Table a. General Bolt Tightening Torques in Nm (max. permissible)

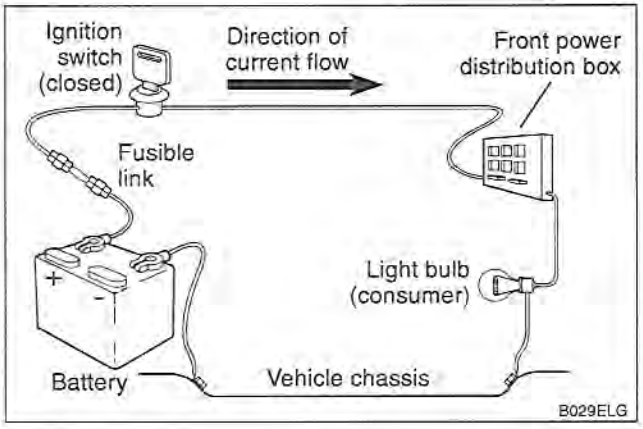
Bolt diameter	Bolt Class (according to DIN 267)					
	5.6	5.8	6.8	8.8	10.9	12.9
M5	2.5	3.5	4.5	6	8	10
M6	4.5	6	7.5	10	14	17
M8	11	15	18	24	34	40
M10	23	30	36	47	66	79
M12	39	52	62	82	115	140
M14	62	82	98	130	180	220
M16	94	126	150	200	280	340
M18	130	174	210	280	390	470

Gaskets and seals

Gaskets should not be reused. Once a gasket has been used, it is no longer capable of making as good a seal as when new, and is much more likely to leak. For this reason, Always plan to use new gaskets for any reassembly. Some gaskets are directional. Make sure that these are installed correctly. This same logic applies to any part used for sealing, including rubber O-rings and copper sealing washers.

In places where a shaft must pass through a housing, flexible lip seals are used to keep the lubricating oil or grease from leaking out past the rotating shaft. Seals should never be reused once they have been removed. When removing a seal, be careful not to scratch or otherwise damage the metal surfaces.

When installing a new seal, it a good idea to coat the seal with oil to aid installation. Some seals are directional and special installation instructions apply. Make sure a seal is installed with the lip facing the correct way. Normally the lip faces the inside. Note the installation direction of the old seal before removing it.



Electrical testing

Many electrical problems can be understood and solved with only a little fundamental knowledge of how electrical circuits function.

Electric current only flows in a complete circuit. To operate, every electrical device in the car requires a complete circuit including a voltage source and a path to ground. The positive (+) side of the battery is the original voltage source, and ground is any return path to the negative (–) side of the battery, whether through the wiring harness or the car body. Except for portions of the charging system, all electrical current in the car is direct current (DC) and flows from positive (+) to negative (–).

Switches are used to turn components on or off by completing or interrupting the circuit. A switch is "open" when the circuit is interrupted, and "closed" when the circuit is completed. See **900 Electrical System–General** for electrical troubleshooting.

Wire repairs

Repairs to a wiring harness require special care to make the repair permanent. The wire ends must be clean. If frayed or otherwise damaged, cut off the end. If the wire is too short, splice in a new piece of wire of the same size and make two connections.

Use connectors designed for the application. Crimped-on or soldered-on connectors are best. Crimp connectors and special crimping pliers are widely available. If soldering, use needlenose pliers to hold the wire near the solder joint and create a "heat dam". This keeps the heat and the solder from traveling up the wire. Always use a solder made specifically for electrical work (rosin core).

NOTE —
Twisting wires together to make a repair is not recommended. Corrosion and vibration will eventually spoil the connection and may lead to irreparable damage to sensitive electronic components.

Insulate the finished connection. Electronics stores can supply heat-shrinkable insulating tubing that can be placed onto the wire before connecting, slid over the finished joint, and shrunk to a tight fit with a heat gun or hair dryer. The next best alternative is electrical tape. Make sure the wire is clean and free of solder flux or other contamination. Wrap the joint tightly to seal out moisture. See **900 Electrical System–General** for more information.

BUYING PARTS

Many of the maintenance and repair tasks in this manual call for the installation of new parts, or the use of new gaskets and other materials when reinstalling parts. Most often, the parts that will be needed should be on hand before beginning the job. Read the introductory text and the complete procedure to determine which parts will be needed.

NOTE —
For some bigger jobs, partial disassembly and inspection are required to determine a complete parts list. Read the procedure carefully and, if necessary, make other arrangements to get the necessary parts while your car is disassembled.

Genuine Porsche parts

Genuine Porsche replacement parts from an authorized Porsche dealer are designed and manufactured to the same high standards as the original parts. They will be the correct material, manufactured to the same specifications, and guaranteed to fit and work as intended by the engineers who designed the car. Some genuine Porsche parts have a limited warranty.

Porsche is constantly updating and improving their cars, often making improvements during a given model year. Porsche may recommend a newer, improved part as a replacement, and your authorized dealer's parts department will know about it and provide it. The Porsche parts organization is best equipped to deal with any Porsche parts needs.

Non-returnable parts

Some parts cannot be returned for credit, even if they are the wrong parts for the car. The best example is electrical parts, which are almost universally considered non-returnable because they are so easily damaged internally.

Buy electrical parts carefully, and be as sure as possible that a replacement is needed, especially for expensive parts such as electronic control modules. It may be wise to let an authorized Porsche dealer or other qualified shop confirm your diagnosis before replacing an expensive part that cannot be returned.

Information you need to know

Model. When ordering parts it is important that you know the correct model designation for your car. Models covered in this manual are 911 Carrera coupe, targa and cabriolet configurations.

