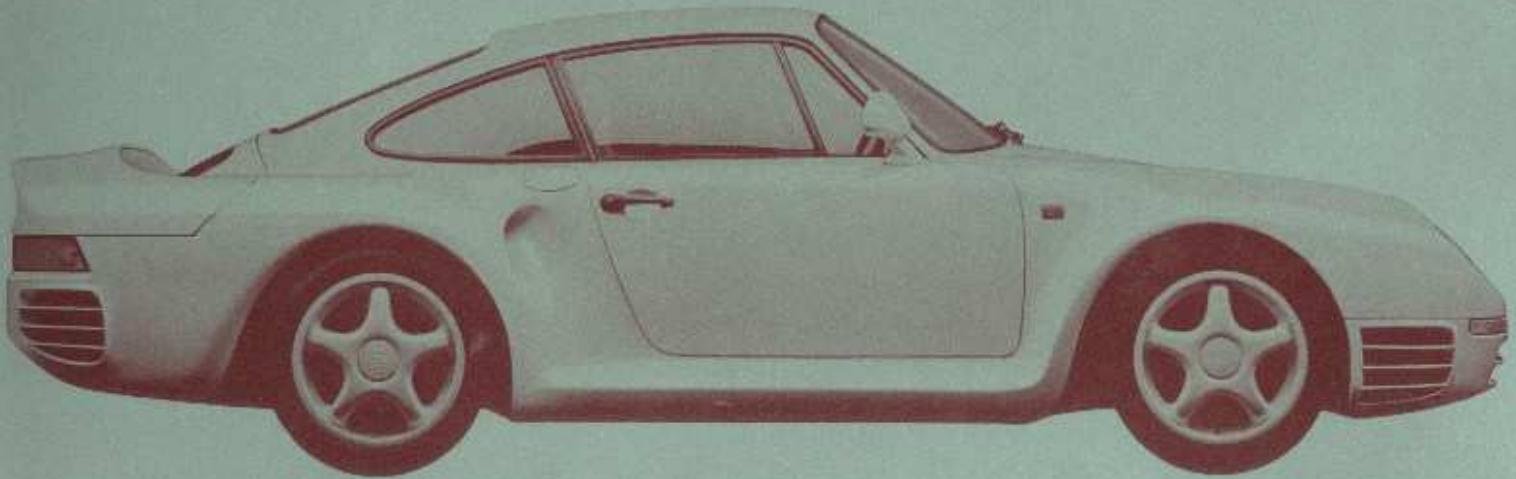


PORSCHE

959



Driver's Manual

PORSCHE

959

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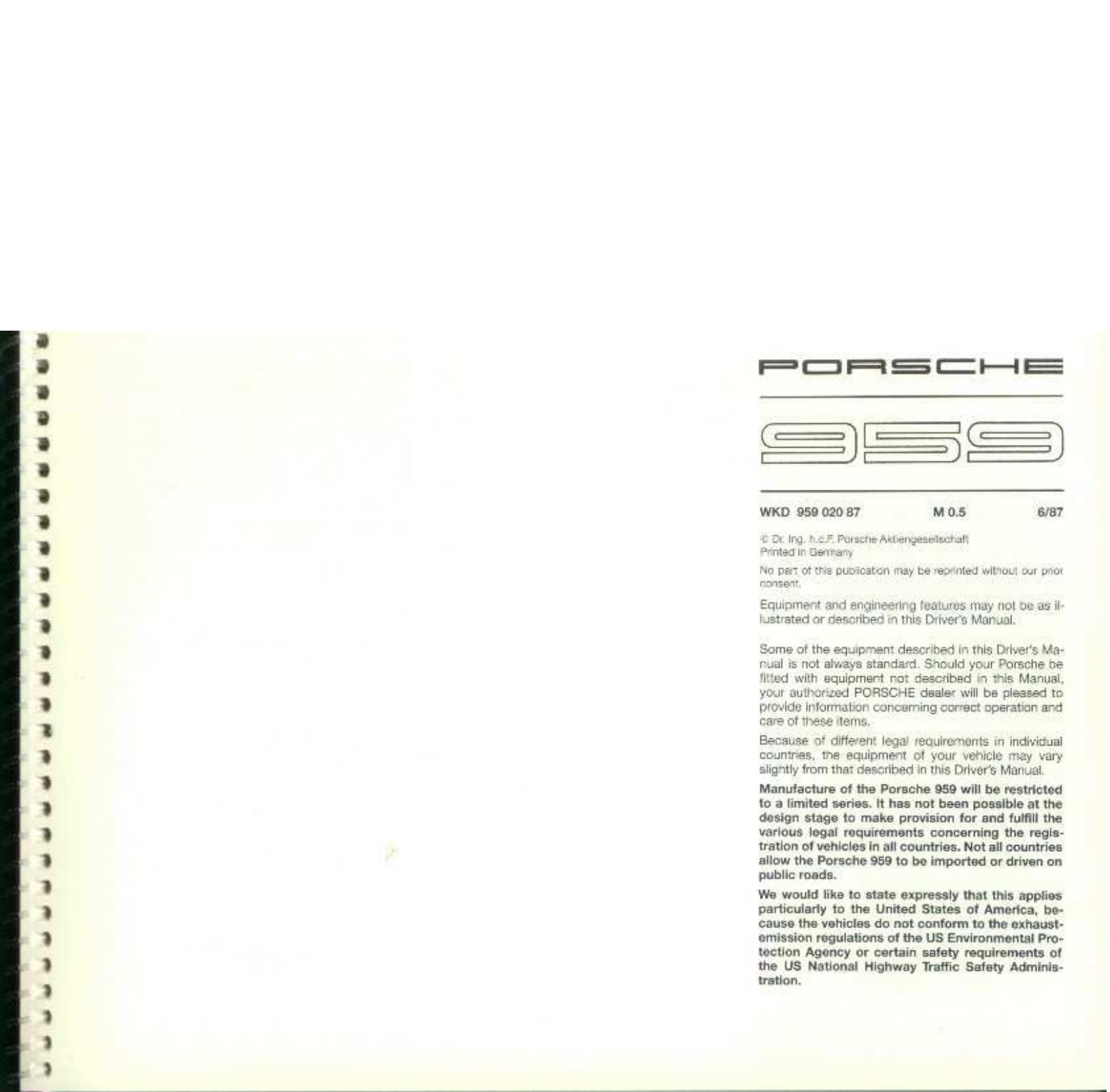
Equipment and engineering features may not be as illustrated or described in this Driver's Manual.

Some of the equipment described in this Driver's Manual is not always standard. Should your Porsche be fitted with equipment not described in this Manual, your authorized PORSCHE dealer will be pleased to provide information concerning correct operation and care of these items.

Because of different legal requirements in individual countries, the equipment of your vehicle may vary slightly from that described in this Driver's Manual.

Manufacture of the Porsche 959 will be restricted to a limited series. It has not been possible at the design stage to make provision for and fulfill the various legal requirements concerning the registration of vehicles in all countries. Not all countries allow the Porsche 959 to be imported or driven on public roads.

We would like to state expressly that this applies particularly to the United States of America, because the vehicles do not conform to the exhaust-emission regulations of the US Environmental Protection Agency or certain safety requirements of the US National Highway Traffic Safety Administration.



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Foreword

First Encounter

The Porsche 959 is a car that is easy to drive, as during the development of this extraordinary automobile, highest priority was afforded to driving safety and ease of operation.

The driver who has opted for the Porsche 959 will approach this new vehicle with a fund of experience gained in driving cars of distinctive class. Just as experienced aircraft pilots study a new aircraft intensively and familiarize themselves with every aspect of their new charge before embarking on the first commercial flight, you should devote your attention to a careful study of the 959, beginning with the 959 Brief Instructions. Here you will find all the important warning and control features as described in greater detail in the Driver's Manual.

A thorough study will make you familiar with the 959 within a short space of time. With this vehicle, you can reach speeds which are subject to their own laws. These are speeds at which a great deal depends on the driver's personality.

Safety

Even the Porsche 959 is subject to the laws of physics. In this context, the relationship of braking distance to speed should always be taken into consideration.

Speed at which brakes are applied	Average braking distance under optimum condi- tions without considera- tion of the reaction time m
km/h	m
320	428
300	368
250	253
200	160
150	90
100	39

These distances are covered from the instant the brakes are applied until the car comes to a complete standstill. The measurements have been made under **optimum conditions** (braking with ABS active on a road with an ideal anti-skid surface).

Usually, these optimum conditions do not apply. As a rule, the driver must allow for longer braking distances.

The average braking distances listed in the table were measured without consideration for the reaction time of the driver. If allowance is made for a typ-

ical reaction time the stopping distance (stopping distance = distance covered during the reaction time + braking distance) is extended by 67 m if the brakes are applied at a speed of 300 km/h. It should also be taken into consideration that at 300 km/h, the car is travelling at 83 m per second.

The Porsche 959 is capable of attaining a lateral acceleration in curves, deceleration under braking and acceleration that go far beyond the bounds of what one has come to expect today. This means safety. However only when you **refrain** from pressing to these limits on the road, thus maintaining an adequate safety margin without using up the reserves for the sake of performance.

The Driver and the Other Road Users

When travelling at high speeds, always make allowance for an essential factor - your fellow road users. Your speed will often be underestimated by others. Please be considerate.

With its characteristic safety and its supreme performance, the Porsche 959 offers a great deal of pleasure to a confident and considerate driver. There is no need to prove anything with the 959. The car has shown its capabilities in the Paris – Dakar Rally and the Le Mans

24-hour endurance race. Our desire and that of our customers is to preserve the freedom of driving. The public's positive attitude towards high-performance sports cars is a matter of interest to all of us. The Porsche 959 and its driver should be a welcome additional dash of colour in the world of day-to-day driving.

Driving on the Limit

You will enjoy the impressive tautness and steering precision. Through this the driver is informed of road conditions and handling.

In the interplay of chassis and new drive technology, the 959 maintains its poise and remains correctable on the limit.

You will notice that as an **active** driver, you have numerous opportunities to intervene and adjust the car's characteristics, because the chassis is set up to maintain your awareness of the vehicle's response.

We recommend driving on closed circuits as a means of familiarizing the driver with the vehicle and its capabilities.

The safe-driving training program of the "Porsche Motor Sport Driving School" provides this experience in West Germany.

Points to be Noted

The Porsche 959 has been tested to the same rigorous standards as every Porsche and is fully suited to everyday driving.

However, new technologies do speak a language of their own. The "breathing" of the high-performance engine with two-stage turbocharging can be audible. This engine draws large quantities of air through its intake system and the noise of this airflow can be heard, for example when you lift your foot off the accelerator.

A low rushing noise which may occur under certain circumstances as the car accelerates is no cause for concern. This noise is caused by the intermittent action of the bypass and turbine cut-in valve.

Small amounts of smoke from the exhaust may be seen to occur from time to time when starting from cold. This is due to moisture vapours and does not indicate any fault.

At very high speed, the aerodynamic conditions alter. Airstream noises are generated. Naturally these are more noticeable at 300 km/h than at lower speeds.

More force is required to close lightweight aluminium doors than heavy steel doors which is one indication of the special nature of the body design. The wholly plas-

tic exterior skin cannot be manufactured with the absolute precision of a sheet-steel body.

An ARAMID fibre fabric (KEVLAR) is embedded in the glass-fibre reinforced, epoxy-resin skin to provide strength. If the panels are examined closely the regular structure of this KEVLAR fabric can be seen on the surface.

The Porsche 959 is not as comfortable as a limousine, because the tyres must be suitable for speeds in excess of 320 km/h. They are like racing tyres (slicks) however with a tread pattern. Suspension and damping have to be stiff.

Maintenance, Repairs, Car Care

Only a few of the authorized PORSCHE dealerships which make up our service network have been selected as **959 Maintenance Centres** for your Porsche 959.

The employees of these companies have received special training to familiarize them with the technology of this exceptional vehicle. You will find a list of the 959 Maintenance Centres in the "Porsche Service" index in the booklet provided with the vehicle and entitled "Porsche 959 Service". Please bear in mind that only

959 Maintenance Centres have the trained personnel to provide this Porsche with the necessary maintenance it requires.

You may be forced to visit another authorized PORSCHE dealer. This is possible, however as not all dealers have the technical literature for the Porsche 959 at their disposal, you will receive a copy of the 959 Repair Manual with your car for use in this event.

Should a fault develop, **please seek the assistance of your 959 Maintenance Centre without delay.** In the interest of your own safety, please exercise extreme caution when driving to the Maintenance Centre. Where specifically mentioned in the Brief Instructions and in the Driver's Manual, observe a maximum speed limit of 80 km/h, avoid any unnecessarily severe acceleration and braking and corner gently.

Your Porsche 959 stores any malfunctions which may occur in its electronic memory. For example, the electronic control unit of the 959 engine can store up to 24 different symptoms, from a defective pressure sensor to a loose connection, even if it occurred only once and then for no more than a fraction of a second. Your Porsche 959 Maintenance Centre has a test unit which serves to analyse a malfunction in the system. Thus, the fault can be pin-pointed and rectified.

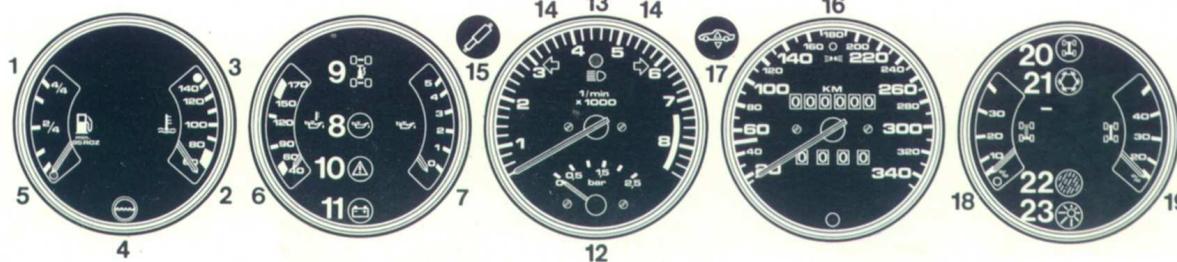
To keep your 959 in perfect condition, always have any minor damage repaired immediately by a specialist. This applies in particular to damage to the magnesium wheels.

We wish you safe driving and a great deal of pleasure with your Porsche 959.



	Small instrument cluster	Large instrument cluster	Tachometer	Speedometer	All-wheel drive control	
Display →	1 Fuel level 2 Coolant temp.	6 Engine-oil temp. 7 Engine-oil pressure	12 Boost pressure		18 Rear axle slip limiter 19 % of drive to FA	
○ = Pilot lamp for →	③ Coolant temp. Blower pressure Engine-comp. temp. ④ Coolant level ⑤ Fuel level	⑥ Engine-oil pressure ⑦ Tyre pressure ⑧ Central warning ⑨ Battery charge pilot lamp	⑩ Full beam/dipped beam ⑪ Indicators ⑫ Damper control	⑬ Sidelights ⑭ Level control	⑮ Traction program ⑯ Ice program ⑰ Wet-road program ⑱ Dry-road program	⑲ ABS ⑳ Brake pads ㉑ Brake pressure Brake-fluid level ㉒ Handbrake
Ignition on + engine not running →	Check whether all pilot lamps are lit				A) Program lamps 20, 21, 22, 23, light up briefly(function check) B) One program pilot lamp lit to indicate program selected	㉓ Handbrake lamp lights up if handbrake applied
Engine running + car motionless ←	Pilot lamps go out if systems free of malfunctions, except: ⑩ Central warning Check: 7 engine-oil pressure at least 1 bar !		⑫ Damper control	⑭ Level control	One program pilot lamp lit to indicate program selected	㉔ ABS ㉕ Handbrake, if handbrake applied
Car in motion →	Above 15 km/h, all pilot lamps go out if systems free of malfunctions, except: See page B for fault displays				One program pilot lamp	

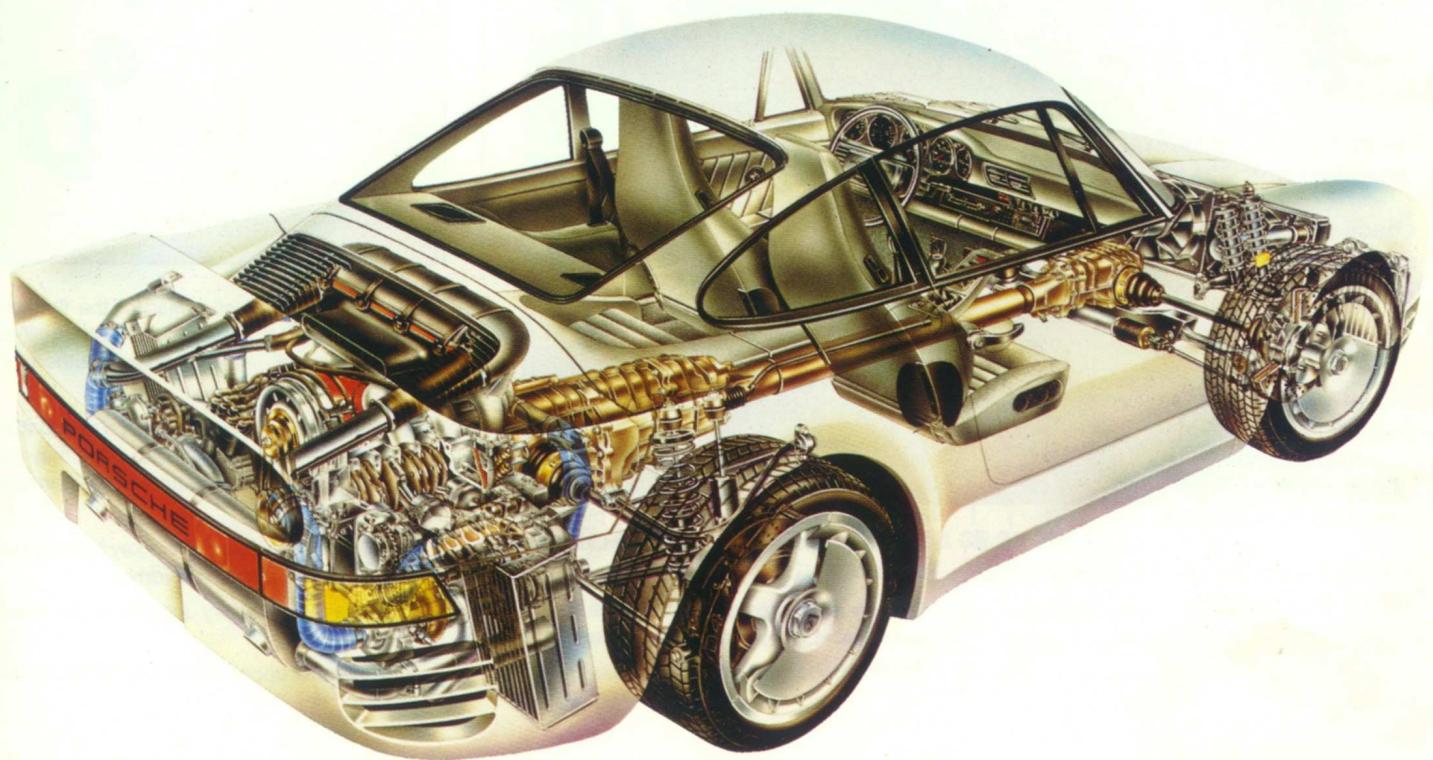
A Brief Instructions Displays Pilot Lamps



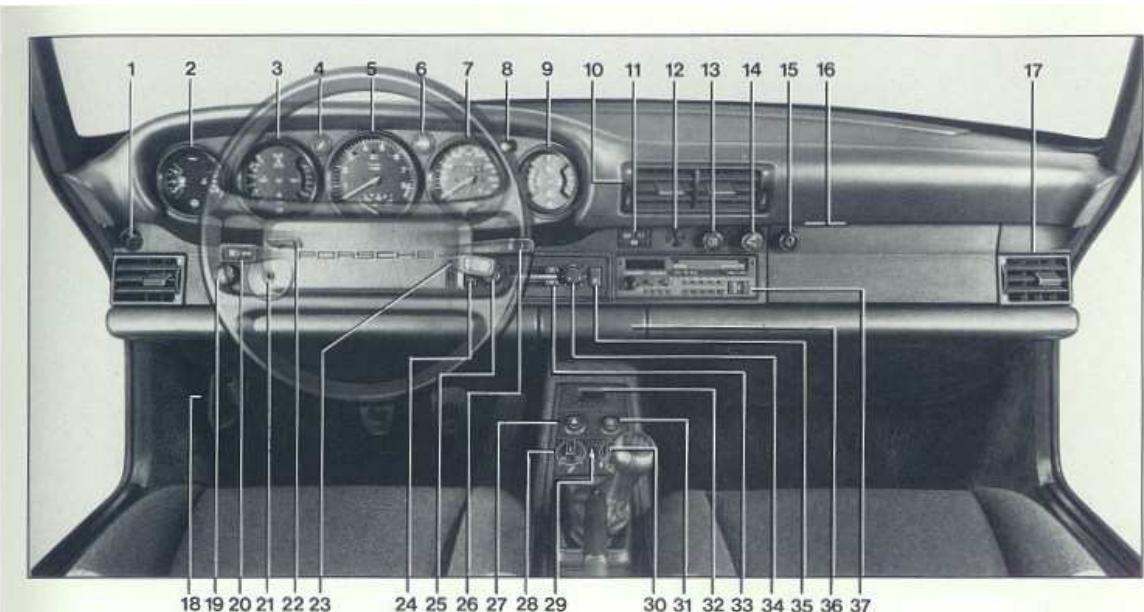
Fault	Small instrument cluster	Large instrument cluster	Tachometer	Speedometer	All-wheel drive control	
Warning priority 1 = 5 sec. buzzer + central warning + pilot lamp ↓ Pin-point fault immediately = Which lamp is lit? ↓ Reaction? ↓ Check for further faults = Observe pilot lamps and gauges	<p>③ Coolant temp. Blower pressure Engine-compartment temperature lights up</p> <p>Drive slowly to P Check/replace Vee-belt Check eng.-comp. blower Check coolant level If warning persists: drive slowly to workshop</p> <p>④ Coolant level lights up</p> <p>Drive slowly to P Check coolant level ● Severe loss: On tow to MC ● Slight loss: Drive slowly to SS_t 2 = Observe temp. Top up. Resume journey Have leak remedied soon – MC</p>	<p>⑧ Engine oil-pressure lights up</p> <p>Gauge 7, immediate response = check eng.-oil pressure: ● If pressure too low: Stop/ Switch engine off On tow to MC ● If pressure normal: drive slowly to P/SS_t Check oil level, engine idling + min. 90°C oil temp. Top up – resume journey ● If warning persists: On tow to MC</p> <p>⑥ Engine-oil pressure flashes</p> <p>Pressure monitoring defective, proceed as above. Gauge 7 = check eng.-oil pressure continuously, check oil level Have fault remedied at MC.</p>	<p>⑨ Tyre pressure lights up/flashes</p> <p>Drive slowly to P/SS_t ● Switch off engine ● Check tyre + wheel ● Increase pressure of wheel concerned by 0.3 bar to at least 3.0 bar front 3.5 bar rear ● Resume journey ● If warning repeated, increase in 0.3 bar steps to max. 4.5 bar</p> <p>⑩ Tyre pressure lights up/flashes although pressure 4.5 bar</p> <p>System defective – pressure not monitored. Drive slowly to MC or Let tyres cool for 30 min. adjust pressure to 4.5 bar, resume journey without monitoring, max. 200 km/h. Check pressure after 1 hour, thereafter daily check.</p>	<p>↓ Engine</p> <p>↓ Engine</p> <p>↓ Tyre pressure</p> <p>↓ Tyre pressure</p>	<p>Severe, persistent pressure loss</p> <p>Drive slowly to MC Check tyre and wheel at intervals, increase pressure to 4.5 bar.</p> <p>Driving with tyre pressure too low</p> <p>Drive slowly to MC Replace tyre if under 2 bar and/or car was not driven slowly</p> <p>ABS fault = tyre pressure no longer monitored</p> <p>Drive slowly to MC</p>	<p>↓ All-wheel drive</p> <p>⑩ Traction program flashes or all program pilot lamps out</p> <p>Drive slowly to MC Read fault memory, rectify fault</p> <p>Special case: battery voltage too low</p> <p>Recharge/replace battery</p> <p>● If warning reset, resume journey ● If warning persists, drive slowly to MC</p> <p>⑪ Brake press., brake fluid lights up</p> <p>Stop Brake carefully, on tow to MC</p> <p>⑫ Handbrake lights up</p> <p>Release handbrake</p>
Warning priority 2 = Pilot lamp ↓ Response?		<p>⑪ Battery charge lights up/flickers</p> <p>Other systems may fail soon. Drive slowly to P/SS_t ● Switch off consumer ● Check/replace Vee-belt ● If warning persists: On tow to MC</p>	<p>⑯ Damper control lights up</p> <p>Drive to MC at earliest opportunity</p>	<p>⑰ Level control lights up</p> <p>Drive slowly to MC Ground clearance and car height incorrect</p>		<p>⑯ Brake pad lights up</p> <p>Drive to MC at earliest opportunity</p>
Notes on functions = Pilot lamp				<p>⑯ Level control flashes slowly</p> <p>Car at level for difficult terrain</p>	<p>One program pilot lamp for program selected</p>	
Key		<p>Slowly = maximum speed 80 km/h</p> <p>! = avoid unnecessarily severe acceleration</p> <p>■ = and braking</p> <p>■ = corner gently</p>		<p>⑰ Level control flashes quickly</p> <p>Car is settling</p> <ul style="list-style-type: none"> ● because driving at increased speed or ● because lower level selected 		
Red = stop / check						
Yellow = slow -priority 1						
Blue = slow - priority 2						
Green = at earliest opportunity						
P Lay-by/carpark						
SS _t Service station						
MC 959 Maintenance Centre						

B

Brief Instructions Faults Notes on Functions



- 1 Pull knob for fuel-tank flap
- 2 Small instrument cluster
- 3 Large instrument cluster
- 4 Pilot lamp for adjustable damping
- 5 Tachometer with boost-pressure gauge
- 6 Pilot lamp for level control
- 7 Speedometer with odometer and trip meter
- 8 Control switch for intermittent-wipe interval
- 9 Instrument for all-wheel drive control
- 10 Central vent for heating, air-conditioning and ventilation
- 11 Brake warning and pilot lamps
- 12 Buzzer for acoustic warning signal
- 13 Switch for rear fog lights
- 14 Cigarette lighter
- 15 Glove-compartment lock
- 16 Glove-compartment light
- 17 Side vent for heating, air conditioning and ventilation
- 18 Pull handle for luggage-compartment lock
- 19 Light switch
- 20 Indicator/dip/flasher stalk
- 21 Steering/ignition/starting lock
- 22 Outside mirror selector switch
- 23 Wiper/washer switch
- 24 Recirculating air/defroster switch
- 25 Blower switch



- | | | |
|---------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------|
| 26 Program-select stalk for all-wheel drive | 31 Switch for heated rear screen | 34 Preselect switch for passenger-compartment temperature |
| 27 Hazard-warning light pushbutton | 32 Clock with stopwatch function | 35 Switch for air conditioner |
| 28 Program switch for damping | 33 Control panel for heating, air conditioning and ventilation top/bottom | 36 Ashtray |
| 29 Central locking button | | 37 Radio |
| 30 Program switch for level control | | |

Before Driving Off

In the interests of your own safety, with the ignition switched on before driving off check the operation of all warning lamps and pilot lamps,

check the air pressure and condition of all four tyres,

clean the headlight lenses, rear lights, indicators and windows

check operation of the headlights, stoplights and indicators with the ignition switched on,

check that the fuel supply is ample,

adjust inside and outside mirrors for unhindered rear vision,

fasten seat belts - driver, front and rear-seat passengers.

