

CDI Electronics®

Force

Prestolite ADI Ignitions 1984-1992

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

NO SPARK ON ANY CYLINDER:

1. Disconnect the stop wire AT THE POWER PACK.
2. Disconnect the rectifier. If the engine sparks, replace the rectifier.
3. Check for broken or bare wires on the unit, stator and trigger.
4. Check the stator and trigger resistance and DVA voltage as follows:

WIRE	READ TO	OEM RESISTANCE	CDI RESISTANCE	DVA
Brown/Blue (or Blue)	Brown/Yellow (or Yellow)	680-900	250-350	180-400 V Connected
Brown/Blue (or Blue)	Engine GND	Open	Open	< 2 V Disconnected
Brown/Yellow (or Yellow)	Engine GND	Open	Open	< 2 V Disconnected
White/Orange (or Orange)	White/Yellow (or Green)	45-55	45-55	0.5 V + Connected
White/Red (or Red)	White/Green	45-55	45-55	0.5 V + Connected

NO SPARK OR INTERMITTENT SPARK ON ONE CYLINDER:

1. Check the stator and trigger resistance and DVA voltage (see NO SPARK ON ANY CYLINDER above).
2. 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.
3. If #2 on a three cylinder engine is the one not firing and the engine has a CDI stator installed, disconnect the Blue wire going to the #2 pack and see if the #2 cylinder starts firing. If so, reconnect the Blue wire with the Blue wire going to the #1 pack.

POWER PACK OR TRIGGER REPEATEDLY BLOWS ON SAME CYLINDER:

1. Check the trigger wires for shorts to engine ground as a shorted trigger wire can destroy a SCR inside the power pack.
2. In contrast, a shorted SCR inside the power pack can destroy a trigger coil. Check the trigger resistance and DVA output (see NO SPARK ON ANY CYLINDER above).
3. Replace the ignition coil on the cylinder dropping spark.

NO SPARK ON TWO CYLINDERS:

1. If two cylinders from the same CD unit will not spark, the problem is usually in the stator. Test per above.
2. If the engine has a CDI stator installed:
 - A. If #1 and #3 are the ones not firing, disconnect the Yellow stator wire from the # 1 pack and see if the #3 cylinder starts firing. If so, replace the #1 pack. If not, then reconnect the Yellow stator wire to the # 1 pack and disconnect the Yellow stator wire from the # 2 pack and see if the #1 cylinder starts firing. If so, replace the # 2 pack.
 - B. If #2 and #4 are the ones not firing, disconnect the Blue stator wire from the # 1 pack and see if the #4 cylinder starts firing. If so, replace the #1 pack. If not, then reconnect the Blue stator wire to the # 1 pack and disconnect the Blue stator wire from the # 2 pack and see if the #2 cylinder starts firing. If so, replace the # 2 pack.

ENGINE WILL NOT SHUT OFF:

Disconnect all stop wires at the power pack. Connect a jumper wire to the stop wire from the pack and short it to engine ground. If this stops the pack from sparking, the stop circuit has a fault. Check the key switch, harness and shift switch. If this does not stop the pack from sparking, replace the power pack. Repeat test as necessary for additional packs.

COILS ONLY HAVE SPARK WITH SPARK PLUGS OUT:

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

MISS AT ANY RPM:

1. Disconnect the rectifier from the stator and retest. If the miss clears, replace the rectifier.
2. In the water or on a Dynameters, check the DVA output from the power pack outputs while connected to the ignition coils. You should have a reading of at least 150V DVA or more, increasing with engine RPM until it reaches 300-400V DVA maximum. A sharp drop in DVA right before the miss becomes apparent on all cylinders will normally be caused by a bad stator. A sharp drop in DVA on less than all cylinders will normally be the switch box or trigger.
3. Connect an inductive tachometer to each cylinder in turn and try to isolate the problem. A high variance in RPM on one cylinder usually indicates a problem in the switch box or ignition coil. Occasionally a trigger will cause this same problem. Check the trigger DVA voltage (see NO SPARK ON ANY CYLINDER above).
4. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem.
5. Check the triggering and charge coil flywheel magnets for cracked, broken and loose magnets.
6. Rotate the stator one bolt hole in either direction and retest.

Pack #1 (Firing #1 and #2 Cylinders)

Pack: White/Orange Stripe **Trigger:** White/Orange Stripe
 White/Yellow
 White/Red
 White/Green Stripe
Pack: Brown/Yellow Stripe **Stator:** Brown/Yellow Stripe
 Brown/Blue Stripe
Pack: Orange/Blue **Coil:** White
 Blue/Red

Pack #2 (Firing #3 and #4 Cylinders)

Pack: White/Orange Stripe **Trigger:** White/Orange Stripe
 White/Yellow
 White/Red
 White/Green Stripe
Pack: Brown/Yellow Stripe **Stator:** Brown/Yellow Stripe
 Brown/Blue Stripe
Pack: Orange/Blue **Coil:** White
 Blue/Red

Pack #2 (Firing #3 Cylinder)

Pack: White/Orange Stripe **Trigger:** White/Orange Stripe
 White/Yellow
 White/Red
 White/Green Stripe
Pack: Brown/Yellow Stripe **Stator:** Brown/Yellow Stripe
 Brown/Blue
Pack: Orange/Blue **Coil:** White
 Blue/Red

No Connection
 No Connection
 No Connection (must be connected to the blue terminal on pack 1)
 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

Sample Connection for a 4 Cylinder Using New Design CDI Trigger

Pack #1 (Firing #1 and #2 cylinders)		Pack #2 (Firing #3 and #4 cylinders)	
Pack: White/Orange Stripe	Trigger: White/Orange Stripe	Pack: White/Orange Stripe	Trigger: White/Orange Stripe
White/Yellow	No Connection	White/Yellow Stripe	No Connection
White/Red	No Connection	White/Red	No Connection
White/Green Stripe	White/Green Stripe	White/Green Stripe	White/Green Stripe
Pack: Yellow	Stator: Yellow	Pack: Yellow	Stator: Yellow
Blue	Blue	Blue	Blue
Pack: Orange/Blue	Coil #1: White	Pack: Orange/Blue	Coil #3: White
Pack: Blue/Red	Coil #2: White	Pack: Blue/Red	Coil #4: White

Force Troubleshooting