

COMMON QUESTIONS AND ANSWERS

Q. The engine will not start or runs rough. What is the problem?
A. Check all connections to insure that they are tight, and in the proper location. Visually check and measure all grounds. Remove paint and corrosion from around the distributor hold down bracket. Make sure that the distributor red and black wire are connected properly. The Ignitor III in the Flame-Thrower distributor will shut down if the wires are incorrectly attached. The Ignitor III is designed to sense high current levels. Check all wires for shorts, correct polarity and that the ignition coil's primary resistance level is acceptable.

Q. The vehicle will start, but then dies. After waiting, it starts. What is wrong?
A. The Ignitor III in the Flame-Thrower distributor may have a "Low Voltage Problem." If the voltage supplied to the red distributor wire is insufficient, the system may run for a period of time, and then shut down as the voltage drops due to engine heat. The period may vary from minutes to hours depending on available voltage and wiring condition.

Q. How do I check for a "Low Voltage Problem" or determine if I am getting adequate voltage?
A. To quickly test for a "Low Voltage Problem" or for adequate voltage (**Note: This is only a test and is not intended as a permanent fix**) attach a jumper wire from the positive battery terminal to the positive terminal of the coil. Try to start the vehicle. If the vehicle starts, low voltage is present. **Note: If the engine starts. The engine will not turn off unless the jumper wire is removed from the positive battery terminal.** Check connections and insure all external resistors have being removed.

Q. How do I check my coil for primary resistance?
A. Remove all wires from the coil. Set the ohmmeter to the lowest scale. Attach one lead of the meter to the positive coil terminal. Attach the other lead to the negative coil terminal. The Ignitor III in the Flame-Thrower distributor is compatible with coils having a resistance of 0.32 ohms or greater.

Q. May I modify the length of the wires?
A. Yes, you may cut the wires to any length your application requires. You may also add lengths of wire if needed (20-gauge). Make sure that all wire splices are clean and the connections are tight.

Q. Will the Ignitor III in the Flame-Thrower distributor work with aftermarket capacitive discharge boxes?
A. **We recommend the Ignitor or Ignitor II as a trigger source for a capacitive discharge box.**

Q. How can I receive additional help?
A. Check our web site for current trouble shooting tips and up to date technical information. Log on to www.pertronix.com. You may also contact our tech line at 909-547-9058.

LIMITED WARRANTY

PerTronix, LLC. warrants to the original Purchaser of its Flame-Thrower Billet distributor that the product shall be free from defects in material and workmanship (normal wear and tear excluded) for a period of 12 months from the date of purchase (30 months when Ignitor III is purchased separately).

If within the period of the foregoing warranty PerTronix finds, after inspection, that the product or any component thereof is defective, PerTronix will, at its option, repair such products or component or replace them with identical or similar parts PROVIDED that within such period Purchaser:

1. Promptly notifies PerTronix, in writing, of such defects.

2. Delivers the defective product or component to PerTronix (Attn: Warranty) with proof of purchase date; and

3. Has installed and used the product in a normal and proper manner, consistent with PerTronix printed instructions

THE FOREGOING LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE FURNISHING OF A REPAIR OR REPLACEMENT COMPONENT OR COMPONENTS SHALL CONSTITUTE THE SOLE REMEDY OF PURCHASER AND THE SOLE LIABILITY OF PerTronix WHETHER ON WARRANTY, CONTRACT OR FOR NEGLIGENCE, AND IN NO EVENT WILL PerTronix BE LIABLE FOR MONEY DAMAGES WHETHER DIRECT OR CONSEQUENTIAL.



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VW & ALPHA ROMEO
CAST DISTRIBUTOR
INSTALLATION INSTRUCTIONS

GENERAL INFORMATION

1. See our website (www.pertronix.com) for latest product information.

2. **IMPORTANT:** Read all instructions before starting installation.

3. **WARNING!!!** DO NOT USE WITH SOLID IGNITION WIRES.

4. The Ignitor III used in our Flame-Thrower Cast distributor may not be compatible as a trigger for other electronic boxes.

5. The Ignitor III Rev-Limiter is preset at 5500 RPM's. The Rev-Limiter can be user set to a minimum 4000 and a maximum 9000 RPM's.

