**WARNING: HIGH VOLTAGE!****DISCONNECT THE BATTERY BEFORE INSTALLING OR SERVICING ANY IGNITION SYSTEMS COMPONENTS.**

Failure to follow these instructions and the vehicle owners' handbook and shop manual could result in serious personal injury, death and or damage to property. This part is designed to be installed by a mechanic that is familiar with European automobiles and safety standards.

General Information

If the connector does not match that of the car, you have the wrong model Perma-Tune box for that car. In either case contact Perma-Tune for assistance with exchanges. The dealer you purchased your Perma-Tune from is not authorized to issue warranty replacement or exchange units. Please contact the factory for technical and warranty assistance. If your alternator light glows slightly, chances are your vehicle has a ground fault. Refer to the factory shop manual and the Perma-Tune web site for more information on trouble shooting ground faults. Spark plug gap can be increased to .065", (except on turbo charged cars with special spark plugs that cannot be re gapped) and copper core, unshielded copper spark plug wire can be used without causing radio noise problems. The 911SC903 Perma-Tune module RPM limit is preset to 8,000 RPM. Refer to the Bluetooth Antenna installation instructions on how to change this setting.

SERVICE NOTES

Warning! High Voltage may be present at the ignition coil primary AND/OR secondary circuit. Do not connect a dwell meter or test light to the coil primary terminals. Serious personal injury, death and or damage to property could result. Always disconnect the battery at the negative terminal before working on the car. **To avoid damage to your Perma-Tune and voiding your warranty:** Do not connect 12 volts to the coil. If the ignition coil shows signs of oil leakage, replace it before installing a new Perma-Tune. Do not use a test light or jumper wire on the Perma-Tune, tachometer or ignition coil. Make sure the relay panel ground cable, engine ground cable and battery negative cable connections are not defective. **Beware of misdiagnosis:** Do not troubleshoot the vehicle by swapping components, you may do damage to the parts or the donor vehicle in the process. If the car does not run with the Perma-Tune but does run with another brand of ignition, read the "Onboard Diagnostics" section of this document. Remove any radio noise suppressers or condensers that may be attached to the ignition system, they are not needed and may cause intermittent ignition problems. Check spark plug wires, spark plug connectors (resistor type), and distributor cap for corrosion and carbon tracking. Check the rotor for shorts, defective resistor and/or defective rotor RPM limiter components. Check fuel for water contamination; check fuel pump pressure and fuel injection settings. Unlike the stock ignition systems, Perma-Tune ignitions make no audible sounds when the ignition switch is on. The Gen 5 Perma-Tune makes no heat of its own under normal operating conditions. The aluminum fins on the housing are for aesthetic appeal only.

Installation Instructions

1. Remove the old ignition module from the car according to the shop manual for this car. Perform a bench check of the original ignition unit according to the manufacturers' specifications. Perform any maintenance procedure needed, if the bench check procedure indicates so, to prevent damaging the new ignition module upon its installation and voiding your warranty. In most cases, examining the old ignition box will reveal if a defective ignition coil or a shorted wiring harness caused it to cease functioning. Replace the ignition coil if it is defective and / or correct shorts before installing a new Perma-Tune. We recommend either the Perma-Tune coil P/N SC010 or factory German made coil with your Perma-Tune. High turns ratio "high

performance” coils can cause Voltage flash over in the distributor cap and are not recommended for use with your Perma-Tune.

NOTE: On some cars, the relay panel where the ignition box is located must be unbolted from the car so that the nuts can be retained while the bolts for the ignition box are unscrewed. One of the screws for the relay panel mounting also holds the braided ground strap that provides the ground for the relay panel. This ground strap can be easy to forget to hook back up because when it is removed from the relay panel it will fall forward between the fuel filter and fuel accumulator where it cannot be seen. It is extremely important that this ground strap be reconnected when the relay panel is bolted back to the car. Failure to reconnect this ground strap may result in damage to the car or your new ignition box and will void your warranty.

2. Perform an ignition coil resistance test. Replace the coil if the coil does not test to specifications or if there is evidence of oil or tar leaking from the coil.

Note: To avoid potential damage to your new ignition box and voiding your warranty, we recommend that you replace the ignition coil when the ignition box is replaced. Use only the Perma-Tune coil part number SC010 or the original German made OE coil.

3. Perform the distributor pick up resistive test and mechanical wear tests as instructed in the Porsche 911SC shop manual. If the tests indicate a fault or excessive wear exists, repair the distributor before you plug in your new Perma-Tune. If the distributor and electrical connections are OK, plug in your new Perma-Tune and reconnect the battery.

Note: We recommend that the distributor resistive test measure 600 Ohms plus or minus 25 Ohms and that the rotor end play not exceed 0.025” (0.6 mm).

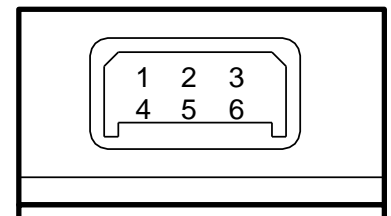
4. Perform the onboard diagnostics checks as described below, then disconnect the battery again.

5. Bolt the ignition box to the relay panel. Then reconnect the battery. Start the engine and verify ignition timing with a strobe light according to the shop manual and engine bay placards for this car. **Note: Some brands of dial back timing lights may not be compatible with Perma-Tune ignitions.**

The connector pin outs below are provided for trouble shooting purposes on the Perma-Tune module. Note: The diagram is of the ignition module sitting on the work bench.

No rewiring of the vehicle is required.

1 = System ground	4 = Coil + Hot (coil - connects to ground at the coil bracket bolt)
2 = Tachometer signal	5 = Power
3 = Signal ground (distributor pin B) Green wire shield	6 = Signal (distributor pin A) Green wire center conductor



BENCH CHECK OF THE IGNITION BOX. (Perma-Tune only)

Pin 1 to Pin 3 = Zero Ohms is normal. These pins are connected together inside the Perma-Tune.

Pin 1 to Housing = Zero to 0.5 Ohms. Greater than 0.5 Ohms between pin 1 and the housing indicates that the brown wire fusible link has blown. This is usually the result of a bad ground connection at the engine to chassis wire.

Pin 1 to Pin 4 = 3,300 Ohms +/- 100 is normal. Readings outside this specifications indicates that the Perma-Tune has been damaged by a defective ignition coil or ignition coil wiring.

Pin 2 to Pin 5 = Zero Ohms is normal. Open circuit reading means the tachometer drive circuit in the module has been burned out. This is usually due to a short to ground of the tachometer signal or a short to power.

Pin 1 to Pin 5 = 200uF to 575uF, this reading requires the use of a meter capable of reading capacitance. Polarity sensitive; Pin 5 is positive. Any other reading indicates damage to the spike suppression circuit of the Perma-Tune. This condition may be caused by battery terminal reversal, defective alternator, ground fault or other wiring problems outside the Perma-Tune.

Refer to the charts to connect the Perma-Tune harness to the correct wires of the distributor installed in your engine.