



PORSCHE

914 1.8/2.0

GENERAL

DESCRIPTION



The position of the engine in the middle of the car is the special individual characteristic of the 914 Roadster. The position in front of the rear axle prevents the installation of rear seats.

On the other hand, this design offers the basic requirements for optimal roadability.

Ideal weight distribution.

Little change in axle load regardless of load distribution.

Low center of gravity.

The front and rear wheel suspension, the brakes, the steering and also the bucket seats are carefully designed to suit fast driving. This equipment is described individually on the following pages.

Body

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

The large curved windshield leads, in connection with the roll bar, the air stream off to the rear, so that you may drive even at full speed, "hood down", without sitting in a drought. The rear window, installed in a vertical position, is shielded by the roll bar and therefore well protected from the weather.

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

Both bucket seats can be adjusted backward, forward and for height, and have a integrated head restraint.

The following measures have been taken to provide for safety inside the car:

Installed seat belts.

Bucket seats with standard head restraints.

Top and bottom rim of instrument panel padded center section with knobs and instruments recessed.

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

Steering wheel with padded center.

Careful ventilation to avoid fogging of window.

Safety interior mirror.

Recessed inside door handles.

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

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

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

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

Electrical System

An alternator, 14 V 50 A (700 W) supplies direct current.

The alternator delivers a high output even at low rpm.

The roadster has retractable headlights. The round headlights cannot be seen by day or become dirty. To drive with lights on the headlights are raised by electric motors.

Engine (914 2.0)

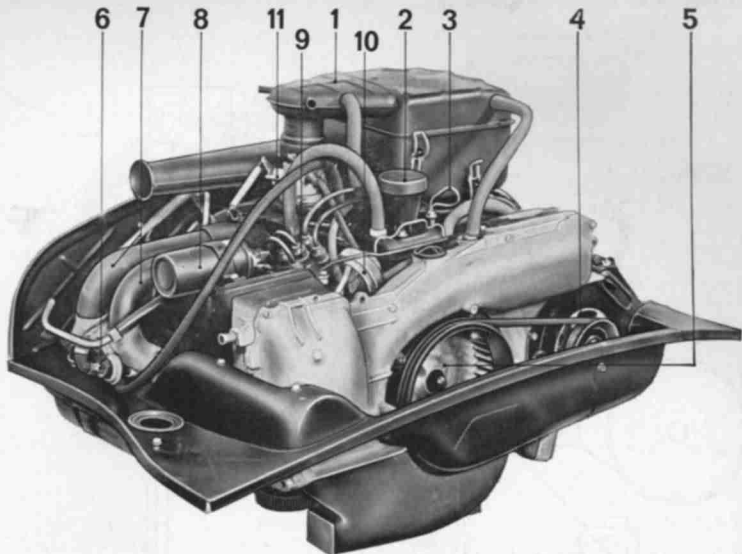
The engine is an air cooled, four cylinder, four stroke horizontally opposed type. The crankcase is divided vertically by the crankshaft and camshaft bearings.

Each side of the engine has two special gray cast iron cylinders with cooling fins and cylinder heads of aluminum alloy, bolted to the casing. The overhead valves are actuated through rocker arms, and pushrods by a central camshaft.

Cooling is by a radial blower mounted to the crankshaft. The amount of cooling air is regulated by a thermostat, so that the cold engine warms up quickly and the operating temperature remains as constant as possible at all times.

