

Chrysler Troubleshooting

Points Type Ignitions with Amplifiers (Power packs)

(Preamps are electronic replacements for points)

A large proportion of the problems with the battery CD units are caused by low battery voltage or bad ground connections. Low voltage symptoms are weak fire or erratic firing of cylinders. Maintenance free batteries are NOT recommended for this application.

WARNING!! Battery reversal will cause severe damage to the CD module and rectifier.

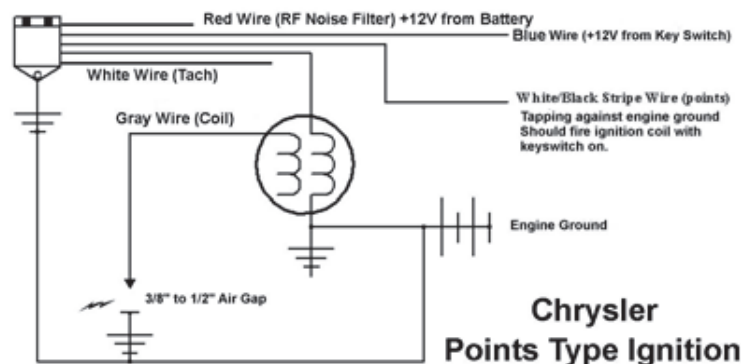
NOTE: The Chrysler CD modules are similar to the OMC CD modules with the exception of wire colors. The chart below will assist you as a general guideline for the Chrysler units:

Red	+12V from battery (RF Noise Filter)
Blue	+12V from the Key Switch
Gray	+ Terminal of ignition coil
White	OEM Tachometer signal
White/Black Stripe	Points or Preamp Module
Black	Engine ground

No Fire at All:

1. Clean all battery connections and engine grounds.
2. Make sure the CD module is grounded. Units using rubber shock mounts require a ground wire fastened from the pack to the engine block.
3. Connect a spark gap tester to the high tension lead coming from the ignition coil and set it to approximately $\frac{1}{2}$ ". If it fires when you crank the engine over, there is a problem in the distributor cap, rotor button or spark plug wires.

Wiring Connection for Testing CD Module



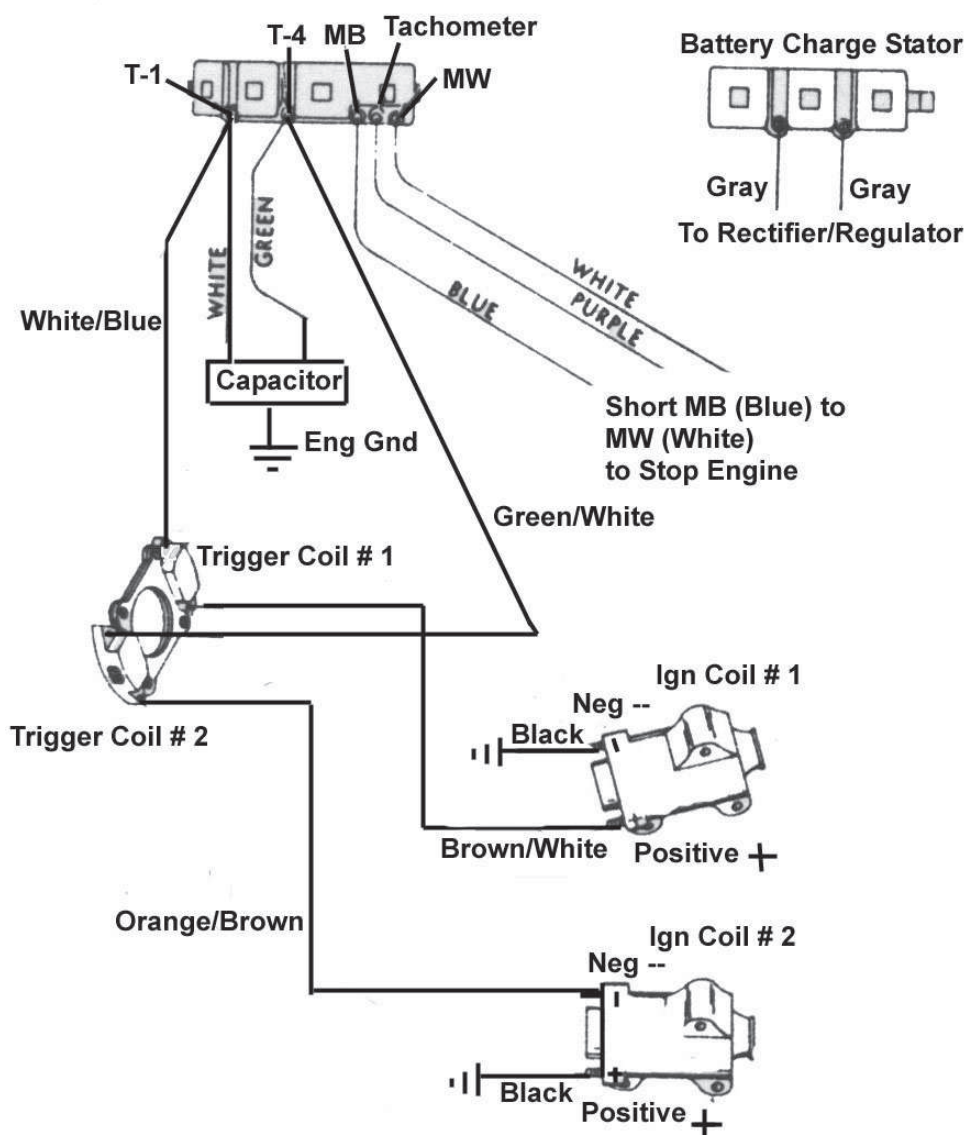
NOTE: Preamps are an electronic version of points and the ignition module will test the same for both.

