door handle grip pulled when shutting the left door.

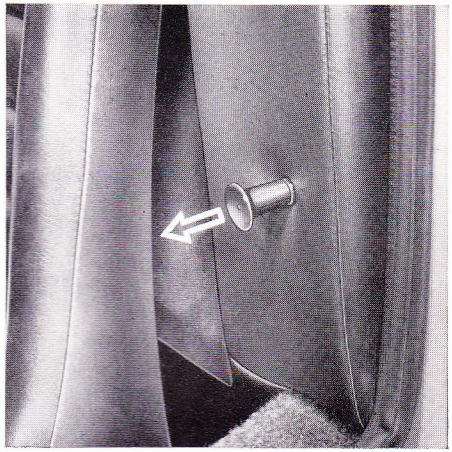
The right door locks without pulling the door handle grip.

Fuel Tank Filter Neck

The fuel filler neck is in the front luggage compartment lid.







Front Lid Release Knob

The lockable front lid release knob is located under the left side of the instrument panel. The lid is opened by first pulling the release knob, the pushing back the safety catch under the lid. Spring tension keeps the lid in the open position.
To close, push the lid down until first the safety catch and then the lock snaps shut.

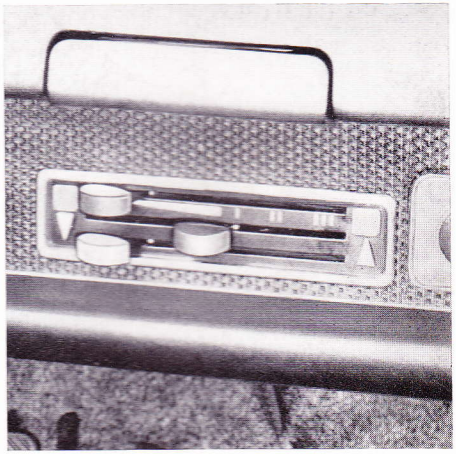
Engine Compartment Lid Release

The release knob for the engine compartment lid is located in the left rear door post. The lid is opened by pulling the release knob which releases the bolt, allowing the lid to be opened. Spring tension keeps the lid in the open position.
To close, push the lid down until the lock snaps shut.

Trunk Lock

The trunk opened by pressing the knob on the lid. Spring tension keeps the lid open.

Ventilating System



A three-speed ventilating blower and respective distributing ducts are located in the luggage compartment below the instrument section.

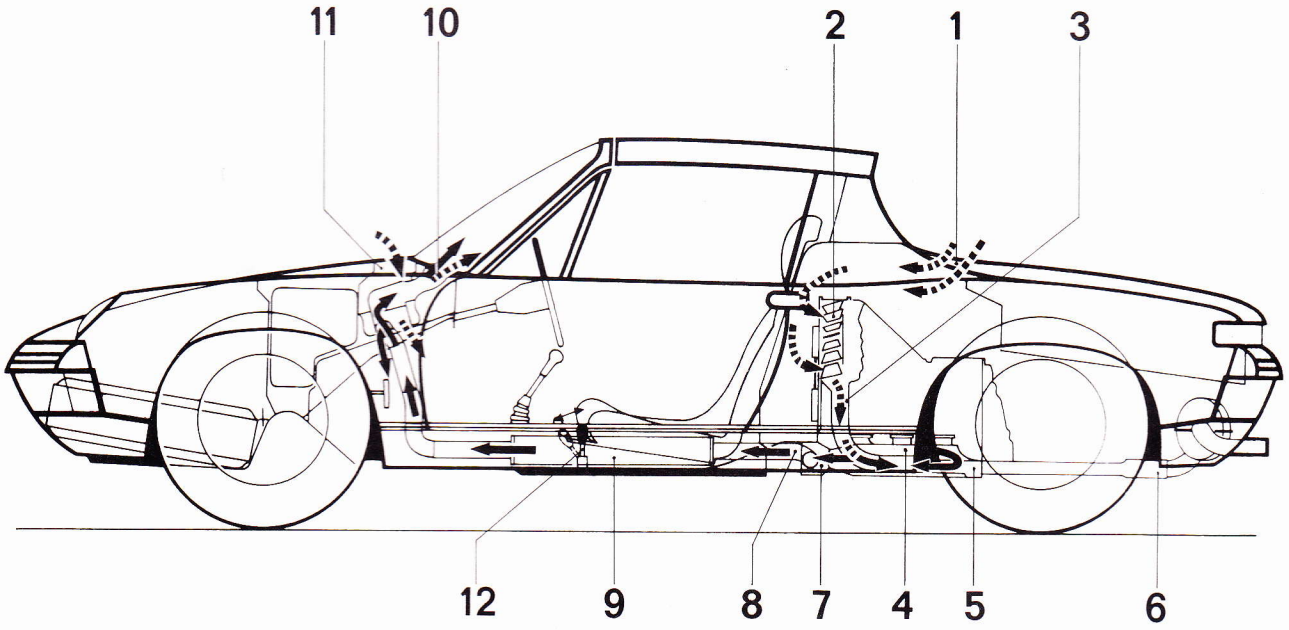
The upper lever in the control panel controls the fresh air gates and ventilating blower.

When the lever is at the left stop, air gates are closed. As the lever is moved to the right the gates open and let fresh air into the passenger compartment throught the inlet below the windshield as long as the car is moving. When the lever is pushed past the center position, the blower goes on. The blower can be set to positions I, II, and III, depending on the desired ventilating effect.

The middle lever regulates the distribution of air. When the lever is at the left, the air flow is directed to the leg area; in center position, the air flows to the lower and upper compartment areas; when the lever is moved to the right stop, air flow is directed upward only.

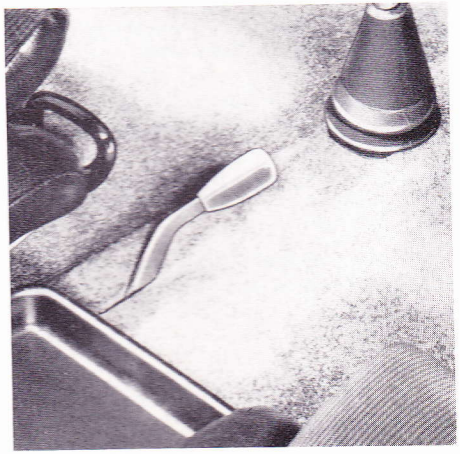
When the manifold heater is turned on, this lever will also regulate the flow of hot air coming from the heat exchangers in the same way as the regulation of fresh air flow.

Schematic view of heating and Ventilating System



Heater

The standard car heater uses heat derived from the engine.



Heater controls (standard heater)

Operation:

The complete fresh air requirement is drawn in by the blower through the grill in the engine compartment cover ①. The quantity of fresh air needed for the car heater is split off immediately behind the blower ② and conducted through a supply pipe ③.
This supply pipe feeds fresh air (cold air) to the two heat exchangers ④ on the engine. The heat exchangers are enclosed sheet metal boxes through which the exhaust pipes ⑤ pass. All detachable joints on the exhaust system ⑥ are located outside the heat exchangers.
The complete engine exhaust system is mounted in the airstream beneath the car's tail.
From the heat exchangers the warm air passes through connecting hoses, flap valve boxes ⑦, pipes ⑧ and acoustic dampers ⑨ into the bodyshell side members and then to the paired distribution points.
Warm air outlets are provided below the windshield ⑩ and in the front footwells. Flap valves ⑦ in the warm air circuit are designed to allow air to circulate continuously over the exhaust pipes in the heat exchangers, even when the heater is shut off. In addition, fresh air can be supplied to the interior through ventilation slots ⑪ below the windshield, regardless of the heater setting.

Operating instructions:

A heater control lever ⑫ is located behind the gear lever. When the lever is pulled back, the warm air supply is turned on; when it is pushed forward, the heating is shut off.
The lever operates flaps in box ⑦ by means of a cable. If the cable breaks, both flaps close automatically and direct the warm air to the atmosphere.
Warm air distribution is controlled by the lower lever in the heater control unit on the instrument panel. With the lever fully to the left, all the warm air is directed downward into the footwells. In the center position warm air is divided equally between the upper and lower outlets. If the lever is fully to the right, warm air is directed only to the upper outlets.

Location of Identification Plates

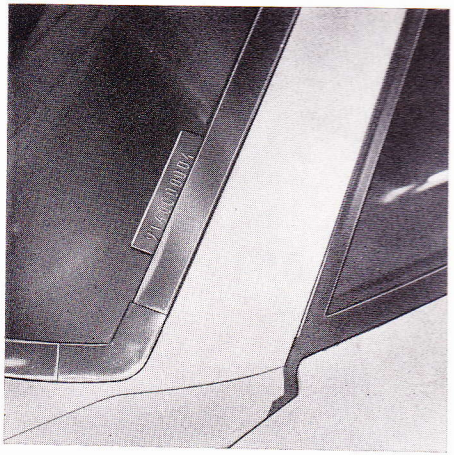
Manufacturer's Plate Chassis Serial Number

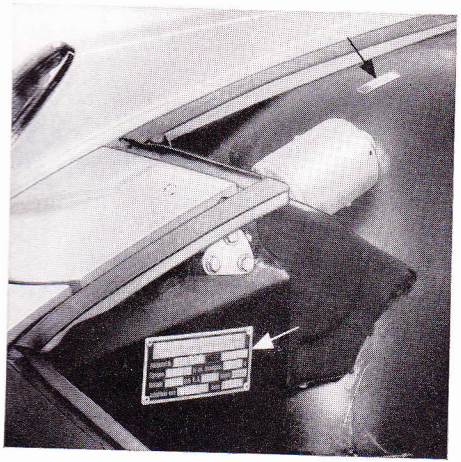
The manufacturer's plate is in the front luggage compartment on the casing of the right headlamp.
The chassis serial number is in the front trunk, stamped on the right wheel well.

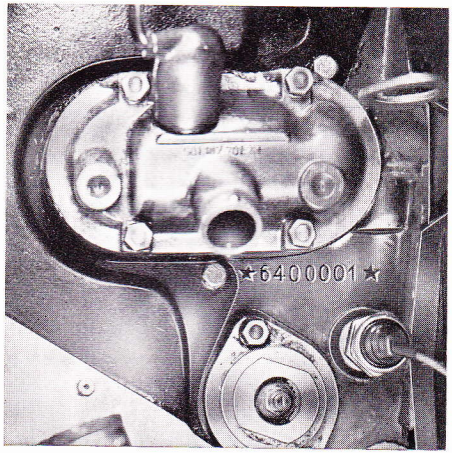
The chassis number is also found on the left windshield post so that it is visible from the outside.

Engine Serial Number

The engine serial number is stamped on the left side upper part of the crankcase below the breather column.







Disc Brakes

When the brakes are applied, each brake pad is pressed hydraulically against its brake disc by a brake piston. The brake pads are self adjusting. The brake discs are protected against road spray and dirt by cover shrouds, although it still is possible that the brake pads and discs become wet when driving on wet highways. When driving on wet expressways or similar fast highways where the easy traffic conditions call for only infrequent use of the brakes, higher brake pedal pressures will be required for braking. Consequently, it will be of advantage to gently apply the brakes at not too long intervals when driving in environments mentioned above so that the discs and pads remain dry. Do not fail to run the brakes dry after the car has been washed.

Conditioning Brake Pads

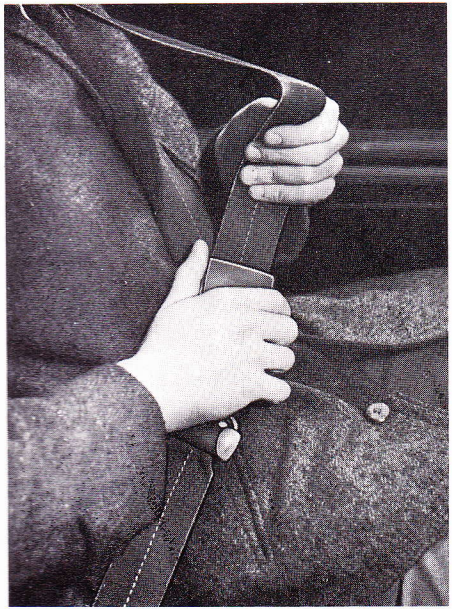
Every vehicle equipped with disc brakes requires a certain run-in period. Care should be exercised during the first 100–150 miles. After that the brakes have reached their full efficiency.

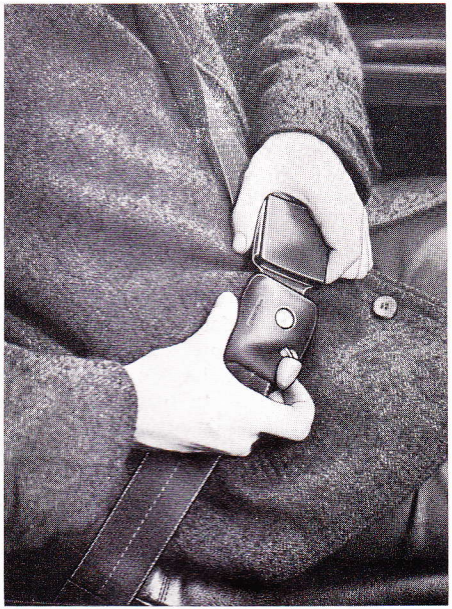
Winter tires and snow chains

We recommend to consult an authorized workshop when buying winter tires and snow chains.
Concerning the snow chains the following has to be considered. Use only fine-membered and flat track chains which have still enough space at the wheel wells. Chains can only be mounted on the rear wheels.
Snow chains cannot be mounted on tires 185 HR 14 (optional).

Hints for Cold Weather Operation

1. Make sure that winter oil of proper specifications is put into the engine at time of the oil change. (See page 86).
2. Fill the windshield washer reservoir with a solution of 3 parts water to 1 part alcohol.
3. Treat the paint finish, chromed and aluminium parts with protective waxes or appropriate compounds (see information on car care, page 40 and so on).
4. Check electrical condition of battery at frequent intervals, including the level and specific gravity of electrolyte; coat battery terminals with grease. (See page 63).
5. Apply glycerine to rubber stripping located between the body and front trunk lid to keep these from freezing shut.
6. Check brake pads and linings, replace if necessary.





Seat Belts

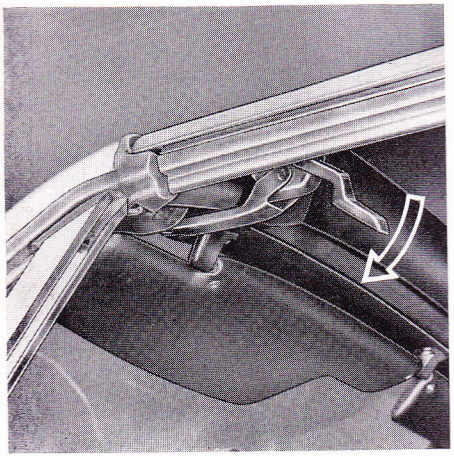
Your Porsche is equipped with a combination shoulder belt for each seat. Occupants of the vehicle should wear the belts at all times. Shoulder belts should not be worn by persons less than 55 in. in height.

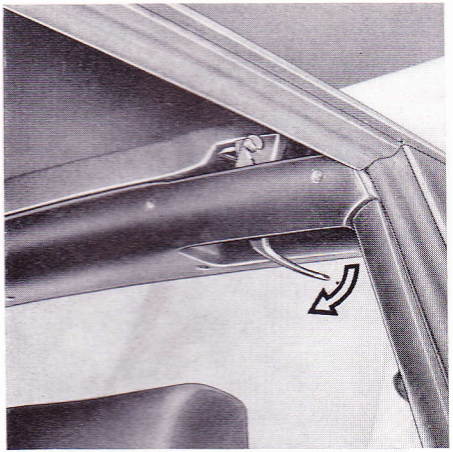
Fastening the belt: Sit well back in your seat so that your body is supported by the seatback. Grasp the buckle-tongue and insert it into the buckle.