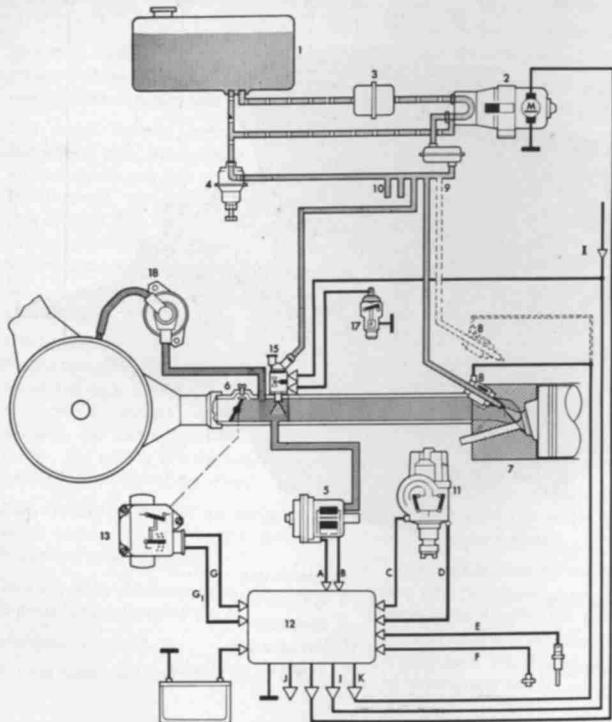
Lubrication for all required points in the engine is by pressure oil circulation. The gear type pump is driven by the camshaft. The oil cooler built into this circuit assures that the oil maintains its lubricating qualities even when the outside temperature or the effort required of the engine is very high.

The engine is equipped with electronically controlled fuel injection, by which the fuel is injected through electromagnetically operated injection valves into the intake ports of the engine. The injectors are supplied with fuel by an electric fuel pump.



- | | |
|---------------------------|---------------------------|
| 1 Air cleaner | 7 Intake pipe |
| 2 Cap for oil filler tube | 8 Ignition coil |
| 3 Dipstick | 9 Distributor |
| 4 Alternator | 10 Vacuum unit |
| 5 Radial cooling blower | 11 Intake air distributor |
| 6 Injection valve | |

Principle of the K-Jetronic



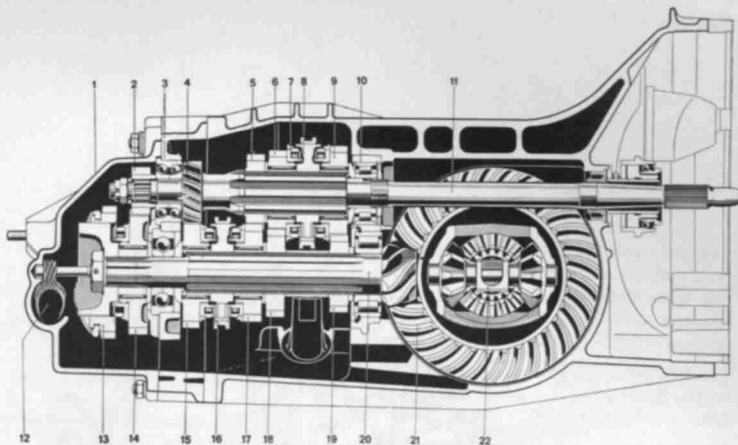
- 1 – fuel tank
- 2 – fuel pump
- 3 – fuel filter
- 4 – pressure governor
- 5 – pressure sensor
- 6 – inlet distributor
- 7 – cylinder head
- 8 – injection valves
- 9 – fuel distributor
- 10 – fuel distributor
- 11 – ignition distributor with release contacts (distributor contacts I & II)
- 12 – control unit
- 13 – throttle switch with acceleration enrichment
- 15 – cold start valve
- 17 – thermal switch for cold starting equipment
- 18 – additional air governor
- 19 – valve for thrust increase

- A + B – from pressure sensor (command under load condition)
- C + D – from the ignition distributor contacts (commands speed and release)
- E + F – from the temperature sensors (command hot run)
- G – from throttle switch
- GI – acceleration enrichment

- I – to the injection valves cylinders 1 & 4
- II – to the injection valves cylinders 2 & 3

Transmission

The type 914 comes with a 5 speed manual transmission. The transmission and differential are contained in a single housing. All forward gears are synchronized. When gears are shifted, a toothed sliding sleeve moves off the synchronizing ring running with the previously engaged gear, passes through the neutral position, and slides onto the synchronizing ring of the selected gear. The servo components provide an additional thrust to the synchronizing elements. This permits rapid synchronization of the differing gear speeds for easy and fast shifting. Once the gears are synchronized, the toothed sliding sleeve engages the synchronizing drive ring thus making a positive mechanical connection between the selected gear and the pinion shaft.