4. Check voltage present on the blue wire at cranking. It MUST be at least 9½ volts. If not, the problem is likely in the harness, key switch, starter or battery.
5. Connect a DC voltmeter to the white/black wire (while it is connected to the distributor) and rotate the engine. There should be some fluctuation in the meter reading. If the reading is high, and fails to move up and down, there is definitely a problem inside the distributor. If the reading is low, disconnect the white/black wire from the distributor and with the key switch turned on, strike the white/black wire against engine ground. The unit should fire each time. If it does, then the CD module is usually good and the points (or Preamp) require checking. If the CD module fails to fire with this test, then the CD module is usually bad.
6. Check DVA voltage on the gray wire going to the coil, it should be approximately 200 volts at cranking. If the voltage is correct, replace the coil with another coil and retest or use a load resistor if another coil is not available. A coil that is shorted internally will give a low reading. In this case replace the coil and retry.

After repairing the engine, check the battery voltage at approximately 3500 RPM, The MAXIMUM allowable voltage reading is 16 volts and the minimum is 12V. Running below 12V or over 16 volts will damage the ignition. Check for loose connections or a bad battery.

Magnapower II Systems

1. Disconnect the white and blue kill wires from the CD Module and retest. If the engine starts and runs, the key-switch or kill circuit is bad.
2. Connect a DC voltmeter from the kill wires to engine ground and turn the ignition switch on and off several times. At no time should you see battery voltage on the kill circuit.
3. Connect a spark gap tester to all cylinders and test with the spark plugs in and out. If the coils will not fire with the spark plugs in, check compression with the spark plugs removed from all cylinders. A blown head gasket on these engines can prevent the coils from firing with the spark plugs installed. This is caused by a hard to explain problem with the triggering circuit.
4. Crank the engine with the starter and then stop. Check the DVA voltage on terminals T1 and T4. You should read between 170 and 270 volts Positive on terminal T1 and between 170, and 270 volts Negative on terminal T4. (Remember that some DVA adapters are not polarized and will read the same regardless of the polarity). If there is a low reading on one of the terminals, disconnect the white/blue and green/white trigger wires, then retest. If the readings are now correct, one of the trigger modules is bad. A continued low reading may be caused by a bad capacitor. To test, use a couple of jumper wires and swap the green and white capacitor wires going to terminals T1 and T4. If the low reading remains on the same terminal, the CD is bad. If it moves when you move the capacitor wires, the capacitor is shorted.
5. Check to see if the ignition coils are wired correctly. The #1 coil on a two cylinder engine and the #1 & 2 cylinder on a four cylinder engine are wired as **NEGATIVE GROUND**. The #2 coil on a two cylinder engine and the #3 & 4 cylinder on a four cylinder engine are wired as **POSITIVE GROUND**.