The 959 sports version is licensed for only 2 occupants.

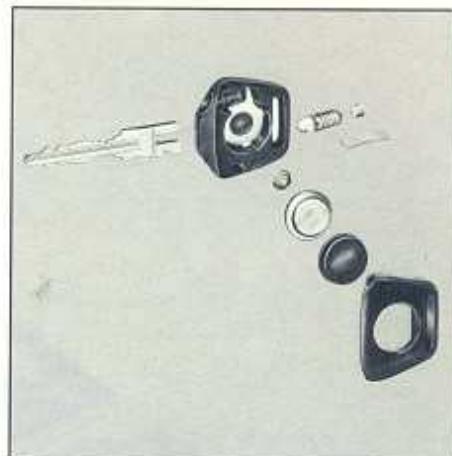


Keys

- A Key with battery-operated light
- B Flat key
- C Key for oddments tray
- D Key for alarm system

Three keys are supplied with the vehicle, all with the same cut. Two of the keys have a built-in battery-operated lamp in the plastic head. The lamp lights up when the contact button is pressed.

One key is flat, designed to be kept in your purse or wallet, for instance, as a "key for emergencies".

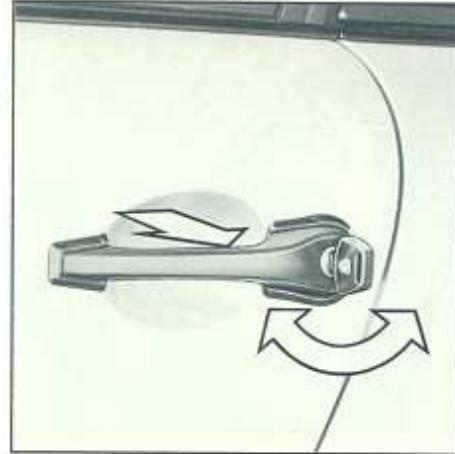


If you remove the plastic head of the flat key, you can attach a plastic head with built-in lamp (available from your authorized PORSCHE dealer).

When the beam begins to fade, fit a new battery of the same voltage. The acid which may escape from a discharged battery could damage your clothing.

1. Carefully lift the cover of the key head with a fingernail or a small screwdriver.
2. Insert a new battery (commercially available, 1.5 V).
3. Reassemble upper half of key as illustrated above.

Always state the key number when ordering replacement keys. The key number is noted beside the vehicle identification number on the small card which you received with the keys. Please keep this card in a safe place – not in the car. Please remove the key-number labels on the heads as soon as you receive the keys.



Door Locks

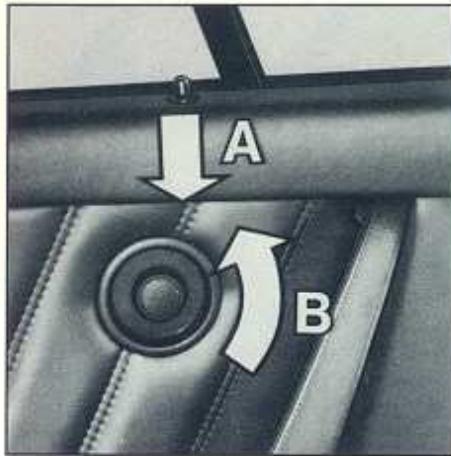
The doors are locked and unlocked from outside with the key.

The doors are locked from inside by depressing the locking button (A). When driving, do not depress the locking button, so that in an emergency the door can be opened from the outside.

The doors are unlocked from inside by turning the knob (B). To open the door from inside, pull the recessed handle (C).

The passenger-side door can be locked by depressing the locking button (A) before closing the door; this is not possible with the driver's-side door. This precaution was taken to preclude the possibility of leaving the key in the ignition and locking the car.

See next page, "Central Locking System".



Central Locking System

The central locking system allows both doors to be locked or unlocked electrically when the key is turned in either door lock.

When the doors are locked, the locking buttons (A) must be fully retracted.

Prior to locking, ensure that both doors are properly closed.

Either door can be locked individually from inside by depressing the locking button (A) or turning the knob (B). If one door is unlocked by turning the knob (B), the second door is automatically unlocked.

Emergency Actuation

Should the central locking system fail, both doors can be opened mechanically.

The driver's door can be locked from inside and the passenger door can be locked (with door still open) by depressing the locking button (A).

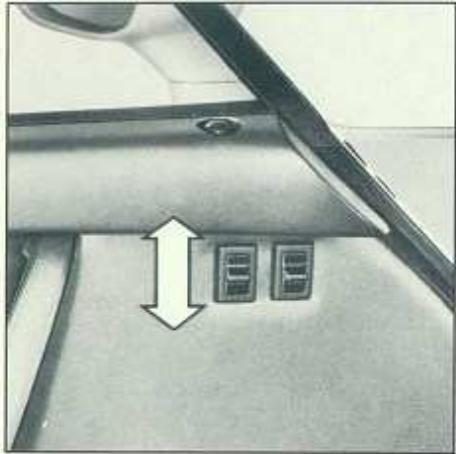


Central Locking System Button

With the ignition key at position 1 or 2, both doors can be locked or unlocked electrically by pressing the central locking system button in the centre console. The button lights up to indicate that the doors are locked.

The button lights up if one of the doors has been locked manually. The door is unlocked by pressing the button. When the button is pressed again both doors are locked and the button lights up.

The central locking system button can be used to lock the doors with the ignition key removed. Pressing the button will not unlock the doors unless the ignition is switched on.



Power Windows

The windows in both doors are operated by rocker switches set in the door-trim panels. The passenger-side window can also be operated from the front switch in the driver's door. When the doors are closed, the power windows can only be operated when the ignition key is in position 1 or 2.

When a door is open, the power window can be operated even if the ignition key has been withdrawn.

Caution: Occupants unacquainted with the vehicle (e.g. children) may injure themselves when closing the windows. As a precaution, the driver should remove the ignition key even when leaving the vehicle for a brief period.



Alarm System

If your vehicle is equipped with an alarm system, you will receive two additional keys.

The alarm system can be primed or unprimed only with these keys.

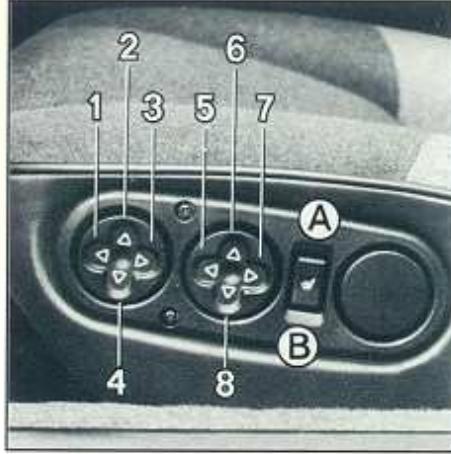
The lock for the alarm system is behind the driver's-side door lock. The key must be turned clockwise through 90° to prime the alarm.

If the driver's side or passenger-side door or front bonnet are opened or if someone should try to start the engine, the alarm will sound for approx. 30 seconds. If the system is triggered again, the alarm will sound once more for approx. 30 seconds.



To unprime the alarm system, turn the key anticlockwise through 90°. Open the door just far enough to provide access to the lock to avoid inadvertent triggering of the alarm.

Remove the key after priming or unpriming the alarm system.



Seats

A correct seating position is essential for safe, fatigue-free driving.

Seat height, fore-and-aft adjustment and backrest angle of the seat installed in the touring version can be selected steplessly at two electric switches, so that the seat can be brought to any desired position.

In the sports version, fore-and-aft position and backrest angle are manually adjusted.

- 1 ⬅️ ➡️ 3 Fore-and-aft adjustment
- 2 ⬆️ ⬇️ 4 Height adjustment, front
- 5 ⬅️ ➡️ 7 Backrest adjustment
- 6 ⬆️ ⬇️ 8 Height adjustment, rear
- A — B Seat heating

Adjusting Seat

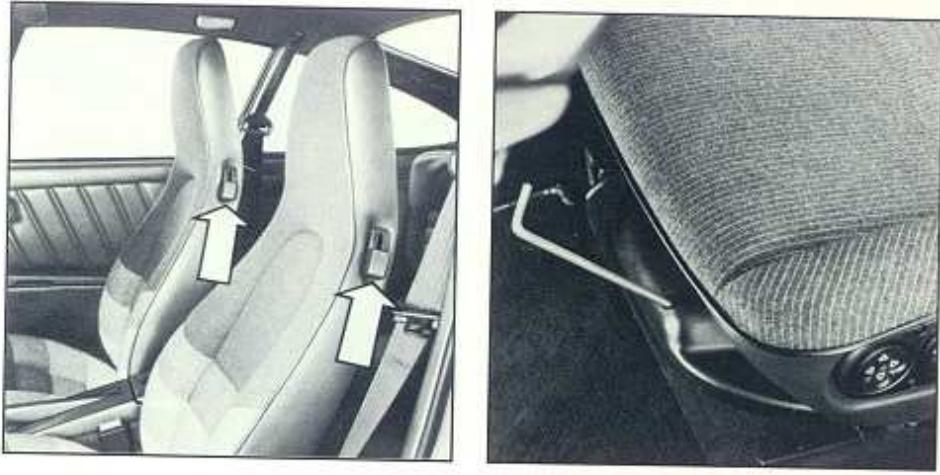
1. To find the correct fore-and-aft position, move the seat until your leg is stretched when the clutch is fully depressed, but your foot is still at an angle.
2. Set desired height at front and rear.
3. Grasp the top of the steering wheel. Adjust the angle of the backrest until your shoulders touch the backrest with your arms almost at full stretch.



Seat Heating (optional extra)

The seat heating is activated by pressing pushbutton (A) and heats the cushion and the backrest. A timer relay switches the heating off automatically after approx. 15 minutes.

The heating can be switched off sooner by pressing pushbutton (B) down.



Sports Seat

For **fore-and-aft adjustment**, raise the outboard locking lever at the front of the cushion, move the seat to the desired position, release the lever and check that the seat latch is properly engaged.

For **backrest adjustment**, raise the inboard locking lever at the front of the cushion, move backrest to desired position and release the lever.

The backrest will move forward by spring action when the lever is raised, unless held back by a weight.

Backrest Locking

The backrest is locked to prevent it falling forward under heavy braking. To unlock, push the knob in the side of the backrest upward. The lock engages automatically when the backrest is returned to the upright position.

Emergency Fore-and-Aft Adjustment

Should the electric seat adjustment fail, use the hex-head spanner from the tool kit to turn the positioning motor at the front of the seat and set the seat to the required position.

Inertia Reel Seat Belt

For their own protection, all occupants must wear the seat belts on every journey.

The standard seat belts are not suitable for children (less than 4' 7" in height). For their own protection and so that they do not irritate the driver, children should occupy the rear seats.

Never use one seat belt for two persons at the same time.

Loose clothing has an adverse effect on the way the seat belt sits. Remove your coat or sports jacket; a correct seating position and complete safety are important.

Do not lay the diagonal belt across solid or breakable objects (spectacles, pen, pipe etc) since these may constitute an additional hazard.

When driving abroad, remember that the local traffic laws also stipulate that seat belts must be worn when driving.



Fastening the Belt

Adjust the seat to the correct position. Grasp the belt tongue and pull the belt with a slow, steady motion across your chest and lap. Insert the belt tongue in the corresponding buckle on the inboard side of the seat and push down until the buckle engages with an audible click.

Make sure that the belts are not twisted.



The lower part of the belt should always fit snugly across the lap. After engaging the buckle, always pull the diagonal belt upward.

The inertia reel is designed to lock the belt more quickly when the vehicle is retarded than when the belt itself unreels. This design combines maximum freedom of movement with optimum safety when braking.



Releasing the Belt

To release the belt, press the red release button marked PRESS. The belt tongue will immediately spring out of the buckle, even if the belt is under load. To store the belt at the end of the journey, guide the belt tongue to the upper mounting point on the door pillar. The plastic slide allows you to adjust the length of the lap belt while keeping the tongue from slipping down when the belt is wound up.

Make sure that the belt is fully wound up when not in use. This protects the belt from dirt and damage.

Check the belts at regular intervals for signs of damage to the webbing. Make sure that the buckles and the anchorages are in good condition. In the interests of your own safety, have the belts replaced if they have been subjected to heavy loads in an accident.

Rear Seat Belts

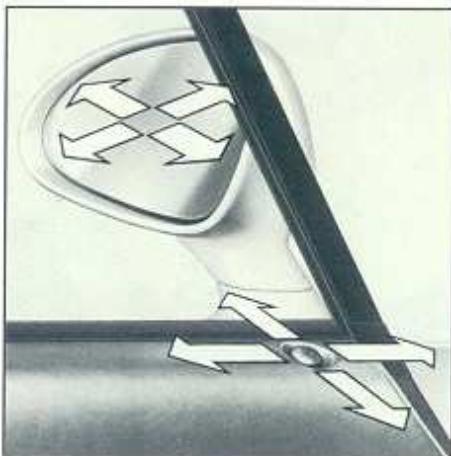
The rear seats are fitted with lap belts. Do not twist the belts. Press the red button on the buckle to release.



Rear View Mirrors

Before setting off, make sure that all rear-view mirrors are correctly adjusted.

Press the lever on the lower edge of the inside mirror to move the mirror to the non-glare setting.

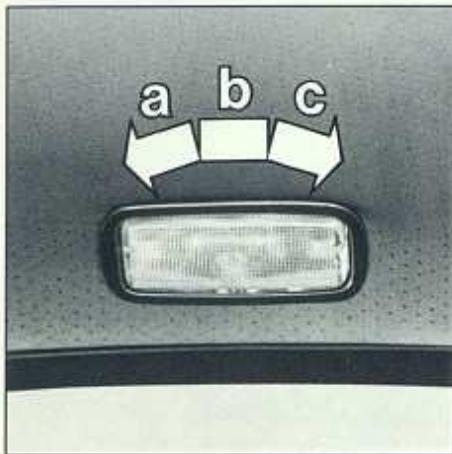


Outside Mirror, Electric

The electrically adjustable outside mirror is adjusted at the control switch mounted on the driver's door.



The mirror on the passenger's side door is adjusted with the same switch, once the rocker switch set in the dashboard on the right above the ignition lock is moved to the correct position. If necessary, the reflector can also be adjusted by hand. When the rear-screen demister is switched on, the outside mirrors are also heated electrically.

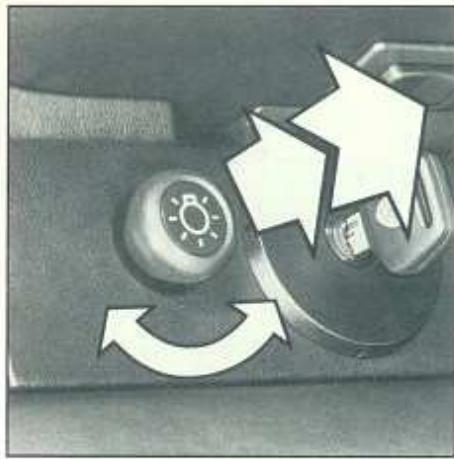


Interior Lights

Two lights are mounted in the roof panel, one on each side.

Pressing the side of the lens operates a built-in switch with three positions:

- a) Light switched off
- b) Light comes on only when door is open
- c) Light on at all times.



Light Switch

The light switch is a two-stage, pull-turn switch. The position light is turned on by pulling the knob out to the first stop; the headlights come on when the knob is pulled out to the second stop. Dipped beam or full beam is selected by moving the **indicator/dip/flasher stalk** mounted on the left side of the steering column. The dashboard is also illuminated when the car's lights are on. The brightness of the dashboard lights can be adjusted steplessly by turning the light switch.



Indicator/Dip/Flasher Stalk

This stalk combines four separate switch functions.

Its motion controls headlight flash, dipped beam and full beam, the indicators and the parking lights.

Positions:

- 1 –Stalk up through point of resistance – right-hand indicator.
- 2 –Stalk down through point of resistance – left-hand indicator.

If the stalk is not moved past the point of resistance, the indicator will only operate until the stalk is released.

The indicators only operate when the ignition is switched on.

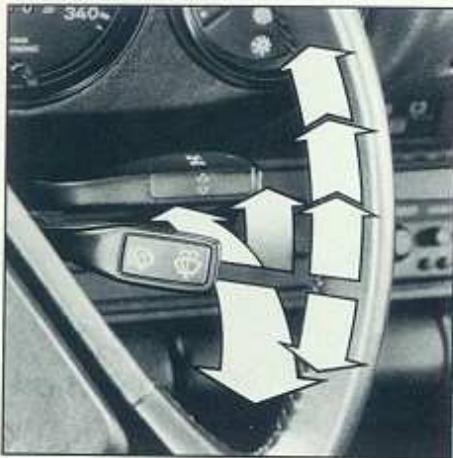
With the ignition key in the 0 position, the right-hand parking light is switched on when the stalk is moved to the right-hand indicator position, moving the stalk to the left-hand indicator position switches on the left-hand parking light. In either position, one front position light and the tail light on the side concerned light up.

With the ignition on and the light switch in position 2:

- 3 –Stalk forwards (toward dashboard) – full beam
- 4 –Stalk back (toward steering wheel) – dipped beam

To flash the headlights, pull the stalk gently back toward the steering wheel. The headlights light up until the stalk is released.

If an **Indicator bulb is defective**, both pilot lamps light up simultaneously with reduced brightness.



Windscreen Wiper/Washer Stalk

The wiper/washer stalk has five switch positions:

- 0 — Wipers parked
- 1 — Slow wipe
- 2 — Fast wipe
- 3 — Very fast wipe
- 4 — Intermittent wipe

Positions 1 — 3 are selected by moving the stalk up, position 4 by pressing the stalk down.

The electric windscreen washer pump is actuated by pulling the stalk toward the steering wheel, regardless of the switch position selected. If the ignition is on (page 31), the windscreen wash nozzles are heated.

If the stalk is pulled toward the steering wheel from the "wipers parked" position, the electric windscreen-washer pump and the wipers are switched on. When the stalk is released, the wipers complete two or three drying strokes.

The surface of the glass may be scratched if the wipers are switched on before sufficient water has gathered on the windscreens. To this end, gentle pulling of the wiper/washer stalk will actuate first the washer pump and then the wipers. The wiper blades should be checked frequently and replaced at least once a year.

The intervals between wiping strokes (intermittent wipe) can be made longer or shorter by turning the switch located between the speedometer and the all-wheel drive instrument.

Headlight Washer System

With the lights on, the washer system is actuated by briefly pressing the wiper/washer stalk.

The water is pumped at high pressure to the nozzles in front of the headlights by the washer pump.

The force of the water extends the nozzles for as long as washing continues.

A relay limits the spraying period. If the headlights are very dirty, repeat the washing procedure.

Stubborn dirt (dead insects, for example) should be removed at regular intervals.

In good time before the onset of winter, add a commercially available antifreeze agent to the water to ensure that the headlight wash system and the windscreen washer remain operational even at sub-zero temperatures.

At regular intervals, check the cleaning efficiency of the headlight washer system.



Rear Fog Lights

If the car lights are on, the rear fog lights can also be switched on.

A push-pull switch controls operation of the rear fog lights. The pilot lamp in the switch lights up when the fog lights are on.

With the ignition key removed, the circuit for the rear fog lights is interrupted.

Caution: Please note that the laws governing the use of rear fog lights vary from country to country.

Hazard Warning Switch

All four indicators will flash in unison if the hazard warning light switch mounted on the centre console is pressed.

A bright red pilot lamp in the switch indicates that the system is working.

The hazard warning lights can be switched on regardless of the position of the ignition switch.



Rear Screen Heater

The heating element in the rear screen is actuated by pressing a pushbutton switch in the centre console.

The outside rear-view mirror is also heated when the rear screen heater is on. The pilot lamp in the switch remains lit as long as the heating is on.



Key ①
Start/stop
Set time
12 or 24-hour mode

Key ②
Reset
Stopwatch
Select digit

Key ③
Select key
Time of day
Stopwatch

Clock

Setting the clock

A. AM/PM or 24-hour mode

If the clock is telling the time in either mode – AM/PM or 24 hour – press key ② for 4 seconds and the display will flash. Press key ① to select either the 12-hour (AM + PM) or 24 hour program. If you only want to change the display mode, press key ③. The clock will then return to the correct time of day.

B. Hours

Press key ② again – hours* flash. Press key ① to set the clock to the correct hour. Press key ③ and the clock resumes normal operation, displaying the newly set hour.

C. Minutes

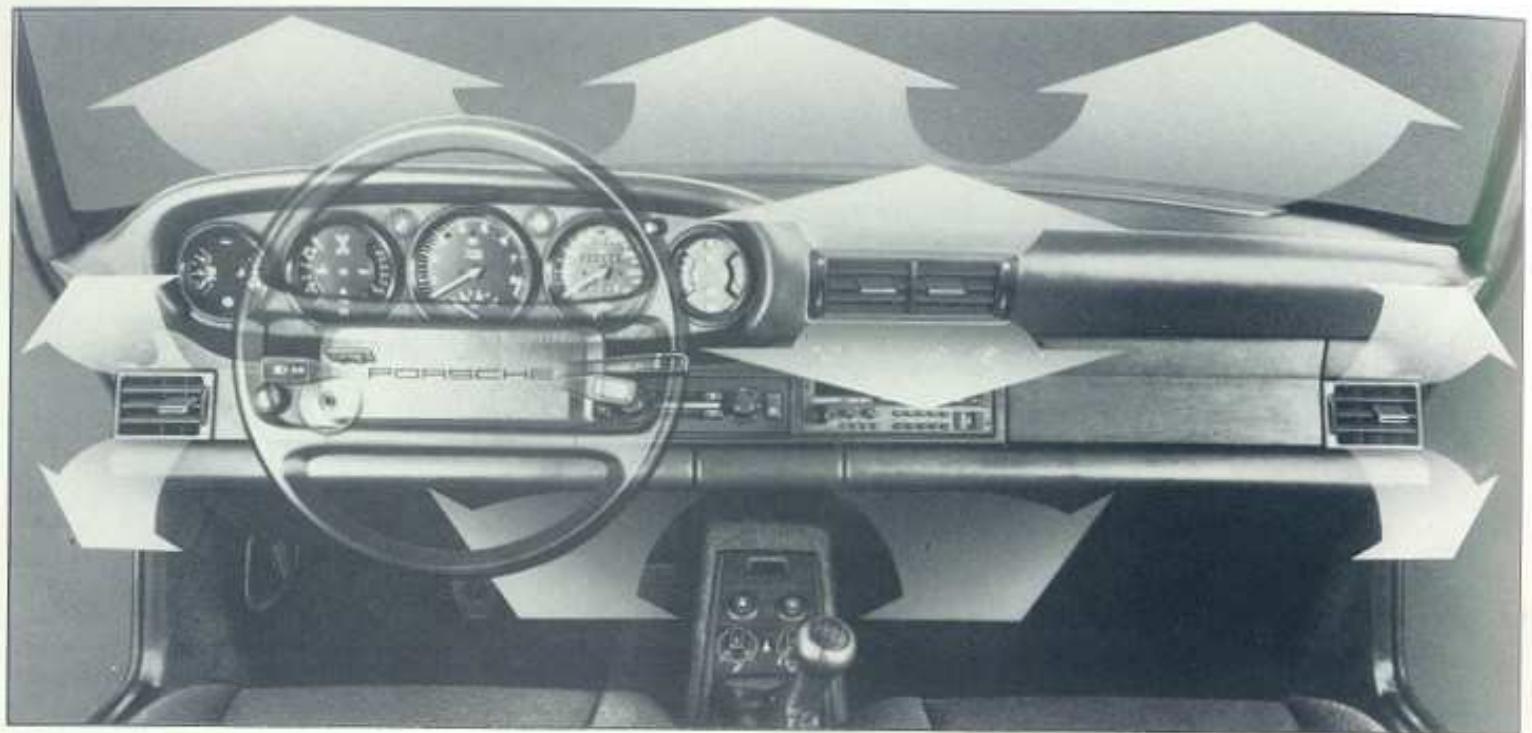
Press key ② again – minutes* flash. Press key ① to set the minutes. The clock can be started at exactly the right second by pressing key ③.

* If key ③ is pressed during sequences A or B, the process must be restarted (press key ②).

Stopwatch Function

The stopwatch can only be started when the clock is displaying the time of day: **the stopwatch cannot be started while the clock is being set.**

- A. Press key ③ – display shows 00:00;
- B. Press key ① – stopwatch starts;
- C. Press key ① again – stopwatch stops (it is possible to continue timing after taking an interim time by pressing key ① again – the stopwatch keeps counting. To stop the watch, press key ① again);
- D. Press key ② – 00:00 appears in display;
- E. Press key ③ – return to time of day.