- | | | |
|-----------------------------|---|-------------------------------|
| 1. Transmission rear cover | 8. Spider | 15. 2nd speed, Gear II, free |
| 2. 1th speed, Gear 1, fixed | 9. 5th speed, Gear 1, free | 16. Shift fork |
| 3. Roller bearing | 10. Roller bearing | 17. 3rd speed, Gear II, free |
| 4. 2th speed, Gear 1, fixed | 11. Input shaft | 18. 4th speed, Gear II, fixed |
| 5. 3rd speed, Gear 1, fixed | 12. Speedometer drive | 19. 5th speed, Gear II, fixed |
| 6. 4th speed, Gear 1, free | 13. Sliding gear,
1th and reverse speeds | 20. Pinion shaft |
| 7. Synchronizing ring | 14. 1th speed, Gear II, free | 21. Ring gear |
| | | 22. Differential |

Brakes

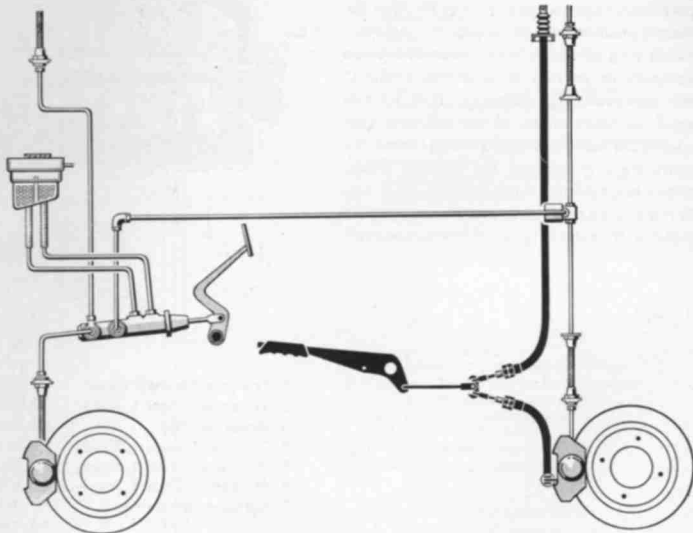
The brake system comprises disc brakes at front and rear arranged in two circuits. The rear brake circuit includes a brake pressure regulator, which maintains a preset maximum pressure in the lines to the rear wheel brakes.

The hand brake operates by means of a cable on the pads of the rear wheel brakes. The brake is self-adjusting.

All VW-Porsche vehicles are equipped with a double circuit brake system; the two circuits operate independently from each other. If one the circuits fails, braking requires increased pressure on the pedal; the stopping distance and the brake pedal travel will increase!

With a defective brake system you should, therefore, never drive your vehicle longer than absolutely necessary!

Drive your vehicle to the curb and carefully test your brakes. As soon as you feel confident enough, drive your vehicle to the next service station keeping in mind that your braking conditions are now different.



Front Axle

The front wheels have independent suspension. They are located by track control arms and suspension struts. The design saves space by placing the components of the axle in the wheel arch and under the luggage compartment floor.