Chrysler Troubleshooting

Capacitive Discharge Module with Alternator (ADI – Alternator Driven Ignition)

General Troubleshooting

1. Disconnect the kill wires from the CD and connect a DC voltmeter between the kill wires and engine ground. Turn the ignition switch on and off several times. If, at any time, you see voltage appearing on the meter, there is a problem in the harness or ignition switch. At NO TIME SHOULD YOU SEE BATTERY VOLTAGE ON A KILL CIRCUIT.
2. Check the flywheel for a broken or loose magnet.
3. Check for broken wires and terminals, especially inside the plastic plug-in connectors. We recommend that you remove the pins from the connectors using the CDI **511-9706** pin removal tool and visually inspect them.
4. Visually inspect the stator for burned or discolored areas. If found, replace the stator. If the areas are on the battery charge windings, it indicates a possible problem with the rectifier.

IF NO FIRE ON ANY CYLINDER:

1. Disconnect all kill wires AT THE PACK.
2. Check for broken or bare wires on the unit, stator and trigger.
3. Using the CDI meter with the 511-9773 peak reading adapter, or CD-77 and 511-9770 piercing probes, measure DVA voltage of the stator between the output wire sets. With everything connected, reading's should be approximately 180 volts or more. Resistance readings between the stator wire sets range from 680 – 800 ohms (factory) and 400 – 500 (CDI/RAPAIR).
4. Disconnect the rectifier. If the engine fires, replace the rectifier.

NO FIRE OR INTERMITTENT ON ONE CYLINDER:

1. Check the stator resistance, you should read 680-800 ohms (factory) and 250-350 ohms (CDI/RAPAIR) DVA 180V or more from blue to yellow (Note – On some two cylinder engines, the stator has two blue wires and no yellow wire. The stator will read from blue to blue). All stator wires should read open to engine ground.
2. Check the trigger resistance, trigger wire sets read approximately 50 ohms between the wire sets (DVA-5V or more), and open to engine ground.
3. If readings are good, disconnect kill wire from one pack. If the dead cylinder starts firing, the problem is likely the blocking diode in the opposite pack.

NO FIRE ON TWO CYLINDERS:

If two cylinders from the same CD unit will not fire, the problem is usually in the stator. Test per above.

ENGINE WILL NOT KILL:

Check kill circuit in the pack by using a jumper wire connected to the kill wire coming out of the pack and shorting it to ground. If this kills the pack, the kill circuit in the harness or on the boat is bad, possibly the ignition switch.

COILS ONLY FIRE WITH THE SPARK PLUGS OUT:

Check for dragging starter or low battery causing slow cranking speed. DVA test stator and trigger.

HIGH SPEED MISS:

1. Using the CDI meter with the 511-9773 peak reading adapter, (or CD-77) and 511-9770 piercing probes, DVA check stator voltage to each pack at high speed. If it exceeds 400 volts, replace the pack.
2. Disconnect the rectifier. If the engine fires, replace the rectifier.

Two Cylinder Engines with Combination CD Module with Built-in Ignition Coils

NO FIRE OR INTERMITTENT ON ONE CYLINDER:

1. Check the stator resistance, you should read 680-800 ohms (factory) and 250-350 ohms (CDI/RAPAIR) DVA 180V or more from blue to yellow (Note – On some two cylinder engines, the stator has two blue wires and no yellow wire. The stator will read from blue to blue). All stator wires should read open to engine ground.
2. Check the trigger resistance, trigger wire sets read approximately 50 ohms between the wire sets (DVA-5V or more), and open to engine ground.
3. If readings are good, disconnect kill wire from one pack. If the dead cylinder starts firing, the problem is likely the blocking diode in the opposite pack.

ENGINE WILL NOT SHUT OFF:

Check kill circuit in the pack by using a jumper wire connected to the kill wire coming out of the pack and shorting it to ground. If this kills the pack, the kill circuit in the harness or on the boat is bad, the ignition switch could also be bad.