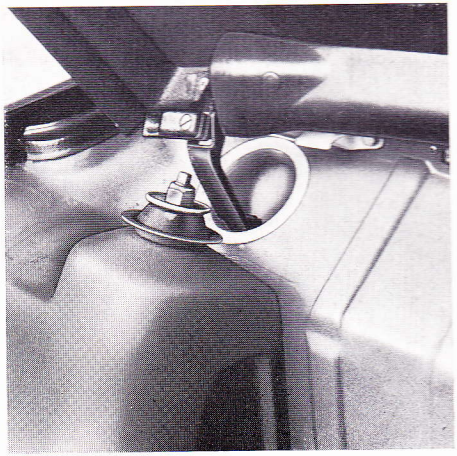
Tightening the belt: Tighten the lap strap by pulling the belt between the buckle-tongue and the plastic-runner, until the belt holds you firmly without tension. After tightening a loop will form, and this can be flattened out by pulling the free end of the belt.

Opening the belt: At the end of your drive, or to release the belt quickly in an emergency, pull up the red lever on the buckle. This will open the seat belt immediately.

Do not wear the belts loosely. Do not strap in more than one person with each belt. Check buckles and fittings periodically to make sure they function correctly and check belt to ensure that the webbing has not been damaged.







Removable Roof

General:

The roof is secured at the back and front by two quick action clamps, facilitating easy removal and installation.

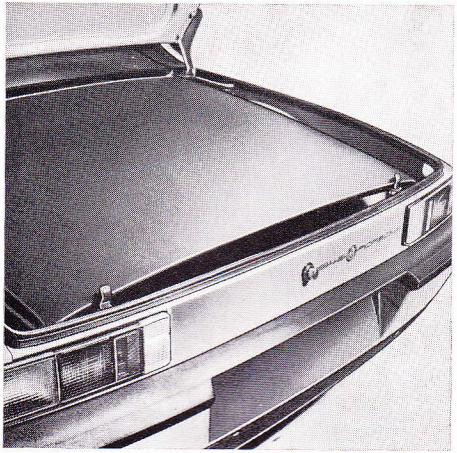
Please observe the following instructions:

Removal of roof:

1. Turn both front clamps outwards and press downwards.
2. Pull down both handles on the roof support (Roll bar side). Lift up the roof at the back and lift out to the rear.
3. Return both handles of the front clamps to the side.

The roof can now be stored in its retainers in the rear luggage compartment.

Rest front edge of roof on the two retainers. Make sure clamps are correctly positioned in the two plastic recesses and the handles are still on the side.



Press roof forward until front edge is completely seated in retainers. Press rear of roof down lightly and secure it with two rubber fasteners.

Installing the roof:

1. Place the roof from above and slightly tilted forward onto the windshield frame and push it forward, pressing lightly.
2. Close both clamps and turn the handles to the side.
3. Secure the top at the rear with the locking handles.

PORSCHE

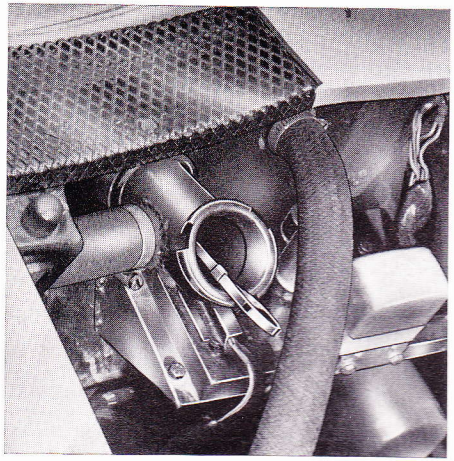
914 6

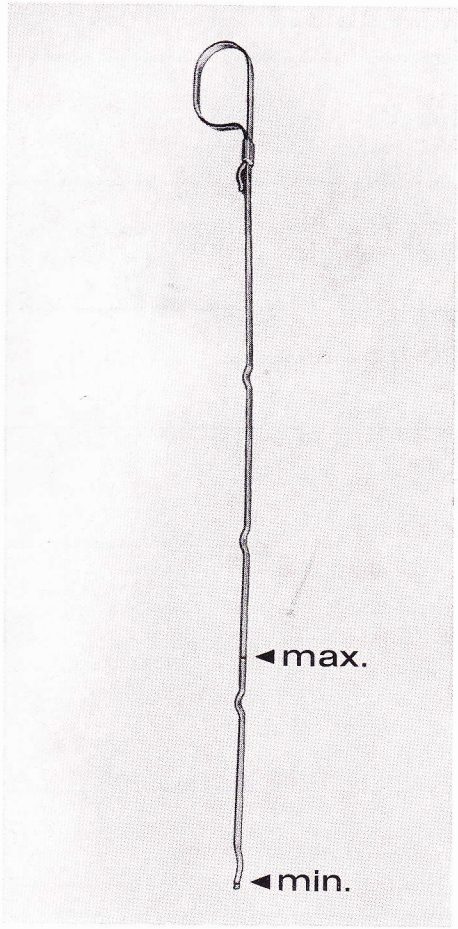
CARE AND LUBRICATION

USA

LUBRICATION SCHEDULE, TYPE 914/6

300 to 600 miles	6,000 to 6,500 miles	**Service required**	then every miles
●	●	Change engine oil and clean magnetic drain plugs at least twice a year, preferably once before summer and once before winter	6,000
●	●	Change engine oil filter	6,000
●	●	Clean oil strainer	6,000
●	●	Change transmission oil	12,000
	●	Lubricate throttle valve linkage	12,000
	●	Lubricate door and lid hinges	12,000





Checking engine oil level

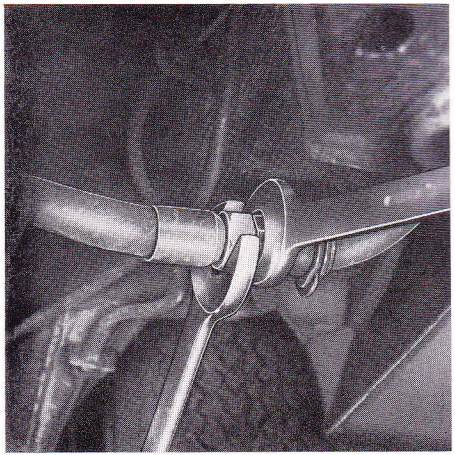
Oil level must be checked with the engine running at idle speed and the oil warm (at least 60° C (140° F). The engine should run at idle speed only.
Before checking oil level allow the engine to idle for about half a minute so that the oil in the tank can settle.

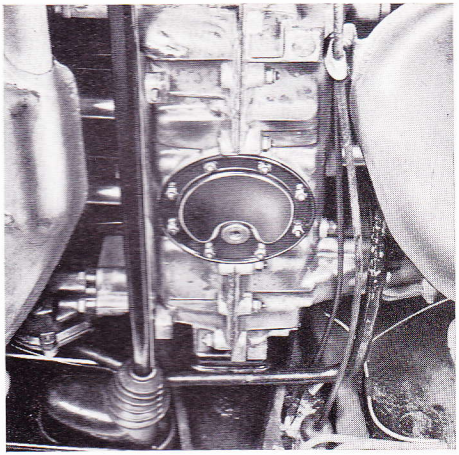
Measurement:

Take off the oil tank filler cap. Pull out the dipstick and wipe clean.
Push the dipstick fully into the guide tube. Wait a few seconds, then remove the dipstick.
The oil level must be between the two marks on the dipstick.

Engine oil change

1. With the engine warm, remove the oil drain plug. Disconnect the oil line between the oil tank and the engine (see illustration)
2. Drain the oil completely from the engine and the oil tank.
3. Remove the oil strainer, clean and re-install. Observe instructions carefully.
4. Replace the filter element as prescribed in the maintenance schedule.





5. Clean the oil drain plug, reinstall and tighten. Connect the oil line between engine and oil tank.
6. Add 9.5 U.S. quarts of brand-name HD engine oil to the oil tank (see page 86).
7. Close the oil tank.
8. Run the engine and check oil level at idle speed as soon as the oil is warm (at least 60°C (140°F). The engine must run until the oil level stabilizes (about $^1/_2$ minute).
9. Stop the engine and add more oil if required.

Cleaning oil strainer with magnetic drain plug

To improve engine oil purification, a magnetic drain plug is screwed into the oil strainer cover. The oil is cleaned initially by the strainer and forced over the magnetic plug.

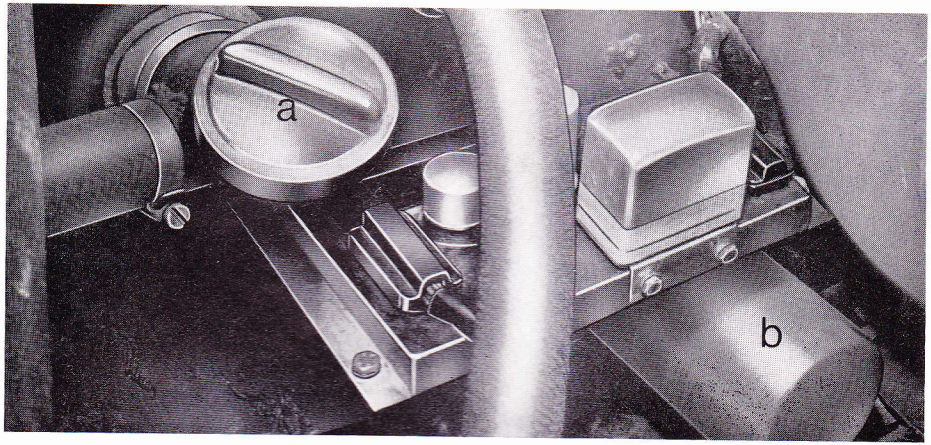
Oil strainer

Removing:

1. Loosen hex nuts on oil strainer cover.
2. Remove cover.
3. Take off strainer with gaskets.
4. Wash all components in clean gasoline.

Installation:

1. Check firm seating of oil suction tube.
2. Clean strainer, remove traces of gasket material.
3. Use new gaskets on each side of strainer.
4. Install the strainer so that its opening fits closely around the suction tube.
5. Remove traces of gasket material from the sealing surface of the cover.
6. Do not overtighten hex nuts, especially if thicker gaskets are used, or the cover may be distorted.



a: Oil filler neck b: Oil filter

Changing Oil Filter Cartridge

The oil filter cartridge must be changed at intervals specified in the lubrication schedule on page 37. The change is accomplished by unscrewing the filter and replacing it with a new one, including a new gasket.

Care should be taken when installing the new filter cartridge. Do not overtighten it since this could make the subsequent removal very difficult.

1. Screw the filter cartridge assembly in until contact with gasket is made.
2. Tighten the assembly only by about one-half turn.
3. Start engine and check for leaks.

Changing Transmission Oil

1. Remove oil drain plug from the bottom of transmission housing.
2. Allow oil to drain completely.
3. Clean drain plug, reinstall, and tighten securely.
4. Wipe dirt from oil filler plug, then remove.
5. Fill transmission with approx. $2^1/_2$ US qts gear lubricant as specified in the lubrication schedule.
6. Check transmission oil level, reinstall oil filler plug and tighten securely. Oil level in the transmission should come up to the bottom of the oil filler hole when the car is level.

Care of Coachwork Oil

The finish on production line Porsches is of a high quality baked synthetic enamel. The color and enamel type designation is indicated on the identification plate attached to the forward door post. When corresponding with the factory on matters pertaining to the paint finish, make sure to include the identification numbers.

In daily use the car is exposed to many mechanical and chemical influencing factors as well as hot sun rays, rain, snow, and frost. The ultra-violet rays, the rapid temperature changes with rain, snow, industrial dust and chemical deposits attack the paint finish which can withstand this only through regular and proper care.

Car Washing

During the initial few weeks, the new car should be washed with clear water only. This is best accomplished by applying a fine water spray to the entire surface to first soften the dirt and remove the worst of it. Following this, clean the surface by using a soft sponge and plenty of water, rinse well, and then wipe dry with a chamois. Never attempt to wash or wax the car as long as the surface is hot from exposure to the sun or engine heat.

Since water will usually moisten the brakes when the car is washed, resulting in poor braking action or one-sided pulling, it is important to test the brakes whenever the car has been washed.

Dust should never be wiped off the car with a dry rag since the dust particles are sharp-edged and abrasive in nature and will rapidly dull the finish and cause scratches that may be difficult to repair.

Care of the Finish

It must first be pointed out that oils contained in the paint are the most important factors contributing to the elasticity of the finish. Due to the fact that these oils are gradually lost as the time goes on, due to weather and similar causes, they must be replenished through regular and proper care of the finish. Proper cleaning and application of preservatives will result in high luster and provide a long lasting protective coating. Given proper care, the original finish will retain its brilliance for many years. The use of polishes is recommended only after it becomes evident that the normal preservatives no longer accomplish the job.

Caution:

Keep silicone polishes off the windshield to avoid wiper smear in rain.

Polishing

It is advisable that repolishing of your car be entrusted into skilled hands of professionals acquainted with this work since a good degree of care and know-how is required. The finish must be polished with clean cotton until high luster is obtained, which should be done in small sections to ensure that the polish does not dry beforehand. A subsequent application of a wax preservative will give the finish a brilliant, long lasting gloss. Metallic paints are especially difficult to maintain and should always be given professional care.

Spots and Stains

Road tar, grease, oil, and insects cannot always be removed with soap and water alone and require special treatment. Spots of any sort should be removed without undue delay before they set and become difficult or impossible to remove.

Road Tar

Road tar should be immediately removed with tar remover since it may cause permanent stains if allowed to stay on for any length of time. Whenever tar removing solvents have been used on the finish, the cleaning should be followed up with a wax preservative.

Insects and Tree Sap

During the warm season, insects will accumulate on the forward surfaces of the body. Since these deposits are somewhat difficult to remove with sponge and water alone, a mild laundry soap solution may be applied. Tree sap accumulating when parking under trees can also be removed with a mild soap solution. Rinse the car thoroghly after cleaning and follow up with a wax preservative.

Leather and Leatherette

The best way to clean leather and leatherette is by using a luke warm soapwater solution and a soft brush. Use sparse amounts of water avoiding soaking on drenching. Use a soft sponge to wipe each section completely dry after it has been cleaned. Clean the seams carefully, making certain that these areas have been cleaned evenly and well dried. When cleaning leather, it is advisable to follow up with a good leather preservative.

Rubber Weatherstripping

Rubber weatherstripping is used around the doors and windows. Given a certain amount of care, these rubber components will remain flexible and resilient; it is normal for rubber to los these properties through aging which causes it to become hard and brittle. However, this process can be effectively countered and slowed through the application of talc powder and glycerine.

Caution:

Glycerine may damage the paint finish.

Upholstery Fabrics

Even though the upholstery fabrics in your Porsche are of top quality, they must be handled with proper care to prevent scuffing or bleaching in the process of cleaning, this being especially the case with fabrics of richer color shades or when removing stains with a water solution. If a vacuum cleaner is not at hand, the upholstery may be cleaned with a soft brush. More persistent stains may be cleaned with luke warm water or, if necessary, soap water solution. Grease and oil spots can be removed with commercial spot removers by using an undyed soft cloth and rubbing the upholstery until dry.

Chrome Trim

Chromed parts should first be washed with sponge and water, then dried with a soft cloth. Road tar must be removed with tar remover rather than knives or objects of that sort. By following up with a proven chrome preservative, a high and long lasting luster will be maintained. During the winter season as well as in coastal areas it will be of advantage to cover the chromed parts with a somewhat heavier coating of the preservative as protection against salty air and extended exposure to corrosive road dirt. If necessary, coat the parts with non-corrosive vaseline or other protective compound.

Cleaning Glass

Your Porsche is equipped with two types of glass, the windshield being of laminated safety glass and all other windows of tempered safety glass (Sekurit). The laminated glass consists of two layers of glass bonded together with a transparent layer of pliable plastic.
The thin layer of road dirt that accumulates on the glass surfaces consists, to a great extent, of tire abradings and fuel/oil deposits combined with dust and other deposits. The best way to clean the glass is by using luke warm water solution containing a small amount of alcohol or baking soda, and clean absorbent paper (also newspaper). If a chamois is used for polishing the glass, it should be one that is used exclusively for that purpose and which has been thoroughly cleaned prior to use. Contact with the painted surfaces must be definitely avoided, especially with polishes and preservatives.
It should be remembered not to engage the windshield wipers until the windshield has been wetted by rain or the windshield washer.

