

# **Installation Instructions for 40500, 40504 & 40506**

## **Mopar Electronic Ignition Conversion Distributor**

Notes: This distributor is a HP direct replacement for the Mopar Vacuum Advance Electronic style distributor. This distributor is designed for use with a Mopar style ECU, Wiring Harness, Ballast Resistor, and OEM style coil (replacement parts are available separately). This distributor will not work with fuel injection systems that require a distributor signal.

### **Please read these instructions before installing.**

You should 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.

### **Included with the Distributor:**

- 1 - Machined Mopar V8 Distributor
- 1 - Rotor
- 1 - Distributor Cap
- 1 - Wiring Harness w/ Mopar Style 2-Pin Connector
- 1 - Advance Curve Spring Kit with 2 Silver & 2 Black springs

### **Installation Instructions:**

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 cylinder #1 (front cylinder on driver's side of engine) at TDC. Note where the rotor blade is aimed at a fixed point on the engine (should be aimed at the front of the passenger side valve cover). Note this point for future reference.
3. Now put the existing cap back on the distributor. Note and mark which spark plug wire the rotor (blade) is pointing at and make sure that is going to #1 cylinder. Then number all the spark plug wires according to the firing order 1-8-4-3-6-5-7-2 and remove the spark plug wires. If in doubt you can leave the wires connected to the old cap and then transfer them to the new distributor cap later in the process (see point # 8).
4. Unplug all external connectors coming from the distributor.
5. Loosen and remove the distributor hold-down bolt and clamp. Lift the old distributor out.
6. Remove the cap from the new distributor. Apply a thin coating of engine oil to the O-ring and surround housing on the new distributor. Lower the new distributor into position. Make sure the rotor blade is aimed at the same fixed point as was the rotor from the old distributor. After the new distributor has been lowered into place, you may find that it hasn't firmly seated with the rotor pointing at the marked spot. This indicates that the lower end of the distributor shaft is not properly aligned with the oil pump drive shaft. You may have to use a screw driver to turn the oil pump drive shaft slightly so that the distributor seats firmly and the rotor lines up to with the mark. Do not attempt to force the distributor into position.
7. With the distributor properly seated, reinstall the hold-down clamp and tighten the hold-down bolt just enough so that the distributor is held in place, but can still be rotated with a little effort. Re-install the distributor cap.
8. One at a time, remove the plug wires from the old cap and install them in the corresponding positions of the new cap. After all the spark plug wires have been transferred, verify that the wire on the terminal post that is aligned with the rotor leads to #1 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.
9. Double check the air gap between the reluctor wheel and magnetic pickup assembly with a non magnetic or brass feeler gauge. The air gap should be 0.007 - 0.010" on all eight points of the reluctor wheel. If not, loosen magnetic pickup assembly hold down screw, adjust the air gap accordingly and retighten the screw.
10. Install the cap on the new distributor and connect the wiring leads from the distributor to the Mopar wiring harness.

### **Adjusting the Mechanical Advance**

1. Please keep in mind that how quickly the mechanical advance comes in is controlled by the stiffness of the advance springs. Softer springs allow the advance to come in more quickly (low compression street engine) while stiffer springs delay the advance curve until higher RPM's are reached (purpose built race engine). The factory installed medium blue springs generate a performance ignition advance curve that typically begins at 1200 RPM and generates 22-24° crankshaft advance that is fully in by 3200-3300 RPM. This mechanical advance curve will work in most street performance engines.
2. The mechanical advance curve in your new distributor is adjustable and can be custom tailored to meet most needs. To gain full access to the mechanical advance to change springs, it is best to have the distributor out of the engine. You can adjust the amount of mechanical advance with distributor in the engine.
3. Remove the cap and rotor from the distributor. Carefully drive the roll pin out of the stop collar and remove the stop collar and trust washer from the distributor shaft.
4. Disconnect the two wire leads to the magnetic pickup. Note that the terminals on these leads are such that you can't get them crossed.
5. Remove the two large screws and lock washers from either side of the bowl. These hold the breaker plates in place.



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6. Push the shaft assembly upward until the lower advance plates are clear of the bowl – be careful as the shaft assembly is now free and can be completely removed from the bowl and lower housing. You can now see and work on the mechanical advance plates and springs. If you need the mechanical advance curve to come in more quickly, swap one or both of the blue springs for the silver springs. If you need the mechanical advance curve to come in more slowly, then swap one or both of the blue springs for the black springs. **DO NOT BEND THE SPRING PERCHES.**
7. The amount of mechanical advance is controlled by the two lower advance plates. There are two adjustment screws, one either side of the advance plates. To adjust the total amount of mechanical advance, loosen the two screws and rotate the two advance plates. **DO NOT BEND THE ADVANCE TABS.** Using the optional Mopar Performance part number 312-P5153446 advance curve key kit key, choose the total amount of mechanical advance that is needed. The amount of crank shaft degrees is marked on each key. Insert the flat side of the key toward the advance tab and rotate the adjustment plate tightly against the key. Tighten the adjustment screws to 30 in-lb.
8. Reinstall in the reverse order.