Chrysler/Force Troubleshooting

Prestolite Capacitive Discharge Module with Alternator (ADI – Alternator Driven Ignition)

Two Cylinder Engines Using a Separate Switch Box and Ignition Coils

1. Disconnect the stop wires from the CD and connect a DC voltmeter between the stop wires and engine ground, turn the ignition switch on and off several times. If, at any time, you see voltage appearing on the meter, there is a problem in the harness or ignition switch. **AT NO TIME SHOULD YOU SEE BATTERY VOLTAGE ON A STOP CIRCUIT.**
2. Check the flywheel for a broken or loose magnet.
3. Check for broken wires and terminals, especially inside the plastic plug-in connectors. We recommend that you remove the pins from the connectors using the CDI **511-9706** pin removal tool and visually inspect them.
4. Visually inspect stator for burned or discolored areas. If found, replace the stator. If the areas are on the battery charge windings, it indicates a possible problem with the rectifier.

IF NO FIRE ON EITHER CYLINDER:

1. Disconnect all stop wires **AT THE PACK**.
2. Check for broken or bare wires on the ignition module, stator and trigger.
3. Using the CDI meter with the 511-9773 peak reading adapter, or CD-77 and 511-9770 piercing probes, measure DVA voltage of the stator between the output wire sets. With everything connected, reading's should be approximately 180 volts or more. Resistance readings between the stator wire sets ranges from 680 – 800 ohms (factory) and 250-350 ohms (CDI/RAPAIR).
4. Disconnect the rectifier. If the engine now has spark, replace the rectifier.

NO SPARK OR INTERMITTENT ON ONE CYLINDER:

1. Check the stator resistance, you should read 680-800 ohms (factory) and 400 – 500 (CDI/RAPAIR) DVA 180V or more from blue to yellow (Note – On some two cylinder engines, the stator has two blue wires and no yellow wire. The stator will read from blue to blue). All stator wires should read open to engine ground.
2. Check the trigger resistance, trigger wire sets read approximately 50 ohms between the wire sets (DVA-5V or more), and open to engine ground.
3. If readings are good, disconnect stop wire from one pack. If the dead cylinder starts sparking, the problem is likely the blocking diode in the opposite pack.

ENGINE WILL NOT STOP:

Check the stop circuit in the pack by using a jumper wire connected to the white stop wire coming out of the pack and shorting it to the white stop wire coming out of the other pack. If this stops all spark from the pack, the stop circuit in the engine harness or on the boat is bad, the ignition switch could also be bad.

COILS ONLY HAS SPARK WITH THE SPARK PLUGS OUT:

Check for dragging starter or low battery causing slow cranking speed. DVA test stator and trigger.

HIGH SPEED MISS:

1. Using the CDI meter with the 511-9773 peak reading adapter, (or CD-77) and 511-9770 piercing probes, DVA check stator voltage to each pack at high speed. If it exceeds 400 volts, replace the pack.
2. Disconnect the rectifier. If the engine now has spark, replace the rectifier.

Three and Four Cylinder Engines Using Separate Switch Boxes and Ignition Coils

1. Check for broken wires and terminals, especially inside the plastic plug-in connectors. We recommend that you remove the pins from the connectors using the CDI **511-9706** pin removal tool and visually inspect them.
2. Check the flywheel for a broken or loose magnet.
3. Disconnect the stop wires from the CD and connect a DC voltmeter between the stop wires and engine ground, turn the ignition switch on and off several times. If, at any time, you see voltage appearing on the meter, there is a problem in the harness or ignition switch. **AT NO TIME SHOULD YOU SEE BATTERY VOLTAGE ON A STOP CIRCUIT.**
4. Visually inspect stator for burned or discolored areas. If found, replace the stator. If the areas are on the battery charge windings, it indicates a possible problem with the rectifier.

IF NO SPARK ON ANY CYLINDER:

1. Disconnect stop wire **AT THE PACK**.
2. Check for broken or bare wires on the unit, stator and trigger.
3. Using the CDI meter with the 511-9773 peak reading adapter, or CD-77 and 511-9770 piercing probes, measure DVA voltage of the stator between the output wire sets. With everything connected, reading s should be approximately 180 volts or more. Resistance readings between the stator wire sets range from 680 – 800 ohms (factory) and 250-350 ohms (CDI/RAPAIR).
4. Disconnect the rectifier. If the engine has spark, replace the rectifier.