6. All external resistors must be removed to achieve optimum performance from the Ignitor III ignition system.

7. The Ignitor III is compatible with coils that have a minimum of 0.32 ohms of primary resistance.

DISTRIBUTOR REMOVAL

1. Crank the engine until the first cylinder in the firing order is at TDC "Top Dead Center" on its compression stroke. The timing indicator should point to TDC or 0.

2. Remove the distributor cap, and make sure that the rotor is pointing towards the contact on the distributor cap for the first cylinder in the firing order.

3. Disconnect the battery negative (-) cable.

4. Disconnect all wires and hoses attached to the distributor.

5. Remove the distributor hold down.

6. Remove the distributor and drive shaft spring.

7. VW's only: Verify that the distributor drive shaft slot is perpendicular to the engine case seam. See figure A.

8. Check the original distributor for excessive wear, or potential problems.

9. Remove the distributor hold-down clamp from the original distributor for use with the new distributor.

DISTRIBUTOR INSTALLATION

1. Install the original distributor hold-down clamp onto the new distributor housing.

2. The clamp should sit flat against the distributor collar.

3. Remove the Flame-Thrower distributor cap.

4. Turn the distributor drive tang so that it lines up with the distributor driveshaft slot.

5. Install the distributor driveshaft spring (VW distributor only).

6. Set the distributor into the engine. Tighten the hold down and slightly tighten the distributor clamp. The distributor hold-down should sit completely flat on engine block.

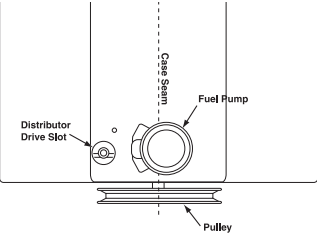


Figure A

7. Install the distributor cap onto the housing. Turn the housing so that the terminal, that represents the first cylinder in the firing order, lines up with the rotor contact terminal.
8. Clip down the distributor cap and install the spark plug wires in the proper firing order. Beginning with the number one cylinder move clockwise 1 - 4 - 3 - 2. **WARNING!!! DO NOT USE WITH SOLID CORE SPARK PLUG WIRES OR COIL WIRE.**
9. See Wiring Instructions.

WIRING INSTRUCTIONS

The Flame-Thrower III distributor can be used in conjunction with most ignition coils rated at 0.32 ohms or greater. For optimum performance we recommend our Flame-Thrower III canister style or HC e-core coil.

Many vehicles came equipped with ballast resistors or resistance wires. To achieve optimum performance we recommend removal of these components. Determine the proper wire length, and attach the provided terminals. (Use a wire crimping tool to achieve an adequate connection).

1. Attach the **Red** wire to the coil positive terminal or a 12-volt ignition source. See Figure B.
2. Attach the **Black** wire to the coil negative terminal.
3. Check to insure correct polarity and that all connections are tight.
4. Reconnect the battery negative cable.

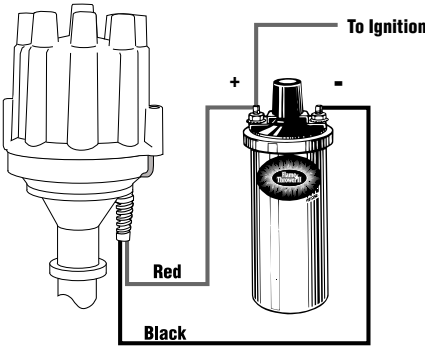


Figure B

5. NON-VACUUM ADVANCE DISTRIBUTORS

- Locate and remove the vacuum hose that was previously attached to the vacuum advance canister. Plug off the vacuum port.
- Set Ignition timing to OEM specifications.

