INSTALLATION INSTRUCTIONS

This distributor is equipped with a digital inductive ignition control module that features a high-performance digital microprocessor-controlled circuitry. The single stage engine protection rev-limiter is easy to use and set. The tachometer lead also produces a 25% duty cycle square wave signal that can be used with both multifunction tachometers and most popular aftermarket EFI systems that require a 20-40% duty cycle square wave tachometer input signal. The automatic ignition timing retard feature provides easier and quicker hot restarts by reducing the load on the starter and electrical system especially when engines have higher static compression ratios.

Contents Include:

Billet Distributor Assembly
Wire Retainer with Screws
Mechanical Advance Curve Kit
Vacuum Advance Lock Out Kit
Wiring Harness Pigtail
Block O-rings - (Not included in all applications and not required. Engine block requires edge chamfering for proper installation).

Removal / Installation

1. If the distributor to be replaced has not already been removed from the engine, remove its cap. Do not remove the spark plug wires at this time.
2. Crank the engine manually until #1 cylinder is at TDC position. Remove the cap with the wire still attached and note the rotor blade aims at a fixed point on the engine or firewall. Note this point for future reference.
3. Unplug all external connectors coming from the distributor.
4. Now put the existing cap back on and note/mark which spark plug wire the rotor (blade) is pointing at. Then number the wires according to cylinder and remove the wires. If in doubt you can leave the wires connected to the old cap, transfer them to the new cap and distributor later in the process (see point # 9).
5. Loosen and remove the distributor hold-down bolt and clamp. Lift the old distributor out. At this point the rotor may spin and move from its position. This is because of the distributor gear.
6. Install the gasket on the new distributor and apply lubricant to gear. Lower the new distributor into position. The rotor should be aimed at the same fixed point as the rotor from the old distributor. After the new distributor has been lowered into place, you may find that it hasn't fully seated against the intake manifold. This indicates that the lower end of the distributor shaft is not properly aligned with the oil pump drive rod. Do not attempt to force the distributor into position.
7. Reinstall the hold-down clamp and thread the bolt just enough to hold the distributor in place, manually rotate the engine until the distributor drops down into place, this aligns the oil pump drive.
8. With the distributor properly seated, tighten the hold-down bolt just enough so that the distributor is held in place, but can still be rotated with a little effort.
9. Remove the plug wires one at a time from the old cap and install them in the corresponding positions of the new cap. After all wires have been transferred, verify that the wire in the terminal post is aligned with the rotor leads to #1 cylinder.
10. Replace the distributor cap.
11. Connect the supplied harness to the distributor and ignition coil as noted below.

Electrical Connections:

Red wire connects to the ignition coil positive (+) terminal.
Orange wire connects to the ignition coil negative (-) terminal.
Black wire is the isolated ground and connects to a proper chassis or engine ground.
Gray wire is for tachometer connection which also produces a 25% duty cycle square wave signal that can be used with multifunction tachometers and most popular aftermarket EFI systems.

Ignition Coils:

The digital control module in this distributor must be properly matched with an ignition coil that has a primary resistance of 0.3–0.7 Ohms and a primary inductance of 4–7 milli Henrys. If necessary, check with the coil manufacturer for their specifications. It is highly recommended that you use the **ALL81234** Canister style or **ALL81232** high output Coil.

A point style ignition coil or a ballast resistor should not be used with this distributor, as both the coil and control module may be damaged. Do not use a coil that is specifically designed for 6 or 7 Series CD type ignition systems. Failure to use the correct coil with this distributor will result in damage to the digital control module will void all product warranties.

NOTE: Make sure that a full 12-volts are always present at the ignition coil positive (+) terminal, key on engine off, during engine cranking and while the engine running. If necessary, run a new 14ga wire from the switched positive source in the fuse box to the coil positive (+) terminal, protected with a 15 amp fuse.

Protection:

Welding: To avoid damaging the control module's digital circuitry, **ALWAYS** disconnect the harness connector on this distributor as well as the tachometer wire when welding on the vehicle.

Battery and Charging System:

The digital control module in this distributor is designed for a negative ground, 12-volt electrical system.
Do not use on a positive ground or 16-volt systems.

Automatic Start Ignition Timing Retard:

The start ignition timing retard feature with this distributor is fully automatic, requiring no input or any type of programming. It provides 4° of crank shaft timing retard during cranking mode. The timing retard is fully dialed out by 300 engine RPM. This provides for easier and quicker hot restarts and lowers the load on the starter / electrical system on engines with high static compression ratios.