Protective Undercoating

The oil industry has developed undercoating and rust proofing materials of bitumen or wax base. Contrary to the conventional so-called "spray oil", these materials do not soften the undercoating sprayed on at the factory. Instead, they solidify and, upon drying, form a tough, pliable protective coat which has a beneficial effect on the undercarriage and various related component parts by protecting these against the effects of weather. We recommend that the undercarriage be treated with this preservative prior to the onset of the winter season as well as in spring.
After cleaning the underside or after repairs to engine or transmission, the undercoating should be renewed.

Seat Belts

Keep belts clean. Wash belts with mild detergent without removing them from vehicle. Dry belts in the shade until they are 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.

PORSCHE

914 6

MAINTENANCE AND ADJUSTMENTS

USA

MAINTENANCE SCHEDULE FOR TYPE 914/6

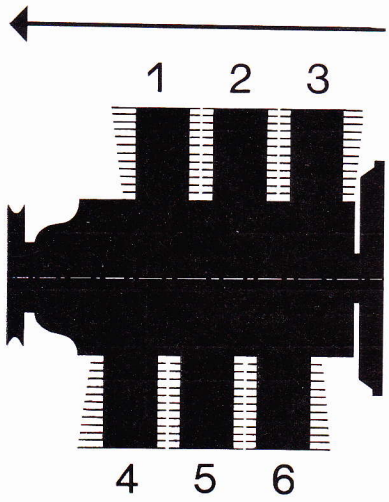
300 to 600 miles	6,000 to 5,500 miles	Operation	then every miles
▬	▬	Engine: Make visual check for oil and fuel leaks.	6,000
	▬	Air cleaner: Replace air filter cartridge.	6,000
	▬	Check flame protection cartridge of crankcase breather and check hose connections for tightness.	6,000
	▬	Exhaust system: Check exhaust system for demage.	6,000
▬	▬	Clutch: Check play and pedal free travel.	6,000
	▬	Wheels: Check alignment and balance*).	6,000
▬	▬	Engine: Check rocker arm shafts for tightness. Check valve clearance.	12,000
	▬	Engine: Check compression.	12,000
	▬	Ignition: Check points and timing. Check spark plug gap. Lubricate ignition distributor cam.	12,000
	▬	Carburetor: Check carburetor adjustment with exhaust gas analyzer.	12,000
▬	▬	Check engine speed switch, micro switch and electro magnetic valves.	12,000
▬	▬	Alternator: Check alternator V-belt tension.	12,000
	▬	Brake system: Remove brake pads, check and measure wear. Check master cylinder push rod free play. Check operation of brake pressure regulator. Inspect all brake lines and connections for damage. Check entire system for leaks. Check brake fluid level in reservoir. Check brake warning light. Check foot and hand brake.	12,000
	▬	Steering: Check all connections and inspect rubber boots on steering gear for tightness and leaks.	12,000
	▬	On vehicles with Sportomatic: Check control valve adjustment, clean airfilter. Clean contact switch points on shift lever and adjust.	12,000
▬	▬	Wheels: Check front wheel bearing play. Check tire pressures, and wheel lug nuts for tightness.	12,000
▬	▬	Electrical system: Check operation of battery and entire electrical system.	12,000

Note: The service intervals are based on "normal" driving. Tire and brake lining wear are heavily dependent on driving habits and should be checked at more frequent intervals. The vehicle should receive a complete maintenance service at least once a year, preferably before winter.

*) At extra cost, if necessary.

Cylinder numbering

Direction of Travel



Adjusting Valve Clearances

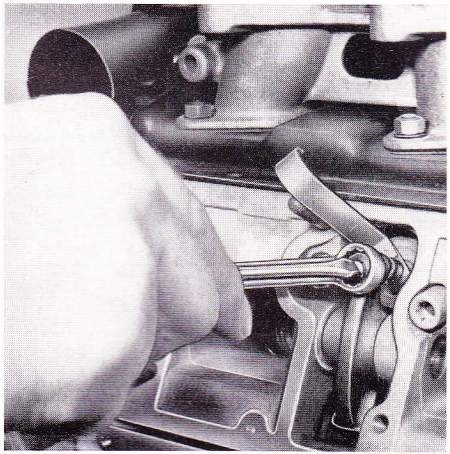
Valve clearances (cold engine):

Inlet 0.1 mm (0.004")
Exhaust 0.1 mm (0.004")

If valve clearances are too small, engine output will also be affected, the valve heads may be burned and backfiring leading to a carburetor fire may occur. We therefore recommend that valve adjustment only be performed by a specialist.

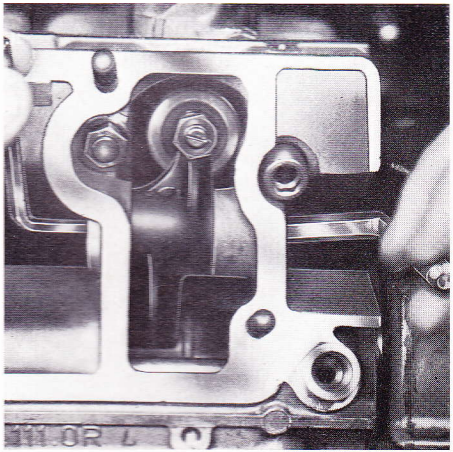
Adjust valve clearance only when the engine is cold.

It is best to adjust the valves in the cylinder order 1 – 6 – 2 – 4 – 3 – 5. Before starting, the piston of the cylinder in which the valves are to be adjusted must be at top dead center on the compression stroke, so that both valves are closed. If adjustment begins at cylinder 1, turn the crankshaft slowly with the V-belt pulley until both valves in this cylinder are closed and the ignition TDC mark on the flywheel is aligned with the joint line on the housing. The marks on the flywheel (on the torque convertor driving disc of Sportomatic cars) can be seen through the inspection hole on the transmission housing flange (see page 52).



1. Take off camshaft housing cover
2. Move piston of cylinder I to ignition TDC.
3. Check valve clearance with feeler gauge.
4. Loosen hex nut on adjusting screw.
5. Adjust clearance by turning the adjusting screw with a screwdriver while holding the nut. Check gap with feeler gauge.
6. Hold adjusting screw to prevent from turning, and tighten locknut.

7. Check the valve clearance again.
8. Repeat this procedure on all other valves in proper sequence.
9. When required, check rocker arm shafts for firm seating, spark plug condition, and cylinder compression.
10. Check rocker box cover gaskets and replace if defective. Reinstall rocker box covers.
11. Start engine and check covers for leaks.



Rocker Arm Shafts

Checking Tightness

Remove rocker box cover and check rocker arm shaft retaining bolts for proper tightness using Allen wrench SW 8 and SW 5.
Proper torque when tightening the bolts on cold engine is 12–13 lbs-ft (1.7–1.8 mkp.)

Checking Spark Plugs

After every 12000 miles of operation, the park plugs must be removed and checked for condition, gap, and performance. The appearance of the electrodes and insulator is a good indicator of the condition of the engine.

In general, the tell-tales are as follows:

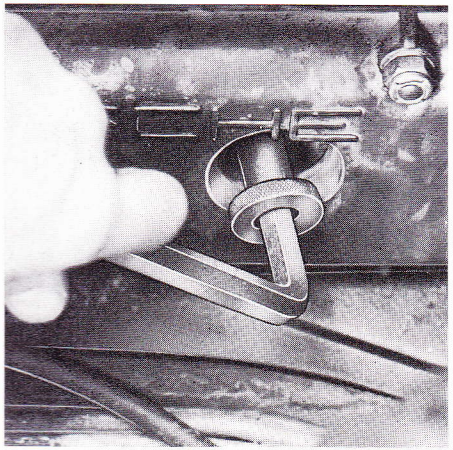
Electrode and insulator - -
Medium brown:

Proper carburetion and spark plug in good condition.

Black:
Fuel mixture too rich, spark plug gap too wide, plug too cold.

Light grey:
Fuel mixture too lean, spark plug loose or leaking, valves not closing fully, plug too hot.

Oil wetted:
Oil sucked into combustion chamber due to worn cylinders or piston rings, plug misfiring.



Cleaning Spark Plugs

Spark plugs can be cleaned with a fine wire brush and blown clean with compressed air. The upper insulator should be wiped clean to prevent current leakage and misfiring. However, we strongly recommend the use of spark plug cleaning machines available in Porsche Audi dealerships.

Caution

The spark plug electrodes may be easily damaged in the course of a mechanical treatment. Cleaning should therefore be accomplished with appropriate care.

Testing Cylinder Compression

Cylinder compression test in accomplished at crank-up rpm. To perform the test first remove all spark plugs and then proceed with testing. Each cylinder should be allowed about 12 piston strokes (compression strokes). Cylinder pressure should be even on all cylinders and range between 130 and 155 psi (9–11 kg/cm^2). The test may be accomplished with a common compression tester.

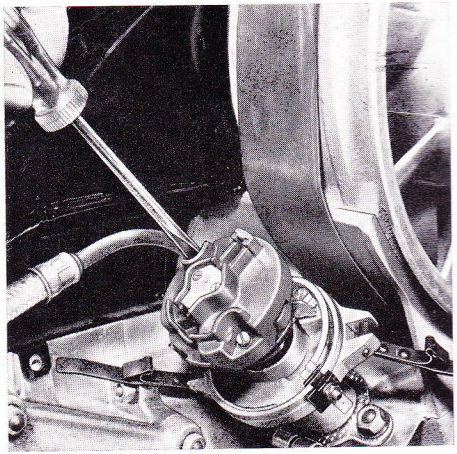
Perform compression test with fully open throttles and oil temperature not less than 140° F (60° C).

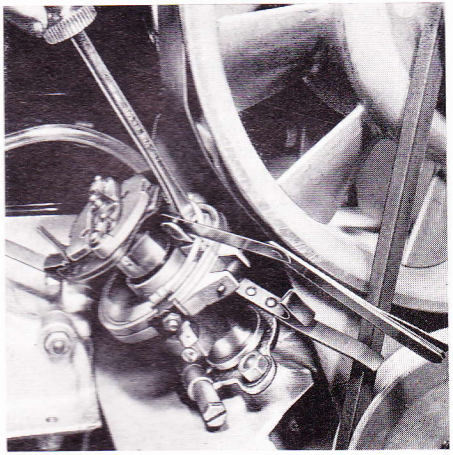
Lubricating Distributor Cam

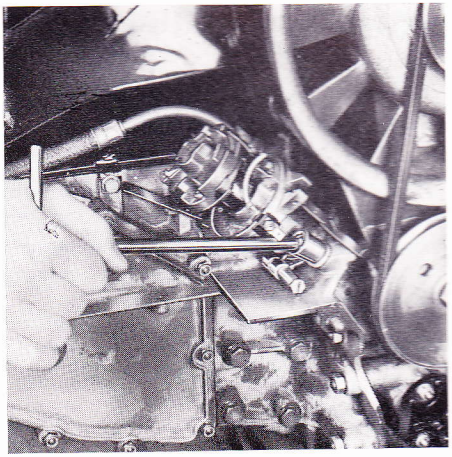
1. Remove distributor cap.
2. Withdraw rotor arm.
3. Remove water shield.
4. Thinly coat the cam with non-corrosive high temperature grease.

Note:

Do not allow grease or dirt to reach the contact breaker points. Dirty contact points will cause misfiring and quick contact erosion.







Adjusting Breaker Points

The first step in adjusting the ignition timing is to check, and readjust if necessary, the breaker point gap. Turn the crankshaft until a cam lobe of the distributor shaft has fully raised the breaker point arm.

Breaker point gap should be .016" (0.4 mm), or dwell angle of 40 ± 3 °.

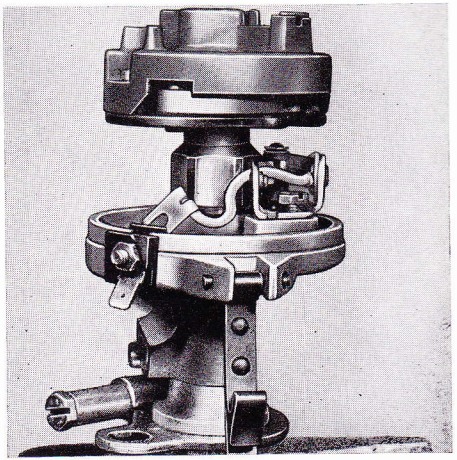
Before the breaker point gap can be reset, it will be necessary to unscrew the rotor to gain access to the front retaining screw of the breaker point plate. After loosening the retaining screw, adjust the breaker gap with a feeler gauge.

Replace the points if burned or pitted.

Replacing Breaker Points

It is necessary to remove the distributor when replacing the points.

1. Remove distributor cap, mark the position of the rotor.
2. Remove retaining nut from clamp at the distributor base and pull the distributor out.
3. Remove both breaker point plate retaining screws and loosen terminal screw of wire lead.
4. Install new points and adjust gap.
5. Reinstall distributor, positioning the rotor as marked in Point 1, above. Install nut with spring washer and tighten.

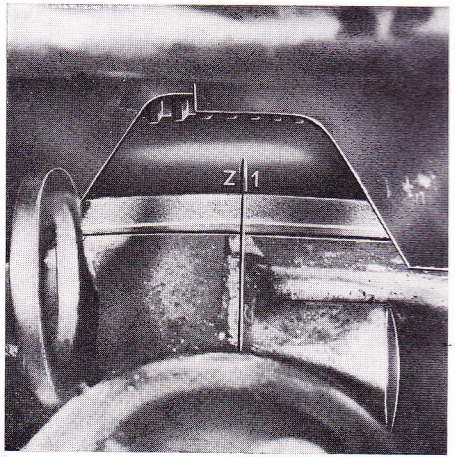


Adjusting Ignition Timing

General:

The basic setting for ignition timing is top dead center.

To adjust, align the OT (TDC) mark for cylinder 1 (Z1) on the flywheel with the joint line on the housing. The marks on the flywheel (on Sportomatic cars, on the torque convertor driviing disc) can be seen through the inspection hole in the gearbox housing.



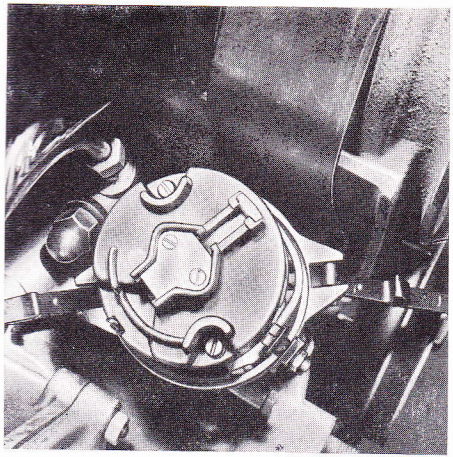
Warning:

After basic adjustment is complete, the ignition must checked by stroboscope with the engine running.

At 6000 rpm ignition should take place at 35° before TDC. (Mark on flywheel : 35.)

This value remains the same whether the engine is running on or off load.

Adjustment by this method can affect the basic ignition setting. However, the variation is not significant.



Adjustment

1. Align the OT (TDC) mark Z1 for cylinder 1 on the flywheel with the partition line of the crank-case.
2. Take off the distributor cap and remove the rotor.
3. Loosen the clamp screw on the distributor holder.
4. Attach one lead from a 12 V test lamp to terminal 1 of the distributor, and the other to ground (earth).
5. Switch on the ignition.
6. Turn the distributor clockwise until the breaker points close, then turn back slowly until the points just open and the test lamp goes out.
7. Tighten the clamp screw holding the distributor.
8. Re-install the distributor rotor and cap.
9. Check ignition with the engine running.

