

## OPEL (Cont.)

### IGNITION SWITCH

**1966-69**

Disconnect battery. Turn ignition switch to "ON" position. Using a suitable rod inserted into stop pin hole on side of steering and ignition lock, remove cylinder. Remove two screws securing switch to steering and ignition lock housing and remove switch.

### STOP LIGHT SWITCH

**1966-73**

Switch is mechanical and is mounted on top of brake pedal in a bracket.

## PANTERA

### SPEEDOMETER

**1973**

Remove chrome nut securing odometer reset knob. Disconnect speedometer drive cable. Remove retaining screws from back of speedometer and remove speedometer.

### GAUGES

**1973**

Disconnect battery ground cable. Remove retaining screws from console panel and pull console panel forward and down to reach rear of gauge. Remove bulb sockets and wiring from gauge, unscrew retaining nut and remove gauge.

### TACHOMETER

**1973**

Disconnect negative battery cable. Remove nuts from back of tachometer and push tachometer out from dash. Remove bulb sockets and wiring from back of tachometer.

### IGNITION SWITCH

**1973**

Disconnect battery ground cable. Remove retaining bolts from steering column and lower column. Remove retaining screws and steering column shroud. Remove retaining screws and wiring and remove ignition switch. To remove column lock, remove shear bolts with a screw extractor. Use new shear bolts when reinstalling column lock.

## PORSCHE

### INSTRUMENT CLUSTER

**1963-65**

Located on left side of instrument panel. Contains an oil temperature and fuel gauge, oil pressure indicator light and generator warning light. To remove, note wire positions and disconnect leads. Remove clamp nuts, pull out instrument lights and set out of way. Cluster can now be removed complete. To install, reverse removal procedure.

**1970-73**

**4 Cylinder Models** — Disconnect battery ground cable. Remove steering wheel and disconnect speedometer cable. Remove knob and jam nut from trip mileage reset. Remove four retaining screws and pull cluster away from panel. Disconnect wires and indicator lights and remove cluster. Push individual instruments out in a forward direction, making sure rubber retaining rings are not damaged. To install, reverse removal procedure.

**911 6 Cylinder Models** — Connecting terminals and cables of all instruments are accessible from luggage compartment side of instrument panel after carpet has been removed. To remove cluster, proceed as follows:

1) Disconnect all cables and wires from instrument that is to be removed. If speedometer is being removed, also remove drive shaft knurled nut and withdraw shaft from speedometer.

2) Remove small knurled nuts securing instrument, remove retaining clamp and take instrument out from passenger compartment side. To install, reverse removal procedure.

### SPEEDOMETER & GAUGES

**1963-65**

To remove, pull instrument lights from sockets. Remove speedometer cable nut and pull cable from instrument. Remove clamp screws from back of speedometer. Remove clamp bracket and remove speedometer from instrument panel. To install, reverse removal procedure.

**1970-73**

**4 Cylinder Models** — Speedometer, tachometer and all gauges may be removed after first removing instrument cluster.

### STOP LIGHT SWITCH

**1963-65**

Switch is hydraulic and is located at front of brake master cylinder.

**1970-73**

**914 & 914/6** — Pull accelerator pedal out of thrust rod in rearward direction. Remove two nuts attaching floorboard and remove to side. Remove switch mounting screws and detach electrical leads before removing. To install, reverse removal procedure.

## PORSCHE (Cont.)

### TURN SIGNAL, DIMMER & FLASHER SWITCH

1963-65

To remove, first remove steering wheel. Disconnect all plug leads. Remove screws from horn contact ring and remove ring. Remove three 9 mm nuts and remove switch housing and cables from steering column. Remove three screws from side of switch housing and pull out switch and cables from inside. To install, reverse removal procedure.

1966-72

**911 Models** — 1) Disconnect battery. Remove horn ring and steering wheel. Remove upper and lower parts of switch housing from steering column outer tube.

2) Disconnect multi-pin plug and all other electrical leads. Detach indicator switch assembly (wiper-washer switch, if equipped) from steering outer tube and remove. To install, reverse removal procedure.

### HAZARD WARNING SWITCH

1970-71

**914/6** — Unscrew knob and shaft and remove from switch. Use suitable cross slot spanner wrench to remove escutcheon nut from switch and mounting panel. Disconnect battery, push switch away from panel and detach wiring. To install, reverse removal procedure.

*NOTE* — Indicator bulb in knob may be removed by extracting window from knob and shaft and then pushing bulb out of shaft with a steel wire.

### INSTRUMENT CLUSTER

1963-67

Disconnect battery and speedometer drive cable. Remove instrument panel attaching screws. Pull cluster forward and disconnect wiring from inside glove box. Mark all wires for reassembly. Remove cluster.

1968-70

**R-10 Models** — Disconnect battery and speedometer drive cable. Remove instrument panel attaching screws. Pull cluster forward and disconnect wiring from inside glove compartment. Mark wires for reinstallation. Remove cluster.

**R-16 Models** — Remove trim rings and pull steering wheel. Remove combination lighting switch housing. Remove instrument panel molding. Disconnect all wiring and speedometer drive cable. Remove mounting bolts and withdraw instrument cluster.

1971-73

**R-10 Models** — Disconnect battery and speedometer. Remove screws attaching instrument panel. Pull cluster forward and disconnect wiring from inside glove compartment. Mark wiring for reassembly. Remove cluster.

**R-12 Models** — Disconnect battery and two junction blocks on cluster. Disconnect speedometer cable. Lift two retaining clips and pull cluster out, freeing mounting lugs from holders.

### BACK-UP LIGHT SWITCH

1966-72

**911** — Switch is located on transmission housing side. Switch is actuated through respective positioning of internal shift rod within transmission when reverse gear is engaged, moving a contact pin and switching on back-up light.

### HEADLIGHT FLASHER

1966-72

**911** — Headlight flasher control is part of a combination switch on steering column. A flasher relay is located under left floorboard.

### HEADLIGHT SWITCH

1966-72

**911** — Disconnect battery and unscrew knob from shaft. Remove escutcheon with cross slot spanner. Pull switch from panel toward rear and remove wiring. To install, reverse removal procedure.

## RENAULT

**R-15 & R-17 Models** — Disconnect battery. Unscrew two knurled nuts on fuse block bracket and tilt bracket. Remove radio speaker grille, then unscrew four retaining clip screws (located in each corner of cluster). Insert a screwdriver between cluster and instrument panel to free inside clip located at bottom center of cluster. Pull out cluster and disconnect all wiring and speedometer cable.

### SPEEDOMETER & GAUGES

1963-73

Speedometer and all gauges may be removed after instrument cluster is removed.

### IGNITION SWITCH

1963-67

Disconnect battery and remove horn and lighting switch shroud. Disconnect wires and mark them for reassembly. Remove screw attaching the ignition switch to its support. Remove switch.

### COMBINATION LIGHTING SWITCH

1968-70

Remove protective housing and glove box. Disconnect and mark wiring. Remove turn signal return spring. Unscrew lighting switch attaching screws and remove switch.