Model Year. This is not necessarily the same as date of manufacture or date of sale. A 1986 model may have been manufactured in late 1985, and perhaps not sold until early 1986. It is still a 1986 model. Model years covered by this manual are 1984 to 1989.

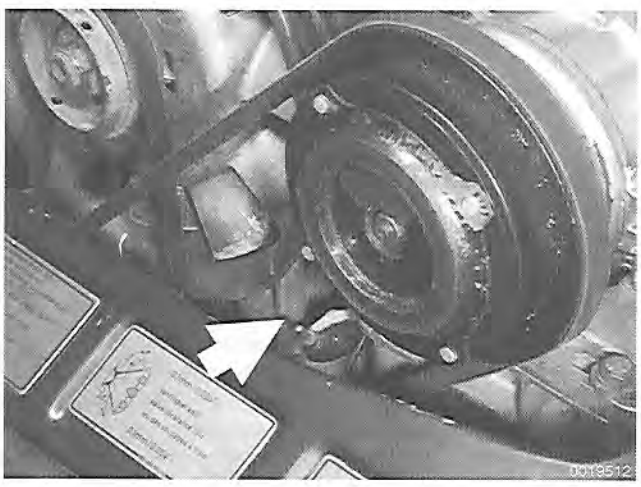
Date of Manufacture. This information is helpful when ordering replacement parts or determining if any of the warranty recalls are applicable to your car. The label on the driver's door pillar (**arrow**) will specify the month and year that the car was built.

Vehicle Identification Number (VIN). This is a combination of letters and numbers that identify the particular car. The VIN appears on the state registration document, and on the car itself. One location is in on the left windshield pillar, another is on the luggage compartment lid (**arrow**). The sticker on the luggage compartment lid contains the following information:

1. Vehicle Identification Number
2. Vehicle code
3. Engine and transmission code
4. Paint and interior code
5. Option Codes

A duplicate of this label is also contained in the vehicle's original paper work (Warranty and Maintenance card).

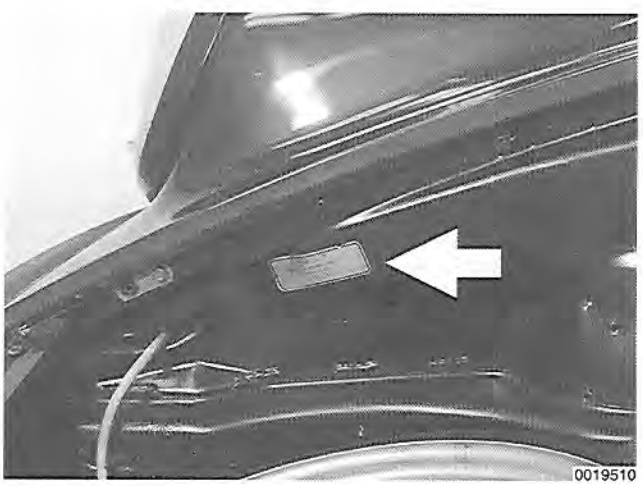
As of 1987 model year, the National Highway Traffic Safety Administration (NHTSA) requires passenger cars with a high theft rate to have the VIN marked on specific parts of the car when manufactured. On Porsche cars, these parts are identified by an adhesive label bearing the VIN and Porsche script. Replacement parts have a similar label, bearing the letters DOT-R. These labels should not be removed as they will tear apart or painted over.



Engine number. The engine number is stamped on the left crankcase half, below the fan housing (**arrow**). 911 cars covered in this manual are powered by a 6-cylinder engine. For information on engine codes and engine applications, see **100 Engine–General**.

Engine Numbers

- 1984-1986 (930/21) . . . . . .200 hp (149 kW)
- 1987-1989 (930/25) . . . . . .216 hp (160 kW)



Paint code. The paint code is on a sticker on the right fender inside the luggage compartment (**arrow**).

Transmission. The transmission type with its identifying code may be important when buying clutch parts, seals, gaskets, and other transmission-related parts. Two transmissions were installed in the models covered by this manual, depending on model year.

Transmissions

- 1984-1986
  with cable-operated clutch . . . . . 915, 5-speed manual
- 1987-1989
  with hydraulic clutch operation . . . . G50 5- speed manual

The transmission number is an eight digit number, i.e. **73 G 349533**

Digit 1	6-cyl. transmission (**7**)
2	5-speed (**3** or **4**)
3	Model year (**G**=1986)
Digits 4 - 8	Serial number (**349533**)

For more information, see **300 Transmission and Clutch–General**.

SERVICE

Porsche dealers are uniquely qualified to provide service for Porsche cars. Their authorized relationship with the large Porsche service organization means that they are constantly receiving new tools and equipment, together with the latest and most accurate repair information.

The Porsche dealer's service technicians are highly trained and very capable. Unlike most independent repair shops, authorized Porsche dealers are intensely committed to supporting the Porsche product. They share the owner's interest in Porsche value, performance, and reliability. On the other hand, there are many independent shops that specialize in Porsche service and are capable of doing high quality repair work. Checking with other Porsche owners for recommendations on service facilities is a good way to learn of reputable Porsche shops in your area.

Compression test

A test of compression pressures in the individual cylinders will tell a lot about the condition of the engine without the need for taking it apart. The test is relatively simple. It requires a compression tester, spark plug wrench, and a few hand tools.

To obtain accurate results, the battery and starter must be capable of turning the engine at normal cranking speed. The area around the spark plugs should be clean, to avoid getting debris inside the engine when the spark plugs are removed. Because engine temperature may affect compression, the most accurate results are obtained when the engine is at normal operating temperature.