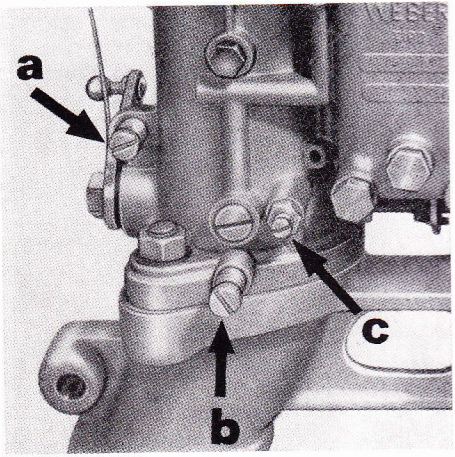
Lubricating Carburetor Linkage

1. Lubricate all pivot points on left and right sides with 1–2 drops of engine oil while moving the throttle controls.
2. Lubricate accelerator pump rods.
3. Disconnect all ball joints, fill cups with high temperature grease, reconnect.
4. Move linkage back and forth to check for proper functioning.

Idle Speed Adjustment

Exact idle adjustment requires the application of special tools and should be performed by your authorized Porsche Audi dealer. The idling speed should be 850-950 rpm. When adjusting, run engine at a fast idle of about 1000–1200 rpm.

1. Warm up engine (oil temperature at least 140° F or 60° C).
2. Remove air cleaner and disconnect throttle linkage ball joints which connect the two carburetor assemblies.
3. Increase idling speed to about 1000 to 1200 rpm by turning idle speed stop screws on both sides, making sure that both screws are equally adjusted.
4. Adjust idle mixture screws in all carburetors so that engine idling is as smooth and fast as possible.



a Idle stop screw

b Idle mixture adjusting screw

c Idle air adjusting screw

5. Place test gauge (Synchro-Test) on one carburetor throat and adjust gauge to bring indicator piston within the glass tube to about one-half height; do not reset the gauge once adjusted for the test.

6. Place the synchro-tester on the other carburetors. If necessary, readjust idle air adjusting screws so that the indicator plunger in the test gauge moves as high as in the first carburetor.

Note:

The idle air adjusting screws should be screwed out of the carburetor as little as possible. It may become necessary to screw all screws fully in and redo to basic adjustment.

7. Evenly turn both idle stop screws back until engine speed drops to idling.

8. Check the adjustment with the synchro-tester.

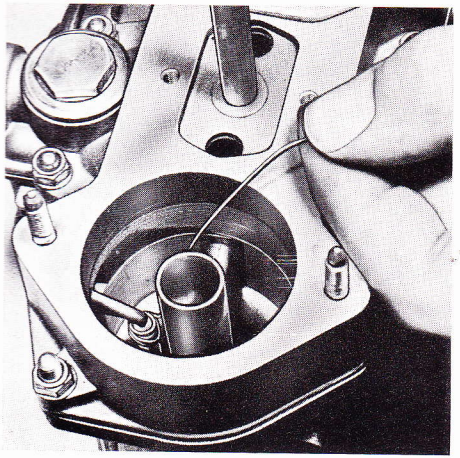
9. Reinstall air filter housing.

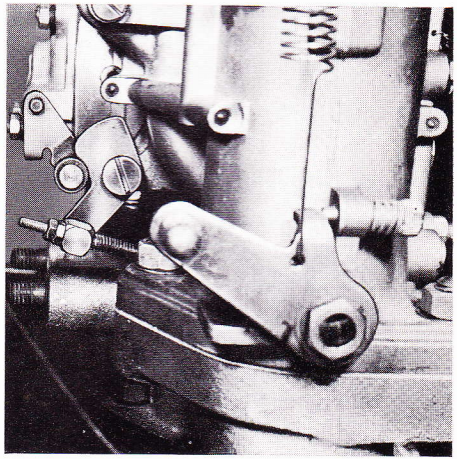
10. Readjust idle mixture adjusting screws so that the engine runs smoothly.

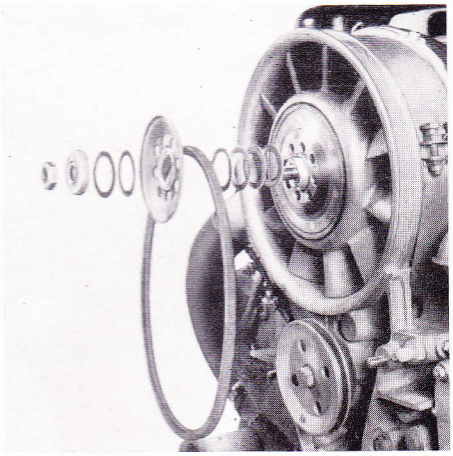
11. Adjust connecting linkage of both carburetors and reconnect.

12. Check injection quantity
The fuel quantity discharged by the accelerator pump should be 0,5 ± 0,1 cc. per pump stroke per nozzle.

13. If this is not the case, the injection quantity has to be readjusted by resetting the cam linkage.







Adjusting V-Belt

The pulley retaining nut must be removed when the blower belt is to be removed or adjusted. Hold the alternator pulley with the holder provided in the tool kit when loosening or tightening the pulley retaining nut.

Proper belt tension is attained by changing the proximity of both pulley halves in relation to each other. This is done by adding or removing spacers which are installed between the two pulley halves; spare spacers are kept between the outer pulley half and the retaining nut.

The belt tension is correct when the belt can be depressed by about $^1/_2$ to $^3/_4$ in (10 to 15 mm) under light thumb pressure. Recheck the adjustment after turning the crankshaft a few times.

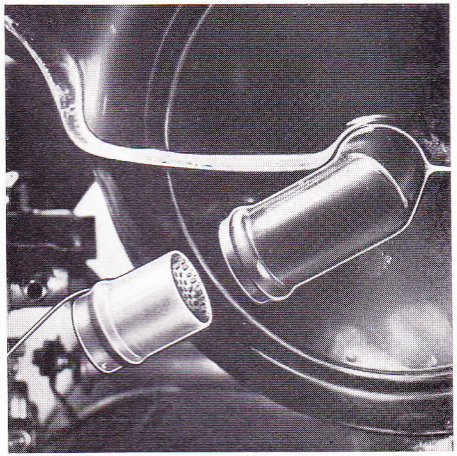
Bear in mind that new belts stretch after the first miles of use. The tension should therefore be checked and adjusted within a short time of installation of a new belt.

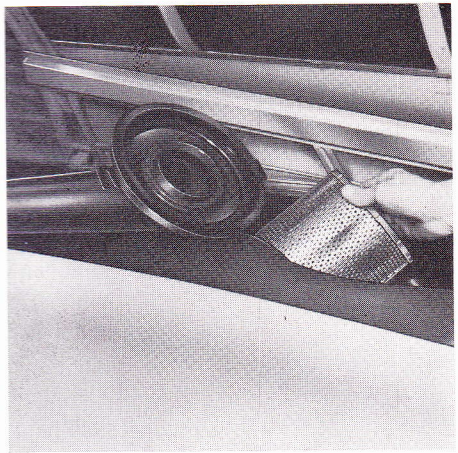
Changing V-Belt

To change the belt apply the same procedure as that for adjusting tension. Begin assembly by having 5 spacers between both pulley halves and work from there to gain proper belt adjustment by adding or withdrawing spacers.

Replacing Air Cleaner Cartridge

1. Remove both wing nuts and preheating hose.
2. Turn the top slightly to right and withdraw.
3. Take filter cartridge out.
4. Clean the inside of housing with an oiled cloth. Do not use shredded rags or similar materials.
5. Check rubber seal in housing for damage.
6. Insert new filter cartridge.
7. Reinstall top, tighten wing nuts, reconnect preheating hose.





Cleaning Flame Trap Cartridge

1. Detach breather hose which connects the oil tank with the air cleaner by pulling the hose off at the air cleaner.
2. Remove flame trap cartridge, clean in cleaning solvent, and blow through with compressed air.
3. Reinstall flame trap and reconnect breather hose.

Brake System

(Dual Circuit Disc Brakes)

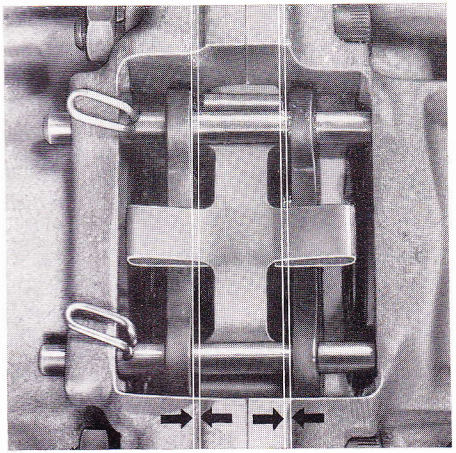
When the brakes are applied, each brake pad is pressed automatically against its brake disc by a brake piston. The brake pads are self-adjusting. The brake discs are protected against road spray and dirt by cover shrouds, although it is still possible for the brake pads and discs to become wet when driving on wet roads. When driving on wet turnpikes or similar highways where easy traffic conditions call for only infrequent use of the brakes, higher pedal pressure will be required for braking. It is therefore of advantage, when driving in the conditions mentioned above, to apply the brakes gently at not too long intervals in order to keep the diss and pads dry. Do not forget to run the brakes dry after a car wash.

Despite the excellent fading resistance qualities of disc brakes, use engine braking power when descending long grades, since overheating may damage the internal seals or cause the hydraulic fluid to boil. This leads to the formation of vapor pockets, rendering the brakes very ineffective, and brake pedal travel increases.

Brake Pads

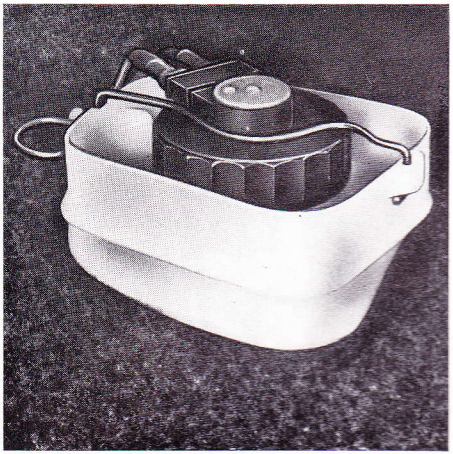
Brake pad wear will depend mainly upon severity of usage, type of driving and condition of the roads. We recommend that during the initial maintenance inspections a check be made as to whether the standard brake pads are adequate for the owner's type of driving. It is to be expected that the pads will wear faster on dirty and wet roads (winter).

Thickness of the pads should be checked during all routine maintenance operations or whenever the wheels are taken off the car (visual check). The brake pads must be thick enough between the brake pad plate and the cross spring to allow a reserve for further wear (see illustration). The permissible wear limit has been reached when the brake pad comes to rest against the cross spring (pad tickness approx. 2 mm / .08"). Before reaching this limit the brake pads should be renewed.
We also suggest that the condition of the brake pads be checked prior to departure on long trips.



Conditioning Brake Pads

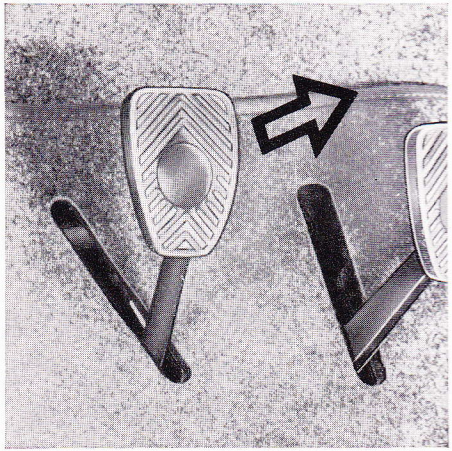
Every vehicle equipped with disc brakes requires a certain run-in period. Care should be exercised during the first 100–150 miles. After that, the brakes have reached their full efficiency.

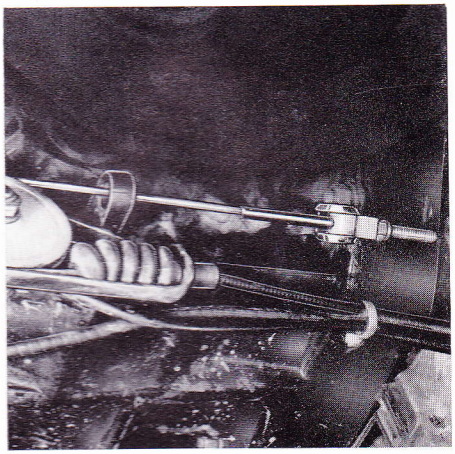


Since the brakes are self-adjusting, brake pedal free travel will remain constant at all times providing that the brakes are free of air. The pedal free travel represents approximately 30–50% of the total pedal travel. Subsequent to installation of new brake pads, the pedal free travel will be somewhat longer until the have passed the conditioning period.

Use only brake fluid that meets SAE specification J 1703 a.

Hydraulic fluid level in the reservoir must be checked at regular intervals and replenished whenever below the top mark. Due to the relatively large cylinder cross-section in the brake calipers, the brake fluid level in the reservoir will decrease at a much faster rate, due to brake pad wear, than one is used to observing in cars equipped with drum brakes. If the hydraulic system has been completely drained for any reason, such as complete brake overhaul, and then refilled, it may become necessary to bleed the brakes again after a short test drive.





Checking and Adjusting Clutch

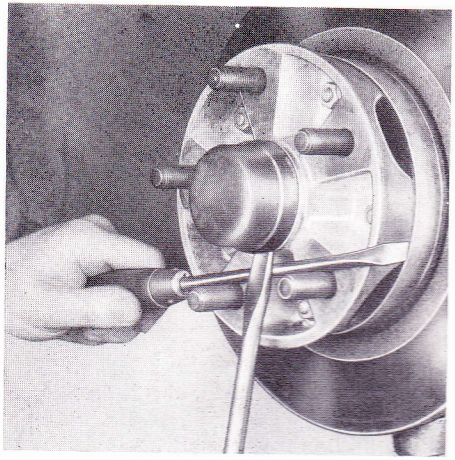
Clutch pedal adjustment should be $^1/_2$ to $^3/_4$" (15 to 20 mm). It is checked by moving the clutch pedal in the direction of the arrow (toward seat).
The free travel distance indicated is to be maintained, since too tight adjustment can cause the clutch to drag and thus become unserviceable.

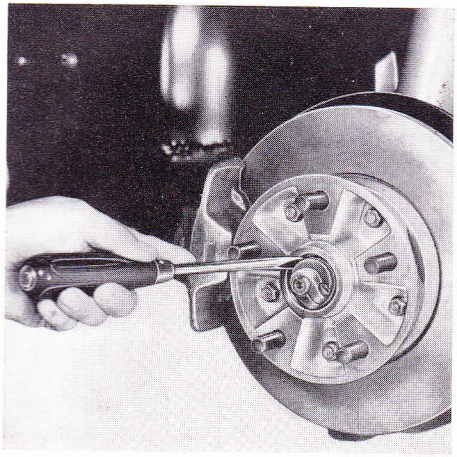
Turn the self-locking nut until reaching specifications ($^1/_2$ to $^3/_4$" – 15 to 20 mm). Hold threaded cable ends with pliers if necessary.

Checking and Adjusting Pedal Travel

The use of the diaphragm type clutch pressure plate necessiates precise limiting of clutch pedal travel. This adjustment should be checked when the transmission is warm and the engine running at idle speed. Depress clutch pedal and check ease of shifting into reverse gear. If the adjustment is correct, the reverse gear will engage practically clash free. The pedal travel stop is a flat piece of metal with an oval hole for adjustment, attached to the floor with two bolts.

1. Unsnap forward part of floormat.
2. Loosen both stop retaining bolts.
3. Move pedal stop up or down, as required, until the proper position, is reached i.e., when the reverse gear will engage practically clash-free.
4. Tighten pedal stop retaining screws.
5. Recheck pedal travel and fasten floormat.





Adjusting Front Wheel Bearings

The front wheel bearings must be adjusted in close compliance with the following instructions to ensure long bearing life.

Checking

Front wheel bearings are properly adjusted when the thrust washer at the outer bearing will still yield sideways with the use of a screwdriver as illustrated above. Prior to checking rotate wheel several times. Adjusting and checking should be done only when the hub is cold.

Adjusting

1. Remove dust cap from hub and loosen Allen screw which locks clamp nut.
2. Tighten or loosen clamp nut until adjusted so that the thrust washer will still yield sideways with use of a screw driver as illustrated above. Spin wheel and recheck adjustment. Retighten Allen locking screw in clamp nut without moving the clamp nut from the adjusted position.