Heater and Air Conditioner

Your Porsche 959 is equipped with an automatically controlled heater and air conditioner which can be set in operation at any time while the engine is running.

The desired passenger-compartment temperature is selected by turning a knob (7).

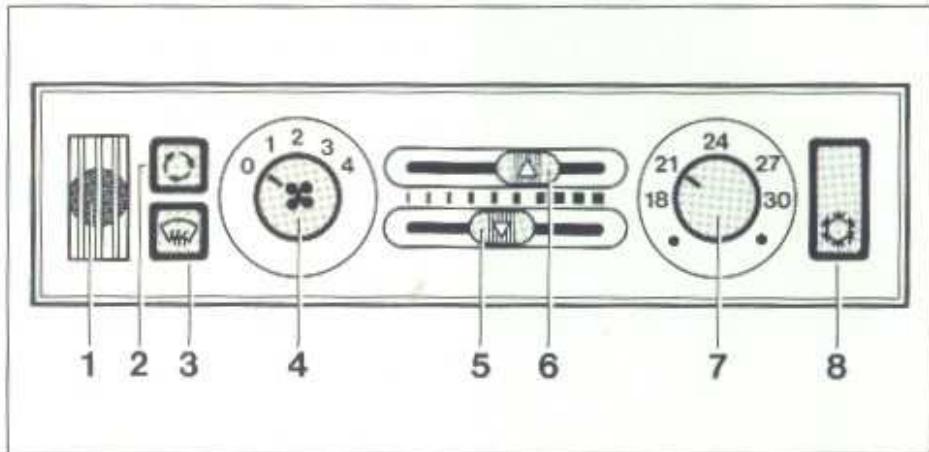
Defroster

Because heating efficiency is dependent on the temperature of the cooling water, the heating does not become fully effective until the engine is at its operating temperature.

To clear the windscreen as quickly as possible, press the defroster button (3) - the pilot lamp lights up.

Regardless of the position of the upper and lower slide controls, the temperature-selection knob and the blower knob, the heater is set automatically to maximum output, blower stage 4 is selected and the entire airflow is directed against the windscreen.

In addition, the air-conditioning compressor is switched on automatically to dry the incoming air if the outside temperature is above 3°C.



Blower Switch

To assure circulation of the air even if the car is at a standstill or travelling at low speeds, the blower continues to operate slowly even when the knob (4) is at the 0 position.

If you wish to increase the flow of air, set the blower to any position between 1 and 4.

Recirculating-Air Switch

If you wish to prevent air entering the car from outside, as may be the case if, for example, exhaust fumes present a nuisance, press the recirculating-air switch (2). This interrupts the flow of fresh air. The recirculating-air mode should not be selected for more than brief periods, as otherwise the windscreen and windows mist up.

Method of Operation

An inside sensor, an outside sensor and a sensor installed in the mixing chamber of the heater provide the signals for temperature control.

Thus, the temperature in the passenger compartment can be held virtually constant, as long as the outside temperature is lower than the preselected inside temperature. Engine speed has no effect on the heating or refrigeration output of the system.

If outside temperatures are high, the **air conditioner** can be activated by pressing switch 8. Again, the system delivers air at the temperature which corresponds to the setting of the knob.

Optimum cooling is attained by setting the blower switch to position 4, closing the windows, opening the side vents and the central vent fully and setting the temperature-selection knob to maximum cooling.

If the car has been standing in direct sunlight for a lengthy period, it is advisable to open the windows and switch on the air conditioner to ventilate the passenger compartment.

Regardless of the outside temperature, the air-conditioning compressor can be switched on in wet weather to dry the incoming air. This keeps windscreens and windows clear.

The flexibility which an automatically controlled heater and air conditioner requires to satisfy individual demands is provided by a number of air-flow variations:

- The upper slide control (6) allows the air-stream to be directed toward the windscreen (to the right – open; to the left – closed).
- The lower slide control (5) allows the air-stream to be directed toward the footwell (to the right – open; to the left – closed).
These two levers are independent of each other and steplessly adjustable.
- The central and side vents can be opened or closed by turning the knurled wheel on the side of each vent (turn up to open; down to close).



The vanes can be swivelled to direct the air-stream in the desired direction.

Should the system develop a fault, please seek the assistance of a 959 Maintenance Centre.



Cigarette Lighter

The cigarette lighter is operational whenever the ignition switch is at position 1 or 2 (see page 31). The coil element heats up when the knob is pushed in. Once the correct temperature is reached, the knob snaps back to its original position.

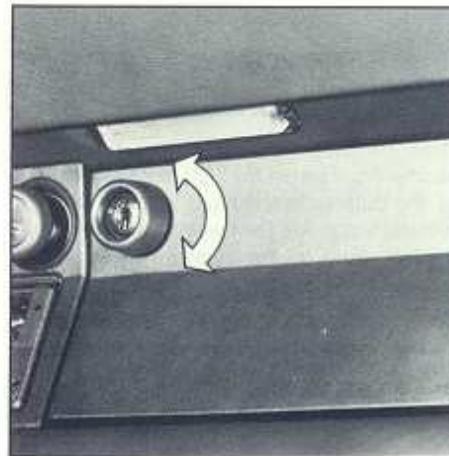
With the cigarette lighter removed, the holder can be used as a socket for 12 V electrical equipment (e.g. portable lamp) with a maximum consumption of approx. 120 Watt. Do not damage the socket by trying to insert plugs of the wrong design.



Ashtray

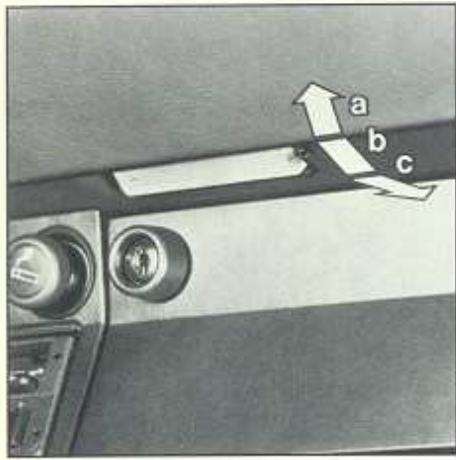
To empty, open fully, press in the locking spring on the underside and pull out the ashtray.

To insert, slide the ashtray into its guides and press in the locking spring on the underside.



Glove Compartment

To open the glove compartment, turn the knob clockwise. To protect the contents against unauthorized access, the knob incorporates a lock which the ignition key fits.



The transparent cover of the light can be moved about its longitudinal axis to actuate a three-position switch:

- a) Light switched on.
- b) Light switched off.
- c) Light comes on when glove compartment is opened.



Oddments Tray

To open the oddments tray, press the knob and raise the cover. To protect the contents from the attention of unauthorized persons, the oddments tray can be locked (see section headed "Keys").

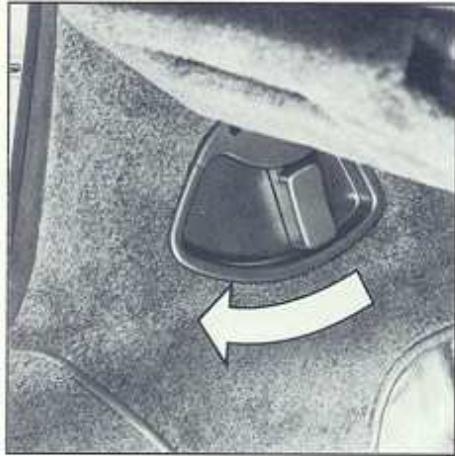


Sun Visors

The sun visors are swivel-mounted and can be pulled down to cut out glare from the front.

The visors can be released from their inboard brackets and swung away from the inside mirror toward the side windows.

A vanity mirror fitted with a protective sliding shutter is set in the rear of each visor.



Front Hood Release (Luggage Compartment)

Releasing Hood

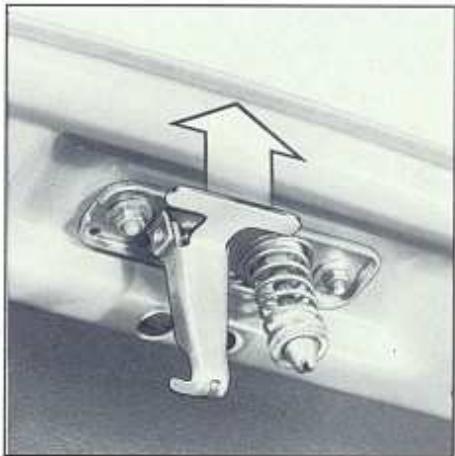
Pull lever recessed in the left sidewall beneath the dashboard.

Opening Hood

Raise the front of the hood slightly and unlatch the safety catch by pulling the handle upward.

Take care to ensure that the wipers have not been swung forward away from the windscreen.

A light mounted in the hood lights up when the front hood is raised.



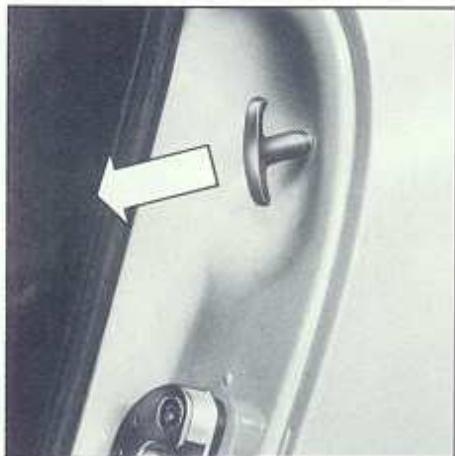
Closing Hood

Lower hood and press down until lock engages with an audible click.

Pull the hood up to ensure that it is properly closed.

Switch the ignition off and allow the engine to cool down before attempting to carry out any work. However, if you do perform any operations with the engine running, take great care to ensure that ties, necklaces or long hair cannot become entangled in the drive belt or blower.

If the front hood or engine-compartment cover release is defective, please refer to the section headed "Emergency Service, Minor Repairs", page 93.



Engine Compartment Lid Release

The handle which releases the lock of the engine-compartment lid is set into the left-hand door pillar. Pull the handle to release the lock and raise the rear of the lid to open.

The lock is designed to open automatically if the operating cable should chance to break.

Notes on Driving

Please note the
959 BRIEF INSTRUCTIONS

Ignition Switch/Steering Lock

The ignition switch has 4 positions:

0 – The steering is locked; all consumers wired through the ignition switch are turned off.

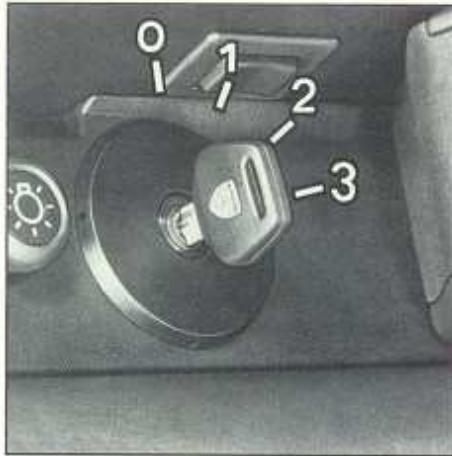
The ignition key can only be withdrawn when the lock is in this position. When the ignition key is turned back to the 0 position, the steering lock does not engage until the ignition key is withdrawn.

In this position, the parking light can be switched on by moving the indicator stalk up or down.

1 – Steering unlocked – with the exception of the indicators, reversing lights and the windscreens wiper/washer, all electric consumers are operational.

2 – The ignition is on. All consumers can be switched on.

If the engine is not running, all the pilot lamps are lit.



3 – To operate the starting motor, turn the ignition key clockwise without pressing the accelerator. Release the key as soon as the engine starts – the key will return to the "ignition on" position. With the exception of those for ABS, adjustable damping, level control and tyre pressure warning system, all the pilot lamps must go out when the engine is running.

While the starting motor is cranking the engine, the circuits for the main electric consumers are interrupted.

The starting motor should not be operated for more than 10 - 15 seconds at a time. If the engine does not start, wait about 10 seconds and try again, after turning the ignition key back to position 1 to reset the lock's built-in non-repeat mechanism. This mechanism prevents operation of the starting motor while the engine is running.

Caution: Never remove the ignition key before the car comes to rest.

Never start the engine or let it run in enclosed, unventilated areas. Exhaust fumes contain carbon monoxide, a colourless and odourless gas which is toxic even when inhaled in low concentrations.

In your own interest, ensure that when you leave the car the ignition key is removed and the steering properly locked. It may be necessary to turn the steering wheel to the right or left until it locks.

If the engine is stopped, either turn the ignition key to the 0 position or remove the key.

If the exhaust system is hot, do not leave the car standing on dry grass or leaves. If conditions are unfavourable, the dry material may begin to smoulder and could cause damage to the car.

See also sections headed "Notes on Running In" and "Starting the Engine".

Starting the Engine

Temperature sensors on the engine automatically provide the correct fuel/air mixture required for starting. Therefore, always refrain from depressing the accelerator when starting, regardless of whether the engine is cold or warm.

In cold weather, it is advisable to depress the clutch pedal fully when starting the engine, even though the gearbox is in neutral.

If the engine fails to start after 10 to 15 seconds, wait about 10 seconds before repeating the attempt.

To assist the engine when starting from cold at temperatures beneath -25°C , it is advisable not to release the ignition key as soon as the engine begins to fire.

Do not warm up the engine when stationary. Drive off immediately, avoiding engine speeds above 4500 rpm for the first five minutes.

Never start the engine or let it run in enclosed, unventilated areas. Exhaust fumes contain carbon monoxide, a colourless and odourless gas which is toxic even when inhaled in low concentrations.



Handbrake

Pull the handle of the brake lever up to apply the handbrake. The lever automatically locks in position.

To release the handbrake, pull the lever up slightly, pushing the release button in at the same time. Lower the lever while keeping the button pushed in.

The handbrake pilot lamp and the central warning lamp do not go out until the handbrake is fully released. An acoustic alarm is set off to warn the driver if the car is set in motion with the handbrake still applied.

Clutch

Hydraulically actuated, single-disc dry clutch with automatic adjustment, maintenance-free.

If clutch-pedal travel increases suddenly, the system may be defective. Have the fault remedied at the nearest 959 Maintenance Centre.

The high engine torque and the performance of the 959 place extremely high loads on the pull-away clutch. Although it is designed to cope with these loads, improper operation may damage the clutch seriously within a very short time.

Do not slip the clutch any longer than necessary and avoid high engine speeds when pulling away from rest.

With the engine's high torque, even low and medium engine speeds are adequate for rapid acceleration from rest.

The service life of the clutch could be shortened considerably if you attempt to slip the clutch while opening the throttle to hold the car on a hill, for example when waiting at traffic lights.

Changing Gear

The Porsche gearbox permits rapid, precise changing of gears. When changing gear, be sure to depress the clutch fully and move the gearchange lever to the fully-engaged position. The illustration on this page shows where the individual gears are to be found.

It is easy to find the individual slots, because springs always return the gearchange lever to the 2nd–3rd gear slot when neutral is selected and the lever released. From this position, pressing the lever forward engages 2nd gear, pulling it back selects 3rd.

To pull away from rest, apply slight pressure to the lever to push it to the left against the force of the spring, to engage either the off-road (G) or 1st gear. When changing up, from 3rd to 4th gear for example, you must move the gearchange lever to the right out of the 2nd–3rd slot against the force of the spring, to select 4th or 5th gear.

When changing from 4th to 5th and vice versa, be sure to keep the gearchange lever pressed to the right against the force of the spring, to avoid an unintentional change down to 3rd or 2nd gear.

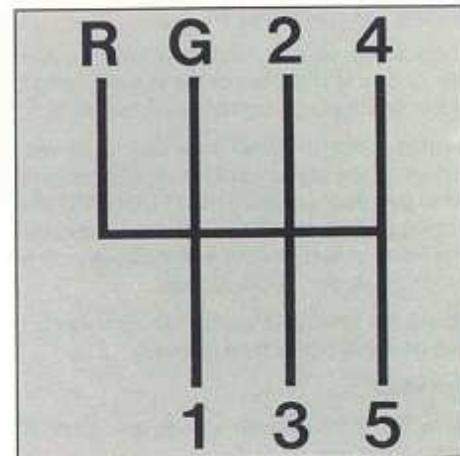
To engage reverse gear, move the gearchange lever from the central position to the left past the G and 1st gear slot against the force of the spring. As this spring-loaded, reverse-gear lock exerts considerable force, it is advisable to use a sharp, forceful motion to carry the lever into the reverse-gear slot.

Both reversing lights come on if reverse gear is selected with the ignition on.

Never attempt to engage reverse gear while the car is in motion.

The table below shows the engine speeds which you should **never exceed** prior to changing down to a lower gear. Higher speeds would exceed the maximum permissible limits for the engine, causing engine damage as the clutch is engaged (these speeds apply to standard gear ratios only).

5th to 4th gear	5800 rpm
4th to 3rd gear	5800 rpm
3rd to 2nd gear	5400 rpm
2nd to 1st gear	5000 rpm
1st to off-road gear	4200 rpm



Notes on Running-In

There are no specific running-in rules for your 959, but by taking heed of the tips below, you can optimize the performance of your car.

Despite state-of-the-art methods of manufacture to the highest standards of precision, some degree of provision must be made for the moving parts to adjust to each other during the first hours of service. The first 1000 km suffice for the major part of this process.

During the running-in period, oil consumption may be rather higher than normal.

Therefore:

Never run a cold engine at high rpm either in neutral or in gear.

Change engine speed and the load on the drive unit frequently.

Do not exceed maximum engine speed of approx. 5000 rpm in any gear.

Always change down in good time to make use of the most advantageous rpm range (see Engine-speed/gear graphs).

Needless to say, this also applies after the running-in period.

Maximum Engine Speed

Under normal operating conditions, you should change to a higher gear at the latest when the needle touches the red mark on the tachometer, or ease off the accelerator. Changing earlier helps conserve fuel.

When maximum engine speed is reached, a speed governor interrupts the fuel feed to prevent overloading the engine by excessive acceleration.

Under normal driving conditions, avoid repeatedly "pushing" the engine up to the point where the governor cuts in.

Extremely high engine speeds do not increase power, they exhaust fuel supplies rapidly and constitute a high load on the engine.

New Tyres

Bear in mind that when new, tyres have still to develop their full grip.

This is because the external rubber skin built up during the manufacturing process is not particularly resistant to slip and the tread has still to adapt to the running gear. Please drive at moderate speeds for an initial period. We strongly recommend that you refrain from practices which would place extreme loads on new tyres - high-speed cornering, for example, or driving in circles. Such manoeuvres would give rise to sawtooth alterations and local overheating of the tread blocks. Tyres treated in this way are robbed of their road-holding characteristics and would be subject to rapid wear. Throughout its service life, the tyre will benefit from a running-in period of alternating gentle cornering and acceleration and braking to load the entire tread.

Running-in New Brake Pads

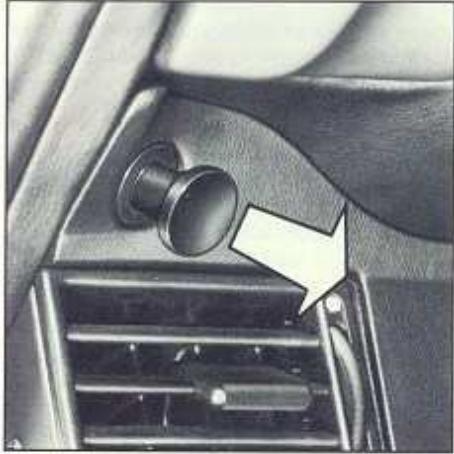
New brake pads have to be worn in; initially, they do not have optimum friction values. Therefore, rather more force must be applied to the pedal during the first 200 km to make up for the slightly reduced braking efficiency. This also applies when the brake pads have been replaced.

Braking

Excessively gentle braking has no beneficial effect on the spontaneous efficiency of the brake pads.

The braking system of the 959 is designed for extreme loading. Nevertheless, if the car's performance is exploited to the full, the temperatures generated are extremely high and are accompanied by correspondingly high wear of the brake pads and discs.

Traffic situation permitting, **do not hold the car at rest with the brake pedal depressed or the handbrake applied while the brakes are extremely hot**. Allow the brakes to cool while driving; the flow of air produced by the car's motion will expedite cooling and you will not be troubled by particles of brake-pad material adhering to the hot brake discs and rubbing. Light, normal application of the brakes while they are cooling does not disrupt the process to any considerable extent and helps smooth brake discs which have been subjected to extreme loads.



Fuel Filler Neck

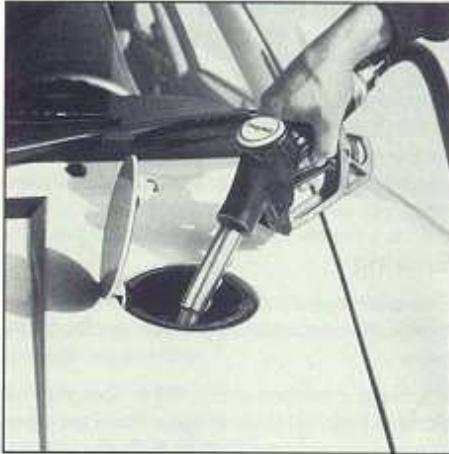
The filler neck is beneath a flap in the luggage-compartment lid.

The release knob for this flap is mounted on the extreme left of the instrument panel.

To avoid the possibility of the full tank overflowing when the fuel heats up, provision is made for expansion. This volume should not be filled when the car is refuelled.

The tank is full when the automatic nozzle cuts off the supply from the petrol pump. Always insert the nozzle as far as it will go into the filler neck and observe the operating instructions.

Carefully place the filler-neck cap in position and turn to close.



Your Porsche 959 can be driven on any brand of fuel with an octane rating of 95 RON/85 MON (premium fuel to DIN 51 600 or unleaded premium fuel to DIN 51 607).

If fuel of adequate quality is not available (e.g. abroad), making it necessary to drive on lower-octane fuel, accelerate gently, change up in good time and avoid high engine speeds to prevent knocking. If you envisage driving for lengthy periods in a country where high-octane fuel is not available, you should consult your 959 Maintenance Centre regarding adjustment of the ignition timing.

Always turn the engine off while refuelling.

The capacity of the tank is 84 litres.

When the needle in the tank gauge in the small instrument cluster has dropped to the lowest line, you still have a reserve of 15 litres. At this point, the second fuel pilot lamp lights up.

Reserve Fuel Canister

As a rule, safety considerations mean that it is **inadvisable** to carry a reserve fuel canister in any vehicle.

Canisters which do not close properly may leak and cause an odour nuisance as well as the risk of explosion.

In conjunction with the large tank capacity and a reserve of approx. 15 litres, prompt refuelling renders a reserve fuel canister unnecessary.

If, nevertheless, a fuel canister is carried, it must be securely fastened in place.

Checking Engine Oil Level in the Reservoir

Check the engine-oil level regularly, even between the specified maintenance intervals and engine-oil changes.

Do not top up the oil until the level is stable and the oil has reached the specified temperature. Too much oil in the engine may cause considerable environmental nuisance or even serious engine damage.

Always measure the oil level with the dipstick:

- with engine idling
- at a minimum oil temperature of 90°C

Procedure:

- If the oil temperature is higher than 90°C measure the level after the trip.
- **Caution:** If the oil temperature rises to only 90°C and the car is left for a few minutes with the engine switched off, the temperature drops beneath 90°C. A measurement taken at this juncture will be incorrect.
- The vehicle must be standing level.



- Switch off the engine for 1 to 2 minutes to allow the oil to stop foaming (this will allow the oil level to stabilize more rapidly, particularly after a period of fast driving). Then allow the engine to idle for approx. 3 minutes to stabilize the oil level.
- Recheck oil temperature (at least 90°C).
- The oil-filler neck is located beneath a flap above the right rear wing.

- Open engine compartment; release lever in left-hand door pillar (see page 30).
- Open oil-tank flap: yellow handle on right in engine compartment.
- Unscrew the oil filler neck cap to reveal the dipstick.
- To measure the oil level, pull out dipstick, wipe clean with a lint-free cloth and reinser fully in guide tube.

Wait a few seconds and pull dipstick out to check oil level.

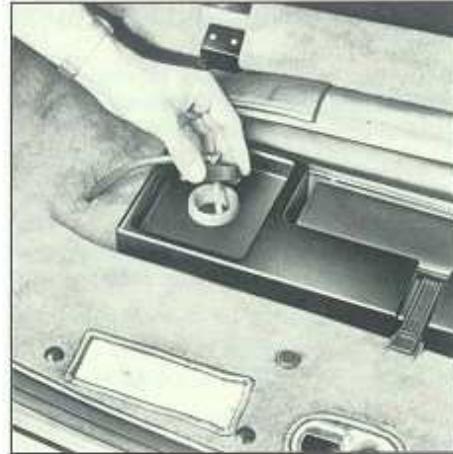


- The two marks on the dipstick indicate the minimum and maximum oil levels. The oil level must always be between these two marks.
- The difference between the two marks on the dipstick is approx. 1.5 litres.
- Always be sure to replace the cap carefully on the filler neck and screw down tightly.

Engine-oil pressure: see section headed "Monitoring and Warning System", page 40.

Changing Engine Oil

The quantity for an oil change is approx. 12.5 litres. Check oil level as specified, top up if necessary. Please refer to the section headed "Engine Oils, Filling Capacities".



Cleaning System Reservoir

The reservoir has a capacity of approx. 7.5 l for the windscreen and headlight washer systems.

To gain access to the filler neck, remove the carpeted panel at the front of the luggage compartment. Raise the buttons of the panel to disengage.

It is advisable to add a cleaning and antifreeze agent to the water in the ratio stated by the manufacturer, because clean water alone is generally inadequate to remove dirt from windscreens and headlights.

Monitoring and Warning System

In the interests of your own safety and to avoid costly damage, proceed in accordance with the

959 BRIEF INSTRUCTIONS

in response to information from the monitoring and warning system. The Brief Instructions describe the various warnings (priority 1 or 2). The following sections clarify the interrelationships and describe the systems. They also tell you how to respond to the system warnings.

Stop and Check

Car **not** driveable, rectify fault immediately

- Traffic and road conditions permitting, pull over to the side immediately and stop at a safe point.
- Observe the **pilot lamps** and **pinpoint** fault immediately.
- Examine/check
- If fault cannot be rectified, have car towed away – see notes on page 85.

