

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 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 green LED is a status indicator and 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 2.7 L, mechanically injected engines originally equipped with the three pin ignition module.

1. Before you start the installation, locate the correct ignition timing specifications for your engine as specified by the factory engine manual. There are many different engine configurations within the family of mechanically injected 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 the wrong timing specifications for the engine can result in severe damage to the engine.

2. 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 terminal of the distributor cap.

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

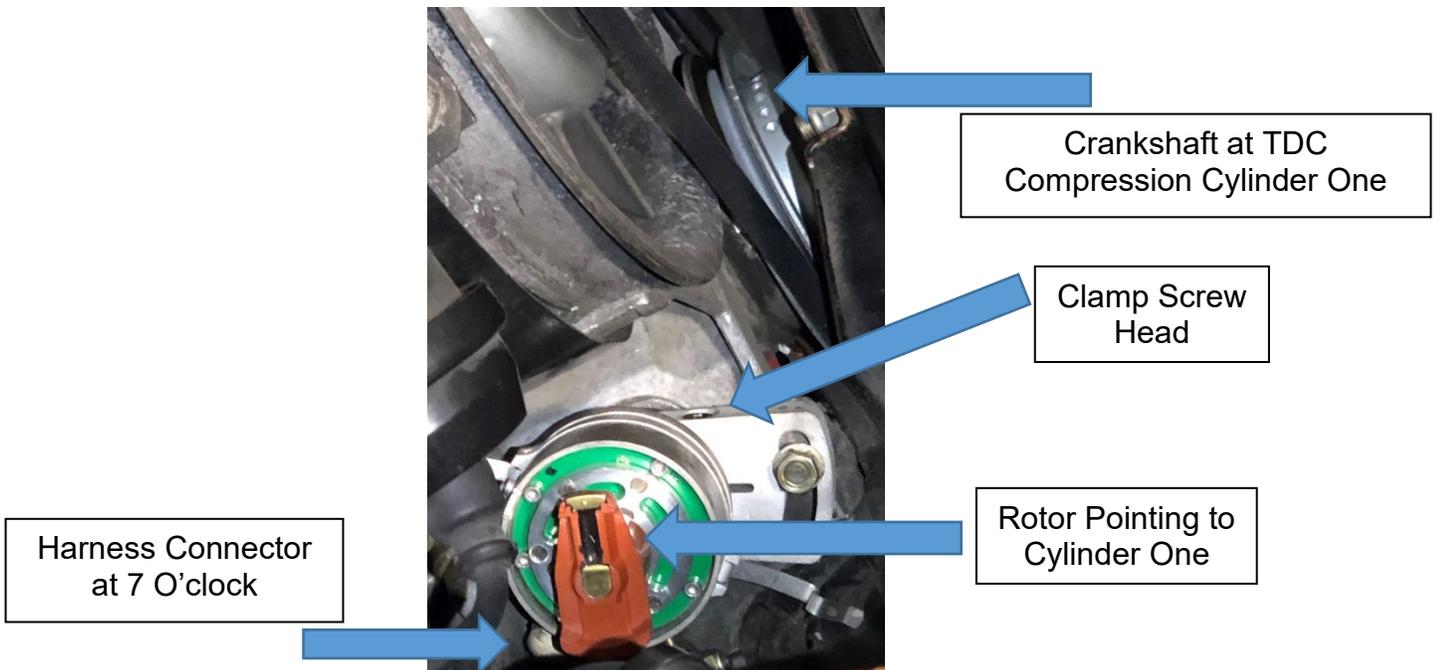
3. Turn off the ignition key and disconnect the battery. Remove the old distributor from the engine. Remove the ignition module harness and note the power connection at the ignition module and the tachometer connection at the distributor. On some cars, the tachometer may be connected to the coil + terminal.

WARNING: Failure to disconnect the battery may cause serious personal injury, death and or damage to property.

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

- Remove the distributor cap from the new distributor and place the new distributor into the engine block without engaging the drive gear. Position the hold down clamp, wire cable and hose nipple to a convenient location. The hold down clamp should be positioned against the distributor housing so that when the distributor is fully inserted into the engine, the engine hold down clamp stud is in the middle of the hold down clamp slot. The clamp should be installed onto the distributor with the Allen head screw facing inboard so that it can be tightened down later. Be sure the hold down clamp is firmly seated against the distributor housing. The wire harness connector will be at about the seven o'clock position. Refer to the picture.

CAUTION: Failure to seat the hold down clamp against the distributor housing may result in damage to the distributor and or crankshaft gear.



