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For warranty support, contact Perma-Tune directly, do not return items to the store.

911CF126 DISTRIBUTOR WITH HARNESS

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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.
NOTE: This kit is for use with Perma-Tune ignition modules only. The distributor harness 3 pin connector will not fit any other brand ignition modules.

To view the programming tutorial, scan the QR code to the right. Search 123\TUNE at the App store to download the free Perma-Tune App.
NOTE: Do not follow installation instructions found on YouTube, follow these instructions only.

INSTALLATION INSTRUCTIONS

These instructions are for Porsche 911 2.7 L, Constant Injection System (CIS) engines equipped with the Perma-Tune three pin ignition module.

1. Before you start the installation, you may want to 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 drastically wrong timing specifications for the engine can result in severe damage to the engine or poor performance.
2. Turn off the ignition switch, disconnect the battery and 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. You may reconnect the battery and use the starter to turn the crankshaft. The starter motor should turn the distributor rotor in the clockwise direction. If the rotor turns counterclockwise, then you have the wrong Perma-Tune distributor for this car. 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. Refer to the factory manual to identify the crankshaft pulley markings.
   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 trigger wire and vacuum hose from the old distributor and then remove the distributor from the engine. Plug the vacuum hose. Disconnect the harness ground connection from the ignition coil mounting bracket and remove

the wires from the coil. Disconnect the two pin ignition harness connector located near the ignition module connector. This connector will have a red key power wire and a black wire with a violet stripe that is the tachometer signal wire. Later you will connect the new harness here. Remove the old ignition system harness from the engine bay.

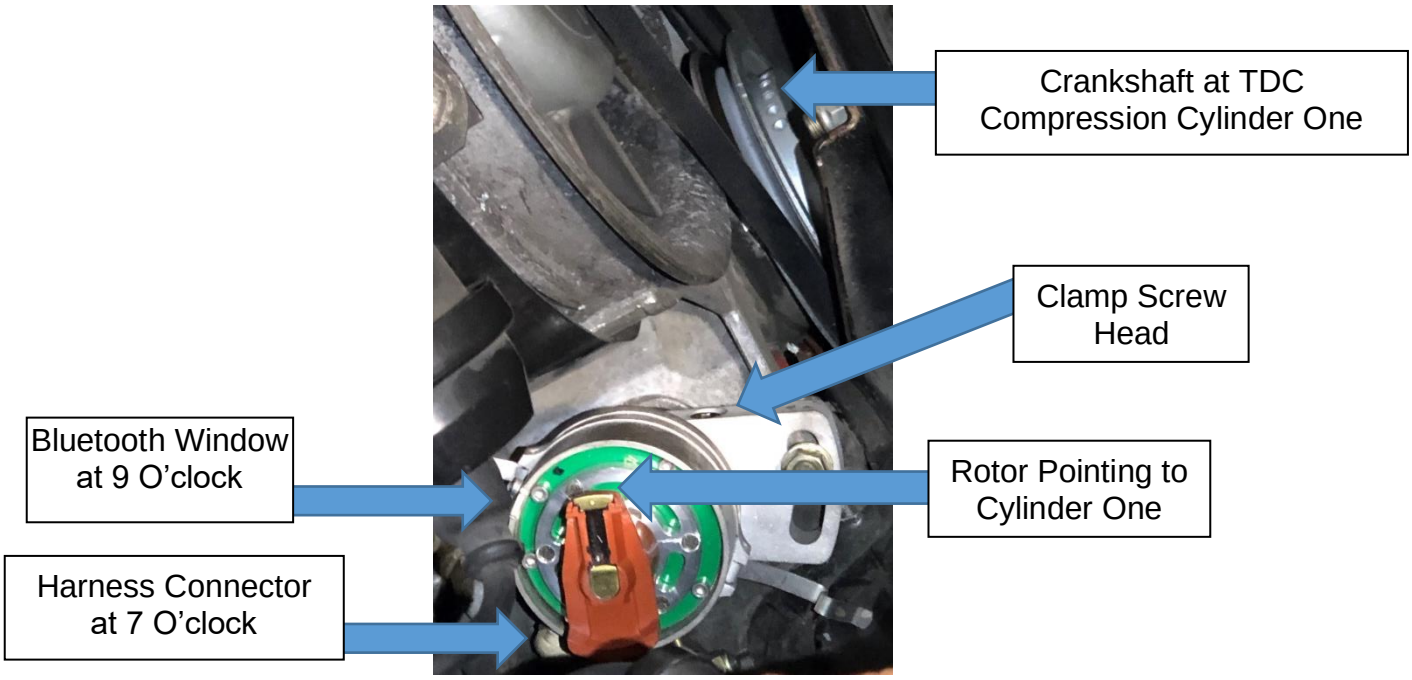
WARNING: Remove the negative terminal of the battery. Failure to disconnect the battery may cause serious personal injury, death and or damage to property.