Drive slowly to carpark or lay-by/service station/workshop/Maintenance Centre

Car **conditionally** driveable. Check fault/rectify soon.

— **Drive slowly always means:**

- maximum speed 80 km/h
- no unnecessarily severe acceleration or braking
- cornering gently

The Porsche 959 supplies three categories of information indicating the driveability of the car:

A Warning – Priority 1

A **buzzer** sounds once for approx. 5 seconds, warning the driver even when traffic conditions prevent him/her observing the instruments. **Central warning lamp** (steady glow) in the large instrument cluster. **Pilot lamp** (steady glow) to pinpoint the source of trouble.

B Warning – Priority 2

Pilot lamps provide the information.

C Function Information

Pilot lamps provide the information.

In the interests of safety, always seek the advice of the 959 Maintenance Centre every time a priority 1 or 2 warning is issued, and have the fault memory read. This, of course, does not apply to faults such as incorrect tyre pressure, low engine-oil level or coolant level, weak battery or handbrake applied, all of which you can rectify yourself.

Only the trained mechanics in the 959 Maintenance Centre are in a position to work on engine, drive system, level control, brakes with ABS, fit new tyres and diagnose faults.

If there is no 959 Maintenance Centre in your vicinity, you should entrust your 959 only to reliable specialists. Give the mechanic your Driver's Manual or the Repair Manual and insist that he follow the instructions **to the letter** (particularly important when changing wheels). After the repairs have been carried out, have your car checked in the 959 Maintenance Centre, if necessary.

Overview of Warnings and Malfunctions

The numbering of the pilot lamps is the same as in the **959 BRIEF INSTRUCTIONS**

A Warning — Priority 1 =

Buzzer + central warning lamp + pilot lamp

A1 Fault: **Stop/check**
Car not driveable
Check/rectify fault immediately

Lamp 8 = Engine-oil pressure lights up **and**
Engine-oil level instrument 7 indicates **inadequate**
oil pressure.

Lamp 26 = Brake-fluid pressure lights up
Brake-fluid level

A2 Fault: **Drive slowly to carpark or lay-by/
service station/workshop**
Car conditionally driveable
Check fault/rectify soon

Lamp 3 = Coolant temperature lights up
Blower pressure
Engine-compartment temperature

Lamp 4 =	Coolant level	lights up	B Warning — Priority 2 =
Lamp 8 =	Engine-oil pressure Engine-oil level	lights up and instrument 7 indicates adequate oil pressure, or flashes = warning system defective.	Pilot lamp B1 fault Drive slowly to carpark or lay-by/service station/workshop Care conditionally driveable. Check fault/rectify soon.
Lamp 9 =	Tyre pressure	lights up/ flashes	Lamp 11 = Battery charge lights up/ flickers
Lamp 20 =	All-wheel drive control	flashes	Lamp 17 = Level control lights up
Lamps 20, 21,22,23=	All-wheel drive control	off	B2 fault: Car driveable Remedy fault/condition at earliest opportunity.
Lamp 24 =	ABS	lights up	Lamp 15 = Damper control lights up
Lamp 27 =	Handbrake	lights up	Lamp 25 = Brake pads lights up
			Lamp 5 = Fuel level lights up

C Function Information =

Pilot lamp		
Lamp 17 =	Level control	flashes
Lamp 20, 21, 22 or 23 =	All-wheel drive control program	lights up

Important Notes on Warnings – Priority 1

Multiple fault:

If a priority 1 fault permitting you to proceed slowly is issued (fault A2), you must carefully observe the remaining pilot lamps, particularly the engine-oil pressure gauge 7.

A further fault may develop which may not re-trigger the buzzer (see section headed "Buzzer").

If the **ABS lamp** comes on because of a fault, the **tyre pressure warning system is also out of action** (no tyre-pressure monitoring) and the **all-wheel drive system** enters the "**emergency program**" mode (= unvariable all-wheel drive). This is due to the fact that these systems receive their road-speed information from the ABS.

In most cases, the fault displays are maintained until the fault itself is remedied. The tyre pressure warning system is an exception. In this case, the fault memory is erased when the ignition is switched off. Nevertheless, the tyre pressure must **always** be corrected every time a warning is issued: the tyre pressure may be inadequate for **certain** driving conditions which may not be repeated exactly for a short time when the ignition is switched on again to resume the journey.

If system voltage is inadequate because of a weak battery, the ABS is switched off (see page 60) and the drive system reverts to the emergency mode (see page 54) until full system voltage is reapplied. As soon as the voltage is corrected, these systems resume normal operation and the warning is cancelled. Temporary deactivation of the systems with a priority 1 warning is necessary to avoid malfunctions.

If **lamp 11 = battery charge** lights up, normal operation remains possible for a certain period.

However, you must presume that as the power supply now coming directly from the battery will soon weaken, some systems (ABS, drive control, etc.) will soon be shut down with a priority 1 warning and that the engine will cease to operate.

Switch off all unnecessary consumers while proceeding at low speed.

Buzzer in Conjunction with Priority 1 Warning

The acoustic warning calls your attention to an unanticipated status or defect in a system also indicated by the pilot lamp concerned or the central warning lamp.

The buzzer only sounds at speeds exceeding approx. 15 km/h and ceases after 5 seconds, whereas the central warning lamp and the pilot lamp concerned remain lit if the fault persists.

If the ignition is switched off and the car restarted, the buzzer repeats its warning once speed rises above approx. 15 km/h if the fault has not been remedied or if it re-occurs.

You can check the buzzer's operation by carefully raising the handbrake by 1 notch at a speed in excess of 15 km/h. To avoid any danger, conduct this test on a stretch of road not accessible to the public.

The buzzer which supplements the pilot lamp has two circuits.

The buzzer sounds when the following pilot lamps light up; the list reflects the urgency of the warnings:

Buzzer — Circuit A

Lamp 3 = Coolant temperature
Blower pressure
Engine-compartment temperature

Lamp 4 = Coolant level

Lamp 8 = Engine-oil pressure
Engine-oil level

Lamp 9 = Tyre pressure

Lamp 24 = ABS

Lamp 26 = Brake-fluid level

Lamp 27 = Handbrake

Buzzer — Circuit B

Lamps 20,
21,22,23 = All-wheel drive control

Lamp 26 = Brake-fluid pressure

If a circuit B warning occurs subsequent to a circuit A warning, the buzzer sounds again, supplementing the information provided by the pilot lamp.

If multiple faults assigned to one circuit occur, the acoustic warning is only issued for the first fault.

Description of Instruments and Systems

Small Instrument Cluster

The fuel supply gauge contains an orange pilot lamp which lights up when approx. 15 litres of fuel are left in the tank.

Coolant Temperature Gauge

The right-hand gauge indicates the temperature of the engine coolant.

Avoid high engine speeds until the needle has risen above the block at the bottom (60°C to 80°C).

Under normal driving conditions, the needle should remain within the 85°C to 95°C range. If high loads are placed on the engine, it is of no significance if the needle rises to 120°C , although it must return to the centre of the gauge when engine load decreases.

Under no circumstances may the engine coolant temperature reach **130°C** while the engine is running or the red pilot lamp set at the top of the gauge light up. In this event, it is essential to reduce engine speed by throttling back or, if possible, by changing up to the next gear. The needle must then return to the normal range and the pilot lamp must go out.

The same pilot lamp to the right and above the coolant temperature gauge lights up in conjunction with the buzzer and the central warning lamp to indicate



- coolant temperature (cylinder-head cooling)
 - blower pressure (cylinder cooling)
 - engine-compartment temperature
- If a warning is issued, drive slowly to a carpark/lay-by and check the system. Proceed as follows:
- Check Vee-belts for blower and alternator:
Thumb pressure exerted roughly halfway between the pulleys should cause the belts to give by an amount roughly equal to the width of one's thumb. If this is not so, the belts may slip and fail to produce the requisite blower pressure. See page 88.
 - Check engine-compartment blowers in engine hood

The blowers start when the engine-compartment temperature reaches 70°C and are switched off at temperatures below 40°C . **Exercise great caution when working on the engine with the hood open.**

- Check coolant level.

If the needle remains in the danger zone, switch off engine and allow to cool, check coolant level and proceed to the nearest 959 Maintenance Centre, keeping a careful eye on the temperature gauge. If possible, avoid idling and extremely low speeds.

Coolant Level Pilot Lamp

The coolant-level pilot lamp set at the bottom of the instrument cluster lights up as soon as the coolant in the expansion tank drops beneath the minimum permissible level. The coolant-level pilot lamp may come on when the engine is started and go out after a short time. In this case, the coolant rises above the minimum permissible level as it heats up and expands.

It is absolutely essential to top up the coolant. If necessary, have the cooling system checked for leaks.

The central warning lamp and the buzzer are actuated simultaneously to indicate low coolant level, excessive coolant temperature, excessive engine-compartment temperature and insufficient engine blower pressure.

Please refer to the section headed "Cooling System".



Large Instrument Cluster

The large instrument cluster contains the gauges for engine-oil pressure and temperature and the pilot lamps for tyre pressure, oil-pressure warning, battery charge and central warning.

Engine-Oil Temperature

The engine-oil temperature influences the engine's life. Therefore, you should drive at moderate speed (max. 4500 rpm) for the first five minutes after starting the engine.

If the needle reaches a temperature in excess of 130°C while the engine is running, moderate your speed and if this does not reduce the temperature, seek the assistance of a 959 Maintenance Centre without delay.

Engine-Oil Pressure

At an engine speed of 4000 rpm, the oil pressure should be at least 3 bar.

With the engine idling, the oil pressure should be at least 1 bar.

The engine is not at risk if the red pilot lamp lights up briefly when the engine is allowed to idle at operating temperature.

If a warning is issued by the buzzer, the central warning lamp and the oil pilot lamp, check the oil-pressure gauge immediately. If the gauge shows inadequate pressure, the engine is at risk. Stop as soon as the traffic situation permits and switch the engine off.

Do not start the engine again, even to check the engine-oil level. Have the car towed to the 959 Maintenance Centre.

The same pilot lamp gives warning of inadequate oil pressure and oil level. Under normal circumstances, regular oil consumption cannot cause inadequate oil pressure, because the engine has an adequate safety reserve of oil.

Check the oil-pressure gauge occasionally while driving. A sudden drop in oil pressure indicates a serious fault. You can avoid grave damage by stopping in good time and switching off the engine.

Normally, if the gauge indicates adequate oil pressure after a warning has been issued (buzzer, central warning lamp, pilot lamp), you may proceed slowly to a carpark/lay-by or service centre and top up the oil (see page 37).

Battery Charge Lamp.

The battery charge lamp provides the means of monitoring alternator and Vee-belt. The lamp comes on with the ignition and goes out when the engine starts. If the pilot lamp lights up suddenly or flickers while the car is under way, the Vee-belt may be slack or broken and must be retensioned or replaced. However, the fault may also be in the regulator or the alternator itself. In this case, the fault must be brought to the attention of a 959 Maintenance Centre.

Central Warning Lamp

The central warning lamp lights up in conjunction with the pilot lamp for the system concerned. If the central warning lamp lights up, it is accompanied by an acoustic warning.

Tyre Pressure Warning System for Tyre and Wheel

Your 959 is equipped with a Denloc tyre-wheel system.

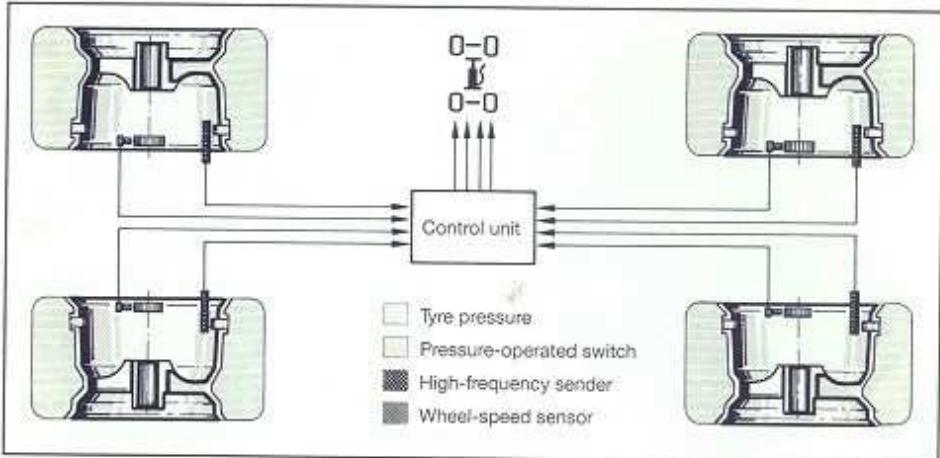
This system prevents the deflated tyre becoming detached from the rim. The wheels have limp-home characteristics which permit the car to continue on its way at moderate speed. There is therefore no need for a spare wheel.

Moreover, the 959 has a monitoring system for tyres and wheels which

- monitors correct tyre pressure more precisely and reliably than any tyre-pressure gauge in the tool kit, at a service centre or workshop:

while the car is underway, the system takes the effects of speed, temperature and pressure into consideration,

- assures excellent handling and low fuel consumption by correct tyre pressure,
- indicates tyre damage **and** cracks in the wheels by pressure loss,
- helps prevent incipient tyre damage and increased tread wear due to low tyre pressure.



Design

The spokes of the magnesium wheel are hollow, cast elements which form a common air space with the tyres.

Each wheel has two built-in pressure-operated switches. The pressure-operated switches have an airtight chamber containing air at the specified pressure for the tyre concerned, front or rear. An airtight but moveable diaphragm separates this chamber from the air space of the tyre. As soon as the tyre pressure is lower than the reference pressure in the chamber, an electric oscillating circuit is interrupted.

As long as the tyre pressure remains above a specified pressure to which the switch is set, the latter closes an oscillating circuit. A high-

frequency sender is fixed to the chassis; with every turn of the wheel, the switch is carried past this sender, extracting its energy. This pulse is passed to a control unit and signals adequate tyre pressure.

If the pressure in the air space formed by tyre and wheel sinks beneath the reference pressure in the pressure-operated switch, the driver is informed by illuminated symbols at the top of the large instrument cluster, the central warning lamp and the buzzer.

The symbol for the tyre pressure warning system in the large instrument cluster is a top view of the four wheels, with the front of the car at the top (upper left-hand wheel in symbol – front left-hand wheel).

Inspecting and Checking

The specified tyre pressures are 3.0 bar (front) and 3.5 bar (rear) at 20°C.

For the sake of simplicity should it become necessary to adjust the pressures when the tyres are cold, it is advisable to inflate the tyres to this specified pressure regardless of the weather, and then observe the tyre pressure warning system pilot lamp.

Style of driving, payload, speed and outside temperature influence the temperature in the tyre and hence the tyre pressure. The tyre pressure warning system automatically takes these factors into account.

Tyre pressure increases by 0.1 bar for every 10°C increase in the temperature of the air in the tyre.

The tyre pressure required becomes higher (adjusting automatically if the tyres are intact) the higher the speed and the payload and the more demanding the style of driving. The correct pressure in tyres that have been driven until warm is always above the specified pressure.

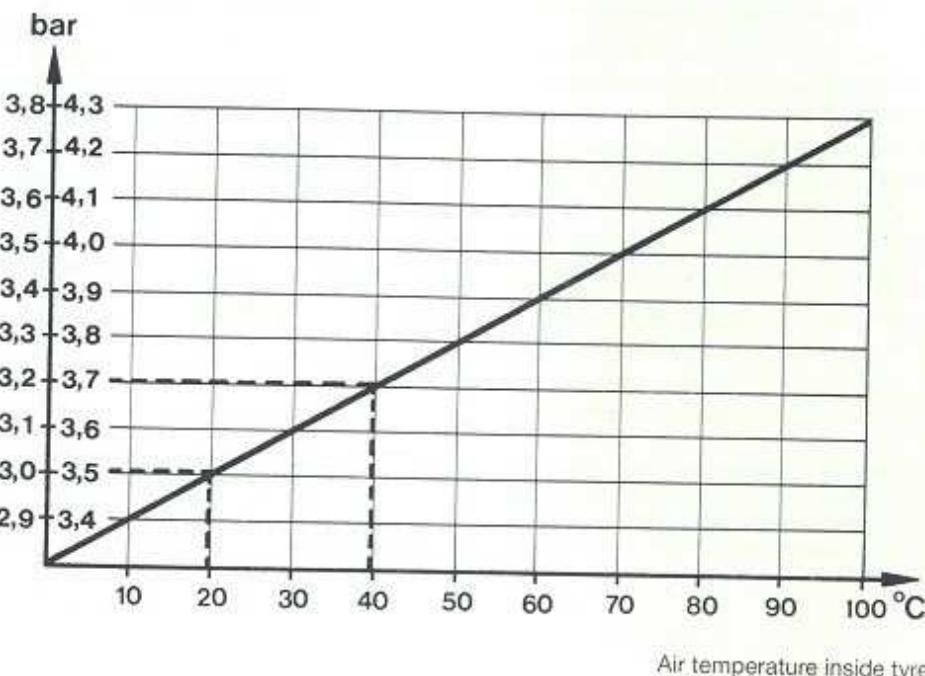
Therefore, never reduce the tyre pressure while the tyres are warm.

In cold weather, the pressure inside the cold tyres is lower. If the pressure has been set correctly at 20°C, at 0°C the pressure in the front tyres is 2.8 bar, with 3.3 bar in the rear tyres.

To measure or correct tyre pressure exactly (see graph), the temperature of the air inside the tyres must be known. It is best to allow the tyres to cool down to ambient temperature over a lengthy period. Bear in mind that direct sunlight and heat from the engine may falsify

the results. Pressure gauges in service stations are often subject to rough treatment and are not always reliable. The 959 tyre pressure warning system functions with a greater degree of accuracy.

Tyre pressure in the tyre



Air temperature inside tyre

Pressure Warning System

- Method of Operation

- So that they can be checked, the pilot lamps for all 4 wheels come on when the ignition is switched on.
- The pilot lamps go out when the engine starts.
- Automatic monitoring begins as soon as the car's speed exceeds walking pace.
- Low pressure in a wheel or a system fault is indicated by one or more of the lamps lighting up or flashing
- The central warning lamp lights up at the same time as the wheel pilot lamp(s) and the buzzer sounds for 5 seconds.
- The pilot lamps remain lit until the display is cancelled when the ignition is switched off.
- With the fault memory erased, monitoring recommences when the engine restarts.
- Because the reference-pressure chamber allows the entire pressure-warning system to make provision for the combination of pressure, temperature and speed, tyre pressure may be lower than the pressure required for one particular combination of these conditions.

Therefore, the system may not output a fault warning immediately after the car pulls away. Even if the tyre pressure is not corrected, the warning may not be repeated when the ignition is switched off (= memory erased) and switched on again, if the same conditions do not reoccur. **Nevertheless, the pressure is too low for a certain combination of temperature and speed**, in other words, for a particular driving situation.

In the interests of your own safety, adjust the tyre pressure at the earliest possible opportunity even if the system issues only one warning. If a tyre is damaged, have it changed as soon as possible.

Handling is adversely affected by low tyre pressures. Damage to tyres and wheels may result.

Do not attempt to suppress the fault by switching off the ignition. The fault is there and applies to a particular driving situation. Such a step would put your safety too much at risk.

Nature of the Pressure Loss

The rubber of the tyres is not wholly impermeable to air; the tyres constantly loose a certain amount of air by diffusion. This loss must be made up from time to time.

If the pilot lamp indicates pressure loss at brief intervals or if the pressures are considerably lower than specified, one may suspect **tyre**

damage or a damaged wheel. Both are faults which must be rectified immediately in the 959 Maintenance Centre.

Types of Information Supplied by the Pilot Lamps

If the pilot lamp for a wheel burns steadily, only **one** pressure-operated switch has been triggered, because the tyre pressure is only slightly too low (or because the other switch is defective).

If a lamp flashes, **both** pressure-operated switches in a wheel have been activated. In this event, the pressure has dropped considerably beneath the specified level.

If all the lamps flash, the pressure in all four wheels is too low or there is a defect in the system.

What the Driver Should Do

A Tyre pressure warning lamp lights up or flashes for one or more wheels

- Low tyre pressure or system malfunction
- Drive slowly to carpark/lay-by or service station
- maximum speed 80 km/h
- avoiding unnecessarily severe acceleration or braking
- cornering slowly

- switch off engine, thereby erasing fault in memory (fault not rectified!)
- inspect tyre and wheel for damage
- **increase pressure in wheel concerned by 0.3 bar**
to minimum 3.0 bar (front)/ 3.5 bar (rear)
- resume journey
- If system repeats low-pressure warning: repeat procedure as for (A), until tyre pressure of 4.5 bar is reached.

B Tyre pressure warning lamp lights up or flashes for one or more wheels, although pressure has been increased to 4.5 bar

- System malfunction, system out of action
Caution: Tyre pressure is no longer monitored
- drive slowly to 959 Maintenance Centre or
if no Maintenance Centre in the vicinity:
- stop car and wait for at least 30 minutes for tyres to cool; when cold, increase pressure in all 4 tyres to 4.5 bar.

Proceed with caution. You are now driving without automatic tyre-pressure monitoring and we recommend that you refrain from driving at speeds in excess of 200 km/h.

You must be absolutely certain that tyres and wheels are undamaged and that there is no continuous, rapid loss of pressure.

- After driving for approx. 1 hour, recheck pressure.
If the pressure is **not** at least 4.5 bar:
drive slowly to the 959 Maintenance Centre.
- If the pressure is at least 4.5 bar:
check pressure daily to ensure that there is no loss. Consult the 959 Maintenance Centre as soon as possible.

C Rapid, continuous loss of pressure

- **drive slowly to 959 Maintenance Centre**
- check tyre pressure at suitably short intervals; increase pressure repeatedly to 4.5 bar.

D Driving with inadequate tyre pressure

The limp-home characteristics of the tyres allow you to proceed cautiously to the 959 Maintenance Centre or to an authorized tyre sales agent, if you drive slowly and make provision for the altered handling of your car. ("Slowly" as described above).

- maximum speed 80 km/h
- avoiding unnecessarily severe acceleration or braking
- cornering slowly

The distance which can be covered on a deflated tyre depends on the style of driving. A tyre which has been run at inadequate pressure over any considerable distance is rendered unusable, especially if it has been subjected to severe mechanical loading.

If the tyre pressure was so low that the cushion of air was fully expended or if the tyre was damaged to the extent that the rim came in contact with the surface of the road, the wheel must be discarded.

In any event, tyres and wheels which have been driven at inadequate pressure must be inspected by a tyre specialist to ascertain whether they are suitable for further use.

Tyres are unsuitable for further use if

- they have been driven at a pressure lower than 2 bar
- if driving speed has exceeded 80 km/h despite low pressure or if the style of driving was not careful as stipulated under (A) above, although speed was restricted to 80 km/h.

E ABS Malfunction

If the ABS pilot lamp lights up, the tyre pressure warning system is out of action, because it receives its wheel-speed signals from the ABS.

An ABS malfunction switches the all-wheel drive control to emergency operation.

- Drive slowly to the 959 Maintenance Centre.

Tyre Pressure Warning System – Brief Test

Please conduct this test every time a wheel or tyre is changed.

The car need only travel some 20 m at at least 20 km/h with the tyres inflated as follows:

1. Tyre pressure 0.8 bar beneath specified pressure:

front	2.2 bar
rear	2.7 bar

While driving, observe the pilot lamps:

The pilot lamp concerned must flash.

If the pilot lamp burns steadily instead of flashing, one pressure-operated switch in the wheel is defective and must be replaced at the 959 Maintenance Centre.

Do not exceed 80 km/h. The tyre could suffer damage.

2. Tyre pressure 0.2 bar above specified pressure:

front	3.2 bar
rear	3.7 bar

While driving, observe the pilot lamps:

The pilot lamp concerned must go out.

In the event of a malfunction, proceed as described in (B), page 49.

Do not forget:

Correct tyre pressure as specified.



Tachometer

The maximum permissible engine speed of the 959 is 7600 rpm. A speed governor interrupts the fuel supply when the engine reaches this speed.

The tachometer's red zone begins at 7300 rpm.

The **indicator pilot lamps** (green) flash in the same rhythm as the indicators. The **full-beam pilot lamp** (blue) lights up when the headlights are switched to full beam.

Boost Pressure Gauge

The gauge in the lower part of the tachometer shows the absolute boost pressure of the turbocharger.

The boost pressure should be checked by the 959 Maintenance Centre, if possible on closed roads or in a facility not open to public traffic.

The boost pressures for steady driving under full load (constant speed, full throttle) are:

2.1 ± 0.2 bar between 2500 and 4000 rpm,
 1.9 ± 0.2 bar between 4500 and 6500 rpm.

The readings observed under normal driving conditions may oscillate and vary widely from these values, depending on style of driving and the course of the accelerating manoeuvre under load.



Speedometer

The upper odometer records the total distance driven. The **trip meter** can be turned back to zero at any time by pressing the pushbutton in the dial.

The pilot lamp for the **position lights** (green) comes on when the position lights are switched on, but goes out when the headlights are switched on.

All-Wheel Drive Control

Your Porsche 959 is equipped with an electro-hydraulically regulated all-wheel drive control system.

On the basis of the program selected, the control unit for all-wheel drive processes engine output, roadwheel speed and other variables, outputting the values for inter-axle coupling (percentage torque to front axle) and rear-axle slip limiter (rear limited-slip differential).

These values are passed to electro-hydraulic positioning motors which produce the pressures required to compress the plates in inter-axle coupling and rear-axle slip limiter.

The driver has four programs which can be selected to suit road conditions or task in hand by moving a stalk on the steering column.



Traction program
for maximum traction to all wheels, for example if car stuck in difficult terrain



Ice program
for ice and snow



Wet-road program
for wet or damp road surfaces



Dry-road program
for dry road surfaces

Traction Program

In this setting, the very high degree of lock almost completely prevents any of the four wheels slipping. This proves its worth in extracting the car from deep mud or snow (in the touring version, the highest level can be selected to assure ground clearance).

The traction program is intended to aid pulling away under difficult conditions and is **not suitable for normal traffic**, or manoeuvring in restricted spaces. The high degree of lock applied by the slip limiter prevents the wheels turning at different speeds, thus producing severe strains accompanied by noises, particularly when cornering tightly, and understeer is much more noticeable than in the "road-going" programs "ice", "wet road" and "dry road".