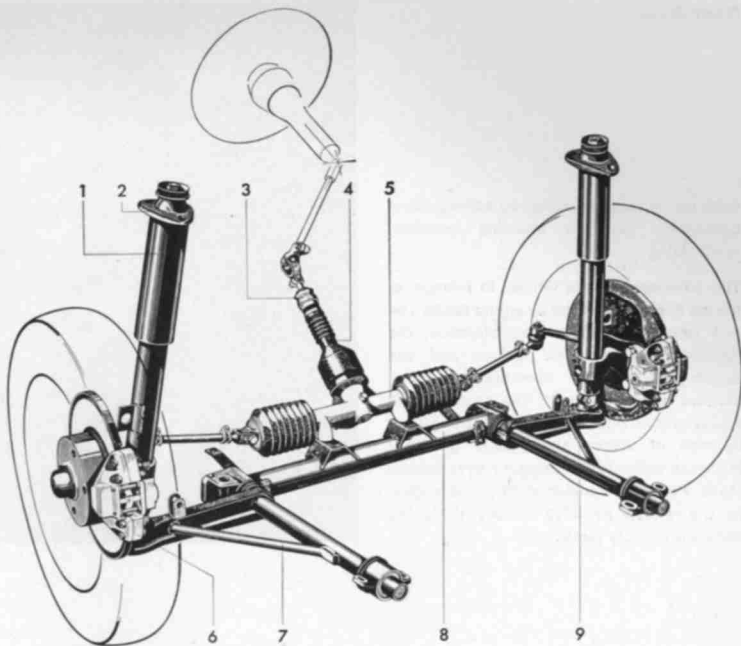
A wide, roomy luggage space is thus achieved in spite of relatively low total height. The transverse control arms are situated on the bodyshell floor and transmit the spring action of the lengthwise torsion bars through the suspension struts to the wheels. The struts are connected at the lower end with the transverse control arms by means of ball joints, and at the upper end to the wheel arch by means of rubber-metal joints.

All joints are maintenance free.

Steering

The steering uses a rack and pinion assembly with two tie rods. The safety steering column is in three parts connected by universal joints.

The steering wheel is well padded and provides, together with the steering column, maximum possible safety for the driver in case of an accident.



1. Shock absorber
2. Mounting
3. Steering shaft mounting

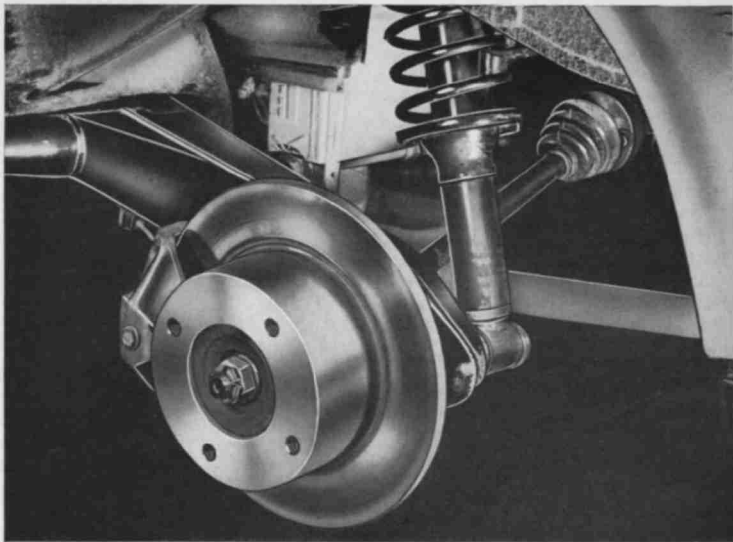
4. Steering
5. Rack and pinion steering gear
6. Brake calliper

7. Track control arm
8. Auxiliary support
9. Ball joint

Rear Axle

Both rear wheels are guided by a triangulated suspension geometry ensuring excellent roadholding.

The movement of the wheels in relation to the car body is absorbed by spring struts. The coil spring with linear characteristics, the auxiliary hollow rubber buffers and the double acting shock absorbers are constructed as a single unit. The action of the spring strut on body and suspension achieved by way of altered spring ratio gradually increases stiffness of springing over bumpy roads. Power is transferred from the engine to the wheels by drive shafts with double constant velocity joints.