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

NOTE: Do not move the crankshaft after the old distributor has been removed from the engine or the cylinder #1 TDC position of the crankshaft will have to be reset before installation of the new distributor.

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 hold down clamp, wire cable and hose nipple to a convenient location. Later in the procedure you will rotate the distributor housing counterclockwise (CCW). Position the housing so that the wire cable and hose nipple will allow the housing to rotate CCW. 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 screw head facing inboard so that it can be tightened down later. Be sure the hold down clamp is firmly seated against the bottom of the distributor electronics 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.



5. Rotate the rotor in the distributor so that the rotor is pointing to slightly CCW of the same location as the old distributor when it was removed. Then push the distributor all the way into the engine block engaging the drive gear. The rotor will move slightly as the distributor gear engages the

crankshaft 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. Install the hold down clamp nut and washers. The idle dynamic timing value will be set by turning the distributor housing within the clamp later in this procedure.

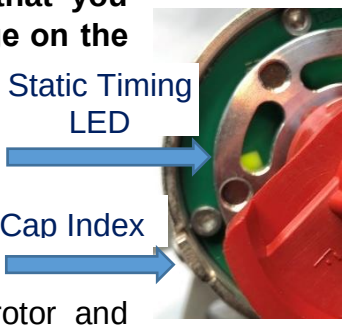
NOTE: Failure to correctly engage the distributor to the crankshaft will result in a no start condition, premature wear of the distributor and rotor or poor engine performance.

6. Route the distributor wire harness with the three pin connector to the ignition module along the same route as the original harness. Plug in the two pin connector of the new harness with the red and violet wire into the chassis harness two pin connector with the red and back/violet wire. DO NOT plug in the ignition module yet. Route the coil harness from the distributor to the coil along the same path as the original harness. 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 old distributor had a manifold vacuum hose connected to it, do not connect it to the MAP sensor yet. Instead, temporarily block off the hose. The vacuum hose is no longer needed for the retard function, it is automatically controlled by the new distributor.

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. You should now be able to view and edit the curves currently programmed into the distributor.

NOTE: The Bluetooth default PIN is 1 2 3 4. We recommend that you customize your PIN in the "Immobilizer" section of the setting page on the App.



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 lights up but no farther.
9. Turn off the ignition switch and disconnect the battery. Install the rotor and distributor cap that were provided with the Perma-Tune distributor. The cap index on the distributor can be adjusted for a black or red distributor cap. Refer to the picture. Use a 2.5 mm Allen wrench to loosen the retaining bolt. Slide the tab up for a red cap and down for a black cap, then tighten the bolt. 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. Connect a timing light to the engine. Clear the engine bay of tools, lights or other foreign objects.

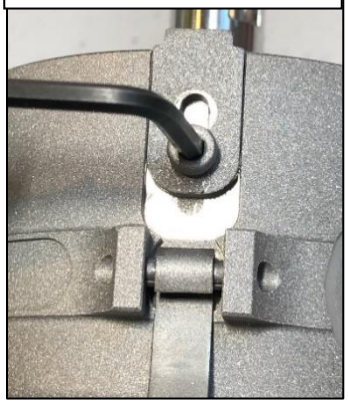
WARNING: Failure to turn off the ignition switch and disconnect the battery may cause serious personal injury, death or damage to property.

WARNING: Failure to clear the engine bay of tools, lights or other 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.

NOTE: The distributor three pin connector will connect to the Perma-Tune brand ignition module only.

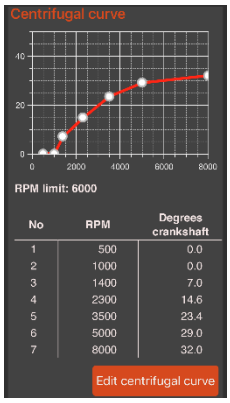
Cap Index Slide for changing between Brown and Black Cap.



