

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.

Plug and Play Installation

The interface harness makes installation easy by eliminating the need to splice the distributor wires into the engine harness. Simply plug in the distributor, the ignition module and the car harness. The distributor is ready to install into the engine and comes preprogrammed with general use settings. Use the road as your dyno to performance tune the engine. It is easy to customize the RPM limit, mechanical advance timing and vacuum timing control using a free app on your phone. A hose connection between the intake manifold and the distributor replaces the stock vacuum pot with a built in MAP sensor that is fully adjustable to operate as vacuum retard or advance. This kit contains the distributor and interface harness. The ignition module and coil are sold separately.

Self diagnostic LEDs are located on the Gen 5 and Gen 6 Premium Perma-Tune modules. The red LED is a strobe light that blinks with each spark the ignition module generates. These LEDs help with setting up the distributor and can be used for diagnosing the ignition system.

To view the programming tutorial and to download the free programming app, go to www.123ignition.com/support/ or scan the QR code.



INSTALLATION INSTRUCTIONS

These instructions are for Porsche 911 2.0L and 2.2L engines originally equipped with the three pin ignition module and breaker points distributor.

1. Before you start the installation, locate the correct ignition timing specifications for your engine as specified by the factory engine manual. The default timing program in the 914126 are generic to the early 911 cars and can serve as a starting point. There are many different engine configurations within the family of 2.0L and 2.2L Porsche engines so be sure to select the correct specifications for your car. You will need to download and install the Tune+ App on your phone, watch the programming tutorial and read the instructions to become familiar with using the App.
CAUTION: Setting the distributor to drastically wrong timing specifications for the engine can result in severe damage to the engine.
2. Turn off the ignition key and disconnect the battery negative terminal. Unplug the ignition module from the harness. Mark the distributor cap terminal that is connected to cylinder #1 and make a corresponding mark on the distributor housing, then remove the distributor cap from the distributor. Rotate the engine to TDC Cylinder 1 on the compression stroke of the piston and note the position of the rotor when the crankshaft TDC timing mark aligns with the timing pointer. The rotor should be pointing directly at the distributor cap cylinder #1 spark plug wire terminal mark that you made which should correspond to a scribe mark on the distributor housing rim indicating cylinder #1. If the rotor is not pointing at #1, continue rotating the crankshaft until the crankshaft TDC mark again aligns with the timing pointer with the rotor pointing to cylinder #1



Crankshaft at TDC #1
When the distributor rotor is pointing to cylinder #1, the crankshaft pulley #1 mark should align with the pointer.

terminal of the distributor cap. Refer to the factory manual to identify the crankshaft pulley markings.

WARNING: Failure to disconnect the battery negative terminal and to disconnect the ignition module from the harness may cause serious personal injury, death or damage to property.

3. Loosen the distributor bow clamp and remove the old distributor from the engine leaving the bow clamp bolted to the engine. Note that the rotor will rotate slightly as the distributor is removed. This is due to the bevel of the distributor gear. If the bow clamp will not release the distributor, remove the bolt that holds the clamp to the engine. Disconnect the red key power wire at the ignition module. Disconnect the black/violet tachometer wire from the ignition harness. On mechanically injected engines the tachometer connection will be at the ignition coil positive terminal. On carbureted engines, the tachometer connection will be at the distributor. Disconnect the harness ground connection from the ignition coil mounting bracket. Remove the ignition module harness from the engine bay.



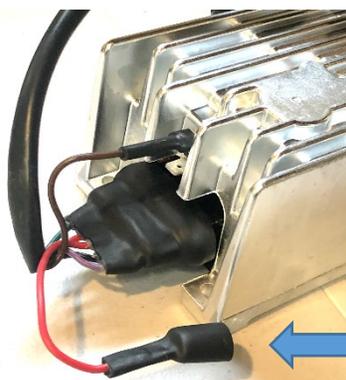
Bow clamp (not included)

NOTE: To prevent foreign objects from being accidentally dropped into the engine, block the distributor hole with a shop rag.