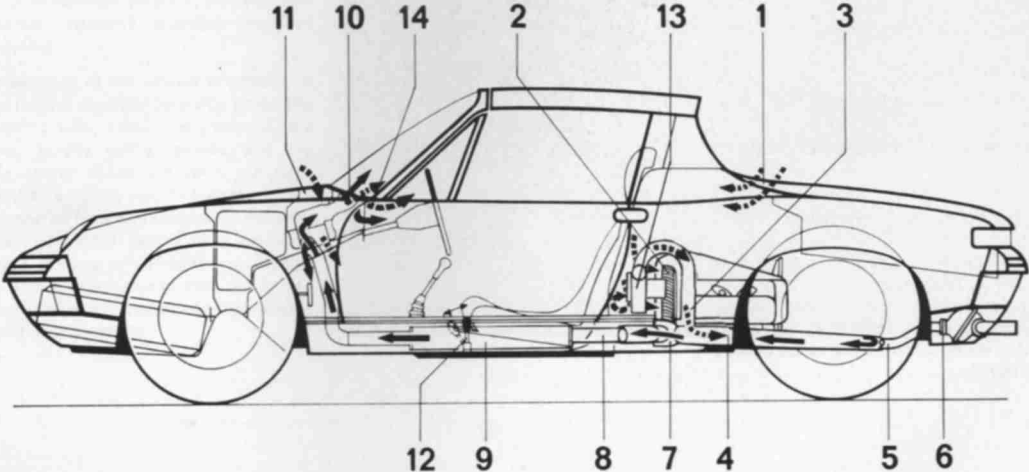




Forced stale air extraction

Air is extracted from the interior of the car through two extractor ducts on the left and right of the passenger compartment behind the seat backs, and from there passes to outlets in the door posts close to the outside door handles.

Schematic View of Heating and Ventilating System



Heater

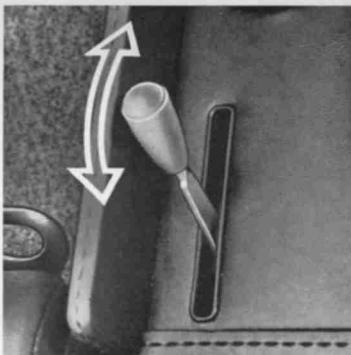
Heater Controls

Operation:

The complete fresh air supply for various functions on the vehicle is drawn in through the grill on the engine compartment cover ① by the cooling blower of the engine. The air stream needed for the car's heater is diverted immediately behind blower ② through a special collector pipe ③. If the heater control lever ⑫ is pulled up fully, an additional electric blower ⑬ is switched on (for low engine speeds, city driving) to draw in additional air and increase heater action. This air supply is also conducted through the collector pipe ③.

From the collector pipe the air (cool air) flows through the engine heat exchanger ④. Heat exchangers are enclosed sheet metal boxes through which the exhaust pipes ⑤ from the engine also pass. All exhaust-system connections which could conceivably become loose ⑥ are located outside the heat exchanger.

The complete engine exhaust system is mounted in the air stream under the car.



From the heat exchangers the air for the heater flows through connecting hoses, chambers ⑦ with control flaps, pipes ⑧ and sound absorbing dampers ⑨ in the body side members to the distribution points, which are grouped in pairs.

Warm air outlets are provided:

at the base of the windshield ⑩ on the left and right in the instrument panel ⑭ and in the front footwells.

The chambers ⑦ with control flaps in the warm air supply circuit are designed so that air in the heat exchangers passes over the hot exhaust pipes even when the heater is shut off.

Additional fresh air can be supplied to the car's interior through ventilation slots in front of the windshield, regardless of the setting of the car's heater.

Operating Instructions:

A heater control lever ⑫ is located behind the gear lever. If the heater lever is moved to the rear the heater will begin to operate; if the lever is moved forward the heater will be shut off. When fully to the rear, an additional electric blower ⑬ is switched on to increase the effectiveness of the heater.

When the lever is pulled back, a cable moves the flaps in the heater chamber ⑦. If the cable breaks both flaps are automatically closed and the warm air escapes to the outside.