Adjusting Toe-In

Uneven wear found on one or more tires may be the result of improper toe-in adjustment. In such cases, the car must be taken to a shop equipped with an optical when alignment ramp to perform a proper check.

Note:

Toe-in can be measured only when the car is standing on its wheels on level ground since readings taken on hoisted car will be erroneous. When measuring toe-in, the car must be empty at curb weight, i. e., with full gasoline tank.

Wheels

Tire Pressures

The tires should be inspected for proper pressure and unusual wear or damage suc as cuts, broken cords, and punctures as part of every maintenance inspection, before departure on longer trips, and at every given opportunity.

Check tire pressure when the tires are still cold.

Nominal tire pressures are as follows:

Front – 26 psi (1.8 atm)
Rear – 29 psi (2.0 atm)

Snow tire pressure:

Front – 29 psi (2.0 atm)
Rear – 32 psi (2.2 atm)

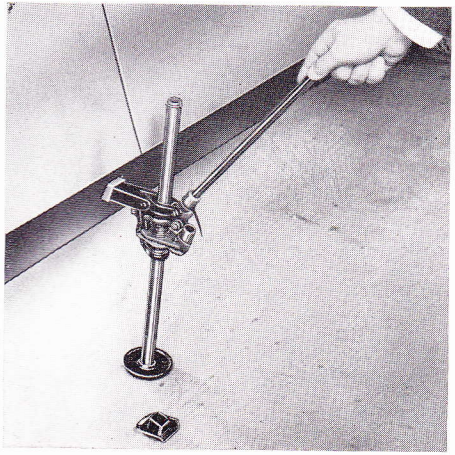
Make sure that your wheels are always well balanced. Hard braking or uneven tire wear may call for rebalancing the wheels.

Caution:

The tire pressure will increase progressively with increasing temperature; therefore, never let any air out of warm tires to meet cold tire pressure specifications.

Spare Wheel

The spare wheel is located in the front luggage compartment. Remember to check the spare tire pressure when checking other wheels. The spare tire should be inflated to the same pressure as the rear wheels.



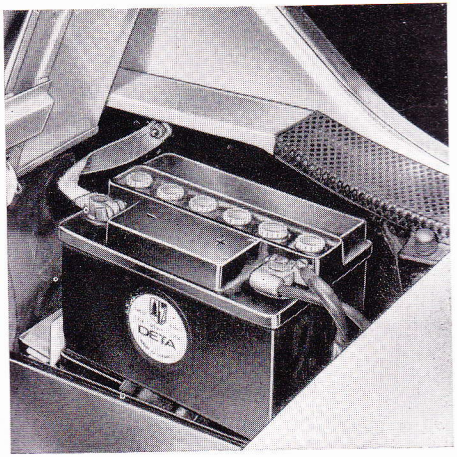
Changing a Wheel

1. Apply the hand brake and select 1st or reverse gear.
2. Pull off the hub cap of the affected wheel.
3. Loosen the wheel nuts slightly.
4. Insert the square end of the jack into the socket provided below the center of the car, at the side. (The heavily ribbed plate should be at the bottom.)
5. Push down the vertical tube of the jack until the foot rests firmly on the ground.
6. Insert the longer end of the wheel nut wrench into the upper pivot socket.
7. Move the lever up and down to raise the car, until the affected wheel is clear of the ground.
8. Unscrew the wheel nuts and take off the wheel.
9. Mount the spare wheel and screw up the wheel nuts handtight. Make sure that the domed face of each nut enters the recess in the rim.
10. Now insert the jack lever into the lower pivot socket and move up and down to lower the car.
11. Tighten the wheel nuts in a crosswise pattern. The prescribed tightening torque is 24 ft. lbs. Push on the hub cap.

Note that the tire pressure of the spare wheel stated on page 61 will need to be corrected.

Warning

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



Electrical System

Note:

Running the engine with disconnected battery will damage the alternator. (This applies also to cars which were later equipped with a battery main switch.)

Testing Batteries

General

The battery must be disconnected before carrying out work on any part of the car's electrical system.
Good starting depends on good condition of the battery. In general, battery care is confined to the addition of distilled water, testing specific gravity of the electrolyte and cell voltage.
The battery is located in the right corner of the engine compartment.
The level of the electrolyte contained in the battery decreases with time and use due to deterioration and evaporation of water from the solution. This should be replenished only with distilled water. The electrolyte level should not be higher than the check bridge or the control neck. If the battery has none of the above reference points, keep the electrolyte level about $^1/_2$" above the top of the battery plates.

Testing Specific Gravity of Electrolyte

Specific gravity of the electrolyte is tested with a hydrometer calibrated in degrees Beaumé or p/cm³. Following nominal values apply:

Battery fully charged
32° Be = specific gravity 1.285 p/cm³

Battery half charged
27° Be = specific gravity 1.230 p/cm³

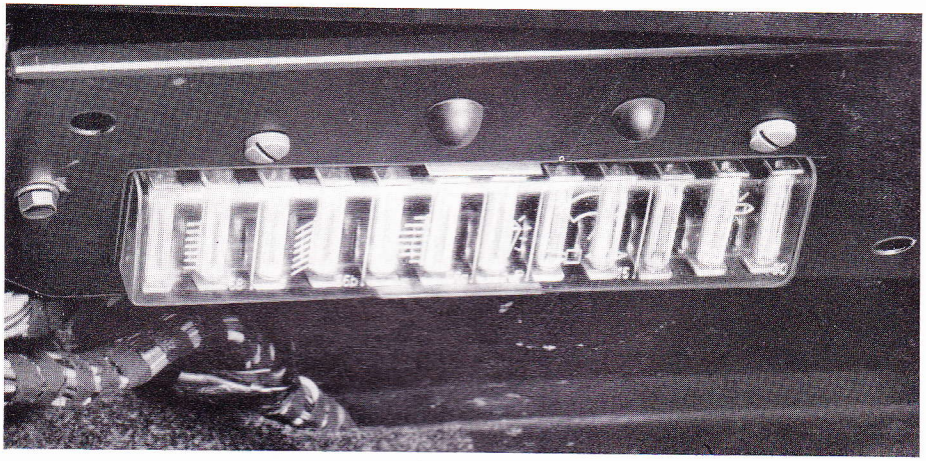
Battery discharged
18° Be = specific gravity 1.142 p/cm³

Testing Battery Voltage

Battery care

1. The battery must be firmly attached to the car.
2. Battery terminals and cable clamps must be kept clean. Corrosion and oxidation can be prevented by coating the terminals and clamps with vaseline or terminal grease.
3. The vent caps must be securely tightened to prevent spillage.
4. Spilled electrolyte must be cleaned off at once with a soda solution to prevent damage to fabrics and metal.

Make sure that the battery is charged at intervals of approx. 6 weeks if the car is not used for long periods. A discharged battery is subject to a rapid formation of sulfates on its plates which leads to their deterioration.



Fuse Capacity

Fuse	Amps	Equipment
①	8	left headlamp high beam
②	8	right headlamp high beam
③	8	left headlamp
④	8	right headlamp
⑤	8	left parking lights
⑥	8	right parking lights
⑦	8	license plate lights
⑧	25	windshield wipers, ventilator, horn, cigarette lighter
⑨	8	flashing turn indicators, stop lights, back-up light
⑩	8	additional headlamps
⑪	8	emergency flashers
⑫	25	pop-up headlamps, inside light

Replacing Fuses

The fuses are located beneath the instrument panel to the left of the steering column and are covered by a transparent plastic cover.
The respective fuses are identified inside the cover.

The fuses are held in position by spring clamps and can easily be removed by hand. A burnt fuse indicates an overloading of the circuit; the defect cannot be remedied by simply installing a new fuse. The cause of fusing, i.e. of overloading must always be traced. The patching of fuses with wire or foil is not permissible since it may cause serious damage to other electrical components. Always carry an assortment of spare fuses in the car.

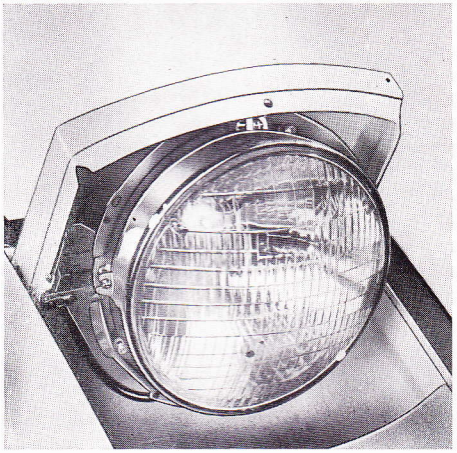
Bulb Chart (12-volt system)

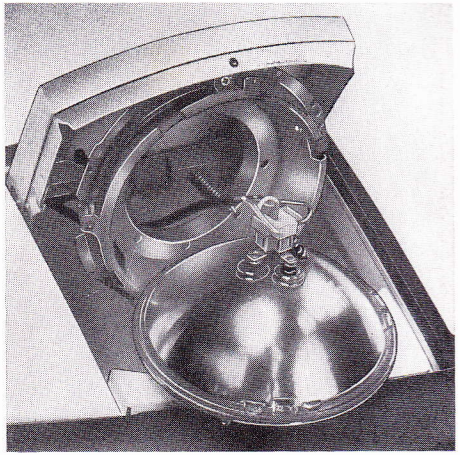
Sealed beam	50/40	W (6012)
Stop lights	32/3	cp (1034)
Turn signals	32	cp (1073)
Back-up lights	25	W
Interior lights	10	W
Parking lights	5	W
Luggage compartment and license plate lights	4	W
Instrument lights	2	W
Control lamps 1,2 and	2	W
Side marker lights	2	cp (1895)

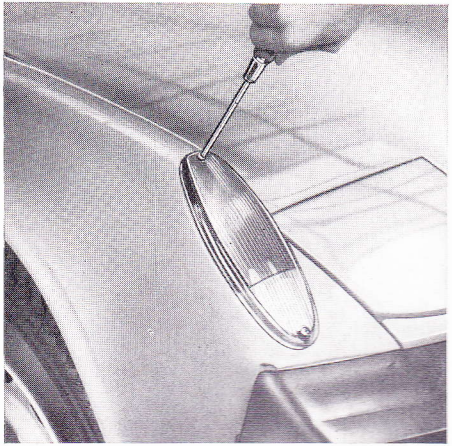
Changing Sealed Beams

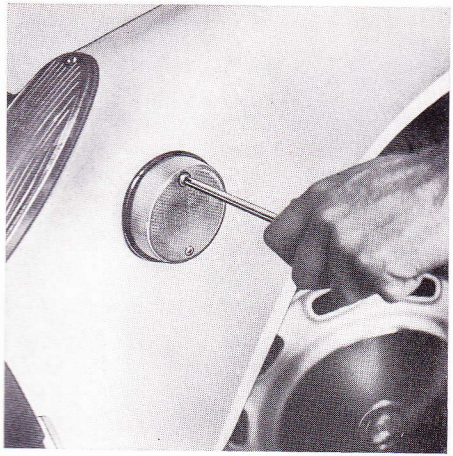
1. Raise the headlamps (switch on head lights).
2. Disconnect the battery.
3. Loosen the cross-head screw and lift off the headlights casing upward.
4. Unscrew the seal beam rim retaining screws and take out the assembly.
5. Turn back the rubber sheath, press back the retainer spring, take out the seal beam and replace.

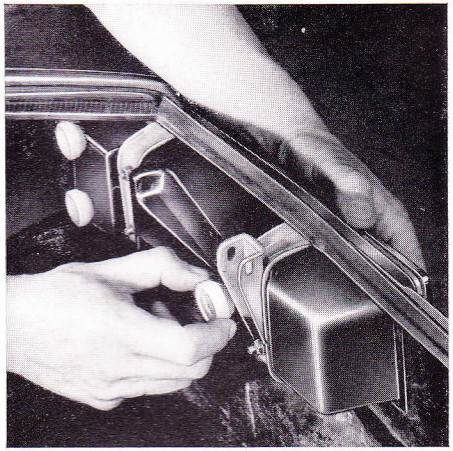
Reinstall in reverse order.

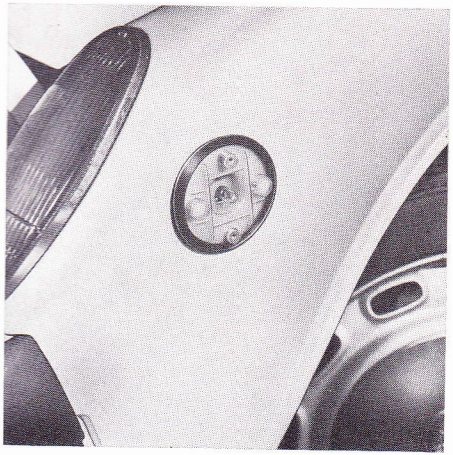












Turn Signal, Parking, Back-up, Illuminated Side Reflectors and Stop Light Bulbs

1. Front lights: Unscrew the two cross-head screws and remove the lamp glass.
   Rear lights: Unscrew the three knurled nuts on the side of the rear luggage compartment and remove the lamp glass.

2. Press the defective bulb and turn to the left (bayonet socket).

3. Take out the bulb and replace.

   Caution!
   Keep bulbs free of dirt and grease by handling it with a clean cloth or paper.

4. Press the bulb into the holder, turning it to the right until the pins snap into the socket.

5. Front lights: Replace the lamp glass and tighten the screws alternately and evenly.
   Rear lights: Replace the lamp glass and tighten the knurled nuts in the rear compartment alternately and evently.

6. Check operation of lamps.

Adjusting Headlights

It is best to check the headlight alignment with a regulation screening or aiming device. If non is available, proceed as follows:

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

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

Opposite the center of each headlight, draw vertical lines (V) intersecting the horizontal. Drawing a vertical line for the center of the vehicle might help aligning vehicle with screen.

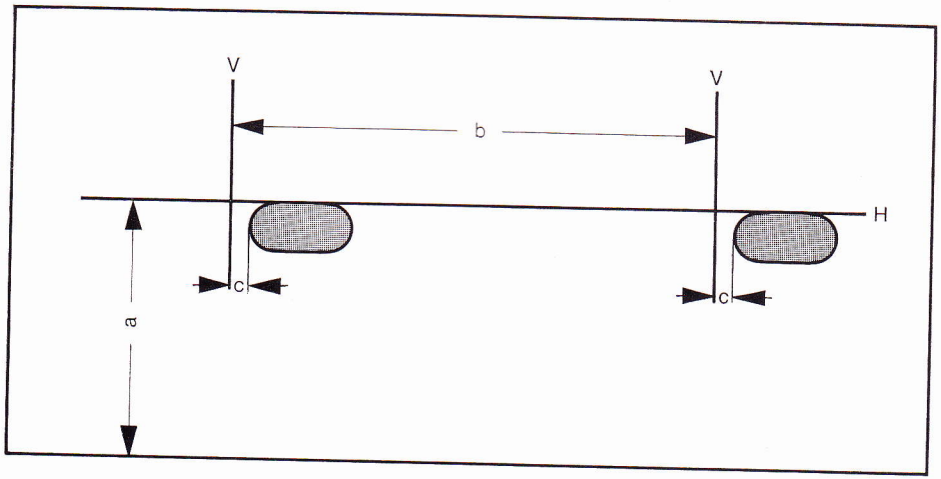
Loosen the screw in the center below the headlight and take the trim ring off.

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

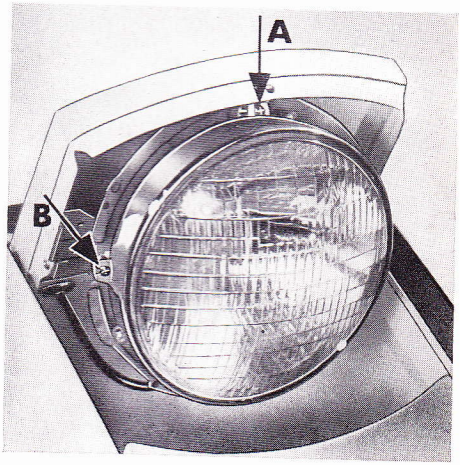
The headlights are correctly aimed when the top edge of the high intensity zone is on the horizontal line H and the left edge is 2 in. to the right of the vertical line V.