### **Adjusting the Vacuum Advance**

The vacuum advance operates independently from the mechanical advance. The vacuum advance canister is factory set to produce 5-7° of crankshaft advance at 15" of vacuum. The amount of vacuum advance can be adjusted by inserting a 3mm hex head wrench into the hose nipple on the vacuum advance canister. Turn the wrench clockwise to increase the amount of vacuum advance or counter-clockwise to decrease. The vacuum advance canister is factory set in the middle of the adjustment range. There are about 5-6 turns of adjustment in either direction. Depending on your tuning strategy, you can either connect the vacuum advance hose to a manifold or a ported vacuum source. The manifold vacuum source will allow for vacuum advance at both idle as well as at light load highway cruise, while the ported vacuum source will only allow for vacuum advance at light load highway cruise.

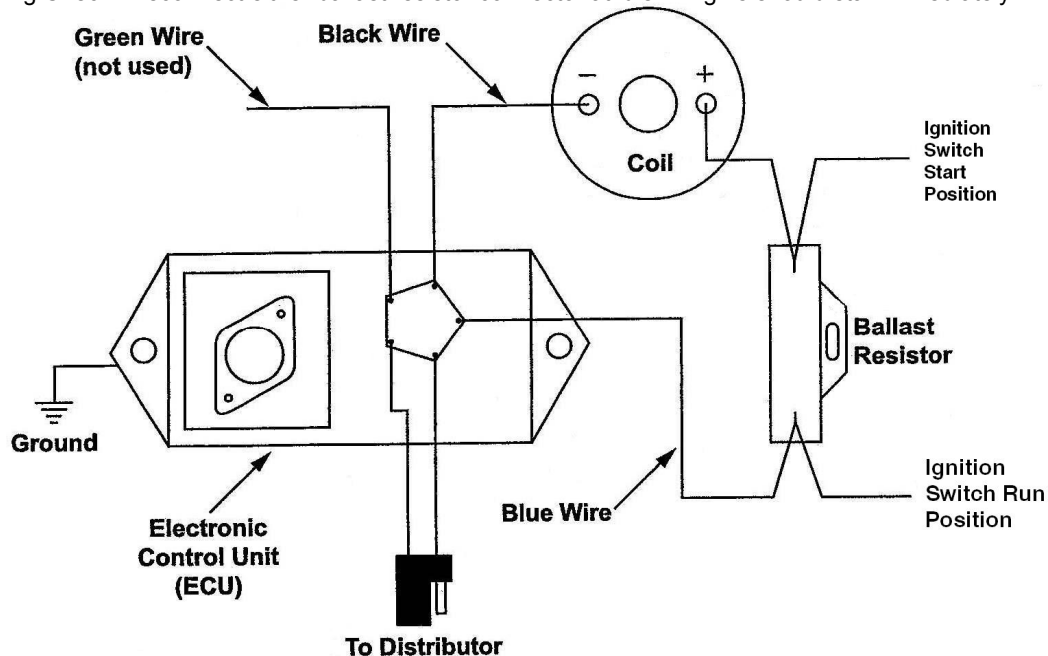
### **Typical Wiring for Muscle Car or Street Rod Installation**

Ignition System Replacement Parts (Available Separately)

- Mopar Style ECU: 555-40800, 555-40805, 312-P4120505, 312-P4120535
- 1.0Ω Ballast Resistor: 555-40103, 312-P5206436
- Wiring Harness: 555-40801, 312-P3690152
- Mopar OEM or OEM Style (oil filled Coil) or HP Coil 555-40105

Trouble Shooting Tips:

- The ECU must be Grounded (sand or wire brush the mounting points & use external tooth lock washers & rust free mounting fasteners).
- Use the appropriate ballast resistor – 1.0Ω is recommended (minimum of 0.5Ω).
- Operation without the ballast resistor will damage the ECU & Coil.
- Use OEM or OEM Style (oil filled) Coil. Do not use a C-D coil (i.e. MSD) since this will damage the ECU.
- Make sure all connections are tight and free of corrosion.
- If vehicle has a history of ECU problems – Check voltage between Coil (+) and a good ground. Turn key to “Run” position and voltmeter should read between 7.0 and 9.0 Volts. If higher voltage, turn key off immediately and check ballast (resistance – too low 0.5Ω minimum), ballast wiring, shorted coil, ignition switch wiring, etc.
- Quick Wiring Check: Disconnect either ballast resistor connector at idle. Engine should stall immediately.



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