Ice Program

In this program for ice and snow-covered roads, the front wheels are driven with a constant, maximum driving torque and the rear wheels exert a constant, interactive slip-limiting effect. Both effects are maintained independent of speed. Driving with this program on dry or wet roads generates a certain degree of strain accompanied by noise. This phenomenon does no damage to your car. However, in the interests of comfort you should select this program only on very slippery surfaces or when driving on ice and snow. It is also advisable to select this program when **patches of ice and snow are lying on the roads**.

Wet-Road and Dry-Road Programs

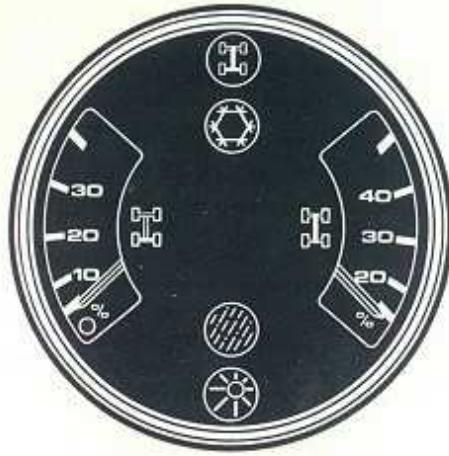
In brief terms, these settings split the driving torque to suit the axle load. At a constant speed, approximately 40% of the driving force is applied to the front wheels. As the car accelerates, the percentage of drive to the front wheels is reduced because the front-axle load decreases. These programs also make provision for speed-dependent adjustments matched to particular road conditions.

To avoid strains and noises when the car is moving at the low speeds required when parking, for example, the amount of drive to the front wheels and the lock applied to the rear axle are reduced almost to 0. However, if you accelerate rapidly during such a manoeuvre, the percentage drive to the front axle and the lock applied to the rear axle increase because of the considerable difference in the speeds at which the wheels rotate, until the wheel speeds return to normal. The process known as wheel-slip detection controls these corrections electronically.

Should you, having misjudged the conditions or simply forgotten the adjustment, fail to select the most appropriate of the road-going programs, handling will not be affected to such a serious extent as would impair driving safety. All road-going programs are useable in all road conditions. The differences between the programs only become apparent when the car is driven close to the limits or when it is clocked over measured distances on closed circuits.

Please do not adopt a potentially dangerous style of driving on public roads in an attempt to determine differences in handling.

Assuming that you are interested, we recommend that you approach the limits by driving on **closed racing circuits**, for example at one of the events organized by the Porsche Motor Racing School or in training facilities with abundant space. Then you can use all the driving programs regardless of the state of the road surface and select the program which is most suited to your style of driving.



Instrument for All-Wheel Drive Control

The pilot lamps for the four all-wheel drive programs are aligned vertically along the instrument's centre line.

To allow their operation to be checked, all four pilot lamps for the drive programs light up when the ignition is switched on. Shortly thereafter, three lamps go out, leaving only the pilot lamp which indicates the drive program currently selected.

The driver can select the all-wheel drive programs by moving a steering-column stalk on the right of the steering wheel between dashboard and windscreens wiper/washer stalk.



The direction in which the stalk is moved is analogous to the layout of the pilot lamps in the instrument. To avoid an inadvertent change of program, the stalk must be moved for at least 1 second.

The gauge on the right in the all-wheel drive instrument indicates the percentage of total torque applied to the front wheels; the gauge on the left shows the amount of lock applied by the rear-axle slip limiter.

To warn the driver of a malfunction in the drive control system, the buzzer sounds for approx. 5 seconds, the central warning lamp lights up and either the pilot lamp for the traction program flashes or all the drive

program pilot lamps go out. At the same time, the needles of the gauges drop to 0. In this event, the drive system automatically enters the emergency mode. Should this happen, proceed carefully and immediately to the nearest 959 Maintenance Centre:

- maximum speed 80 km/h
- avoid sharp acceleration
- corner gently

If the ignition is switched off and then switched on again, the display may not indicate a fault, because the program computer has not yet re-located the constellation which led to the malfunction. Nevertheless, the fault is there and must be rectified by the Maintenance Centre which will use the diagnostic unit to read the car's fault memory. Once it has been repaired, the Maintenance Centre staff will erase the fault from the memory.

Adjustable and Speed-Dependent Level Control (Touring Version)

The automatic control system keeps the height of the car (ground clearance) constant, regardless of payload. This correction means that handling remains unaltered while the correct wheel settings are maintained, to the benefit of the high-speed capabilities of the tyres. (In the sports version without level control, this is attained by stiffer springs and reduced payload.)

The right-hand knob in the centre console allows you to adjust ground clearance in 3 stages.

Level for difficult terrain = 180 mm ground clearance

Level for easy terrain = 150 mm ground clearance

Normal level for road = 120 mm ground clearance

The **normal level** has a ground clearance of approx. 120 mm. The lowest height to which the car can be set, this level is adequate for all **normal driving conditions**. Under normal road conditions, please always select the normal level. With the running gear set up in this way, the car has optimum handling characteristics in no way impaired by the high payload.



Important note:

If the car is driven on normal roads, **normal level** should be selected.

In this setting, you avoid the possibility of the car temporarily sitting too high:

The 959 accelerates more rapidly than a high level, if selected, can be corrected. The pilot lamp flashes to indicate that the car is sitting temporarily too high for the speed at which it is travelling.

The level is not adjusted unless the engine is running.

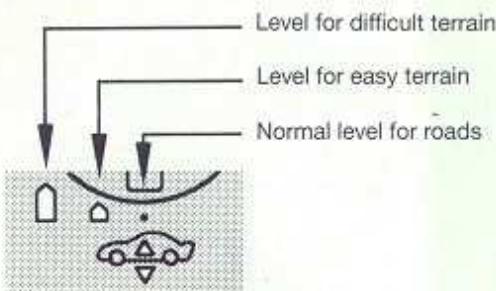
If the knob is turned to select a lower position with the ignition **switched off**, or if the ignition is switched off while the car is settling, the pilot lamp will **not** flash rapidly when the engine is restarted, although the car settles to the lower level.

Therefore, if it is unclear whether the knob has been moved to a lower setting while the engine was switched off or if the adjustment is interrupted, the knob must be set briefly to the position for difficult terrain and then to the "normal" level with the engine running.

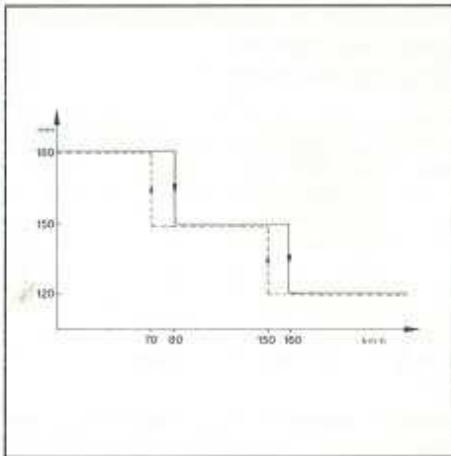
The higher levels are designed for special cases (e.g. unsurfaced, rutted tracks, steep entrances to garages, underground car parks, high kerbs, mud, deep snow).

The level for difficult terrain is of advantage when the car has lost traction on deep, unbound material and is sitting on the ground. Bear in mind that due to kinematic and aerodynamic factors, the car's handling characteristics change when ground clearance increases and the high limits which apply for the normal level cannot be reached, for example when cornering.

This is why the car is automatically lowered from any higher level when speed increases.



Above 80 km/h Below 70 km/h
 Above 160 km/h Below 150 km/h



A

When the level for easy terrain (150 mm ground clearance) is selected, the car

- settles to normal level (120 mm ground clearance) when speed exceeds 160 km/h,
- is raised to the level for easy terrain (150 mm ground clearance) when speed drops below 150 km/h.

B

If the level for difficult terrain (180 mm ground clearance) is selected, the car

- settles to the level for easy terrain (150 mm ground clearance) when speed exceeds 80 km/h,
- settles to normal level (120 mm ground clearance) when speed exceeds 160 km/h,
- is raised to the level for easy terrain (150 mm ground clearance) when speed drops below 150 km/h,

- is raised to the level for difficult terrain (180 mm ground clearance) when speed drops below 70 km/h.

C

Adjustment of ground clearance is interrupted during cornering or braking.

Pilot Lamp for Level Control:

When the ignition is switched on, the pilot lamp on the top right beside the tachometer lights up. Once the car pulls away, the lamp goes out at approx. 7 km/h.

Rapid flashing of the pilot lamp:

This means that the car is settling from a pre-selected high level to a lower level.

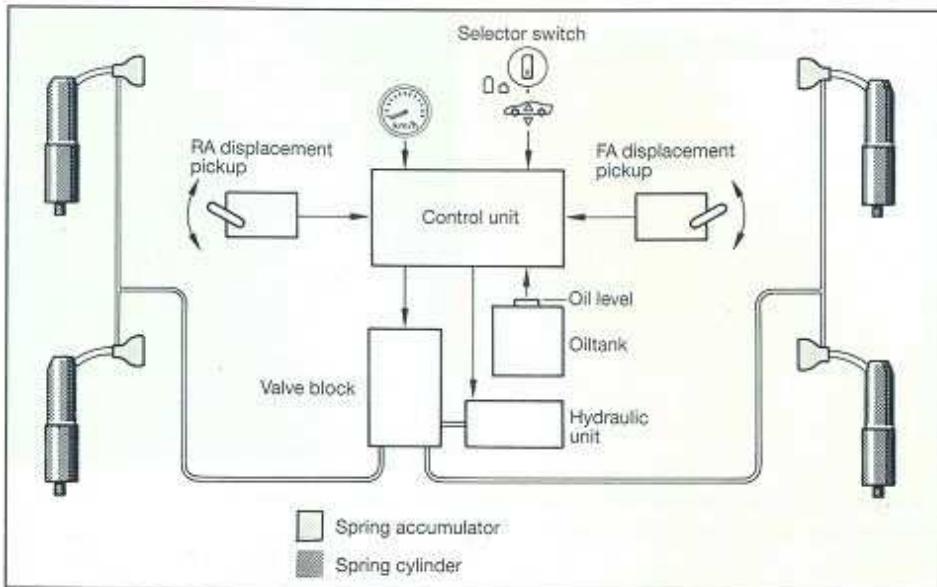
- Because the speed threshold for the elevated level has been exceeded
or
- because the driver has turned the knob to select a lower level which has not yet been reached.

Slow flashing = level for difficult terrain has been reached

Steady glow = malfunction

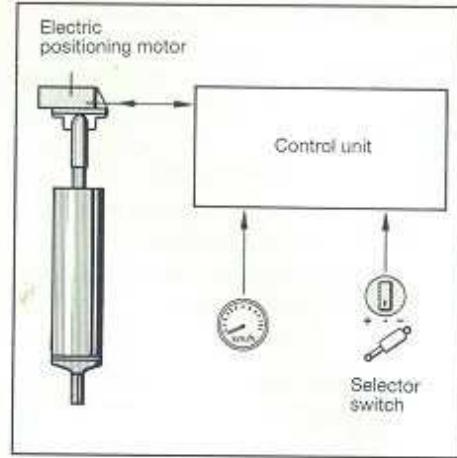
In this case, the system attempts to restore the normal level. Seek the assistance of the Maintenance Centre:

- maximum speed 80 km/h,
- avoiding severe acceleration and unnecessarily sharp braking,
- cornering gently.



(See also "Important Note" on page 55)

Adjustable and Speed-Dependent Damping



The need for damping changes with the task in hand, the state of the road surface and the driver's wishes.

The left-hand knob in the centre console allows any of three damping programs to be selected.

The damping force is automatically increased at a varying rate depending on the program selected ("+" corresponds to harder, "-" corresponds to softer) as speed increases, and reduced as speed drops.

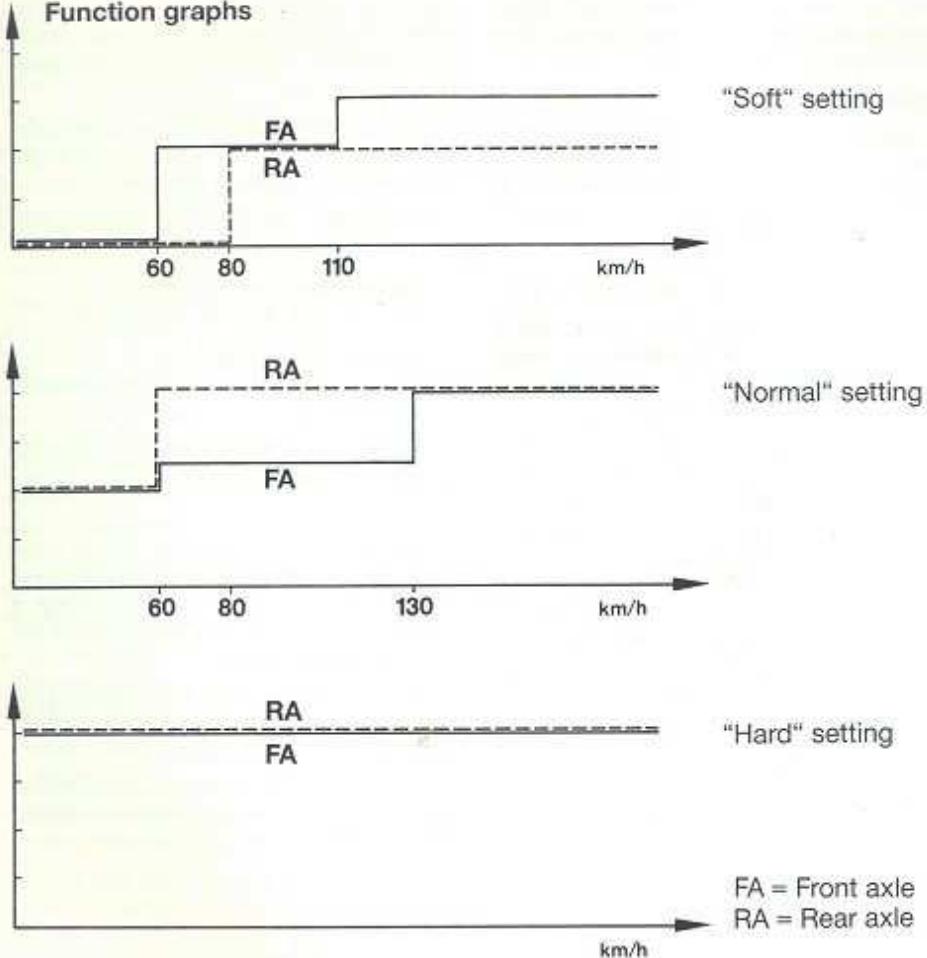
Only the "hard" switch position represents a fixed force which is maintained throughout the speed range (see function graphs).

When the ignition is switched on, the pilot lamp on the top left beside the tachometer lights up. The lamp goes out when the car pulls away.

If a fault develops, the system attempts to reach the "hard" setting. In any case, however, all four dampers are balanced to exert equal forces on left and right.

The pilot lamp burns continuously to indicate a malfunction. Please seek the assistance of your 959 Maintenance Centre.

Function graphs





ABS Pilot Lamp

The ABS pilot lamp lights up when the ignition is switched on and when the engine idles after starting.

The lamp goes out when the car reaches a speed of approx. 7 km/h after pulling away. If the ABS lamp lights up at a speed in excess of 7 km/h, there is a defect in the system or the battery is weak.

A simultaneous warning is issued by the central warning lamp and by the buzzer which sounds for 5 seconds at speeds exceeding 15 km/h.

Without exception, if an ABS fault is indicated drive slowly to the 959 Maintenance Centre or correct battery voltage.

Drive slowly means:

- maximum speed 80 km/h
- avoiding unnecessarily severe acceleration and braking
- cornering slowly.

After every ABS malfunction, you should bring the car to the 959 Maintenance Centre for diagnosis, even if the warning has been cancelled. The only exception is when the cause was low battery voltage.

Because the Porsche 959 ABS consists of two independent systems, a malfunction caused by a single fault (ABS lamp lights up) only deactivates the control for two diagonally opposite wheels, in other words only in the circuit in which the malfunction occurs. In this event, automatic regulation of braking force is only deactivated for the left-hand front wheel and right-hand rear wheel or the right-hand front wheel and the left-hand rear wheel. Automatic regulation of all 4 wheels is only deactivated when a malfunction occurs in both circuits. The wheels with deactivated braking-force regulation are braked with the force which you input by depressing the brake pedal. The difference is that the braking force at the

wheel is no longer optimized automatically; instead, you must meter this force at the pedal. If sufficient force is applied to the brake pedal, the wheels will lock.

ABS remains functional as long as power supply is adequate if the car is towed with the ignition on and the engine switched off.

If the ABS lamp lights up, the following systems are no longer functional:

- Tyre pressure warning system
no pressure monitoring; see page 46
- All-wheel drive control
reverts to emergency operation = constant all-wheel drive.

This is due to the fact that these systems receive their wheel-speed information from the ABS.

If a defective alternator or a weak battery mean that voltage is reduced to an inadequate level, the ABS is deactivated until normal voltage is restored. Deactivation is accompanied by the warning described above.

The ABS is also deactivated if the requisite hydraulic fluid pressure is no longer applied (brake pilot lamp lights up).

The car can then be braked in the conventional manner, in other words, without anti-lock brake regulation.

(!) Brake Pilot Lamp

The brake pilot lamp lights up when the ignition is switched on.

The lamp must remain out while the car is underway.

If the brake pilot lamp comes on while the car is being driven (as a priority 1 warning accompanied by buzzer and central warning lamp), the braking system is defective.

Either the brake-fluid level is too low (leak) or the hydraulic pressure of the brake booster is inadequate. In the latter case, the ABS is also deactivated (ABS pilot lamp comes on). The car can then be braked without anti-lock brake regulation. The system is designed such that if a warning is issued, the residual pressure is adequate for a few applications of the brakes, unless there is a severe leak.

In both cases, the system must be inspected in the 959 Maintenance Centre and any leaks remedied.

If a warning is issued by brake pilot lamp (accompanied by buzzer and central warning lamp) always

- stop immediately, traffic situation permitting.
- Bear in mind that operation of the braking system may be changed or restricted.
- Have the car towed to the 959 Maintenance Centre.

- If braking system is defective, use a towing bar instead of a rope or have the car transported on a truck.

The brake pilot lamp is always accompanied by the handbrake pilot lamp. Your first response to a warning should therefore be to check whether the handbrake has been released.

(○) Warning Lamp for Brake-Pad Wear

The warning lamp for brake-pad wear lights up when the ignition is switched on and goes out once the engine has started, if the thickness of the brake pad is still adequate.

When new, the brake pad is 13 mm thick. Under normal driving conditions it wears evenly. A certain amount of uneven wear occurs if the car is driven in a sporting manner. Once the pad reaches a thickness of 1 to 3 mm at its thinnest point, a priority 2 warning is issued by the warning lamp for brake-pad wear. The display is cancelled every time the ignition is switched off and reactivated as soon as the brakes are reapplied.

Have the brake pads replaced by the 959 Maintenance Centre at the earliest opportunity (use only original brake pads. A special brake pad is available for competition driving).

It is advisable to change the brake pads as soon as possible when the warning lamp comes on, because then the warning contact can be reused together with its cable. If one envisages competition driving, the brake pad must be replaced as soon as the warning lamp indicates that it is worn; if the pads are thin the thermal load on the brake caliper, piston and brake fluid is higher. Moreover, once the brake pads wear to a certain extent there is a danger of the steel carrier plate causing damage by rubbing against the brake disc.

Always wear in new brake pads, see page 35.

(P) Handbrake Pilot Lamp

The handbrake pilot lamp lights up together with the central warning lamp if the handbrake is applied when the ignition is switched on. If the handbrake is applied while the car is in motion, the pilot lamp is accompanied by the 5-second buzzer at speeds in excess of 15 km/h. The warning is cancelled once the handbrake lever is fully released.

The handbrake pilot lamp always lights up together with the brake pilot lamp. If the former does not go out when the handbrake is released, there is a fault in the braking system. Pull over immediately and stop. (See section headed "Brake Pilot Lamp".)

Tyres and Tyre Care

Which Tyres?

Given the exceptional performance of the Porsche 959, only specially developed, high-speed tyres are compatible with safe driving.

In the interests of your own safety, use only the tyres approved by Porsche. Before fitting new tyres, please consult your authorized PORSCHE dealer, who will be pleased to inform you of the up-dated list of approved tyres. Needless to say, you may also address your enquiries directly to the Customer Services-Engineering Division of the Porsche AG.

The makes and types of tyres expressly mentioned in your vehicle registration papers are binding. In the Federal Republic of Germany, other tyres cannot be fitted without an entry to this effect by the officially recognized independent inspector (e.g. of the TÜV).

In all other countries, proceed in accordance with the applicable regulations. Please consult your authorized PORSCHE dealer or the national PORSCHE importer, who will be pleased to answer your questions.

Tyre Life

The length of the tyres' service life depends on your style of driving as well as on correct tyre pressure and wheel alignment. Rapid acceleration, high cornering speeds and harsh braking increase tyre wear. Tread wear is also hastened by high temperatures and rough road surfaces. Like the engine, tyres need to be run under the correct operating conditions at all times.

Tread

The risk of aquaplaning increases as tread depth decreases. This applies particularly to wide tyres. Once the tread is less than 3 mm, it is advisable to consider changing tyres and to drive more cautiously in the wet. The tread grooves have 1.6 mm deep ribs which act as tread-wear indicators. When these indicators become visible, the tyres should be replaced.

Age of Tyres

Over a period of years, these changes may impair the high-speed strength and adhesion properties of the tyres.

The reasons stated above preclude the use of tyres which are older than 4 years as indicated by the date of manufacture on the sidewall, even if the tyre still has sufficient tread is not permitted.

The DOT or ID number on the sidewall indicates the date of manufacture. The last three digits of this number indicate the week and year of manufacture (e.g. DOT ... 217: 21st week of 1987, or ID ... 506: 50th week of 1986).

With high performance tyres, as needed on your 959, chemical and mechanical agency may alter their properties even though their tread may show no visible signs.

On tyres which are older than 4 years, you may only drive slowly i.e. limit maximum speed to 80 km/h, avoid any unnecessary severe acceleration and braking and corner gently.

The still widespread belief that aging and storage increase the tyre's resistance to wear is unfounded. In the course of time, the chemical additives which make the rubber elastic become less effective and the rubber becomes brittle.

Limp-home Feature of the Denloc System

If a tyre deflates or if the tyre pressure warning system indicates low tyre pressure, you should stop immediately at a safe point, traffic permitting, or proceed slowly to a carpark/lay-by or service station.

Drive slowly always means

- maximum speed 80 km/h
 - avoiding unnecessarily severe acceleration and braking
 - cornering slowly
-

Remember to use hazard warning lights and a warning triangle.

Follow the instructions in the section headed "What the Driver Should Do" in the "Tyre Pressure Warning System" chapter, page 48.

Driving with inadequate tyre pressure

The safest and most economical procedure is to increase tyre pressure to 4.5 bar, if the extent of damage to the tyre permits.

The limp-home properties of the tyres used will allow you to drive cautiously to the 959 Maintenance Centre even when tyre pressure is too low, although the car's handling will exhibit some degree of alteration.

("Drive slowly" as described above.)

The Denloc system will also prevent a deflated tyre becoming detached from the wheel when cornering, unless the tyre is completely destroyed.

The distance which a tyre at low pressure can cover depends on the style of driving.

Tyres which have covered considerable distances at low pressure must be discarded, especially if they have been subjected to severe mechanical loading in this condition.

If the tyre pressure is so low that the air cushion is completely expended or if the tyre is damaged to the extent that the rim comes into contact with the road surface, the wheel must be discarded.

In any event, a trained specialist must inspect tyres and wheels which have been run at inadequate pressure to ascertain whether they are suitable for further use.

Tyres are unsuitable for further use if

- they have been driven at a pressure lower than 2 bar
 - if driving speed has exceeded 80 km/h despite low pressure or if the style of driving was not careful as described above, although speed was restricted to 80 km/h.
-

Spare Wheels

If you want to carry a spare wheel, your 959 Maintenance Centre will supply a complete **emergency spare wheel** which can be fitted on either front or rear axle.

This wheel can be mounted on a special bracket behind the passenger seat and serves as an emergency spare wheel because the tyre may rotate in the direction opposite to that specified, or may even be too small when fitted on the rear axle.

When driving on a spare wheel, **do not exceed a maximum speed of 80 km/h**.

This emergency spare wheel has no pressure-operated switch, which means that tyre pressure is not monitored. Therefore, the tyre pressure warning system will indicate a malfunction as long as you continue to drive with an emergency spare wheel.

If you fit a **standard front wheel** to the rear axle as a spare wheel, or if you use a standard wheel as a spare wheel **fitting it so that it rotates in the direction opposite to that specified**, you must **drive slowly**:

- maximum speed 80 km/h
- avoiding unnecessarily severe acceleration and braking,
- cornering slowly.

Please note that a standard front wheel must be discarded if it is more than 4 years old. The special emergency spare wheel, in contrast, may be stored indefinitely.

Fitting Tyres

High-performance tyres with Denloc system can only be fitted with the aid of special equipment, in other words they can only be fitted at the 959 Maintenance Centre or by an authorized tyre dealer.

In the interests of safety, tyres of this type should be replaced when damaged and never repaired (applies to all VR tyres fitted to Porsche cars).

Ensure that the valve inset and the valve seal ring are replaced every time a tyre is changed. The valve body itself is reused.

A brief test of the tyre pressure warning system must be carried out every time a wheel or tyre is changed (see section headed "Inspecting and Checking", page 50).

Use only the makes and types of tyre tested by Porsche.

Always replace at least both the tyres on one axle. Only tyres of the same make and type should be used together.

Never use different types of tyres.

When replacing a defective tyre, remember that the difference in tread depth between the two tyres on either axle must not exceed 30%.

A combination of well-worn tyres on the front and new tyres on the back has an adverse effect on handling.

During the initial break-in period, new tyres do not have their full grip. Drive at moderate speeds for the first 200 - 500 km.

Take particular care to ensure that when work is carried out, the protective coating of the wheels is not damaged, because without this coating, magnesium wheels corrode rapidly. Have damage repaired professionally and without delay.