4. Remove the distributor cap from the new distributor and place the new distributor into the engine block without engaging the drive gear. Position the wire cable and hose nipple to a convenient location. The wire harness connector will be at about the seven o'clock position.
5. Rotate the rotor in the distributor so that the rotor is pointing to slightly counter clock wise (CCW) in the same direction of the old distributor when it was removed, then push the distributor all the way into the engine block engaging the drive gear. The rotor on the new distributor should then be pointing to the cylinder #1 of the new distributor cap. This cylinder position will probably be 180 Degrees from the cylinder #1 that is molded into the cap. If the distributor rotor is not pointing to the right position, repeat step 5 until it does. The distributor must be fully inserted into the engine block with the distributor housing against the bow clamp. Install the bow clamp bolt.

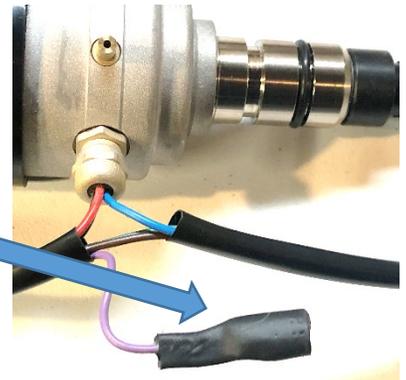
NOTE: Failure to correctly engage the distributor to the crankshaft will result in a no start condition, premature wear of the distributor and rotor or poor engine performance.

6. Route the distributor wire harness with the three pin connector to the ignition module. Plug the red power connector of the harness into the red power wire of the car harness. DO NOT plug in the ignition module yet. Route the coil harness from the distributor to the coil. Connect the 8 MM ring terminal to the coil bracket mounting bolt. Connect the green wire of the harness to the + terminal of the coil and connect the brown wire of the harness to the - terminal of the coil. The "+" terminal of the coil is equivalent to the stock coil terminal 15 or A. The "-" terminal is equivalent to the 1 or B terminal of the stock coil. If your car had a vacuum hose connected to the old distributor, connect the hose to the hose nipple of the Perma-Tune distributor.



Tachometer connection for points type tachometers

Power from Key switch



WARNING: Connecting the module before proceeding with the rest of the installation will result in the ignition coil becoming live during the next step which could result in serious personal injury, death and or damage to property.

7. Reconnect the battery and turn on the ignition power. The blue LED in the distributor Bluetooth window should light up. Open the Tune+ App on your phone and connect the phone to the distributor using Bluetooth as demonstrated in the App tutorial. When the App has successfully connected to the distributor, the blue light in the distributor Bluetooth window will go out. Program the distributor with the correct factory timing specifications for your engine.

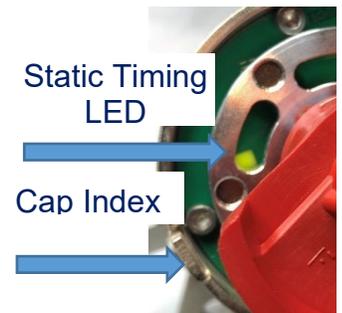


NOTE: The factory specifications may be given in degrees of distributor position and distributor RPM and the App is calibrated for crankshaft degrees and crankshaft RPM. You must double the distributor figures to enter specifications into the App in crankshaft figures.

NOTE: If your engine had a vacuum retard function, this function is now automatic and does not require a vacuum connection. You may connect the vacuum hose to the MAP sensor and program it to compensate for load.

NOTE: The Bluetooth default PIN is 1 2 3 4 .

8. Remove the rotor in order to set the static engine timing. There is a green LED on the circuit board mounted underneath the magnet rotor that is visible through the slots in the magnet rotor. This LED will light up indicating when the ignition module will make a spark. Rotate the distributor housing CCW until the green LED just lights up. Turn off the ignition switch.



WARNING: Failure to turn off the ignition switch before proceeding to the next step may cause serious personal injury, death or damage to property.