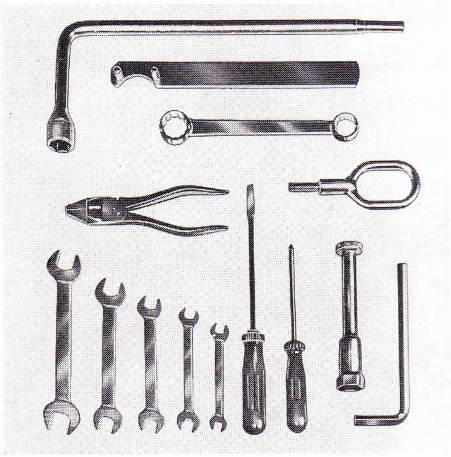
Check with your State Bureau of Motor Vehicles for variations from these specifications.

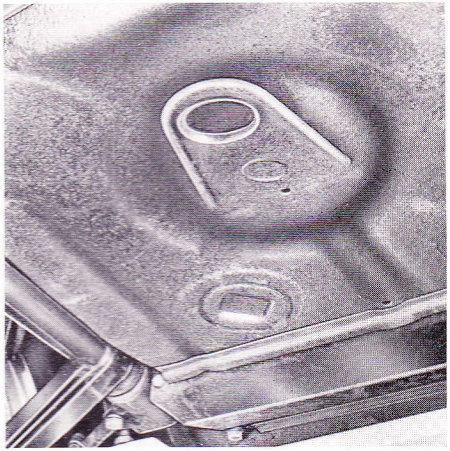
a = Height of headlamp center from floor
b = Distance between headlamp centers
c = 2 in.

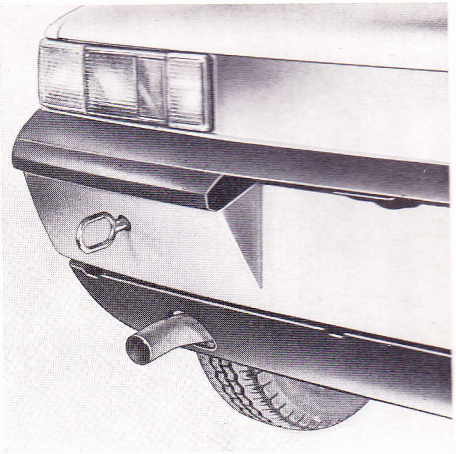


A – Vertical aim
B – Lateral aim









Tool Kit

The tool kit and the car jack are standard equipment. The tool kit contains all tools required for minor repairs.

Kit Contents (subject to change)

Spark plug wrench, Wheel nut wrench
5 double open ended wrenches
Ring spanner, Screwdriver
Phillips head screwdriver, Combination pliers
Narrow section V-belt
Retaining key for V-belt pulley
Towing eye, Plastic wallet with fuses

Towing Hook

A towing hook is provided under the front of the car for the attachment of a towrope.

The towing eye contained in the toolkit can be screwed into a socket on the rear bumper.

Always observe state laws and municipal ordinances governing towing.

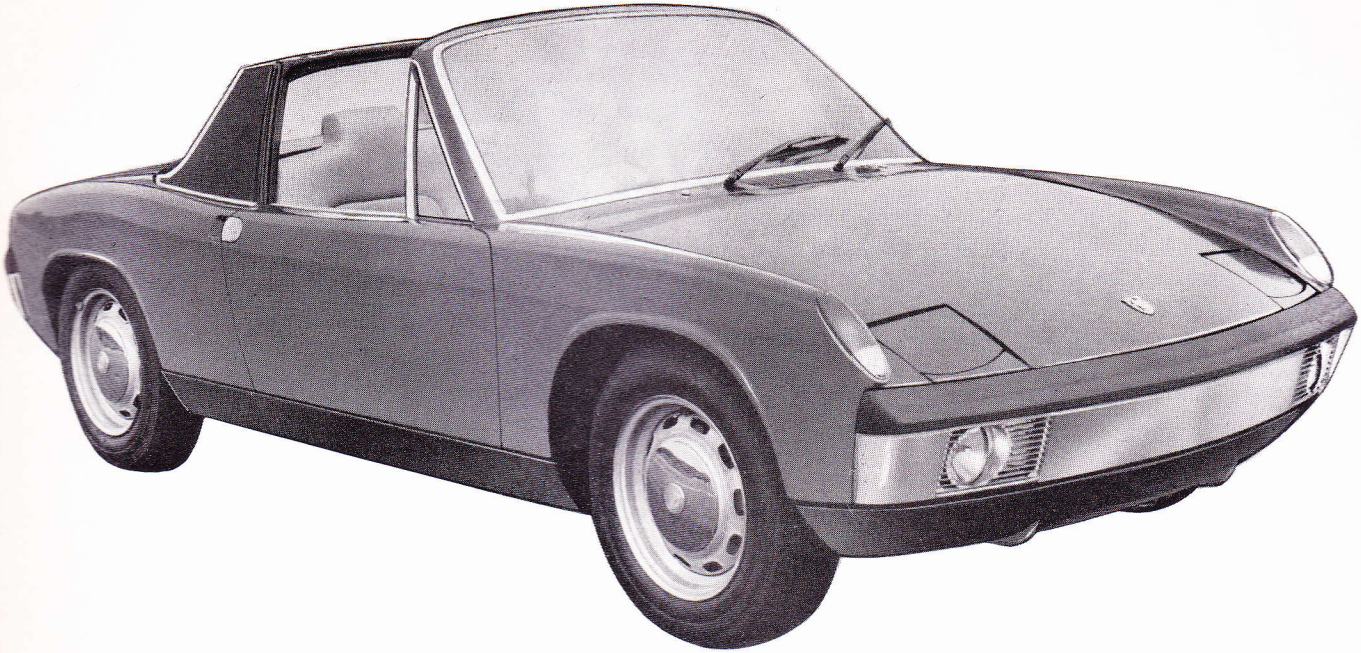
PORSCHE

914/6

USA

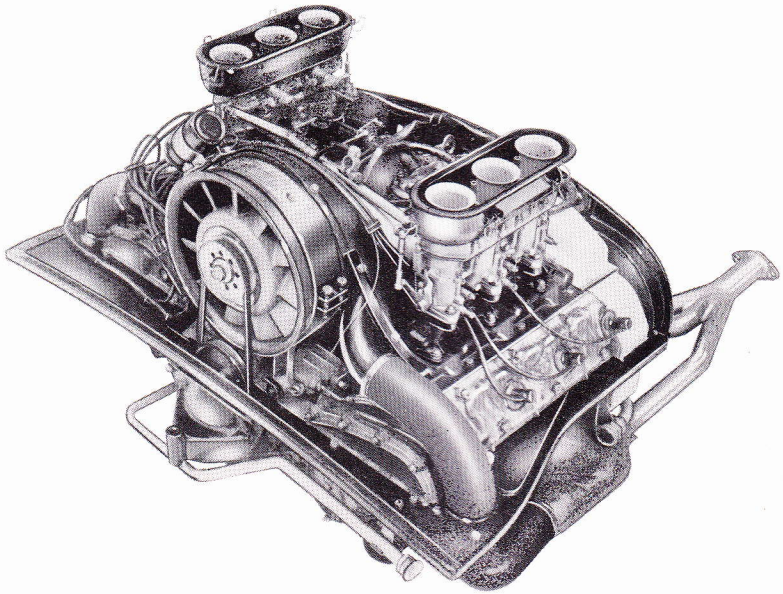
GENERAL DESCRIPTION

The position of the engine in the middle of the car is the special individual characteristic of the 914/6 Roadster. The position in front the rear axle prevents the installation of rear seats.
On the other hand, this disign offers the basic requirements for optimal roadability.
Ideal distribution of weight.
Little change in axle load when car loading is changed.
Low moment of inertia about the main car axis.
The front and rear wheel suspension, the brakes, the steering and also the bucket seats are carefully designed to suit fast driving. This equipment is described individually on the following pages.



Engine

The engine is an aircooled, four stroke cycle, horizontally opposed six. The crankshaft is accomodated in a two piece light alloy crankcase and has eight plain journal bearings. The six cylinders are arranged in two banks of three cylinders each and mounted in horizontal position on the left and right side of the crankcase. The cylinders are held in place by the extensively finned, light alloy cylinder heads which are bolted to the crankcase by steel studs. The valves are nested in individual combustion chambers in an overhead "V" and are actuated thru rocker arms and an overhead camshaft on each bank. Both camshafts, together with their rocker arms, are mounted in individual camshaft housings, each actuating the valves of a three-cylinder bank. The camshafts are connected with the crankshaft by means of chains running over an intermediate sprocket wheel. The chain tension is adjusted automatically and remains constant at all times. Mounted on each of the two cylinder banks is a triple-throat, downdraft carburetor. Engine lubrication is by a dry sump system. Two gear-type oil pumps are located in the crankcase; one pump draws oil from the oil tank and forces it to the lubrication points, whereas the second pump scavenges the oil draining from the lubrications points and returns it to the oil tank. A thermostatically controlled oil cooler maintains proper oil temperature in the engine. Oil pressure relief valves control the pressure in the lubricating system. Arranged in the oil return circuit is a full-flow oil filter which entraps foreign matter and cleans the oil. Mounted atop the engine block is an alternator which is driven by the crankshaft over a narrow V-belt. The impeller of the cooling air blower is mounted on the extended alternator shaft. Cooling air drawn by the blower is guided to the engine cooling points over deflector baffles. Part of the cooling air mass is routed to the exhaust manifold heat exchangers where it is heated; with the heat controls appropriately set, the hot air flows into the passenger compartment.



Transmission

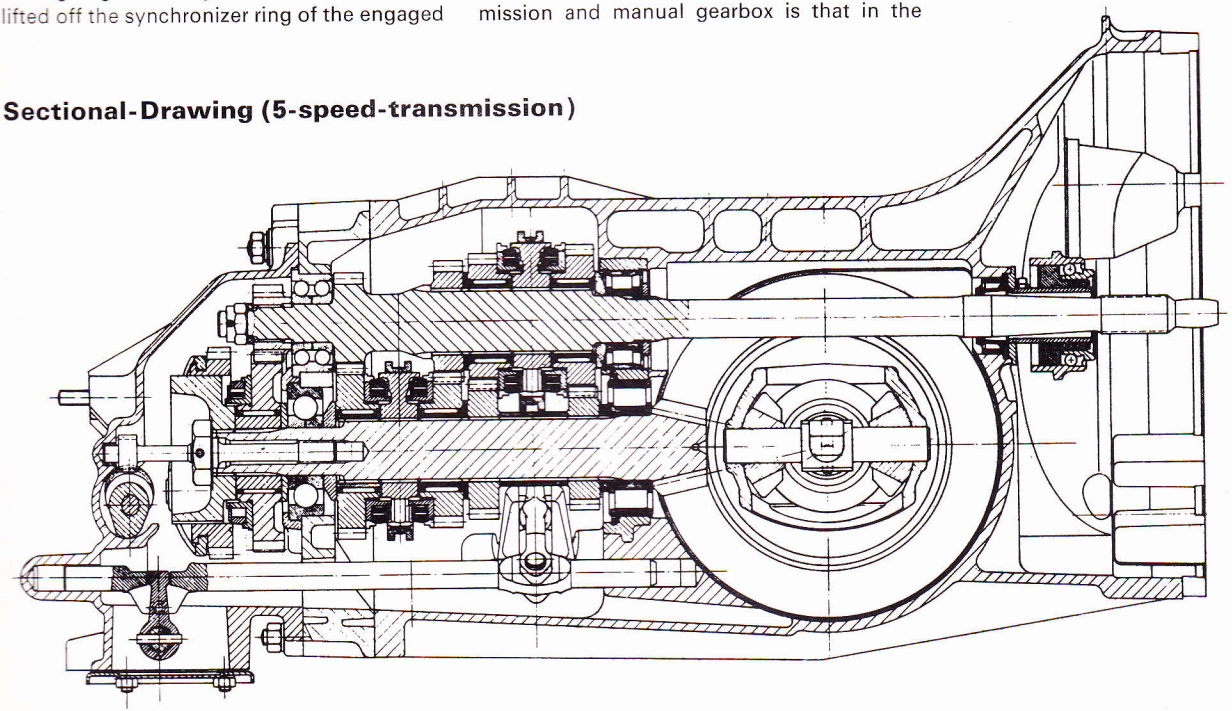
The type 914/6 can be supplied with 5 speed manual gearbox or with 4 speed Sportomatic transmission.

In both manual gearbox and Sportomatic transmission all forward gears are permanently engaged by means of helical pinions and baulk ring synchronised.

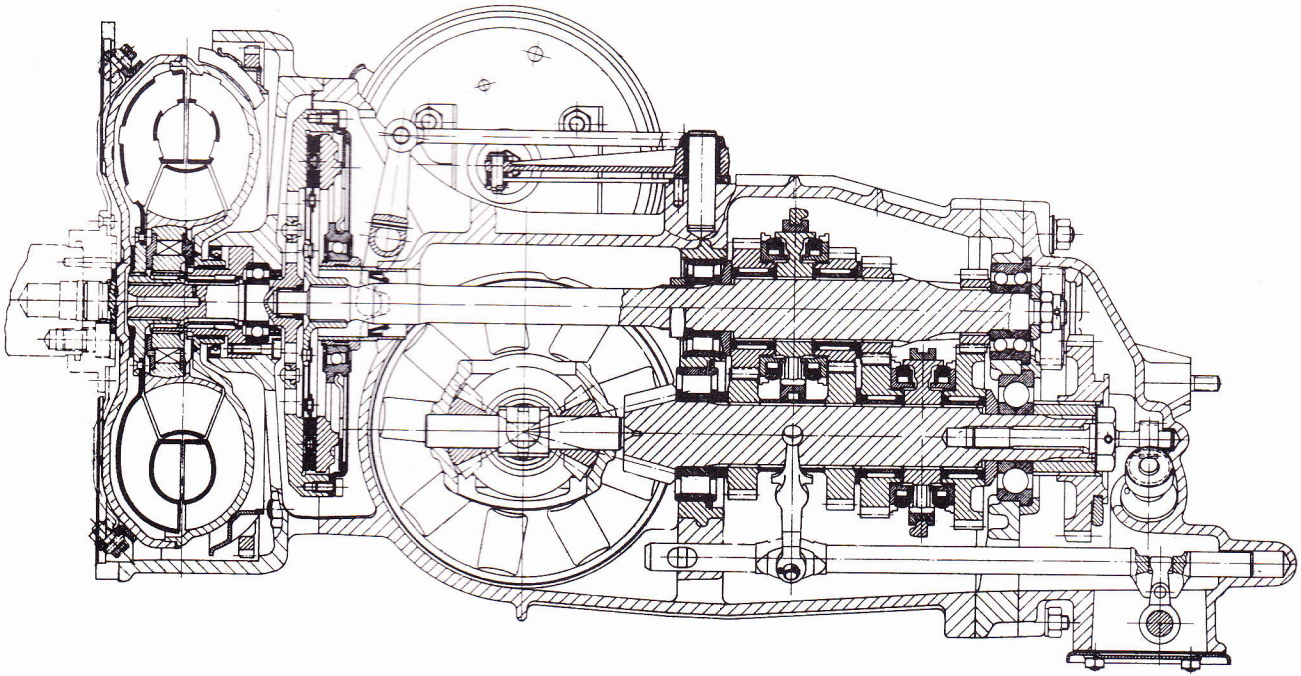
During a gear change the selector sleeve is lifted off the synchronizer ring of the engaged gear and pressed onto the cone of the gear to be selected. The synchronizing effect is automatically increased by the baulking elements, the amount of work in changing is reduced and the time taken for shifting decreased. After synchronization is completed the selector sleeve engages with the teeth of the clutch. The connection between the gear wheel and the shaft is thus completed.

The difference between Sportomatic transmission and manual gearbox is that in the Sportomatic a hydrodynamic torque convertor and a servo clutch are installed in front of the actual gearbox. Gear selection is the same as with mechanical transmission – by means of the hand lever on the tunnel between the two seats. For Sportomatic however the gear lever has an electrical contact for opening and closing the clutch, operated by vacuum. The transmission and the axle drive are built into one casing.