Tyre Pressure

At 20°C outside temperature: 3.0 bar front/3.5 bar rear (see section headed "Tyre Pressure Warning System", Page 46).

The pressures stated in the "Technical Data" are minimum values: under no circumstances may tyre pressures be set lower than those stated.

Always check air pressure when the tyres are cold. Never let air out of warm tyres.

Check tyre pressures every 14 days.

The maximum pressure marked on the tyre only applies to classification as part of national type testing and must not be confused with the operating pressure. In European countries, the tyres may be inflated to higher pressures.

Dust Caps

These caps protect the valves from dust and dirt and thus help prevent leaks. Always screw dust caps on tightly and replace missing caps without delay.

Load and Speed

Do not overload the car. A combination of over-load + inadequate tyre pressure + high speed + high outside temperature + incorrect alignment + previous damage e.g. caused by harsh contact with kerb + extremely old tyres is highly dangerous.

Balancing

As a precautionary measure, have the tyres balanced in spring (summer tyres) and before the onset of winter (M + S tyres). Note that only the specified weights may be used for balancing (self-adhesive weights must not come into contact with cleaning agents as they might otherwise drop off). Uneven tread wear is an indication of incorrect wheel alignment. Have the alignment checked by a specialist.

See section headed "Tyres, Wheels, Wheel Alignment".

Balancing and inspection should be entrusted to a specialist workshop.

Parking on Kerbs

Hard impact against kerbs (or traffic islands) is dangerous. It can lead to hidden tyre damage which only becomes apparent at a later date (danger of tyre failure at high speed). Tyres never forget.

Therefore: drive slowly and preferably at right angles over kerbs. Take care when parking at or on kerbs.

Tyre Damage

Inspect tyres at regular intervals for foreign objects, nicks, cuts, cracks and bulges (sidewalls). If a tyre has been damaged to the extent where it is uncertain whether there is a break in the ply with all its consequences, or if a tyre has been damaged by thermal or mechanical overloading due to a loss of pressure or any other prior damage, we recommend that the tyre be replaced in the interests of safety.

If a faulty tyre is replaced, it should be noted that the difference in tread depth between the tyres on any one axle must not exceed 30%.

Winter Tyres

Maximum permissible speed

160 km/h for M + S (Q) - radial tyres

190 km/h for M + S (T) - radial tyres

An appropriate sticker must be affixed in the driver's field of vision.

See section headed "Tyres, Wheels, Wheel Alignment" for tyre dimensions.



Wheel with Lockable Wheel Bolt

Each wheel of the Porsche 959 is held in place by a single, large bolt.

The wheel bolt is hidden by a small plastic cover at the centre of the wheel.

A lock insert in each wheel prevents the wheel bolt slackening and secures the wheel against theft. The insert constitutes a positive locking element between wheel bolt and hub. The ignition key opens and closes the wheel lock.

The wheel bolt has a hexagon socket to accommodate the wheel wrench or the lock insert when the wheel is on the hub.

The wheel bolt has a captive, rotating thrust ring which presses the wheel against the hub.

A sturdy tapered ring is fitted to the magnesium wheel to transfer the clamping force exerted by the wheel bolt to the wheel. This ring always remains in the wheel. Every time you purchase a new wheel, be sure to check that it is supplied **with tapered ring in place**. Any attempt to fit the wheel without the tapered ring would result in irrevocable damage to the wheel.

The wheel has a large pentagonal opening which accommodates the reduction gearing of the wheel wrench. The reduction gear unit supplied with the tool kit is required to tighten or remove the wheel bolt. The small hexagon of this unit must engage the wheel bolt, with the large pentagon locked in the wheel. The reduction gear ensures that the person fitting the wheel need only exert a small force on the lever to apply a torque of 230 Nm (170 ftlb) to exert the high torque of 850 Nm (627 ftlb) required to tighten the wheel bolt.

The torque wrench is set on the reduction gear unit. The wrench is a precision tool: a click which can be heard and felt through the wrench indicates that the specified torque has been reached.

Maintenance: every 2 years by the 959 Maintenance Centre:

1. Inspect torque wrench.
2. Inspect reduction gear unit, apply lubricant if necessary.

It must be possible to turn the gearing smoothly by turning the hexagon head. Lubricant: 10 g Molykote Longterm 2 plus.

3. Clean and repack space between wheel bolt and thrust ring with long-term lubricant.
4. Clean and replace lubricant between tapered ring and wheel.

Only permissible lubricant for steps 3 and 4: **Optimoly TA assembly paste for light-alloy connections** (Porsche part No. 000.043.020.00).

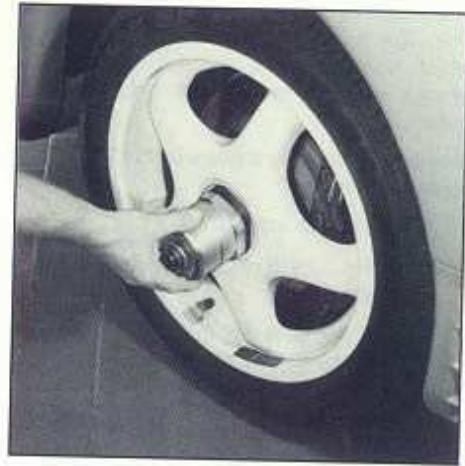
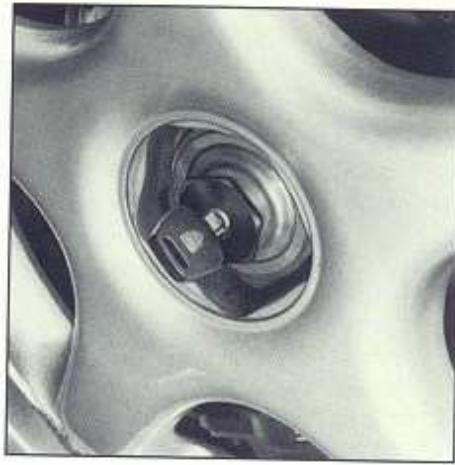
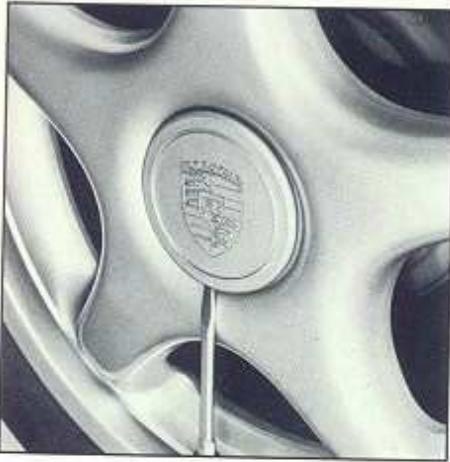
Changing a Wheel

Changing a wheel presents no difficulty. But only the correct **tightening torque applied to absolutely clean parts** to which the correct lubricant has been applied provides the **safety** which the performance of the Porsche 959 demands.

If the wheel is fitted by neither yourself nor the 959 Maintenance Centre, do not entrust the work to anyone other than a specialist.

Give the competent fitter this Driver's Manual and insist that he follow the instructions below to the letter.

If you are left in any doubt, have the work checked at the earliest possible opportunity. Until this check is carried out, drive slowly as described above (max. 80 km/h, etc.).



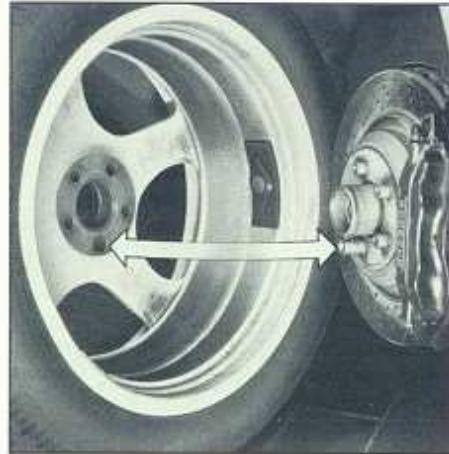
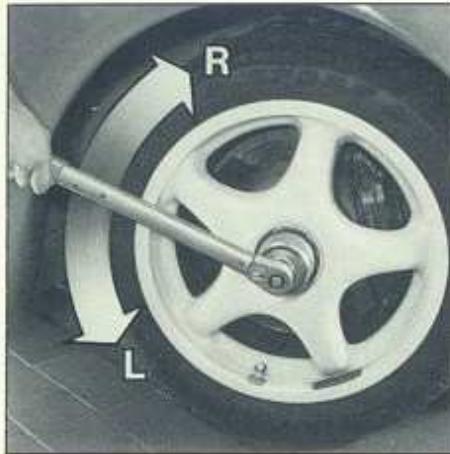
Procedure for Changing a Wheel

Please note the instructions on how to use the car jack in the chapter entitled "Breakdowns, Minor Repairs".

1. Engage first gear, apply handbrake, chock wheels.
2. Place a cloth on the ground to keep parts clean.
3. Using a screwdriver, carefully pry out plastic cover at centre of wheel.
Place a cloth or a small piece of plastic beneath the blade to prevent the screwdriver damaging the paintwork when the cover is levered off.

4. Insert ignition key in wheel lock and turn clockwise through approx. 90°, grasp black hexagon head of lock and pull out.

5. Insert small hexagon of reduction gearing unit in wheel bolt (where the lock insert was) and push the large pentagonal head as far as possible into the corresponding hole in the wheel. Turn the reduction unit slightly until it is properly seated.



6. Attach torque wrench to reduction gearing unit. Set the small lever to L = slacken = anticlockwise.

Slacken wheel bolt by turning anticlockwise.

7. Raise the car until the wheel to be changed is clear of the ground. Unscrew wheel bolt and remove wheel.

8. Fit new wheel.

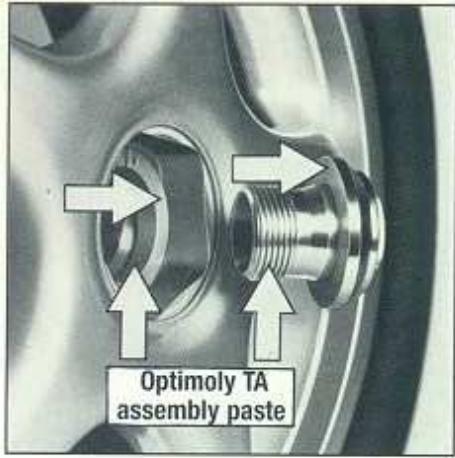
It is essential to ensure that the wheel rotates in the correct direction (arrow on the sidewall).

When fitting the wheel, keep contact surfaces clean and note the positions of the five studs; one of the studs is longer and thicker than the others to locate the wheel exactly – similarly, one of the five holes in the wheel is larger than the others to accommodate this stud. This larger stud is on the same side as the valve.

Check that both pressure-operated switches are fitted inside the wheel and are undamaged.

If you fit a special emergency spare wheel (see page 63) or if a front wheel is fitted to the rear axle or a wheel fitted so that it rotates in the direction opposite to that specified, you **must drive slowly**:

- maximum speed 80 km/h
- avoiding unnecessarily severe acceleration and braking
- cornering slowly.



9. The following parts must be **clean** and screwed together with a light coating of assembly paste on the contact surfaces:

- thread of wheel bolt and surface of thrust ring which faces wheel,
- tapered ring in wheel on the surface which faces the wheel bolt and in the large hole,
- surface of hub against which tapered ring sits;
- assembly paste must be reapplied if the original coating is insufficient.

Use only Optimoly TA assembly paste for light-alloy connections, Porsche part No. 000.043.020.00.

Always carry a small quantity of this paste in the car and insist that the workshop use this paste and no other. Otherwise, the correct torque setting will not be reached and the parts may suffer damage.

If the wheel has been fitted without an adequate coating of assembly paste, drive slowly to the workshop and have the wheel relubricated and refitted.

Drive slowly means:

maximum speed 80 km/h

avoiding unnecessarily severe acceleration and braking

cornering slowly.

10. Insert wheel bolt.

11. Insert reduction gearing unit in the small hex socket of the wheel bolt and the large pentagonal socket of the wheel.

12. Attach torque wrench. Set the small lever on the torque wrench to "R" = clockwise = tighten. Hold the wheel with one hand and tighten the wheel until it is handtight by turning the torque wrench clockwise (right-hand thread).

13. Lower car and remove jack, install jacking-point cover.

14. Now turn the wheel bolt with the torque wrench until a click is heard and felt through the handle.

Thereafter, **do not tighten the bolt any more**. The wheel has now been tightened to the specified

torque of 850 Nm (627 ftlb)

at which the wheel bolt is self-locked against slackening.

The wheel bolt cannot be tightened properly unless the parts are in perfect condition and have been coated with Optimoly TA assembly paste, and unless the reduction gearing unit is in proper working order and

can be turned easily and smoothly by hand at the hex head. As a further precondition, the torque wrench used must not be subjected to torques higher than those stated above.

Note for Workshop

If a 959 torque wrench with reduction gearing unit is not available, the wheel can be tightened to **850 Nm (627 ftlb)** with a standard torque wrench in perfect working order, to which the appropriate force must be applied.

15. Remove torque wrench and reduction gearing unit.
16. Insert wheel lock, turn slightly to engage toothed and lock. The lock also prevents

the wheel bolt slackening and protects against theft. Install cover.

17. Use the pressure gauge to check tyre pressure and correct if necessary with the on-board compressor.

Tyre pressure at outside temperature of 20°C

front	3.0 bar
rear	3.5 bar

See Section headed "Tyre Pressure Warning System", page 46.

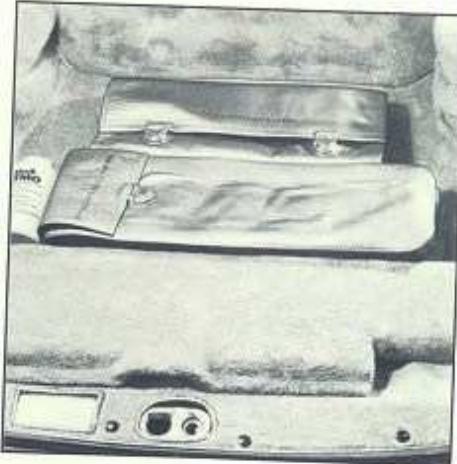
Notes on Maintenance

We recommend that you entrust all work which may be necessary to your 959 Maintenance Centre. The training and experience of the workshop personnel, technical information supplied by the manufacturer and special tools and equipment constitute a sound basis for the flawless maintenance of your Porsche.

If you wish to work on your car yourself, exercise the greatest care and attention as this is the only way of fully assuring operational safety.

Because the car must be raised on a lifting platform for the purpose, changing the engine oil and the engine-oil filter are among the tasks which you should entrust to your workshop.

Avoid working on the engine unless it is switched off and cool. However, if you work while the engine is running, take great care to keep ties, necklaces or long hair clear of Vee-belt or blower.



Tool Kit

See also chapter entitled "Breakdowns, Minor Repairs".

The tool bags contain all the tools needed for driver maintenance of the car and for minor repairs.

Regulations in some countries require additional tools to be carried. Details should be obtained before leaving for a foreign country.

Lifting platform, Car Jack, Raising the Car

It is essential to follow the instructions in the section headed "Breakdowns, Minor Repairs".

It is particularly important to ensure that the car is only raised at the lifting points designed for the purpose, and that a jack is never applied to engine, gearbox, front or rear axle.

The car jack may only be used to raise the car when changing a wheel. For reasons including your own safety, only purpose-built equipment may be used to support the car when it has to be worked on from beneath.

When the car is raised on a lifting platform, it is absolutely essential to place weights in the car to preserve balance when parts and/or units in the front section of the car are removed, or to use a device to prevent the car tilting.

Cooling System

The engine of your Porsche 959 is cooled by both air (cylinders) and fluid (cylinder heads).

The cooling system has a capacity of approx. 25 litres of coolant. Before the car leaves the factory, the system is filled with a mixture comprising 12.5 litres of low-chalk water and the same amount of coolant additive to act as anti-freeze and corrosion inhibitor as well as raising the boiling point of the coolant. Mixed in this ratio, the coolant in the entire cooling and heating system will not freeze at temperatures as low as -35°C.

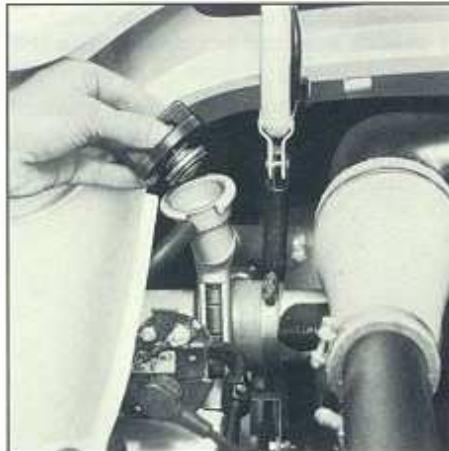
Because the coolant additives age, the coolant should be changed every 2 years.

Radiator Fans

The radiator fans are electrically powered and controlled by thermostats which respond to coolant temperature.

When the engine is warm, the fans may continue to run for a period once the engine has been switched off, or they may come on although the engine is not running.

Caution: the additional engine-compartment blowers in the engine-compartment hood may start up while the hood is open, if the engine is running and a certain actuating temperature is reached.



Checking Coolant Level

The level of coolant in the **inspection glass** should be checked at regular intervals and at least before every long journey.

The inspection glass is on the front left in the engine compartment beneath the coolant filler neck.

Coolant level is monitored electrically and an inadequate coolant level is indicated by the central warning lamp, the coolant-level pilot lamp and the buzzer.

Coolant must be visible in the inspection glass at all times.

Top up to between "min." and "max." levels when engine is cold.

If too much coolant is poured in, the excess amount evaporates through the relief valve in the cap as engine temperature increases.

There is no need to remove the cap of the inspection glass to check the coolant level. It may be necessary to wipe the glass clean with a cloth.

Topping Up

To retain the corrosion-inhibiting qualities and avoid lime deposits, **the ratio in which the coolant is mixed should not be changed by topping up with pure water, even in the warm part of the year.**

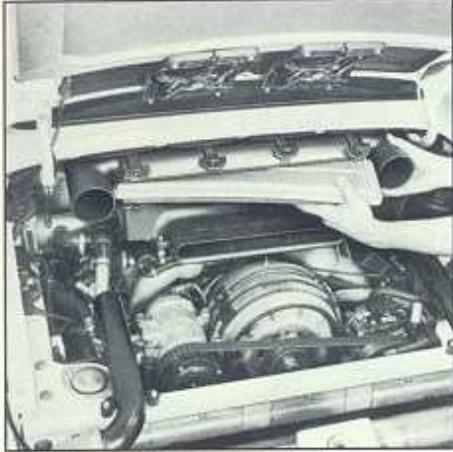
Use only a mixture of coolant additive and clean water to top up the system. See table in the chapter headed "Filling Capacities" for ratio.

To avoid the risk of damaging the engine, top up with **cold** coolant only when the **engine is cold**.

Note: the sealed cooling system suffers virtually no loss of coolant and it is usually unnecessary to top up the system. A noticeable loss of coolant is a clear indication of leaks. Should this occur, have the cooling system checked immediately by a 959 Maintenance Centre.

Caution: avoid removing cap of expansion-tank while engine is hot. Risk of scalding.

Before topping up, allow engine to cool down slightly, then slowly turn cap of expansion tank clockwise and allow overpressure to escape before removing cap.



Changing Air Filter Element

To change the air-filter element, remove the air hoses after slackening the hose clamps. Unhook the rubber retainers which hold the cover, push cover up and remove filter element.

Clean inside of filter housing with a lint-free cloth dipped in oil.

Insert new filter, carefully place housing cover in position, reclose rubber retainers, connect air-hoses and tighten hose clamps.

Caution: avoid working on the engine unless it is switched off and has been allowed to cool down.

However, if you work on the car while the engine is running, take great care to ensure that ties, necklaces and long hair are kept clear of the Vee-belt and blower.



Power-Assisted Steering

The force which the driver applies to the steering wheel is boosted by the auxiliary hydraulic force exerted by the power-assisted steering.

The airstream noises which become audible when full steering lock is applied are due to the design and do not indicate a defect in the steering system.

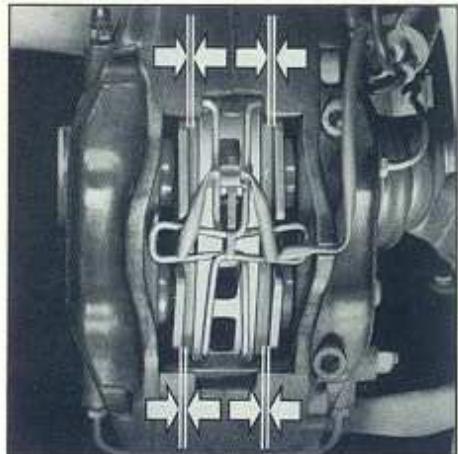
Bear in mind that when the engine is not running (car on tow) or if the steering hydraulics fail, the steering is unassisted and a greater exertion is required to steer the car.

Checking Hydraulic Fluid

The reservoir is mounted on the wheel arch, on the right inside the engine compartment.

Unscrew cap and wipe dipstick. Allow engine to idle. Screw cap down fully and remove. The level should be between the upper and lower marks. If necessary, top up with hydraulic fluid. Use only the fluid specified in the chapter headed "Filling Capacities".

Place cap in position and screw down.



If the brake pads wear evenly as they usually do under normal driving conditions, the brake-pad wear warning lamp lights up when the pads are reduced to a thickness of 3 mm. If the car is driven close to its limits, the rate of wear may vary across the pad. It is therefore advisable to have the pads replaced in the 959 Maintenance Centre when the wear limit is reached, to avoid damage.

See section entitled "Warning Lamp for Brake Pad Wear", page 61.



Checking Thickness of Brake Pads

Like tyre wear, brake-pad wear depends on your style of driving and variable external influences, with the result that the intervals at which the pads are inspected and replaced will vary from car to car.

Do not rely solely on the brake-pad wear warning lamp; check the thickness of the brake pads visually. There must always be a reserve for further wear between brake disc and brake-pad plate (see illustration).

The brake pads have reached their limit of wear when they are 2 mm thick.

Checking Brake Fluid Level

The transparent reservoir for the brake hydraulics is on the left in the luggage compartment, beneath the carpet beside the tank filler neck.

Check the level at regular intervals. It should always be between the "min." and "max." lines. The level will drop slightly during normal operation as the disc-brake pads wear and are automatically adjusted. This is normal. If the brake fluid level drops too low, seek the advice of your 959 Maintenance Centre.

The hygroscopic nature of brake fluid and the high loads placed upon it by the car's performance mean that the fluid must be renewed annually by your 959 Maintenance Centre.

When topping up, use only new (unused) brake fluid. See chapter headed "Filling Capacities" for specification and quantities.

Caution: brake fluid is caustic and attacks paintwork.

Air-Conditioner Maintenance

The tension of the compressor Polyrib belt is checked as part of the regular maintenance.

Due to the design-related loss of refrigerant, the level should be checked at least once a year. Start engine, switch on air conditioner, set temperature-select knob to maximum cooling output and adjust blower to stage 2 or higher.

Open door to prevent the system switching off automatically, unscrew cap from inspection glass-fluid tank (tank is mounted beneath front left-hand wing, cover in wheel arch). Allow engine to run for approx. 5 minutes and check level in inspection glass; the ball must be floating at the top.

If necessary, have air conditioner topped up by an authorized workshop with the appropriate equipment.

To obtain optimum cooling, care must be taken to ensure that the condensers of the air conditioner are not clogged and that both front condenser fans operate.

If the touring version 959 is raised on a lifting platform for work to be carried out with the engine running, the level control must be temporarily deactivated (see note in Repair Manual).

Retightening Drive Belt

The Polyrib belt for servo and level pumps and air-conditioner compressor must be tensioned with the aid of an eccentric.

This eccentric is located between engine carrier and engine and is adjusted by means of a curved slot. To adjust, use an 13 mm spanner to slacken the nut in the slot and turn the eccentric with a 32 mm open spanner until belt tension is as specified. Then retighten the lock nut.

The drive belt tension is correct when resistance can be felt, but the belt allows itself to be twisted through approx. 90° between servo/level pump and air-conditioner compressor.

Have belt tension checked or retightened without delay with the special tool available at any Porsche workshop.

Avoid working on the engine unless it is switched off and has been allowed to cool. However, if you work on the car while the engine is running, take great care to keep ties, necklaces and long hair clear of Vee-belt and blower.



Drive Control, Checking Level of Hydraulic Oil in the Reservoir

A reservoir in the luggage compartment holds the fluid which the hydraulic side of the system requires.

The reservoir is mounted on the bulkhead, on the right beneath the drip tray of the headlight washer tank.

With the dry-road program selected and the ignition switched off, the fluid level should be between the min. and max. lines.

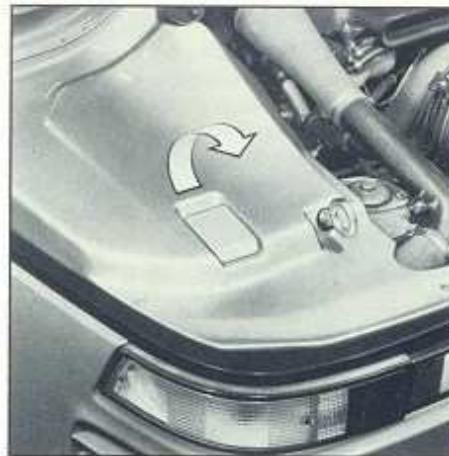
Use only the fluids specified in the chapter headed "Filling Capacities".

Level Control, Checking Level of Hydraulic Oil in the Reservoir

The fluid level for the level-control system is checked by the workshop when the regular services are carried out.

However, the procedure is outlined below in case you have to check the level yourself, for example if the "system defective" warning is issued.

The knob on the centre console must be set to "normal level".



After opening the engine-compartment hood, pull the yellow flap on the **left-hand** side panel.

The flap in the body panel behind the driver's door opens, providing access to the dipstick for the hydraulic fluid.

Pull out the dipstick and check whether the level is between the min. and max. lines.

The dipstick must be dry. Before checking the level, wipe the dipstick with a clean, lint-free cloth and push it back into the tube as far as it will go.



Top up if the level is too low, using only the fluids specified in the chapter headed "Filling Capacities".