- Disengage the distributor gear from the crankshaft and rotate the rotor in the distributor so that the rotor is pointing to slightly counter clock wise (CCW) to 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 3 until it does. Install the hold down clamp nut and washers. The idle timing setting will be set by turning the distributor in the clamp and then the Allen head screw will be tightened.

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.

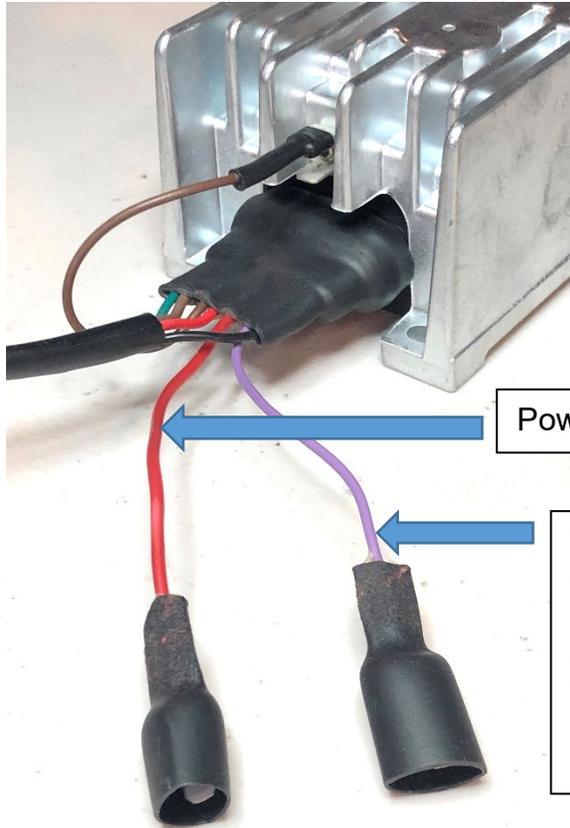
- Route the distributor wire harness with the three pin connector to the ignition module. Plug the red power connector of the harness into the red power wire of the car harness. DO NOT plug in the ignition module yet. Route the coil harness from the distributor to the coil. Connect the 8 MM ring terminal 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. If your car had a vacuum hose connected to the old distributor, connect the hose to the hose nipple of the



Perma-Tune distributor. The vacuum retard function is automatic with the new distributor and the vacuum advance function of the distributor MAP can be used for load sensing.

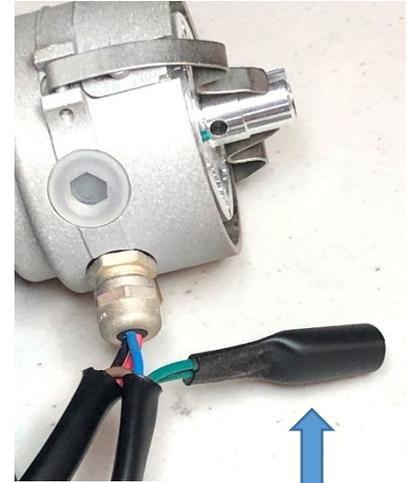
7.

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.



Power from Key switch

To tachometer for carbureted, CIS injection engines and all other tachometers not used with mechanical injection.



To tachometer for mechanical injection engines with tachometer P/N 914 641 301 10 **ONLY**. This tachometer uses the P/N 0 227 990 001 ballast.

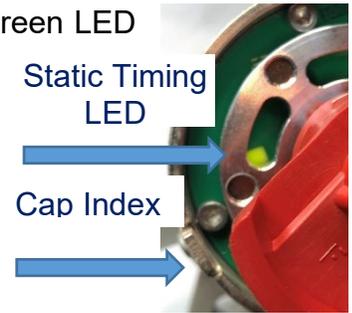
8. Reconnect the battery and turn on the ignition power. The blue LED in the distributor Bluetooth window should light up. Open the Tune+ App on your phone and connect the phone to the distributor using Bluetooth as demonstrated in the App tutorial. When the App has successfully connected to the distributor, 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 requires a vacuum retard setting, enter a negative number to represent the number of retard degrees.

9. 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. While doing so, also press the rotor in a CCW direction in order to remove possible free play in the gear drive. 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.

10. 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 in the correct firing order. Be sure to observe the new cylinder number one position of the cap 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. 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 5 or Gen 6 Premium ignition module, the green LED status indicator on the module should flash one second on and one second off to indicate that the module is active and ready to run. 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, there should be no fluttering, flashes or interruptions visible in the red LED.

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 within the range of the slot in the hold down clamp and then tighten the bolt. 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. 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. 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.

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/cm2	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
kPa	" HGk	cmHG	"HG A	PSIA	PSIG	kg/cm2	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