Sectional-Drawing (5-speed-transmission)



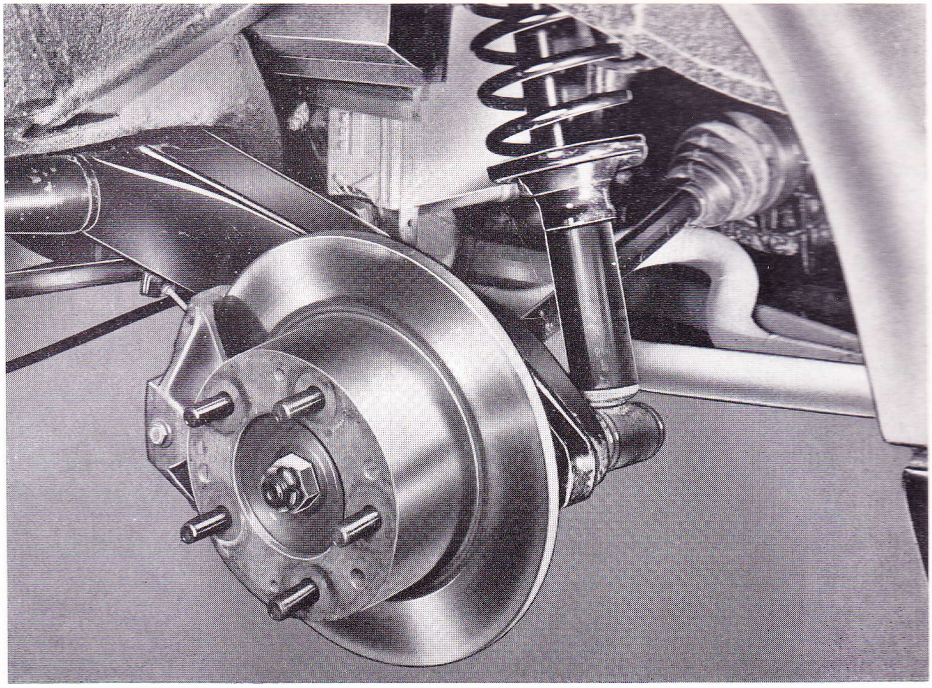
Sectional-Drawing (Sportomatic)



Rear Axle

Both rear wheels are guided by triangulated control arms, the geometry of which is chosen to allow good roadholding, because of its excellent reaction to bumps and changes in direction.

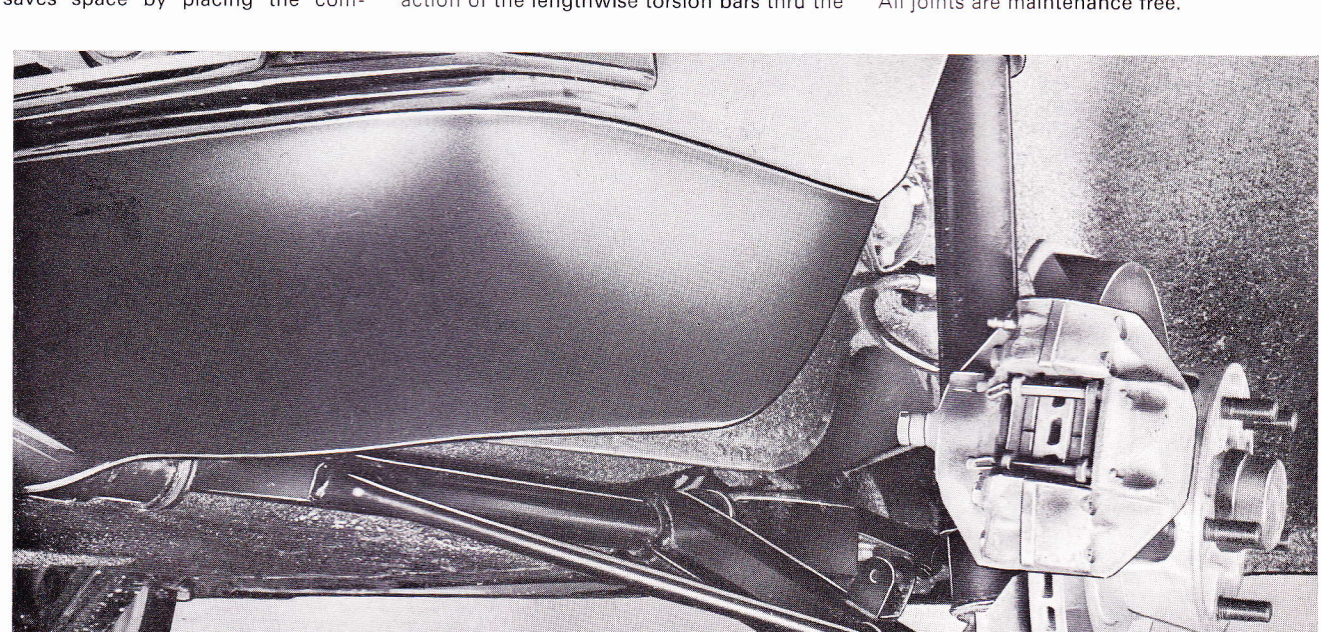
The movement of the wheels in relation to the car body is absorbed by spring struts. The coil spring with linear characteristic, the auxiliary hollow rubber buffers and the double acting shock absorbers are constructed as a single unit. The action of the long travel spring strut on body and suspension achieves by way of the altered ratio between spring and wheel hub the desired gradually increasing stiffness of springing when the wheel is compressed against the springs. Power is transferred from the engine to the rear wheels by double universal joint shafts.



Front Axle

The front wheels have independent suspension. They are located by transverse control arms and shock absorber struts. The design saves space by placing the components of the axle in the wheel arch and under the luggage compartment floor.
A wide, roomy luggage space is thus achieved in spite of relatively low total height. The transverse control arms are situated on the bodyshell floor and transmit the spring action of the lengthwise torsion bars thru the shock absorber struts to the wheels. The struts are connected at the lower end with the transverse control arms by means of ball joints, and at the upper end to the wheel arch by means of rubber-metal joints.

All joints are maintenance free.

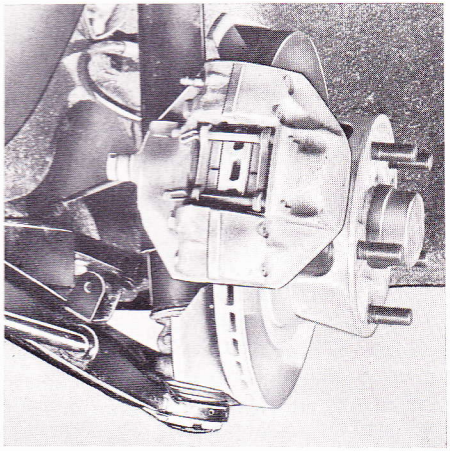


Steering

The steering uses a rack and pinion assembly with a two-part track rod. The safety steering column is in three parts connected by universal joints.
The steering wheel is well padded and provides, together with the steering column, maximum possible safety for the driver in case of an accident.

Brakes

The brake system comprises disc brakes at front and rear arranged in two circuits. The rear brake circuit includes a brake pressure regulator, which maintains a preset maximum pressure in the lines to the rear wheel brakes.
The hand brake operates by means of a wire cable on the pads of the rear wheel brakes. The brake is self-adjusting.



Body

The open body is fitted with a roll bar. The plastic roof can be removed and stored in the rear luggage compartment.

The large, curved windshield, made of laminated safety glass, allows a limited clear view even when shattered. The rear window, installed in a vertical position, is shielded by the roll bar and therefore well protected from the weather.

The doors are opened from outside by a handle recessed into the door so as to form a flush surface, and from inside by pulling a handle recessed in the door. Both doors can be locked with the ignition key. The lock is immediately in front of the flat door handle. The driver's door can be locked without the key, by pressing the catch underneath the inside handle and pulling out the flat outside door handle while closing the door.

The driver's bucket seat can be adjusted backward, forward and for height, and has a combined head restraint. The passenger seat cannot be adjusted; The seat back and the head restraint are fixed to the rear wall. The foot rest can be arranged to suit the passenger. The following measures have been taken to provide for safety inside the car:

Installed seat belts
Bucket seats with standard head restraints.
Top and bottom rim of instrument panel padded center section with knobs and instruments recessed.

Switches, knobs and grab handle for the passenger are made of resilient material.
Sun visors are padded.

Steering wheel with padded center.

Careful ventilation to avoid fogging of window.

Safety interior mirror.

Recessed inside door handles.

The front luggage compartment offers 7.1 cu. ft. of space. The spare wheel lies in a special recess in the floor and is covered by a carpeted plywood board.

The spare wheel can be removed and packed in the rear luggage space if large pieces of luggage are to be transported.

The rear luggage compartment has a capacity of approx. 8.8 cu. ft. and is particularly suited to carry large luggage.

The engine is installed between the rear axle and the passenger seats. It is accessible through a special lid between the rear window and the rear luggage compartment. A grille built into the lid allows entry of air for combustion and for cooling.

Electrical System

An alternator, 14 V 55 A (770 W) supplies direct current.

The alternator delivers a high output even at low rpm.

The roadster has pop-up headlamps, which retract into the body completely. The round headlamps cannot be seen by day or become dirty. To drive with lights on the headlamps are raised by electric motors.

PORSCHE

914/6

USA

TECHNICAL DATA

Engine

Number of cylinders	6
Bore	3.15 in. (80 mm)
Stroke	2.60 in. (66 mm)
Displacement	121.5 cu.in. (1991 cc)
Compression ratio	8.6:1
Horsepower rating	125 SAE HP (110 DIN HP) at 5800 rpm
Maximum torque (SAE and DIN ratings)	131 ft-lbs (16.0 mkp) at 4200 rpm

Design Specifications

Engine type	Horizontally opposed, four-stroke-cycle six
Cooling	Air cooled
Cylinders	Individual, grey cast iron liner with finned light alloy jacket
Cylinder head	Light alloy
Number of valves, per cylinder	1 intake, 1 exhaust
Valve arrangement	Overhead, in "V"
Valve actuation	OHC 1 camshaft per cylinder bank
Camshaft drive	Chain
Crankshaft	Forged, with 8 main bearings
Connecting rod bearings	Plain, three layer
Blower drive	V-belt, over alternator (V-belt = Phönix Rhombus DA 9.5 x 710 or similar)
Alternator-to-engine ratio	Approx. 1.4
Air valume	Approx. 47 cu.ft./sec (1320 ltr/sec) at 5800 crankshaft rpm
Engine lubrication	Dry sump system
Fuel pump	1 electrical
Carburetors	2 Weber triple throat carburetors

Electrical System

Operating voltage	12 volts
Battery capacity	45 Ah
Radio noise suppression	Remote suppression
Alternator output	Maximum 55 amps at 14 volts AC (770 watts)
Ignition type	Battery; capacitive discharge system
Firing order	1 – 6 – 2 – 4 – 3 – 5
Ignition timing	35° BTC at 6000 rpm
Spark plugs	BERU 240/14/3; BOSCH W 230 T 30 or similar
Spark plug gap	.024 in. (0.6 mm) .024 in. (0.6 mm)

Power Train (5-speed-transmission)

Clutch	Single plate dry disc
Transmission	Porsche, servo – lock synchronization
Number gears	5 forward, 1 reverse
Gearshift location	Floor-mounted, central
Final-drive	Spiral bevel pinion and differential
Drive ratio	7 : 31, (4.429)
Rear axle drive	Drive shafts with two CV joints per shaft
Gear ratios	Refer to transmission diagram (page 90)

Power Train (Sportomatic)

Clutch	Servo action single plate dry disc
Transmission	Porsche, servo-lock synchronization, with torque converter
Number gears	4 forward, 1 reverse
Gearshift location	Floor-mounted, central
Final drive	Spiral bevel pinion and differential
Drive ratio	7 : 27, (3.857)
Rear axle drive	Over double joint half axles
Gear ratios	Refer to transmission diagram (Page 91)

Chassis, suspension

Frame	Welded pressed steel box section frame, welded to body
Front suspension	Independent, suspension struts and track control arms
Front springs	Round section longitudinal torsion bar for each wheel
Rear suspension	Independent, semi-trailing arms
Rear springs	Coil spring, double acting telescopic shock absorber and progressive rate hollow rubber spring for each wheel
Foot brake	Dual circuit, operating hydraulically on all four wheels; disc brakes at all wheels, vented disc brakes on the front wheels, pressure regulator in rear wheel circuit
Hand brake	Operates mechanically on rear of foot brake system
Effective brake disc diameter	Front 9.26 in. (235 mm), rear 9.45 in. (240 mm).
Total effective friction area	32.6 sq. in. (210 cm^2)
Rims	$5^1/_2$ J x 15, optional $5^1/_2$ J x 14
Tires	165 HR 15; optional 185 HR 14 with rims $5^1/_2$ J x 14
Steering	rack and pinion
Steering reduction ratio (in center)	1 : 17,78
Camber angle (DIN curb weight)	front 0° ± 20′; rear –30′ ± 20′
Toe-in (DIN curb weight, car depressed with force of 33 lb)	front + 20′ ± 10′; rear 0° + 15′
Caster angle (DIN curb weight)	6° ± 30′

Climbing Ability (5-speed-transmission)

Weight conditions (party laden)	
1st gear, max. gradient:	68%
2nd gear, max. gradient:	32%
3rd gear, max. gradient:	19%
4th gear, max. gradient:	13%
5th gear, max. gradient:	9%

Climbing Ability (Sportomatic)

Weight conditions (party laden)	mechanical	with torque conversion (brief periods only)
Driving range L max. gradient:	39%	70%
Driving range D max. gradient:	22%	36%
Driving range D3 max. gradient:	14%	23%
Driving range D4 max. gradient:	7%	18%

Filling Capacities

Engine	Approx 9.5 US qts (9 liters) premium quality HD oil, acc. to API specification MS SAE 10 = below + 5° F (–15° C) SAE 20 = from + 5° F to 32° F (–15° C to 0° C) SAE 30 = above 32° F (0° C)
Transmission and differential (also Sportomatic)	Approx 2.6 US qts (2,5 liters) SAE 90 transmission oil specification MIL 2105 A
Fuel tank	16.4 US gals (62 liters) including approx 1.6 US gals (6 liters) reserve Required octane rating: 96 octane (premium fuel)
Hydraulic fluid reservoir	Approx 12 fl. oz. (0.35 liters) according to specification SAE 1703 a.

Dimensions

Wheelbase	96.5 in. (2450 mm)
Track (DIN curb weight) front	53.2 in. (1352 mm)
rear	54.2 in. (1376 mm)
Overall length	156.8 in. (3985 mm)
Overall width	65.0 in. (1650 mm)
Overall height (car empty)	48.8 in. (1240 mm)
Ground clearance (car loaded)	5.1 in. (130 mm)
Turning circle	approx. 36 ft. (11 m)

Weights

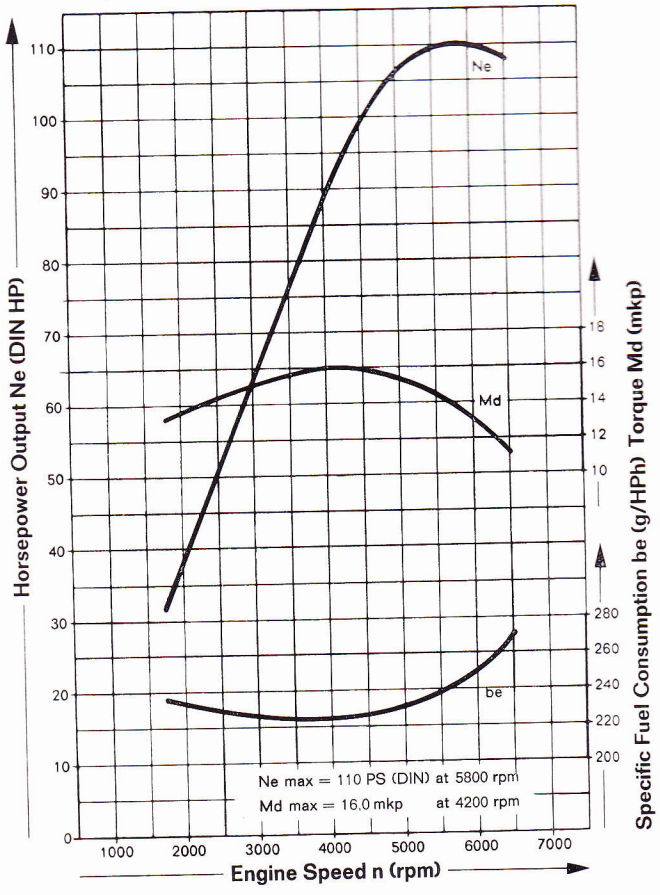
DIN curb weight	2075 lbs (940 kp)
Total permissible weight	2780 lbs (1260 kp)
Maximum axle load front*	1433 lbs (650 kp)
rear*	1433 lbs (650 kp)

* Do not exceed total permissible weight.