Chrysler/Force Troubleshooting

Capacitive Discharge Module with Alternator (ADI – Alternator Driven Ignition)

Three and Four Cylinder Engines Using Separate Switch Boxes and Ignition Coils (Continued)

NO SPARK OR INTERMITTENT ON ONE CYLINDER:

1. Check the stator and trigger resistance; the trigger wire sets should read approximately 50 ohms between the wire sets (DVA-5V or more), the stator should read 680-800 ohms (factory) and 250-350 ohms (CDI/RAPAIR) DVA 180V or more from blue to yellow.
2. If readings are good, disconnect the stop wire from one pack. If the dead cylinder starts sparking, the problem is likely the blocking diode in the opposite pack.

NO SPARK ON TWO CYLINDERS:

If two cylinders from the same CD unit will not spark, the problem is usually in the stator. Test per above.

ENGINE WILL NOT SHUT OFF:

Check the stop circuit in the pack by using a jumper wire connected to the stop wire coming out of the pack and shorting it to ground. If this stops the pack from sparking, the stop circuit in the harness or on the boat is bad, the ignition switch could also be bad.

COILS ONLY HAS SPARK WITH THE SPARK PLUGS OUT:

Check for dragging starter or low battery causing slow cranking speed. DVA test stator and trigger.

HIGH SPEED MISS:

1. Using the Fluke meter with the 511-9773 peak reading adapter, (or CD-77) and 511-9770 piercing probes, DVA check stator voltage to each pack at high speed. If it exceeds 400 volts, replace the pack.
2. Disconnect the rectifier. If the engine now has spark, replace the rectifier.

Pack #1 (Firing #1 and #2 Cylinders)				Pack #3 (Firing #4 and #5 Cylinders)			
Pack:	White/Orange Stripe	Trigger:	White/Orange Stripe	Pack:	White/Orange Stripe	Trigger:	White/Orange Stripe
	White/Yellow		White/Yellow (a)		White/Yellow		White/Yellow (a)
	White/Red		White/Red (a)		White/Red		White/Red (a)
	White/Green Stripe		White/Green Stripe		White/Green Stripe		White/Green Stripe
Pack:	Brown/Yellow Stripe	Stator:	Brown/Yellow Stripe	Pack:	Brown/Yellow Stripe	Stator:	Brown/Yellow Stripe
	Brown/Blue Stripe		Brown/Blue Stripe		Brown/Blue Stripe		Brown/Blue Stripe
Pack:	Orange/Blue	Coil:	White	Pack:	Orange/Blue	Coil:	White
	Blue/Red		White		Blue/Red		White
P Pack #2 (Firing #3 Cylinder)							
Pack:	White/Orange Stripe	Trigger:	White/Orange Stripe				
	White/Yellow		White/Yellow (a)				
	White/Red		No Connection				
	White/Green Stripe		No Connection				
Pack:	Brown/Yellow Stripe	Stator:	Brown/Yellow Stripe				
	Brown/Blue		No Connection (must be connected to the blue terminal on pack 1)				
Pack:	Orange/Blue	Coil:	White				
	Blue/Red		No Connection				

(a) CDI replacement triggers do not have a connection for this wire from the power pack as the new trigger uses a common ground wire. This allows the wires going to the power pack from the trigger to be larger and more durable. The power pack uses that color as a ground wire for the trigger.

Color Code Cross Reference

FUNCTION	OLD	NEW
Trigger	Orange	White/Orange Stripe
Trigger	Green	White/Yellow Stripe
Trigger	Red	White/Red Stripe White/Green Stripe
Trigger	White/Green Stripe	White/Green Stripe
Stator	Blue	Brown/Blue Stripe
Stator	Yellow	Brown/Yellow Stripe
Pack Output to Coil	Orange	Orange/Blue
Pack Output to Coil	Red	Blue/Red
Ignition Coil	White	Orange/Blue
Stop Circuit	White	Black/Yellow