9. Install the rotor and distributor cap that were provided with the Perma-Tune distributor. Transfer the spark plug wires from the old distributor cap to the new distributor cap. Note the cylinder #1 location from step 5. Plug in the ignition module to the harness three pin connector and connect the brown wire of the harness to the spade terminal on the ignition module. Connect the black/violet tachometer wire to wherever it was removed from in step 3. On mechanically injected engines, connect the tachometer black/violet wire to the coil positive terminal with the green wire of the new harness. On all other cars, connect the tachometer black/violet wire to the violet wire of the new harness located at the distributor.
10. Clear the engine bay of tools or any foreign objects and keep yourself away from moving parts. Turn the ignition switch to the run position. If your car is equipped with a Perma-Tune Gen 6 Premium ignition module, the blue LED status indicator on the module should illuminate. Start the engine and note the flashing red strobe LED of the ignition module as the starter is engaged. While the starter is turning, the red LED should flash with each spark generated by the ignition module. When the engine is idling, the LED will appear to glow dimly and get brighter as the engine RPM increases. While the engine is running, the red LED should not flicker but rather change in brightness with the engine RPM.

WARNING: Failure to clear the engine bay of tools, foreign objects and or body parts may result in personal injury, death and or damage to property.

CAUTION: Failure to connect the brown harness wire to the module may result in a no start condition and could cause damage to the ignition module and or distributor.

11. Using an engine timing light, adjust the engine timing to the correct factory idle specifications by rotating the distributor and then tighten the bow clamp. Refer to your engine manual to determine if the vacuum hose should be connected to the distributor or blocked off in order to obtain the correct initial engine idle setting.
12. Verify the mechanical advance function using your timing light. If so directed by the factory engine manual, reconnect the vacuum hose and verify the vacuum function using your timing light. Some engines require vacuum advance functions and others require vacuum retard functions. There is no need to connect a vacuum retard hose to the distributor since the MAP sensor is disabled automatically below 1,500 RPM. The distributor timing functions should conform to the factory specifications for your car found in the factory engine manual. Adjust the timing functions using the Tune+ App on your phone to attain the factory specifications.
13. Using your timing light RPM function, verify that the tachometer is reading correctly. At this point the car can be test driven or put on a chassis dyno in order to fine tune the engine ignition timing parameters using the Tune+ App. The chart below converts engine manifold pressure, measured in kPa by the App, to engine gauge values.

Conversion Chart Key

kPa = kilo Pascal, Absolute

"HG Gauge Vacuum

cmHG Gauge Vacuum

"HG A = inches Mercury, Absolute

PSIA = Pounds per Square Inch, Absolute

PSIG = Pounds per Square Inch Gauge pressure

kg/cm² Pressure

Bar A = Absolute Bar Pressure

Bar Boost = Gauge Pressure

kPa	" HGk	cmHG	"HG A	PSIA	PSIG	kg/cm ²	Bar A	Bar Boost
10	26.58	67.5	2.953	1.45				
20	23.62	60.0	5.90	2.9				
30	20.67	52.5	8.86	4.22				
40	17.72	45.0	11.81	5.8				
50	14.77	37.5	14.76	7.25				
60	11.81	30.0	17.72	8.7				
70	8.85	22.5	20.67	10.15				
80	5.9	15.0	23.62	11.6				
90	2.95	7.36	26.58	13.4				
100	Zero	Zero	29.53	14.5	Zero	Zero	1	Zero
110			32.48	15.95	1.45	.1	1.1	.1
120			35.44	17.4	2.9	.2	1.2	.2
130			38.39	18.85	4.35	.3	1.3	.3
140			41.34	20.3	5.8	.4	1.4	.4
150			44.29	21.75	7.25	.5	1.5	.5
160			47.25	23.2	8.70	.6	1.6	.6
170			50.20	24.65	10.15	.7	1.7	.7
180			53.15	26.1	11.6	.8	1.8	.8
190			26.10	27.55	13.05	.9	1.9	.9
200			59.06	29.00	14.5	1.0	2	1