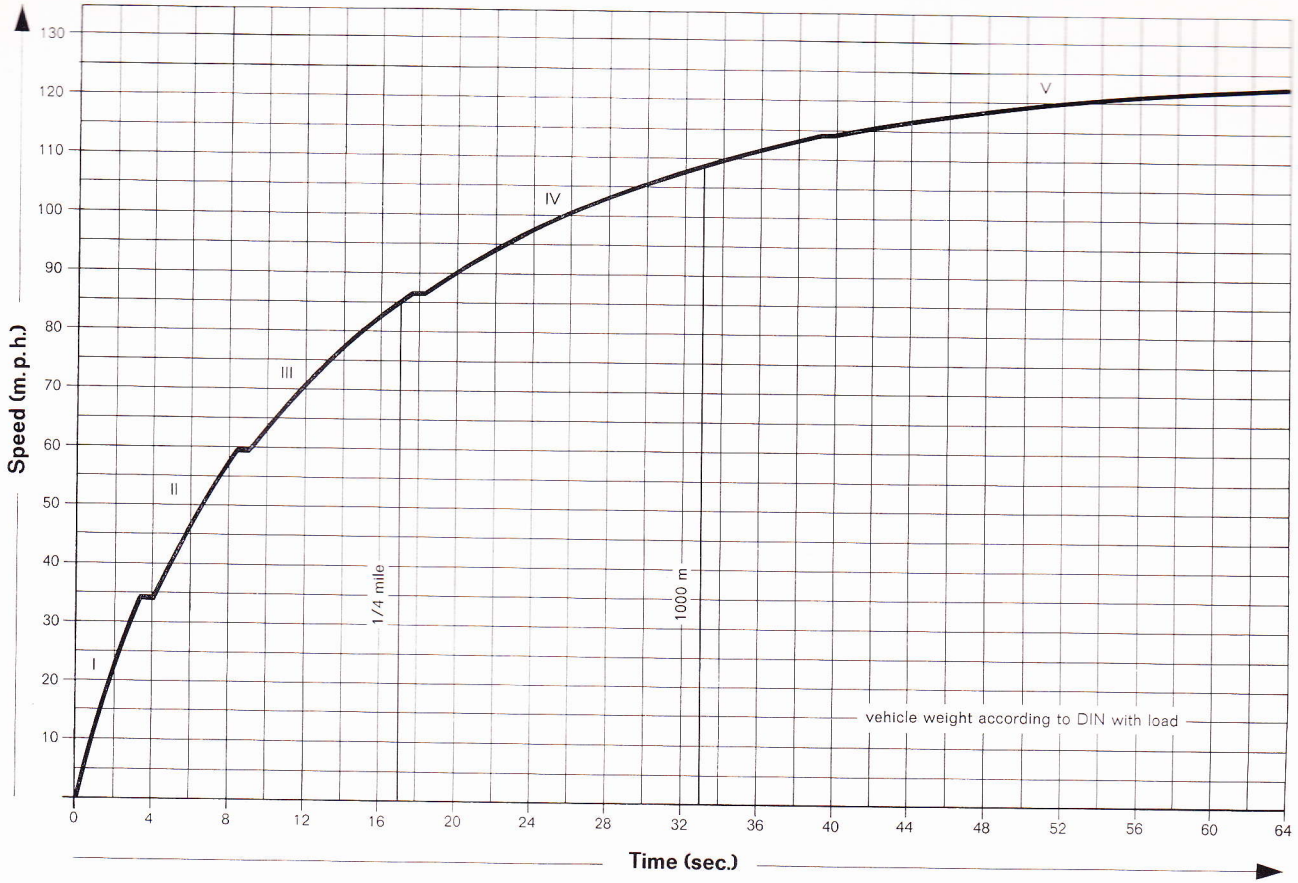
Performance

Maximum speed (5-speed-transmission)	approx. 125 mph (200 km/h)
Maximum speed (Sportomatic)	approx. 122 mph (195 km/h)
Power/weight ratio (DIN curb weight + driver)	17.8 lbs/SAE HP (9.2 kp/DIN HP)
Nominal fuel consumption (DIN)	26 mpg US
Engine oil consumption	1.5–2.0 US qts per 600 miles

Full-power Performance Engine Type 914/6

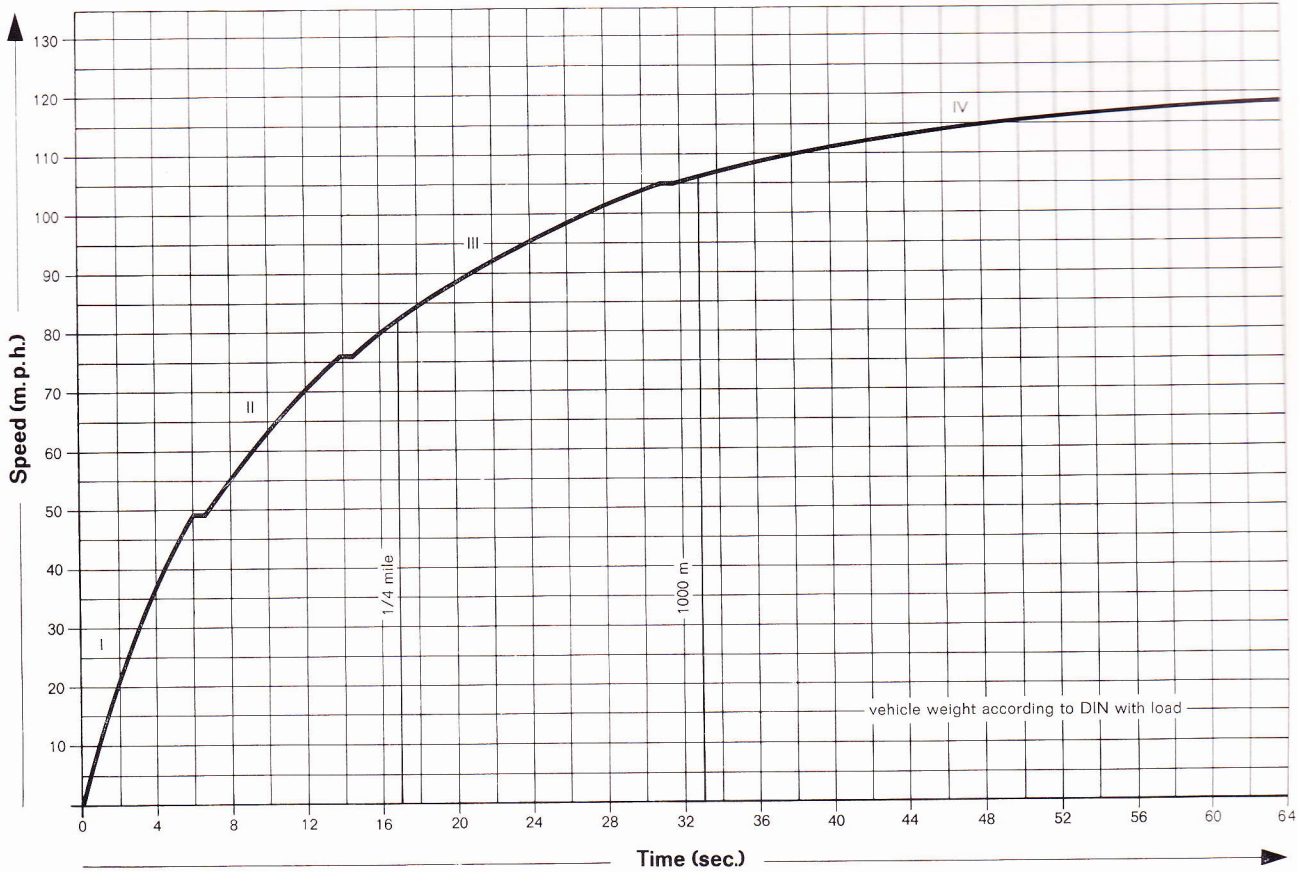


Acceleration Curve 914/6

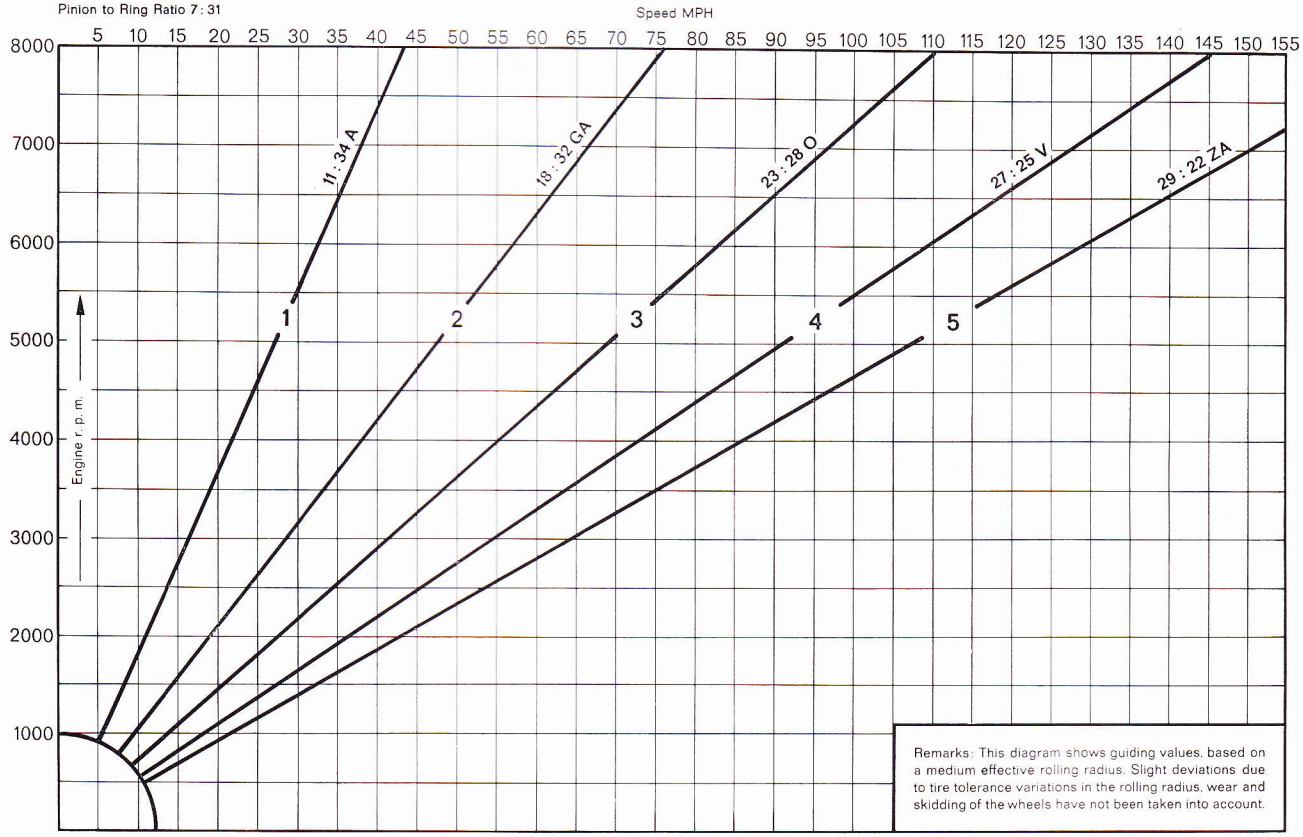


Acceleration Curve 914/6

SPORTOMATIC



914/6 Transmission Diagram



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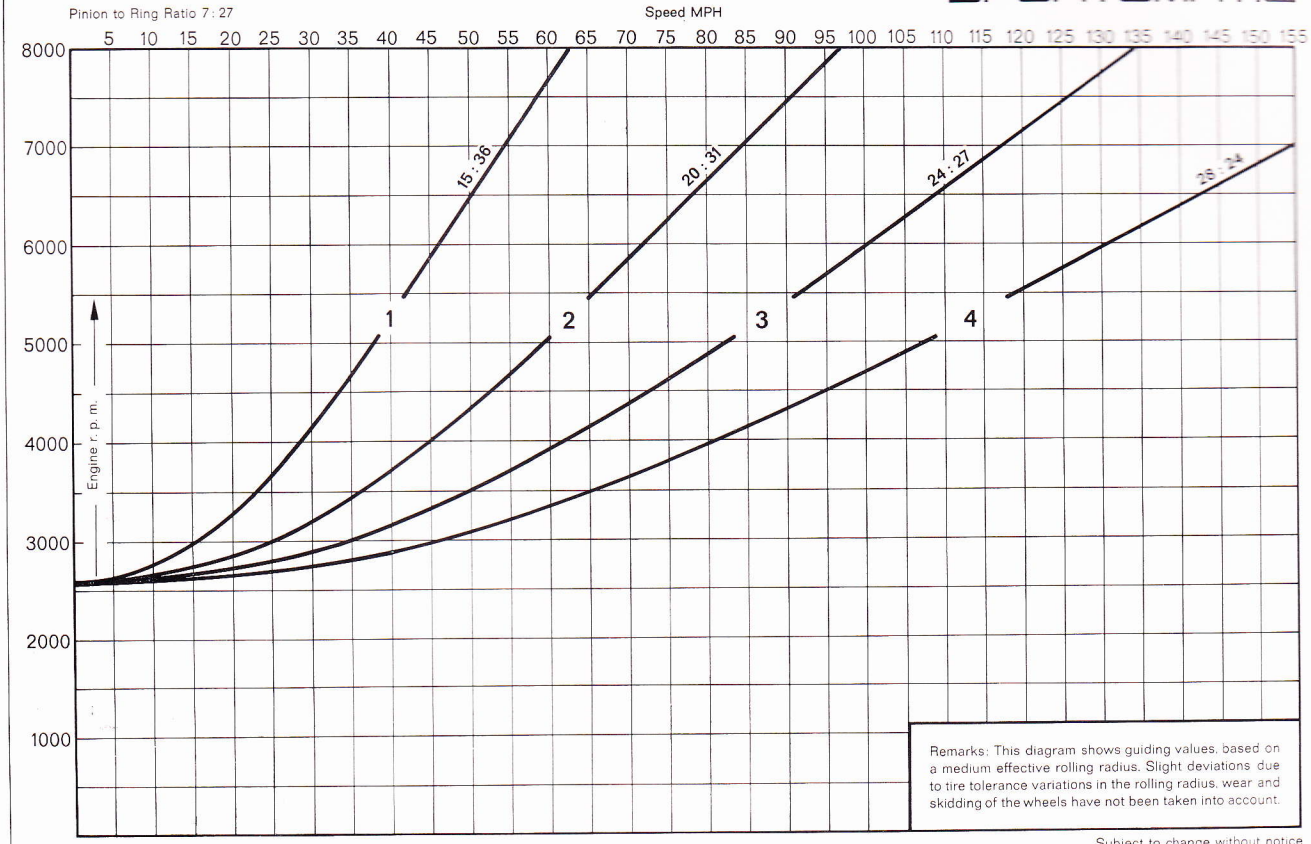
914/6 Transmission Diagram

SPORTOMATIC



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If you are located in North Dakota, South Dakota or Wisconsin, for information contact:

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