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Rev-Limiter:

The digital control module in this distributor features a built-in "soft touch" rev limiting control by dropping the spark to individual cylinders resulting in a smooth activation.

Note: As delivered from the factory, the rev limiting function of the digital control module turned off and is designed to be used with carbureted engines. If the engine is equipped with a fuel injection system, the rev limiting function in this distributor's control module must be left off and you must set and control the engine rev limiting function via the fuel injection system's software.

Note: Rev limiter settings require the use of the separate gray tachometer output lead wire, **NOT** the coil negative (-) lead.

The gray tachometer output lead wire has a male 1/4" quick disconnect terminal. It may be handy if you have a mating female terminal or a T-adapter wiring lead made up ahead of time when setting the rev limiter, especially if you are using an aftermarket tachometer that requires a 20-40% square wave input signal. It may also be easier with the help of a second person.

How to Activate the Rev-limiting Function:

Turn the ignition key on without starting the engine, within 10 seconds, tap the gray tachometer output lead wire to ground three (3) times. If successful, the tachometer will sweep up to 1000 RPM to show that the rev limiting function is activated. If the sweep function does not happen, turn the ignition **OFF** and then repeat this procedure.

Note: The confirmation tachometer sweep function only works with an aftermarket tachometer that uses the 20-40% duty cycle square wave input signal. If you are using a tachometer with a signal lead that connects to the coil negative (-) terminal, the sweep to confirm function is not available. Finally, turn the ignition off to exit activation mode.

How to Program the Rev-limiting Function:

Start the engine and bring the engine RPM up to one half of the desired rev limiter setting and hold the engine RPM as steady as possible. For example, if you want the rev limiter to be set at 5000 RPM, bring the engine speed up to 2500 RPM and tap the gray tachometer output lead wire to ground one (1) time. The control module will verify the setting by sweeping the tachometer up monetarily to the actual RPM rev-limit setting, which in this example would be 5000 RPM. If the rev-limiting setting is not exactly where you wanted it to be, as shown during the sweep function, you can repeat this process as many times as necessary to get the desired RPM rev-limiter set correctly. If you are using a tachometer with a signal lead that connects to the coil negative (-) terminal, then the sweep to confirm function is not available.

How to Disable the Rev-limiting Function:

Turn the ignition key on without starting the engine, within 10 seconds, tap the gray tachometer output lead wire to ground five (5) times. If you are successful and you are using an aftermarket tachometer that requires a 20–40% square wave input signal, then the tachometer will sweep up to 1500 RPM to show that the rev limiting function is now deactivated. If the sweep function does not happen, turn the ignition OFF and repeat this procedure. Please note that the confirmation tachometer sweep function only works with an aftermarket tachometer that uses the 20-40% duty cycle square wave input signal. If you are using a tachometer with a signal lead that connects to the coil negative (-) terminal the sweep to confirm function is not available. Turn the ignition off before starting the engine to exit the deactivation mode.

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Spark Plugs and Spark Plug Wires:

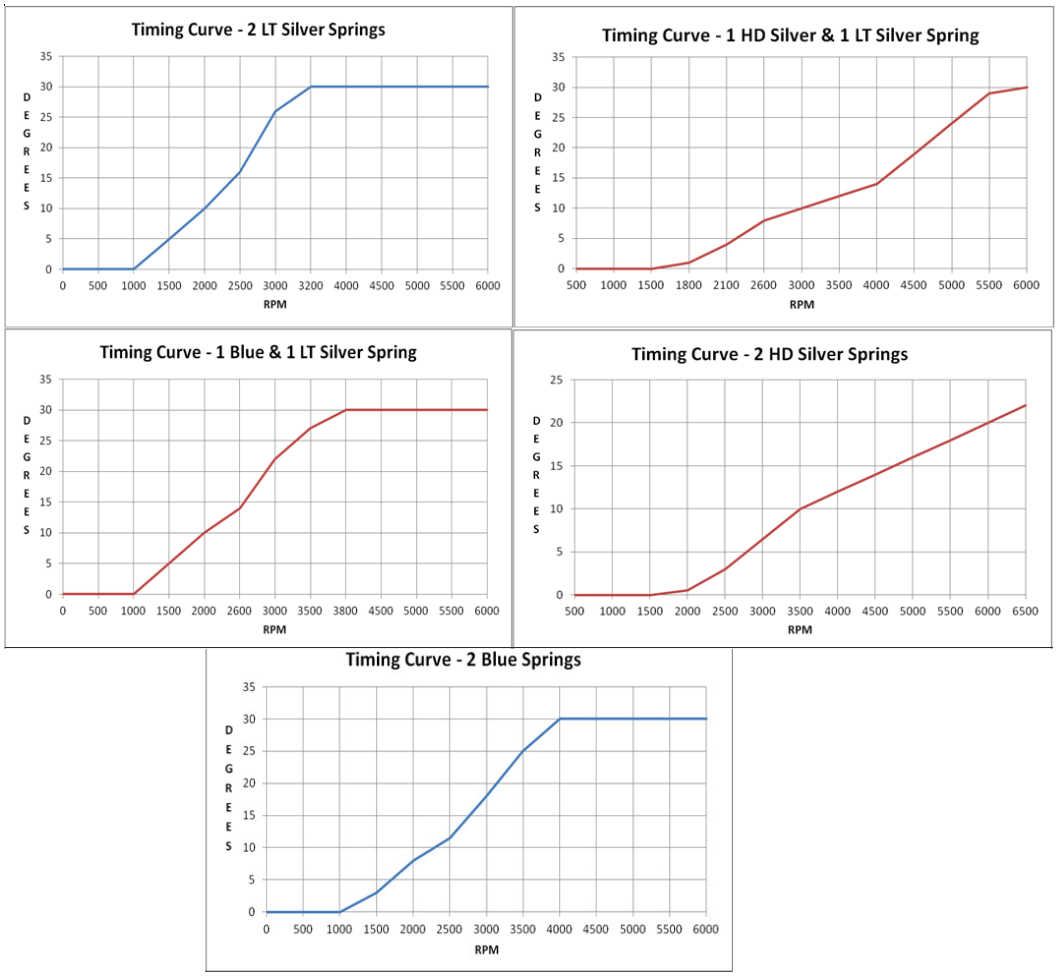
Resistor type spark plugs must always be used with this distributor to minimize any EMI/RFI noise issues. Solid core spark plug wires are not compatible with this distributor.

Advance Curve - Spring Selection:

The distributor is pre-assembled with the medium tension blue springs installed. The included mechanical advance curve kit includes additional tension springs; the larger diameter silver-metallic springs are heavy tension and the smaller diameter silver springs are light tension than the installed blue springs. The springs can be used in sets or mixed depending on the timing advance curve you desire.

See charts below for specific combinations.

To change the springs, remove the distributor cap and rotor, the springs are located under the rotor. Using needle nose pliers carefully lift the springs off their posts (so you can reuse them if needed). When installing the new springs make sure that the eyelet of the spring sits completely in the groove on the post.



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INSTALLATION INSTRUCTIONS

Mechanical Advance Bushings:

There are 3 different advance bushings included in the mechanical advance curve kit. The distributor comes with the Blue 21° bushing installed, if a different degree of mechanical advance is desired, follow the procedure below to change the bushings or to lock out the mechanical advance.

Bushing Sizes:

How to Replace the Mechanical Advance Bushings:

1. Remove the distributor cap and rotor.
2. Remove the locknut and washer on the bottom of the advance assembly.
3. Remove the bushing and install the new one.
4. Install the washer and locknut.

How to Set-up the Mechanical Advance Lockout :

1. Remove the distributor from the vehicle.
2. Remove the advance components including the springs, weights and the advance stop bushing from the advance assembly.
3. Remove the roll-pin from the drive gear and remove the gear from the shaft.
4. Slide the shaft two inches out of the housing.
5. Rotate the shaft 180° and insert the advance stop bushing pin into the small hole on the advance plate.
6. Install the locknut and washer to the advance stop bushing pin. This locks the advance in place.
7. Install the drive gear and roll-pin.

How to Set-up the Vacuum Advance Lockout:

1. Remove the distributor from the vehicle.
2. Remove the two Allen head screws that hold the advance canister.
3. Remove the snap ring that holds the magnetic pickup assembly in place.
4. Gently lift the magnetic pickup plate and slide the vacuum canister out.
5. Install the lockout plate in place of the canister. Install the two retaining screws.
6. Install the supplied screw and washer through the lockout and tighten.
7. It is important to make sure the pickup plate is properly seated in the housing. If it is crooked or slanted, the paddles of the reluctor wheel may contact the pickup. Check the clearance by rotating the distributor shaft. If necessary, use the supplied shims under the lockout hold-down to correctly position the pickup plate. If no shims are required, use one beneath the washer of the lockout hold down screw.

Note: Do not forget to plug the original vacuum advance hose if applicable.

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