DiamondFIRE Distributor Installation Instructions - HEI

Congratulations on your purchase of an E3 DiamondFIRE Racing Distributor. When properly installed, this billet racing distributor will give you years of trouble-free performance. These instructions are designed to assist you in installing your new E3 distributor. ***Please read these instructions in their entirety before beginning your installation***

IMPORTANT NOTE: Always disconnect the battery, negative lead first, before working on the ignition system. When you are done, reconnect the battery installing the positive lead first.

IMPORTANT NOTE: The drive gear pre-installed on this distributor is melonized and therefore is compatible with flat tappet or hydraulic roller camshafts. If your engine has a billet steel hydraulic roller camshaft, a compatible steel or bronze alloy gear must be used. If your engine has a mechanical roller camshaft, a bronze gear must be used. To prevent distributor gear or camshaft wear/failure, verify camshaft core material prior to distributor installation. Once camshaft core material is verified, ensure the correct distributor gear is installed. Due to a specific 0.500" shaft diameter, use only E3 Spark Plugs distributor gears with E3 Spark Plug distributors. Both steel and bronze gears are available for purchase at www.e3sparkplugs.com.

Distributor Gear Material Reference Chart

Cam Core Material	Melonized Steel	Iron	Bronze Alloy
Cast Iron – Flat Tappet Cams	X	X	
Ductile Iron (SADI) – Hydraulic Roller/Some Mechanic Roller	X		X
Billet Steel – Mechanical Roller/Some Hydraulic Roller	X		X

Distributor Gear Installation

Once you have chosen the appropriate distributor gear, the process of replacing it is simple and straight forward. With a small punch and a hammer, remove the pin and slide the gear from the distributor shaft. Be sure to keep the washer that sits above the gear. With the washer in place, reinstall the new distributor gear, turning the gear till the hole for the roll pin on the distributor shaft and the distributor gear are aligned. With these holes aligned, tap the roll pin back into position with a hammer. Make sure the roll pin sits flush or slightly inset in the distributor gear on both sides. If the roll pin protrudes from the distributor gear, damage to the block, distributor, and distributor gear can result.

Included with the distributor:

1 – Billet Chevy HEI Distributor with O-ring
1 – Distributor Cap with Built-In Coil
1 – Distributor Rotor
1 – Installation Hardware Kit

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How to Install the Distributor

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 slowly until the rotor blade aims at a fixed point on the engine or firewall. Note this point for future reference by marking it with white-out, grease pencil or similar.
3. Unplug all external connectors coming from the distributor. Be sure to pull the connector and not the wires when disconnecting any connectors. Pulling the wires can result in damage to the harness.
4. Replace the existing cap on distributor, note and 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 and transfer them to the new cap later in the process (see Step # 9).
5. Loosen and remove the distributor hold-down bolt and clamp. Lift the old distributor out. The rotor may move from its position due to the helical cut teeth on the distributor gear. Note the direction of movement.
6. Install the gasket and lower the new distributor into position. Please note that the rotor will move in the opposite direction from when you removed the old distributor. When the distributor is fully seated make sure that the rotor is aimed at the point marked with the white-out. After the new distributor has been lowered into place, you may find that it hasn't seated firmly against the engine block. This indicates that the lower end of the distributor shaft is not properly aligned and engaged with the oil pump drive gear. Do NOT attempt to force the distributor into position.
7. Either remove the distributor and use a long appropriate sized hex drive to turn the oil pump shaft until it properly aligns with the distributor shaft, or reinstall the hold-down clamp and thread the bolt just enough to exert a very slight pressure against the distributor. *NOTE: Overtightening the hold down bolt can result in damage to the threads and/or distributor. Only apply mild pressure.* Then manually rotate the engine until the distributor drops down into place. When the distributor is fully seated make sure that the rotor is aimed at the same fixed point as was the rotor from the old distributor.
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 that is aligned with the rotor leads to number one cylinder. If you are unsure of cylinder number position or firing order, this information can be found in the service manual that covers your particular engine. Install the distributor cap.
10. Connect a switched 14-gauge wire from a 12-volt source to the B+ terminal on the distributor cap. (Ensure the three-pin connector from the module is connected to the cap)
11. To connect a tachometer, simply attach the trigger wire of the tachometer to the “tach” terminal on the distributor cap.
12. Use a timing light to verify that the initial timing is set correctly and tighten the hold down bolt.
13. Connect the vacuum advance unit by means of a vacuum hose to a ported vacuum outlet. This will be located above the throttle plate(s) at the base of the carburetor.
14. The advance mechanism can be adjusted by inserting a 3/32” or 2.5mm hex wrench into the vacuum hose nipple on the canister at the base of the distributor. Turning the hex wrench clockwise increases the amount of vacuum advance, while turning it counter-clockwise reduces the amount of vacuum advance.
15. The mechanical advance is set up at the factory for a curve that begins at 1,000 RPM and yields 18 degrees of mechanical advance, all in by 3,000 RPM.