To top up, unscrew the cap of the hydraulic-oil tank immediately beside the dipstick and ensure that the level does not rise past the max. line on the dipstick.

Ensure that the cap is screwed tightly back on the filler neck and consult a 959 Maintenance Centre at an early opportunity to ascertain the cause of fluid loss.

Battery - Inspection and Maintenance

Because of the danger of short-circuits, the battery must be disconnected before any work is carried out on the electrical system. Always disconnect the earth lead first; when reinstalling, begin by connecting the positive cable first.

Disconnecting the battery while the engine is running causes the immediate destruction of the alternator. This also applies to cars with retrofitted battery main switches.

Bear in mind that only a well-charged battery can supply enough current to start the engine. Check the condition of the battery at regular intervals. The battery sits in the luggage compartment beneath the plastic container for windscreen washing-water tank and first-aid box (see chapter headed "Removing Battery").

To avoid irreparable damage to the alternator, disconnect the battery before charging with a quick charger.

When outside temperatures are low, the battery suffers from a loss of capacity. During the winter months the battery is subjected to increased use as the rear-screen demister is often used, as are additional lights, the blower, the windscreen wipers and the like. Therefore, turn off consumers when they are not required, particularly if your driving involves mainly short distances and stop-and-go traffic.

Checking Electrolyte Level

Remove all the filler caps. When the car is standing level, the electrolyte in each cell should reach the indicator. Use only distilled water (no acid) to top up the level when necessary. Do not overfill. The electrolyte level must be checked more often during the summer months and in countries with hot climates.

Checking Specific Gravity

The specific gravity of a well-maintained battery gives an indication of the battery's capacity. The specific gravity is measured in g/cm³ with the aid of an hydrometer.

Checking Voltage

The battery voltage can only be checked with special measuring equipment. Please consult an authorized workshop.

Battery Care

Battery terminals must be kept clean. Protect them by applying a special grease which binds acids and check that the connections are tight.

Make sure that the cell caps are secure and that the vent holes are not clogged by dust and dirt.

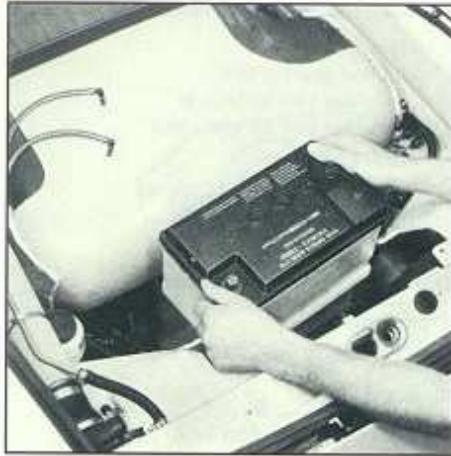
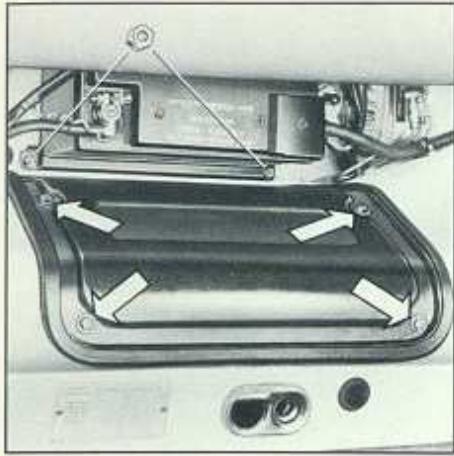
Keep electrolyte away from clothing and all car parts. Neutralise spilled electrolyte immediately with a soda solution.

Because of the risk of explosion, do not work with a naked flame or light near the battery.

The battery will discharge even if your Porsche is not on the road. The battery must be recharged at intervals of approximately 6 weeks to retain its operability, as a discharged battery is susceptible to lasting damage. Do not forget to check the level of electrolyte and top up if necessary.

Recharging Battery

If the car is not in operation for prolonged periods, the battery must be recharged from time to time with a commercially available battery charger. The battery-charger cables can be connected to the plus terminal and earth in the engine compartment to which jump leads can also be connected when the battery is flat (see section headed "Starting with Jump Leads"). The battery has its own breather system, so there is no need to open the battery compartment beneath the luggage compartment.



Removing Battery

Before removing the battery which is beneath the tank in the front of the luggage compartment, the carpeted panel must be removed and the luggage-compartment carpet unclipped and folded back. The water tank for the windscreens washer and the drip tray must also be removed.

Remember to reconnect the drain hose when reinstalling the battery.

Before using a socket wrench w/f 10 with T-bar to unbolt the brackets, disconnect the cable from the minus terminal and then the cable from the plus terminal.

When installing the battery, begin by reconnecting the plus cable, followed by the minus cable.

Risk of short circuit.

Breakdowns, Minor Repairs

Tool Kit and Accessories

The tool bag contains:

- 1 towing hook
- 1 special crank-type spanner, 6 mm hexagon
- 1 socket wrench for alternator
- 1 offset hex screwdriver, 8 mm to DIN 911
- 1 offset hex screwdriver, 6 mm
- 1 offset hex screwdriver, 10 mm
- 1 extension
- 1 spanner for blower impeller
- 1 ring spanner 60/24
- 1 spark-plug spanner, 17.5 mm
- 1 engineer's pliers
- 1 water pump pliers
- 1 Phillip's screwdriver - PH2
- 1 screwdriver - 2
- 1 screwdriver - 1
- 1 double-ended open spanner 8, 9
- 1 double-ended open spanner 10, 11
- 1 double-ended open spanner 12, 13
- 1 double-ended open spanner 14, 15
- 1 double-ended open spanner 16, 17
- 1 double-ended open spanner 18, 19
- 1 pair gloves
- 1 cloth, 40 x 40, yellow
- 8 spark plugs

The accessories bag contains:

- 1 torque wrench
- 1 reduction gearing unit
- 1 narrow Vee-belt for blower
- 1 narrow Vee-belt for alternator
- 1 Polyrib belt
- 1 car jack
- 1 warning triangle
- 1 hood support, rear centre

The compressor bag contains:

- 1 compressor
- 1 tyre pressure gauge

First-aid box

Beneath cover for water tank



Caution:

The car jack may only be used to raise the vehicle. In the interests of safety, including your own, always use safety stands specially designed for the purpose when working underneath the vehicle.

Any attempt to position the car jack at another point may damage the vehicle or may result in personal injury.

Under no circumstances may a jack be placed beneath engine, gearbox, front or rear axle to raise the car. This could lead to serious damage.

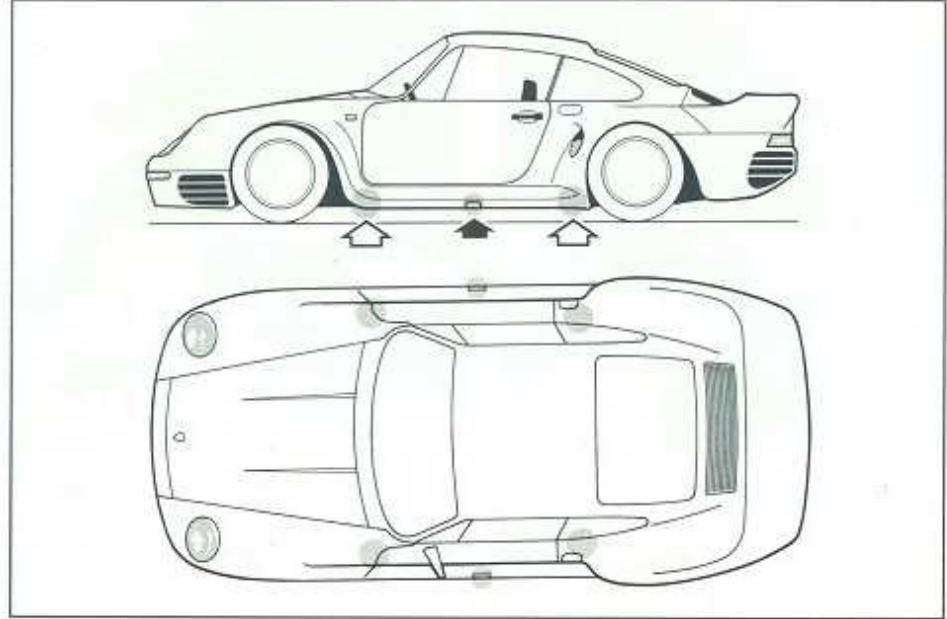
Lifting Platform, Car Jack, Lifting Car

Position the car on a smooth, level surface, apply the handbrake, engage 1st gear and chock the wheels on the side opposite to where the jack is positioned.

Never allow anyone to sit in or lie beneath the car while it is being raised.

Car Jack

The lifting points for the car jack are at the rear beneath the door sills on each side.



Workshop Floor Jack

The jacking points for a workshop jack are the same as those illustrated for a lifting platform.

CAUTION

If parts such as engine, gearbox, fuel tank, wheels or front/rear axle are to be removed, anchor the vehicle to the lifting platform or add appropriate weights to maintain the

centre of gravity. Failure to take this precaution may allow the vehicle to tilt or slip off the platform, causing serious damage or injury.



Lifting Platform

Before driving onto the platform, make sure that clearance between car body and platform is sufficient.

The lifting pads must be positioned at the jacking points shown in the illustration.

Before lifting a touring version 959 on the platform, it is advisable to set the car to the highest level, thus ensuring that the platform arms have enough clearance. If this is not the case, take suitable steps to increase ground clearance (for instance, place planks beneath wheels).

The level control of the touring version 959 must be temporarily deactivated if work is carried out with the car on the lifting platform and the engine running (see note in Repair Manual).

The **front** jacking points are located at the front near the side of the floor pan beneath the side member.

The **rear** jacking points are located at the rear near the side of the floor pan beneath the side member.

Always take care to avoid damaging critical components in the vicinity of the jacking points.



On Tow

Never tow the car over more than the shortest possible distance.

Bear in mind that with the engine switched off or if the hydraulic steering fails, steering is unassisted and more exertion is required to steer the car.

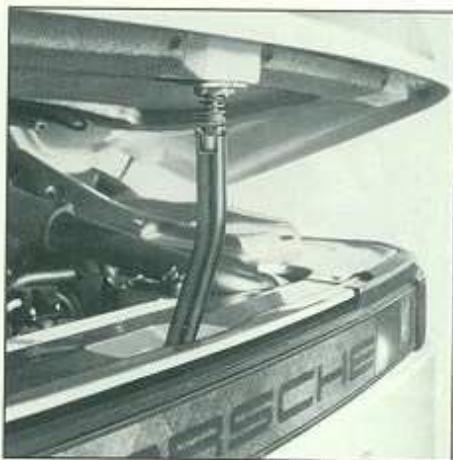
When the car is on tow, it is essential to switch on the ignition to prevent the steering lock engaging and to allow the electric pump of the brake booster to function. Furthermore, the stop lights and indicators will not work unless the ignition is switched on.

If the car is towed over a long distance and the battery discharges, you must allow for the lack of brake boost. In this event, the ABS is also deactivated.

Without the boost effect of the servo, you will have to exert considerably more pressure on the pedal to apply the brakes, once the stored pressure is exhausted by a few applications of the brakes.

When the engine is switched off, the level control does not function and ground clearance is reduced. Remember that on rough surfaces, the car may come into contact with the ground.

If your car has to be taken in tow, screw the towing hook which you will find in the tool kit into the hole in the left-hand side of the front bumper. Use a screwdriver to carefully remove the cover in the front air dam.



The towing hook can also be used to take another car in tow or if your car has to be pulled out backwards. In this event, mount the towing hook in the engine compartment. With the engine compartment open, remove the cover in the left-hand engine-compartment panel and screw the hook into place. The engine-compartment hood must be held open by means of the bar which is also included in the tool kit.

With the slotted plate toward the locking pin, push the bar between spring plate and taper of the lock mechanism (elbow of bar toward rear) and engage the lock section in the engine-compartment hood lock.

To dislodge the bar, pull the engine-compartment hood release lever.

If you tow another car, it should not be heavier than your Porsche. The towing rope must always be taut; avoid jerky, sudden loads at all costs. Always observe the legal stipulations which apply to taking and being taken on tow.

Caution: never attach tow rope at any point other than the hook designed for the purpose.

Starting with Jump Leads

If the engine refuses to start because the battery has gone flat in winter or after the vehicle has been off the road for a lengthy period, jump leads can be used to start the engine from the battery in another vehicle.

When using jump leads, note the following:

1. Both vehicles must have 12 V electrical systems. The capacity (Ah) of the feed battery should not be much less than that of the flat battery.
2. Only jump leads of sufficient cross-section and fitted with insulated crocodile clips may be used. Always follow the manufacturer's instructions.
3. Temperatures of -10°C are low enough to freeze a flat battery. It is essential to thaw a frozen battery before connecting the jump leads.
4. Avoid any contact between the two vehicles, as otherwise current could flow as soon as the plus terminals are connected. The result would be a short-circuit.
5. The flat battery must be properly connected to its vehicle's electrical system.
6. Keep the battery away from anything which may cause fire, e.g. naked flame, burning cigarettes or contact sparks caused by electrical connection. Risk of explosion.



7. Begin by connecting the plus terminal of the feed battery to the remote battery plus terminal in the engine compartment, using the (red) jump lead for the purpose (remote terminal has a black plastic socket with cover, see Fig.). Open plastic cover.

Then connect the second (black) jump lead to the minus terminal of the feed battery and then to an earthing point of the chassis of the car with the flat battery, e.g. engine-to-engine carrier mounting bolt.

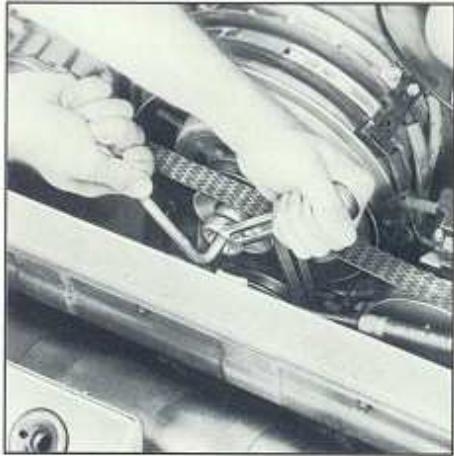
When disconnecting the leads, proceed in the reverse order.

8. Do not stoop over the battery. Risk of contact with caustic fluids.

9. Start the engine of the car with the feed battery and depress the accelerator.

10. When using jump leads, do not crank the engine for more than 15 seconds, then wait for at least 1 minute before repeating the attempt.

Avoid working on the engine unless it is switched off and has cooled down. If you work on the car while the engine is running, take great care to keep ties, necklaces and long hair clear of Vee-belt and blower.



Replacing Vee-Belt

To change the alternator Vee-belt, remove the cap from the nut with a sharp tool such as a screwdriver, then hold the shaft with the offset hex screwdriver from the tool kit, use the ring spanner to slacken the nut and remove the front half of the pulley.

Proper belt tension is achieved by removing or adding shims between the halves of the pulley.

Shims removed from between the pulley halves must be refitted between the lock nut and the front half of the pulley.

It is essential to ensure that no shims become jammed between pulley and nut.

If it becomes necessary to change the second belt which drives the blower, the alternator Vee-belt must first be removed.

Then hold the blower with the special sickle spanner from the tool kit (push the studs into two vent holes in the impeller) and slacken the nut with the aid of the ring spanner and the four-claw special bit.

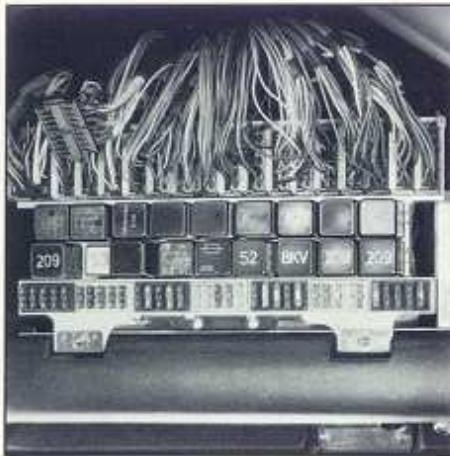
Caution: Do not attempt to block impeller by holding the blades.

To tighten the belt, proceed as above.

Tension is correct when the Vee-belt can be depressed approx. 5 - 10 mm by thumb pressure applied midway between the pulleys. Check tension after turning the engine through several rotations.

Have your 959 Maintenance Centre recheck and if necessary retighten the new Vee-belt.

Worn Vee-belts may only be replaced by belts approved by the manufacturer and available from your authorized PORSCHE dealer.



Fuses, Relays

The central electrics unit is mounted beneath the glove compartment in the passenger-side knee room.

To open the plastic cover, unscrew the two knurled nuts on the same level as the rubbing strip. The fuses are accessible once the cover is open.

An assignment plan with the individual consumers is also to be found beneath the cover.

A blown fuse is easily recognized by the melted strip of metal. Use the pliers enclosed for the purpose to withdraw a blown fuse from the spring clamp. Always fit a replacement fuse of the same rating.

Never attempt to bridge blown fuses with strips of metallic foil or wire as this could lead to serious consequential damage. If a circuit repeatedly blows its fuse, please consult your 959 Maintenance Centre.

To avoid damage to the electrical system, you are advised to entrust all work, including the installation of electrical accessories, to your 959 Maintenance Centre.

Replacing Bulbs



To avoid short-circuits, turn off the consumer concerned when changing a bulb.

New bulbs must be clean and free of grease. Always use a clean cloth or a piece of soft paper when handling bulbs.

In the interests of road safety, it is advisable to carry spare bulbs in the car to ensure that the vehicle's lighting can always be put in order on the spot. When travelling abroad, bear in mind that some countries stipulate that spare bulbs be carried at all times.

Front and Rear Indicators, Stop Lights, Reversing Lights, Rear Position Light

Remove the Phillips screws holding the lens and remove lens. Push defective bulb into socket and twist to the left (bayonet socket). Remove bulb from socket and fit replacement.

Push replacement bulb into socket while turning clockwise until the pins engage.

Place lens in position and tighten retaining screws alternately and evenly. Check operation of lights.



Headlights, Front Position Light

Remove Phillips screw at bottom of headlight trim ring, grasp ring at top and bottom and pull out evenly, tilting up if necessary.

Caution: the ring engages the headlight recess at the top. A certain amount of resistance must be overcome.

To avoid damaging the paintwork, please refrain from using any tools.

It is necessary to remove the entire headlight unit, which is held in place by four screws.

Disconnect the three-pole plug from the headlight, press holding clamp down and push to one side.

Remove defective bulb and fit replacement. The guide nose must fit into the slot in the reflector.

To change the position-light bulb, pull the socket out of the reflector. Press defective bulb slightly into socket, turn and remove. Install replacement bulb.

Position the socket in the reflector, checking that the guide nose is in the correct position.

Install headlight, check operation and correct aiming.

Please exercise great care when reinstalling the trim ring.

Begin by engaging the recess in the back of the ring at the top with the spring tab mounted on the outboard side of the headlight recess.

Insert Phillips screw and tighten.

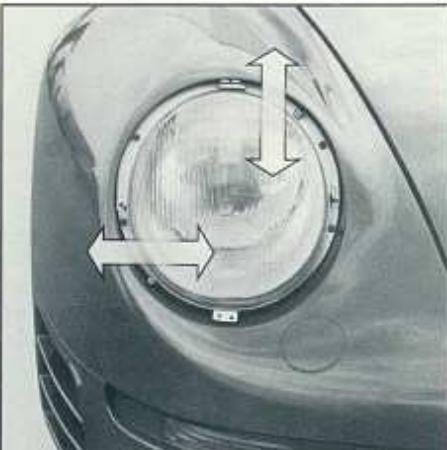
Aiming Headlight Beams

Only correctly aimed headlights will provide optimum road illumination even with dipped beams, while protecting the drivers of oncoming vehicles from dazzle.

The headlights may only be aimed with the aid of a special device. The car must be ready for the road and with a full tank. A person must occupy the driver's seat or a 75 kg weight must be placed there; the tyre pressures must be correct.

After loading, roll the car forward a short distance to allow the suspension to settle.

The level-control switch must be set to normal level.



Setting Screws

The headlights can only be aimed once the trim ring has been removed as described above.

Each headlight has separate setting screws for vertical and lateral adjustment of the reflector. The headlights are aimed by turning the screws clockwise or anticlockwise.

- Upper setting screw
= vertical adjustment
- Lower setting screw
= lateral adjustment

If your car is equipped with asymmetric headlights and you enter a country in which the traffic runs on the opposite side of the road, you should cover the prism sectors of the light-diffusing lenses with opaque adhesive tape. This renders the beams of dipped headlights symmetric and they do not dazzle the drivers of oncoming cars.



Side Indicators

Push the housing toward the rear of the car and withdraw.

Pull rubber sleeve and bulb socket off housing. The defective bulb can now be removed and a replacement bulb fitted.

Push the socket into the housing, press the rubber sleeve into position and snap the unit into the wing.

Be sure to check operation of the indicators.

Registration-Plate Light

Remove both screws and withdraw light unit. Unclip the defective soffit bulb from between the contact springs and fit a replacement bulb.

Reinstall the unit and check that the seal is properly seated. Tighten screws carefully.

Check operation of light.

Rear Fog Light

The use of Longlife bulbs renders failure of the rear fog light extremely unlikely. Should it become necessary to replace the bulb, it is advisable to entrust the work to an authorized workshop.



Luggage Compartment Light

Unclip the entire unit. Replace defective bulb. When reinserting the unit, check that holders are properly engaged. Check operation.



Interior Lights

The description below applies to both the glove-compartment light and the passenger-compartment lights.

Insert screwdriver and carefully pry the unit out of the recess in the panel.

Remove defective soffit bulb from between the contact springs and install replacement bulb.

Insert first one side of the light in the recess and then the other side and press home. Check operation of light.

Luggage Compartment Lid, Manual Release

If the lid-release mechanism is defective, a manual release allows the luggage compartment to be opened by hand.

Unscrew the front section of the left-hand wheel arch cover. Open the lid by pulling the Kevlar loop which can be seen on the top right.

Car Care Instructions

Regular and correct care helps maintain the value of your car and is a precondition for the vehicle guarantee and the Long-Life Guarantee.

To assure the validity of the Long-Life Guarantee for the full 10-year period, any authorized PORSCHE dealer will inspect the level of care and maintenance of the vehicle and draw up a written record of his findings. He will make out a Status Report and provide certification in the section of the "Guarantee & Maintenance" booklet entitled "Long-Life Guarantee Status Report".

Washing

The best method of protecting your car from the damaging effects of the environment is frequent washing and the re-application of a preservative.

The longer salt, road dust and dirt, airborne industrial emissions, dead insects, bird droppings, etc. are allowed to remain on the car, the more damaging is their effect on the bodywork.

Salts have a particularly corrosive effect on interior body seams, flanges and joints.

It is therefore necessary to clean such areas thoroughly with a sponge every time the car is washed - even after going through an automatic car wash - then rinse them with clean water and rub dry with a chamois leather.

To protect the fresh paintwork, new cars should be washed carefully with plenty of clean water. Dark paint finishes show up the smallest surface damage (scratches) more readily than light colours. Because of the composition of their pigments, dark colours are also more susceptible to scratches and therefore require particularly careful attention.

Use abundant water, a soft sponge or wash-brush and a suitable, mild car shampoo. Begin by spraying the body thoroughly and rinsing away any loose dirt. Do not wash your Porsche in bright sunlight or while the bodywork is hot. After washing, rinse the car and dry with a chamois leather. Remember to dry the seams, flanges and joints.

Do not use the same leather for rubbing down as you use for cleaning the windscreen and windows.

The moisture which reaches the brakes during washing may reduce braking efficiency or make the brakes pull unevenly. Always test the brakes after washing the car.

Never use a dry cloth to wipe dust off the car; the abrasive dust particles damage the paint-work.

Preservation

The fats in the paint are the constituents which maintain the elasticity and lustre of the paint, but it is these fats which climatic influences extract from the paintwork in the course of time. To retain the high lustre and prevent dirt accumulating on the surface or industrial emissions penetrating the paint, it is necessary to regenerate the paint by applying a preservative in good time.

It is advisable to use only the preservatives and agents recommended by your authorized PORSCHE dealer. Provided it is washed and treated with preservative at regular intervals, the original finish of your car will be retained for years to come. Apply the preservative after the car wash and polish it dry, or simply add a preservative to the final rinse water. Use this water to wash the car down and rub dry with a chamois leather.

Cleaning and Preserving Engine Compartment

The engine compartment and the surface of the engine are treated with a corrosion inhibitor before the car leaves the factory.

If grease solvents are used to clean the engine compartment or if the engine is washed, one almost invariable result is the destruction of the corrosion-inhibiting coating. It is then absolutely essential to have a durable preservative applied to all surfaces, body seams, joints and assemblies in the engine compartment.

Effective rust-proofing is particularly important in winter. If the car is driven frequently on roads where salt has been spread, the whole engine compartment should be cleaned thoroughly after the cold season to prevent salt causing any damage. A preservative should be applied after the engine compartment has been washed, and the process completed with a full under-body wash.

The importance of applying a preservative is enhanced, owing to the use of magnesium parts on the 959.

Windows

The road dust which settles on the windscreen and windows contains particles of tyre rubber and oil residues. The interior trim and upholstery also release particles of material, especially in strong sunlight. These particles collect on the insides of the windows. These deposits are augmented by impurities in the air entering the car through the fresh-air vents.

A lukewarm soap and water solution or a normal window cleaner can be used to clean the insides and outsides of the windows. Remember to clean the wiper blades as well. If you use a chamois leather for the windows, do not use it for the paintwork, as otherwise, it will pick up a certain amount of preserving agent and smear the windows, thus impairing vision.

Use a special sponge to remove dead insects from the windscreen.

During winter, add a cleaning agent with anti-freeze in the required concentration to the water in the windscreen and headlight-washer reservoirs.

Do not apply adhesive labels to the plastic film on the inside of the Sekuriflex windscreen or clean with aggressive agents. Do not clean when dry. Naptha may be used to remove stubborn soiling. When cleaning, ensure that the plastic film is not damaged by hard objects such as rings or wristwatches.

The inside of the windscreen may only be de-iced with the aid of hot air from the defroster nozzles. Do not use de-icing sprays, scratchers or scrapers.

Use the backing film (3 are supplied with the vehicle) to attach stickers.