10. Connect the battery and 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 should illuminate and the blue LED on the distributor should illuminate. Connect your phone to the App and switch to the Dashboard screen, pictured. The red light on the bottom left side of the App Dashboard screen should turn green, the Voltmeter should show battery Voltage and the Temperature gauge should show ambient temperature. Switch the App to the Curves screen. Note the Degrees Crankshaft at the idle RPM of your engine. If the Degrees Crankshaft value is not already set to zero, set it to zero. You may return to the original value after completing the dynamic timing in the next step.

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

11. If you are using the MAP sensor, temporarily disconnect the vacuum hose and plug it. 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. Check the engine timing using an engine timing light, the timing should be close to zero degrees TDC. Remaining clear of moving parts, adjust the engine timing to zero degrees TDC by turning the distributor body while viewing the TDC pulley mark. The App Degrees Crankshaft curve values will now be the same as what the timing light shows. Turn off the ignition switch and disconnect the battery. Tighten the clamp bolt on the distributor hold down clamp and connect the manifold vacuum hose to the distributor MAP sensor hose connection.

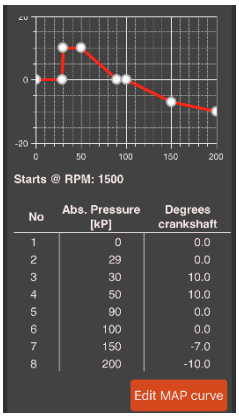


WARNING: Failure to stay clear of moving parts may result in personal injury, death and or damage to property.

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

CAUTION: If you are using the MAP sensor, disconnect the vacuum hose and plug it before setting the idle timing. Leaving the MAP sensor connected will cause you to set the idle timing incorrectly.

12. Connect the battery and turn the ignition switch to the run position. Open the App to the Curves screen. You may return the idle RPM Degrees Crankshaft value back to the value that you noted in step 10 or you may want to program the distributor with the factory recommended timing curves for your engine or you may want to make your own curves. If you want to use the factory manual curves and the manual calls for setting the idle timing to a value something other than zero degrees with the vacuum hose disconnected and blocked, add that value to the mechanical curve figures in the App in crankshaft degrees. If your engine had a vacuum retard function, this function is now automatic and does not require a vacuum connection. The vacuum connection to the MAP sensor can be used to compensate the mechanical curve values for load or can be set to the factory manual values. If you do not want to use the MAP sensor, plug the vacuum hose or set the App MAP curve values to all zeros.



CAUTION: If you do not use the MAP sensor, plug only the manifold side of the hose, do not plug the MAP sensor hose nipple on the distributor. Plugging the MAP sensor will block the sensor from sensing atmospheric pressure and may cause incorrect ignition timing.

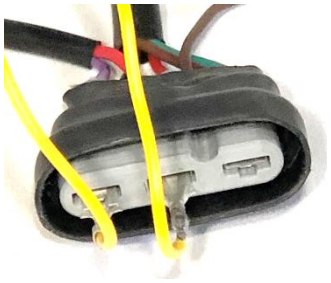
NOTE: Do not change the mechanical idle advance value shown by the timing light by turning the distributor body or the App curves will no longer be accurate. Use the App to change the idle timing.

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

13. Start the engine and verify the mechanical curve and MAP curve functions using a timing light. 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 App. It is a good idea to save a copy of the final distributor curves in your phone or PC for future reference. At the end of this document there is a conversion table that converts diagnostics and dashboard gauge values to kPa values used in the App.

Bluetooth PIN and Reboot Function

If the App cannot access the distributor because you have forgotten what you changed your Bluetooth PIN code to, this procedure will restore the PIN code to the default setting of 1 2 3 4. If the App cannot pair to the distributor Bluetooth, check to see if the Bluetooth LED is flashing. If so, this procedure will reboot the distributor Bluetooth module.



1. Close the App on all devices (very important).
2. Turn off the engine key.
3. Disconnect the distributor harness connector from the ignition module. Jumper pins B (power) and C (signal) as shown in the picture.
4. Turn ON the ignition key. The blue LED on the side of the distributor will begin to flash in about 10 seconds.
5. After about 30 seconds, the blue LED will stay on indicating that the reboot procedure is complete.
6. Turn OFF the ignition key, remove the jumper and plug the connector back into the ignition module.
7. Now the PIN code is reset to 1234, the Bluetooth is rebooted and the distributor is ready to function normally.

The conversion chart is used for converting gauge values to absolute manifold pressure in kPa values used by the 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