

GM HEI Ignition Conversion

Most everyone has experienced the drawbacks of the Ford and other pieced together crap low power ignition systems AMC put on Jeeps. There seem to be several choices out there to upgrade to a more reliable and higher voltage system. Some of these can range from \$100 or so to several hundreds of dollars.

Most Jeeps with V8 engines have one of two distributor systems. A Ford Duraspark system or a Motorcraft points system. The points system is relatively reliable and very simple. It requires periodic adjustment and maintenance using special tools. The Ford Duraspark system is all electronic. The distributor contains a magnetic trigger that sends signal to the controller and spark is distributed to the spark plugs from the coil. The Ford system is fairly reliable but failure is usually instant with no warning and no recovery except with replacement of the controller module. I was always a good idea to take a new replacement module along on the trail because these things always fail at the wrong time.

When my AMC/Motorcrap controller went out again, stranding me 90 miles from home and costing me a \$90 tow, I decided that it was time to make a change. I did a lot of research on many Jeep and AMC sites on ignition upgrades. People seemed to like a number of different systems, Petronix (seemed to be cheap and simple but there were enough people that seemed to have problems with it), Ford TFI (still lots of external stuff), after market stuff from MSD, ACCEL and others (very expensive and lots of parts that you would have a hard time getting emergency parts) and GM HEI.

I chose the GM HEI conversion for several reasons, among those being recommendations from people whose advice I value and how pleased those who have already done this conversion. While my Jeeps all have V-8 engines, you can get an HEI system for your 6 cyl too so this article applies to all Jeeps.

The GM HEI system was used in GM vehicles for approximately 20 years. It is a simple design using a magnetic trigger, electronic controller inside the cap, and a coil. A nice feature of the HEI is the coil is integrated right into the distributor cap, meaning no coil wire. This feature allows for a much hotter spark and increased gap on the spark plugs. There are many aftermarket high-performance coils available too. The fact that any replacement parts I might need in the future, I can easily pick up at AutoZone or the neighborhood parts store as they are factory GM parts makes this conversion a plus. Another reason I chose the HEI is due to the easy 1 wire hook up (or 2 wire if you have a tach) and the elimination of the pesky ignition module, the coil and my anemic Ford distributor. You can really clean up your engine compartment with this system.

Now I don't usually write testimonials, especially unsolicited ones but when I buy something that I perceive is an excellent value and it increases my engines response and even a little better mileage, I feel the need to tell others.

After searching many websites and talking to many sellers I chose **Rick** at enginebuilder@gmail.com he uses all USA parts, a GM top housing with Billet Aluminum shaft with New hardened USA gear. 100% New electronics installed, 50,000 volt built in coil, low saturation ignition module, brass terminal cap and wire harness. All of this together nearly doubles your spark power and the chance of cross fires is nearly nil due to the increased distance the GM top housing puts each output from one another.

Your Engine will run much smoother with added throttle response. The Unit uses easy to replace GM parts and HEI ignition wires. A new Gasket and 2-connectors are included for Power and Tach hook-up.. Rick tests each unit on a Sunnen 505 distributor machine for proper curve and spark output before shipped. Don't confuse this high quality piece with imports being offered. I wont swear that it is all 100% new and I didnt ask but when I have pulled both of mine out of the boxes, they looked like a 100% brand new distributor. I have seen similar ones for sale that looked like they were rebuilt AMC/Chevy hybrid distributors, NOT this one. I used Accel 8.5mm HEI wires and Bosch platinum plugs that I gapped to .050. You do need to trash your old wires and replace them with good HEI 8mm or better wires and a new set of quality plugs.

The best part of this is the cost, under \$200 with shipping and Rick takes Pay Pal so it was easy to pay for. I have seen similar HEI conversions priced as high as \$500 and the average being around \$250 so Ricks stuff is a bargain and he carries stuff for both the V-8 and 6 cyl engines.

Installation is pretty straight forward. Disconnect the battery. Remove all the old Duraspark/Motorcraft components (if equipped). Remove the plug wires making note of the firing order. Remove the distributor cap. Mark the old distributor's rotor position so the new distributor can be installed in the same place. If you forget this step the engine will probably not start or run real bad. An easy way to locate the start of a firing cycle is to remove the spark plug from the #1 cylinder and crank the engine in short bursts. Put your finger over the plug hole and feel for the compression stroke to force air out of the plug hole. Look down at the timing cover marking and line up the line on the harmonic balancer to the 0 line on the cover. This can be DANGEROUS so watch out for the fan and make sure the Jeep is in Neutral on a manual or Park if you have an auto.!

Remove the bolt and bracket that holds the distributor in and pull it out. Install the new gasket onto the shaft (Rick includes a new gasket) and insert the distributor so that the rotor end is pointing in a direction to allow movement of the distributor to set proper timing. Make sure the vacuum advance device is not going to interfere with your PS pump or any of your belts. You may need to crank the engine 2 full turns to allow the distributor gear to engage the oil pump drive shaft located below the bottom of the distributor. It is important to make sure the distributor is fully seated ! If you don't, you wont have any oil pressure (yep I did it one time, freaked me out til I figured what I did or should I say didn't do).

Once the distributor is fully seated lightly tighten the securing bracket so that you can properly set ignition timing after the engine is running. Wiring up the HEI is easy. All that is required is 2 wires. One from a switched 12V circuit and the other from the Start side of the starter coil. For me I just soldered the red wire that I attached to the + terminal of the distributor to the RED wire that came from the starter solenoid to the + side of the coil. This wire provides power to the distributor during engine cranking and when the key is in the on position. The 2nd wire goes to your tachometer if you have one.

Now all that is left to do is to install the cap and wires. Starting from the #1 cylinder and moving clockwise through the firing order. **AMC V8 Firing Order 1-8-4-3-6-5-7-2** The spark plug gap can be increased due to the hotter spark provided by the new distributor. Recommended gap is .050 - .055. After all of the wires are installed check all connections and make sure everything is cleaned up and out of the way of moving parts.. Reconnect the battery and start the engine. If you installed everything correctly, the engine should fire right up. Rotate the distributor until the engine runs smooth and then fine set the timing using a timing light. The recommended ignition timing is 8 degrees BTC with distributor vacuum advance disconnected and the engine at idle. I set my Jeep a bit higher about 10 degrees, high enough just before any engine ping was heard.

Now if engine doesn't start or run correctly you may have the distributor out of time, your plug wires not run correctly or your + wire is not providing voltage. 1st check and make sure that ALL of your plug wires are properly run from the correct terminal on the distributor to the correct plug. Check and make sure the + wire to the distributor is getting 12V during cranking and when the key is sitting in the "on" position. If all that is correct then you will probably have to remove the distributor and re-time it.

If all is right, enjoy the quicker starts, the smoother idling and running and some better gas milage.

Mike

Contact for HEI system Rick enginebuilder@gmail.com

Tell him Mike from the Jeep Club sent you and he just might give you a discount 😊

6 Cyl HEI from Rick



Ricks V-8 HEI