VACUUM ADVANCE DISTRIBUTORS

- Locate and temporarily plug the end of the vacuum hose that was previously attached to the vacuum advance canister.
- Set Ignition timing to OEM specifications. After setting initial timing the hose will be unplugged and attached to the vacuum advance on the distributor.
6. Once the ignition timing is adjusted the distributor clamp should be tightened completely. **Note: Hold down clamp must be free of paint and corrosion, this will insure that a proper ground is made to the engine block.**

REV-LIMITER SETTING PROCEDURE

1. Remove distributor cap and rotor.
2. Turn the ignition key to the 'ON' position. Do not try starting the engine.
3. Turn the Rev-Limit dial clockwise until it stops. Turn the dial counterclockwise until it stops. A slow blinking of the LED indicates that the setting procedure has been initialized and that the Rev-Limit can be set.
4. Turning the dial clockwise sets the Rev-Limit. After turning the dial, pause and watch the LED for verification of the Rev-Limit setting. Long flashes indicate 1000 RPM's and short flashes indicate 100 RPM's. For example, 6 long flashes followed by 2 short flashes means the Rev-Limit is 6200 RPM's. Continue turning the Rev-Limit dial until the desired Rev-Limit is reached. **NOTE: Leaving the Rev-Limit dial in the full counterclockwise position disables the Rev-Limiter.**
5. Let the LED sequence thru at least three complete cycles. This verifies the correct setting and prepares the unit for permanent storage of the Rev-Limit.
6. Turn the ignition key off, this signifies to the Ignitor III that the Rev-Limit procedure is complete. **Note: The Ignition key MUST be turned off or the engine will not start.**
7. Your rev limit is now set and will not change until you go through this procedure again.
8. Re-install cap and rotor.

NOTE: Setting the rev limit may be done effectively and easily on a bench or table. Connect the module to a 9-volt battery as shown in figure 2. Then follow the setting procedure outlined above.

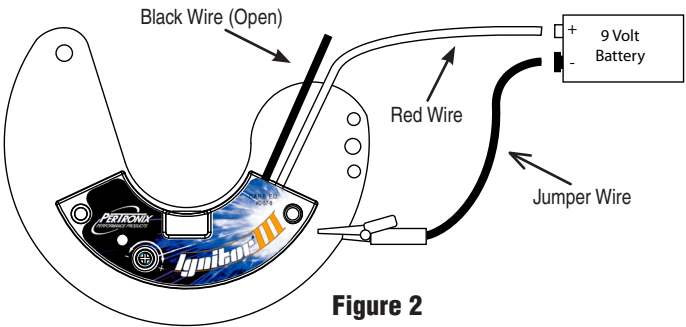


Figure 2

REV-LIMITER SPECIFICATIONS

Settings	RPM'S
Minimum	4000
Maximum	9000
Factory Setting	5500

GROUND TESTS

It is imperative that the power and grounds be checked as part of the installation procedure. After installing the Ignitor III module and the distributor and with the distributor in the engine, use a digital multi-meter to measure the resistance from the aluminum plate holding the module to battery (-), the net resistance must be less than 0.2 ohms. (Set meter to lowest ohms setting). The net resistance is the meter reading minus the resistance of the meter leads. If the net resistance is greater than 0.2 ohms, the source of the faulty ground must be found and fixed. Usually the source of the bad ground is easily found by holding one probe on an original location and moving the second probe toward the static probe. Where the resistance drops identifies the source.

Maximum resistance from Ignitor plate to battery negative terminal.	0.2 ohms
EXAMPLE:	
Resistance from Ignitor plate to battery negative (-) terminal.	0.4 ohms
Resistance of meter leads	0.2 ohms
After subtracting meter lead resistance, your net resistance is:	0.2 ohms

VOLTAGE TEST

1. (Do not disconnect wires from Ignition coil). Place ignition switch in the "off" position.
2. Connect a jumper wire from negative (-) terminal of the coil to a good engine ground. **Note: For coils with less than 1.0 ohms of primary resistance add a 1.0 ohm ballast resistor in jumper wire.**
3. Connect the voltmeter red lead to the positive (+) terminal of the coil and the black lead to a good engine ground.
4. Turn the ignition switch to the "on" position and note voltage reading on the voltmeter. Quickly read the voltage and turn ignition "OFF". Leaving ignition "ON" for an extended period could result in permanent damage to the coil.
5. SEE CHART BELOW FOR SPECIFICATIONS.
- Note: Low voltage can be caused by poor connections, poor contacts in the ignition switch, ballast resistor, and or a resistance wire in the wiring harness (Factory Installed).**

	Minimum	Maximum
Ignition Switch "ON" (with jumper wire)	8.0V	N/A
Cranking (with jumper wire)	8.0V	N/A