Please observe the following instructions:

1. Clean windscreen where sticker is to be applied.
2. Cut backing film to size required, round off the corners.
3. Pull off protective film.
4. Spray soap solution onto adhesive side of backing film and onto windscreen (distilled water and liquid soap or grease-free detergent, mixed in ratio of 10 : 1).
5. Apply backing film to the screen and spray again.
6. Use a flexible plastic spatula to smooth backing film and press out liquid and bubbles.
7. Dry windscreen and film with a soft cloth.
8. Apply sticker.

When removing the sticker or the backing film, first spray the film with a soapy solution (see step 4).

Polishing

More intensive polishing agents should not be used to clean the bodywork until the application of normal preservatives is no longer sufficient to restore the original lustre.

Caution: do not apply silicone polishes to the windscreen or windows.

The paintwork of your car is exposed to all manner of mechanical and chemical influences, particularly those of a climatic nature such as bright sunlight, rain, frost and snow. Ultra-violet light, rapid changes in temperature, rain, snow, industrial dust and chemical deposits constantly combine in their attack on the paintwork, which is only able to withstand such exposure in the long term if it is given regular and most importantly, proper care and attention.

Matt painted parts should not be treated with preservatives or polishes as this will spoil the matt effect.

Spots and Stains

Tar spots, traces of oil, dead insects, etc. cannot always be removed simply by washing. They may cause discolouration if allowed to remain on the paintwork for a lengthy period and should therefore be removed without delay with a suitable agent (tar, industrial dust or insect remover).

Wash and rinse the affected area as soon as stains have been removed.

Minor Paint Damage

Minor paint damage such as scratches, scores or chips caused by flying stones, should be painted over immediately before corrosion sets in. Any traces of corrosion which may have appeared already must first be removed. Coat the area with a rust-proofing primer (applicator or aerosol) and finish off with a top coat. The paint code and colour number are noted on a paint data plate in the car.

Magnesium Parts

Because of the high risk of corrosion damage to the parts concerned, have any damage to the paint or protective coatings of magnesium parts such as wheels, gearbox casings, engine components, etc. rectified by your 959 Maintenance Centre at the earliest possible opportunity.

Underbody Protection

The underside of the 959 is protected by a cladding made of Kevlar and coated light alloy. This cladding requires no special care.

However, as the possibility of damage being incurred on the road cannot be excluded, we recommend that you have the underbody inspected and if necessary repaired at regular intervals - the most suitable times are before the onset of winter and in spring.

Always apply a fresh coating of suitable preservative to unprotected areas after cleaning the underside of the body or engine and after repairs involving work on this part of the car.

Your authorized PORSCHE dealer is familiar with the underbody sealing treatment and is in possession of the documents and equipment required. We recommend that you entrust him with all such work and inspections.

Lights/Plastic Parts

Use only soap and water to clean the plastic light lenses. Never use chemical cleaning agents for this purpose. The same applies to other plastic parts and films.

Door, Luggage-Compartment, Engine-Compartment Hood and Window Seals

Rubber seals tend to age and become brittle or cracked if they are not treated occasionally with glycerine or talcum powder.

Light Alloy Wheels

Pitting may occur if metallic particles which cause contact corrosion (e.g. brass or copper in brake-pad dust) are allowed to remain on the magnesium for too long.

Because of the high risk of corrosion damage to the parts concerned, damage to the protective coating of magnesium parts must be rectified by your 959 Maintenance Centre at the earliest possible opportunity.

Regular care is necessary in order to retain the attractive surface finish. The wheels should be washed down with a sponge or wash brush every two weeks if possible. Where salt is spread on winter roads or in areas which suffer from aggressive industrial emissions, the wheels must be cleaned every week.

Non-acidic detergents (max. pH-value of 10) may be used for this purpose.

Every three months, the wheels should be coated with a non-acidic grease (vaseline) after cleaning. Use a soft cloth to rub the grease well into the surface.

Cleaning agents which dissolve oxide such as are frequently used for other metals, or abrasive tools and agents damage the protective coating and are therefore unsuitable.

Explanation of the pH Value

The pH value is a measure of the hydrogen-ion concentration of a fluid. It indicates whether a fluid is acidic or alkaline.

A fluid with a pH value of 7 is neutral (e.g. chemically pure water) and is thus neither acid nor alkaline. Acids have a pH value less than 7 and the lower the pH value, the stronger the acid. Alkalies have pH values of between 7 and 14 – their strength increases with the pH value. Sparkling mineral water, for example, has a pH value of 6 - 6.5 and is thus slightly acidic. Battery acid, on the other hand, has a pH value of 1, or:

The pH value of a normal soap solution is 8 - 9, whereas the value for a dish-washer detergent is approx. 12.5 - the latter, therefore, would not be suitable for cleaning the wheels.

Your authorized PORSCHE dealer will be pleased to advise you on the choice of suitable detergents.

Leather

Leather is best cleaned with a white, soft woolen cloth and a weak soap and water solution. Aggressive cleaning agents and hard materials are unsuitable. Under no circumstances should the rear of perforated leather trim become wet – take special care when cleaning.

Once cleaned (the leather of the seats is subject to particularly severe use), treat the leather with the agent recommended by Porsche. Please ask your authorized PORSCHE dealer for further details.

Leather should be cleaned and treated several times a year, depending on how severely it is handled and how quickly it becomes dirty. We recommend that the leather be treated initially after the first few weeks or after the car has covered one or two thousand miles.

Creases, healed scratches, insect bites and slight variations in shade and grain, the natural surface markings of leather, are the characteristics of this natural material and add to its attractiveness.

Fabric Upholstery, Carpets

To clean, use a vacuum cleaner or a medium stiff brush. Remove spots and stains with a lukewarm soap and water solution or a reputable spot remover.

Care of the Seat Belts

If it becomes necessary to clean the belts, use any mild washing agent. Avoid exposing the belts to direct sunlight until they are dry.

If unsuitable cleaners are used or any attempt made to dye or bleach the belts, the webbing may be weakened thus impairing safety.

Storing your Car

If you intend to store your Porsche for a prolonged period, please consult your authorized PORSCHE dealer. He will be pleased to advise you on the most suitable methods of corrosion protection.

Brief Tips for Winter Driving

Engine Oil

In good time before the onset of winter, refill the engine with oil of the correct viscosity. If you are using multigrade oil, you are to a very large extent unaffected by seasonal changes in temperature and you can take full advantage of the extended oil-change intervals. See also "Filling Capacities" and "Engine Oils".

Battery

When outside temperatures fall, the battery's capacity decreases, but at the same time the load placed on it increases considerably. Therefore, check the condition of the battery in good time and have it recharged if necessary. Also have the level of the electrolyte checked and the battery terminals greased. Please observe the instructions in the section headed "Battery Care". Always switch off unnecessary consumers.

Brakes

After driving for long distances on salt-covered roads, a film may build up on the brake pads and discs, considerably reducing friction and braking efficiency.

The wheel brakes should therefore be cleaned every two weeks or so with a powerful jet of water. The cleaning effect of automatic car washes is insufficient to remove this film.

Caution: moisture on the brake pads may temporarily reduce braking efficiency. It may be necessary to exert more force on the pedal.

Corrosion Protection

The salt spread on winter roads is a severe trial for your car's bodywork. Therefore, you should wash the car and apply a preservative as often as possible in accordance with our Car Care Instructions. Before and after winter, have the underbody protection checked in an authorized Porsche workshop.

Magnesium Parts

Because of the high risk of corrosion damage to the parts concerned, damage to the paint or protective coating of magnesium parts such as rims, gearbox casing, engine components, etc., should be rectified by your 959 Maintenance Centre at the earliest possible opportunity.

Door and Window Seals

To prevent the rubber seals on the doors, luggage-compartment and engine-compartment hood from freezing, it is advisable to treat the rubber parts frequently with glycerine or talcum powder.

Door Locks

To prevent the locks freezing after washing, cover the lock cylinders. However, if a lock does freeze, use any good de-icing agent. In many cases, a well-heated key will help. Never use force.

Water Reservoir

To ensure that the windscreen washer and the headlight washer also function at temperatures below freezing, add a commercially available antifreeze to the water before temperatures begin to drop.

Winter Tyres, Snow Chains

Due to the restricted suitability of summer tyres for winter driving, it is advisable to fit special winter tyres when snow and ice are expected. If M + S radial tyres are used in the winter, they must always be fitted on all four wheels. See the chapter headed "Tyres and Tyre Pressures". Note the differing laws governing maximum speeds which apply in individual countries.

Snow chains can only be mounted on the rear wheels. These chains can only be fitted to winter tyres and the level control must be set to the position for difficult terrain.

Never fit snow chains to standard summer tyres.

Always observe the instructions supplied by the chain manufacturer.

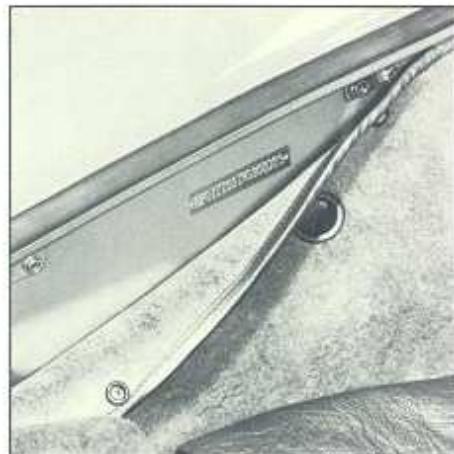
Your authorized dealer will be pleased to advise you on choosing the appropriate winter tyres and snow chains.

Accessories

During the winter, it may be useful to carry a folding shovel to dig the car free; a hand brush and a plastic scraper to clear snow and ice from the car; a board to place under the car jack and dry sand to improve grip when starting on icy mountain roads.

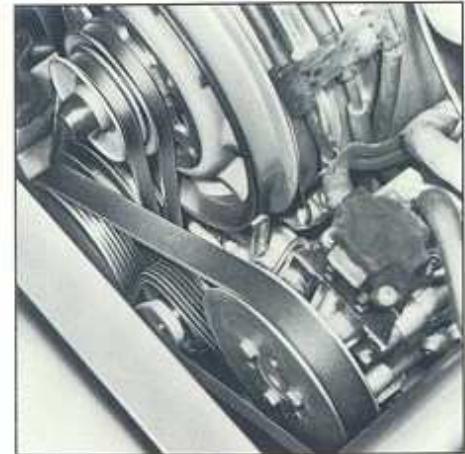
Vehicle Identification Data

To ensure prompt, correct response when ordering parts or submitting enquiries, always quote the vehicle identification and engine numbers.



Vehicle Identification Number

The vehicle identification number is stamped on the right-hand sidewall of the luggage compartment.



Engine Number

The engine number is stamped on the right-hand support of the blower housing.



Identification Plate

The identification plate is riveted to the luggage-compartment lid beside the lock.

Data Bank

The data bank is fixed on the inside of the luggage-compartment lid between the hinges.

Paint Data

The paint-data plate is on the right-hand door pillar. The paint-data plate of custom-painted vehicles is stored in the glove compartment.

Please note that the special materials used in the bodywork of the 959 also require special paints.

However, the trade designation and the colour (for example India red) correspond to the standard PORSCHE finishes.

Technical Data

Subject to change without notice

Engine

No. of cylinders	6
Bore	95.0 mm
Stroke	67.0 mm
Displacement (actual)	2850 cc
Compression ratio	8.3:1
Output to 80/1269/EWG	330 kW(450 hp)
at crankshaft speed	6500 rpm
Torque to 80/1269/EWG	500 Nm(369 ftlb)
at crankshaft speed	5000 rpm
Specific power output to 80/1269/EWG	115.8 kW/l(157.5 hp/l)
Fuel octane rating	95 RON/85 MON (premium fuel to DIN 51 600 or unleaded premium fuel to DIN 51 607)
Fuel consumption in l/100 km (to 80/1269/EWG or ECE A 70)	at 90 km/h 9.3 at 120 km/h 10.7 urban cycle 17.5
Engine-oil consumption	up to 2 l/1000 km
Max. permissible engine speed	7600 rpm
Spark plugs	Bosch XR 4 CS
Spark-plug gap	0.8 ± 0.1 mm
Battery	12 volt 66 Ah (sports version 12 volt 50 Ah)
Alternator	1610 Watts, 115 A
Firing sequence	1-6-2-4-3-5
Ignition	by DME
Ignition timing	by DME
Warning: high voltage! Risk of electrocution when working on any part of ignition system or tachometer.	
Vee-belt for alternator	Optibelt AV 10/9.5 x 694 La
Vee-belt for blower impeller	Optibelt AV 10/9.5 x 684 La
Drive belt for air-conditioner compressor (touring version)	Gates KG 1551 Lw
Drive belt for servo pump (sports version)	Gates KG 979 Lw
Valve clearance	Hydraulic valve-clearance adjustment

Power Train

Rear engine and gearbox bolted together to form a single drive unit. Variable all-wheel drive through dual-joint halfshafts to the rear wheels and via transaxle and front differential and dual-joint halfshafts to the front wheels.

Manual gearbox, number of gears: 6 forward gears / 1 reverse gear

Ratios (i)	G. (off-road) gear	3.500
	1st gear	2.059
	2nd gear	1.409
	3rd gear	1.036
	4th gear	0.813
	5th gear	0.639
	Reverse gear	2.857
Final drive ratio (i)		4.125

Climbing Performance

G. (off-road) gear	99.3 %
1st gear	98.8 %
2nd gear	59.5 %
3rd gear	37.5 %
4th gear	25.1 %
5th gear	15.8 %

Tyres, Wheels, Wheel Alignment

	front	rear
Summer tyres	235/45VR 17 DL on 8 J × 17 DL rims	255/40VR 17 DL on 10 J × 17 DL rims
Winter tyres	215/50 R 17 74 TDL M+S on 8 J × 17 DL rims The load-bearing capacity and the code letter for permissible maximum speed (e.g. 86T) are minimum requirements.	235/45 R 17 86 TDL M+S on 9 J × 17 DL rims
Caution: snow chains can only be fitted to winter tyres on rear axle, with level for difficult terrain selected. Maximum speed with snow chains 50 km/h.		
Tyre pressure, tyres cold at 20°C outside temperature	front 3.0 bar rear 3.5 bar (See section headed "Tyre Pressure Warning System") These pressures also apply to winter tyres	

Camber*	front -20' ± 10'; rear -45' ± 10'
Toe-in*	front +10' ± 5' total, no lateral pressure; rear +20' ± 5' per wheel
Steering difference angle*	2° 10' at 20° lock
Caster*	9° ± 15'

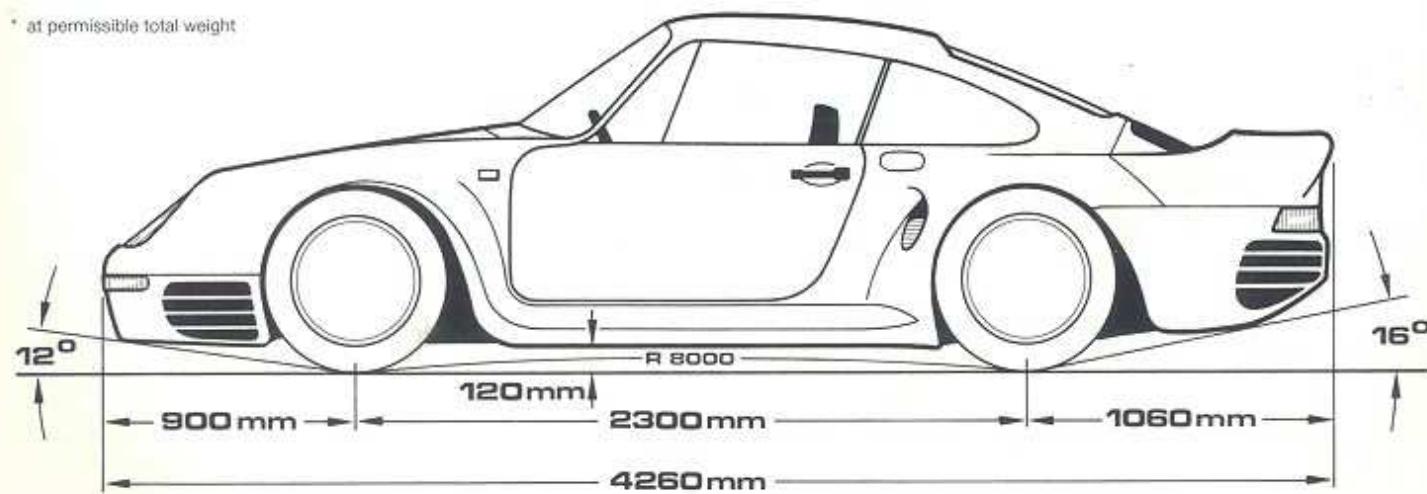
* at DIN kerb weight (car unladen but with full fuel tank)

Dimensions (at DIN kerb weight)

(Touring version at normal-level setting)

Length	4260 mm
Width	1840 mm
Height	1280 mm
Wheelbase	2300 mm
Ground clearance*	120 mm
Track, front	1504 mm
Track, rear	1550 mm
Turning circle	11.1 m
Overhang angle rear	16.0°

* at permissible total weight



Performance

Top speed 315 km/h
Acceleration from 0-100km/h 3.9 seconds

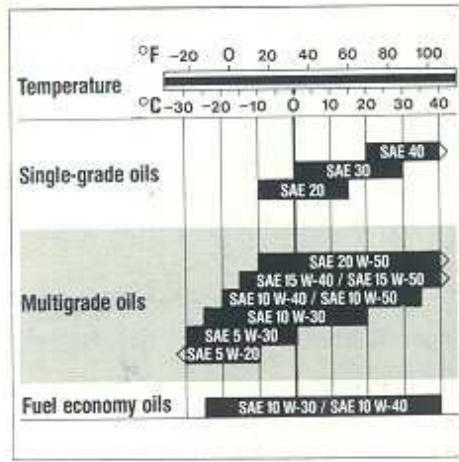
Weight

	Touring version	Sports version
At DIN kerb weight, basic model	1450 kg	1350 kg
At DIN kerb weight, with extras	1590 kg	1550 kg
Total permissible weight	1940 kg	1750 kg
Max. front axle load*	780 kg	750 kg
Max. rear axle load*	1160 kg	1020 kg

* Do not exceed total permissible weight.

Filling Capacities, Classifications

Engine	Total quantity of engine oil approx. 18 litres; oil change: approx. 12.5 litres are required. Oil level is measured definitively with dipstick, engine warm and idling. Engine-oil specification: permis.: API SE SF with combination API SE/CC-SE/CD; SF/CC-SF/CD. Multigrade oils: as per approvals list. See chapter headed "Engine Oils" Difference between min. and max. lines on dipstick, approx. 1.5 litres
Engine coolant	approx. 25 litres
Manual transmission with differential	3.5 litres Shell HD 75W90 (15 mm beneath lower edge of filler hole)
Front-axle final drive	1.8 litres Shell Spirax MA 80 W
Fuel tank	Approx. 84 litres, including approx. 15 litres reserve; leaded or unleaded premium fuel to DIN 51 600 or DIN 51 607, minimum octane rating 95 RON/85 MON
Brake-fluid reservoir	approx. 450 cc, use only SAE J 1703, DOT 4 brake fluid, e.g. ATE SL DOT 4 (DOT 3 for competitive events)
Steering/level control	Castrol LHM or Pentosin CHF 7.1, dipstick is definitive means of measurement
Lock control	Castrol LHM or Pentosin CHF 7.1
Windscreen and headlight washer system	Approx. 7.5 litres
Surge tank for clutch actuation (on left beside fuel tank)	Only FAG DOT 4 brake fluid manufactured by FAG Kugelfischer Georg Schäfer, Ebern, to SAE 1703



Engine Oils

Use only engine oils which have been tested and approved by PORSCHE. Your authorized PORSCHE dealer will be pleased to advise you on the correct type of oil for your engine. All modern engine oils are compatible with each other, in other words, when the oil is changed it is not necessary to flush the engine if you wish to use a different grade of oil. Since, however, each brand of oil has its own special composition, you should, if possible, use the same oil when topping up between oil changes.

PORSCHE engines have long intervals between oil changes. You can exploit the length of these intervals to the full by using multi-grade oils,

since these are largely independent of seasonal fluctuations in temperature.

If your vehicle is used frequently in stop-and-go traffic in winter, the engine will not always be properly warmed up. Condensates from combustion products may accumulate in the oil. In this case, it is advisable to change the oil in spring so that your engine once again has a 100% efficient oil.

Engine Oil Performance

Engine oil is not merely a lubricant, it also keeps the engine clean, neutralises the dirt which penetrates the engine in the combustion process and protects the engine against corrosion. Specially developed substances are added to the oil to enable it to discharge these functions.

The oils known as mineral oils are produced directly from crude oil. The oils can be further refined (hydrocrack oils) or totally converted (synthetic oils) by a number of chemical processes. In their structure, these latter oils are more efficient and require fewer additives than simple mineral oils.

One way of expressing the efficiency of an oil is the API classifications which are divided into categories "S" and "C". The degrees of quality are expressed by letters appended in alphabetical order. The requirements for PORSCHE engines are API class SE/CC to SF/CD.

Viscosity

Like all liquids, engine oil is viscous when cold and thin-bodied when warm. The viscosity of an

oil is expressed by the oil's SAE class. For cold viscosity (measured at temperatures below 0°C), the SAE class is given as a number followed by the letter "W" (as in winter); the SAE class for hot viscosity (measured at 100°C) is given only as a number.

The viscosity of two oils is, therefore, always the same if the oils share the number of an SAE class.

e.g.: A 10W-30 oil and a 10W-40 oil have the same viscosity when cold (below 0°C); when hot (at 100°C), the oil with the number 30 is thinner than the oil with the number 40.

Single-Grade/Multi-Grade Oils

Oils with two viscosities are called multi-grade oils; single-grade is the term applied to oils with only 1 viscosity.

Single-grade oils can only be used for the narrow temperature range identified by their SAE number; multi-grade oils cover a wider temperature range (see chart).

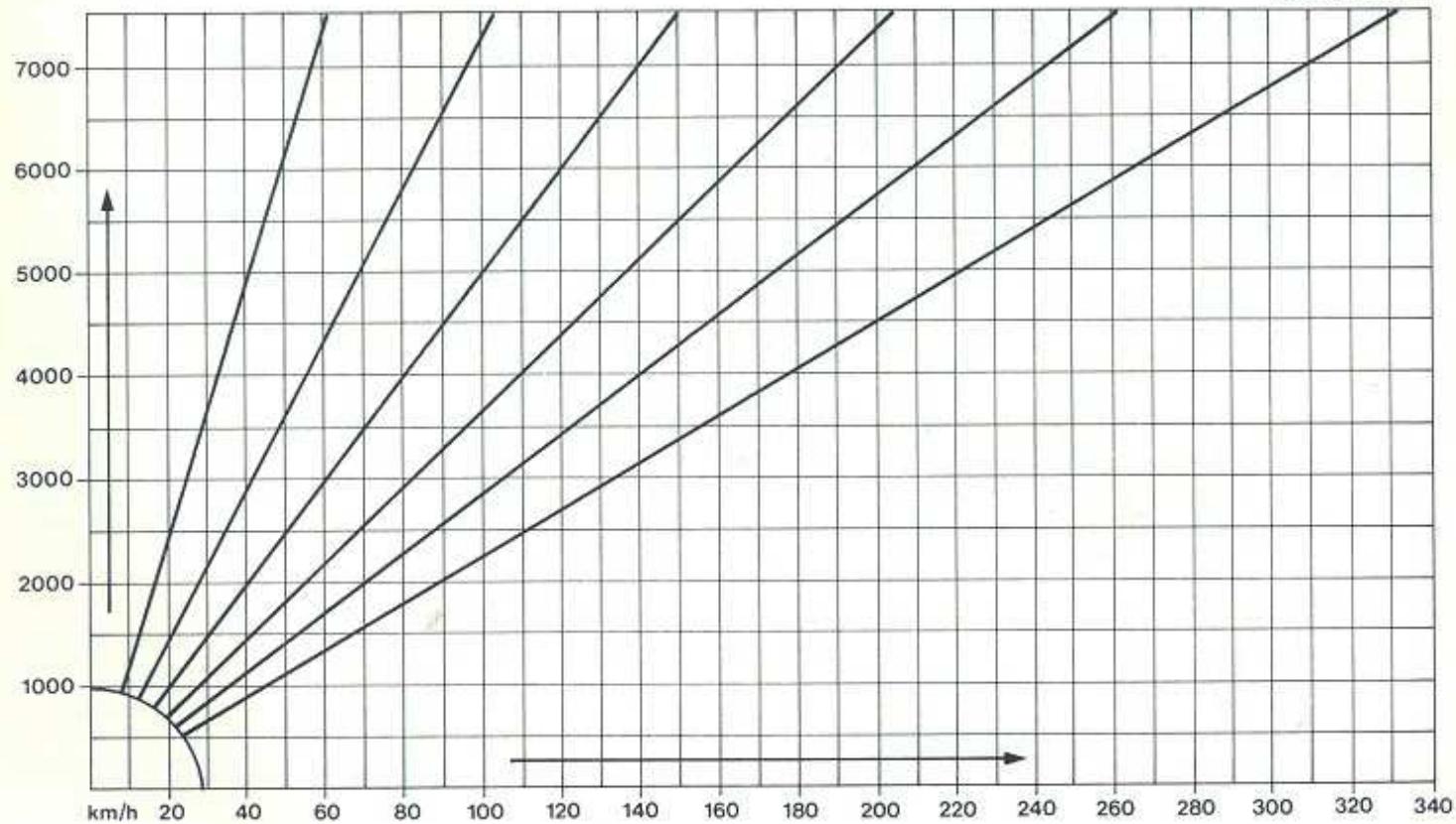
Fuel-Economy Oils

Oils with relatively low viscosity to reduce friction inside the engine are generally termed fuel-economy oils. PORSCHE approves only such fuel-economy oils as are structurally so stable that they can be used in PORSCHE engines as both summer and winter oils (see chart of ranges of application for oils of different viscosities). At the present time, these conditions are fulfilled by synthetic or hydrocrack fuel-economy oils.

Engine Speed/Gear Graph

SSS

Tyre size: 255/40 VR 17



Full-Load Curves 955



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