1. INTRODUCTION

SparkEVO Zero is the simplest and fastest way to turn your mechanical contact points system into a zero-maintenance electronic ignition. SparkEVO Zero can be installed on any kind of contact points engine 2-stroke or 4-stroke, with 1 cylinder.

2. DESCRIPTION

- ✓ Compatible with every contact points engine (2-stroke or 4-stroke, with 1 cylinder).
- ✓ Replaces the capacitor and uses the contact points as timing signal:
  - no maintenance needed
  - no more timing adjustment
  - no contact points wearing
- ✓ Higher engine revving
- ✓ Cleaner emissions, longer spark plug life, longer engine life
- ✓ Very easy to install
- ✓ Small package, rugged, fits everywhere
- ✓ Technology encased in high-temp thermoplastic with epoxy molding: IP68, -20°C ÷ 70°C continuously

3. INSTALLATION TO ORIGINAL SETUP (COIL POWERED)

Follow the steps for a proper setup.

1. Disconnect contact points from condenser and low voltage stator coil
2. Remove the condenser
3. Take 1 wire out of engine, connected to contact points
4. Take 1 wire out of engine, connected to low voltage coil
5. Follow the table for connecting wires:

WIRE	**COLOR - SPARKEVO**
From contact points	WHITE
From stator coil (connect also to high-voltage coil)	RED
Chassis/ground	BLACK
12V enable (**do not connect, insulate the wire**)	BLUE

Following is the connection diagram.

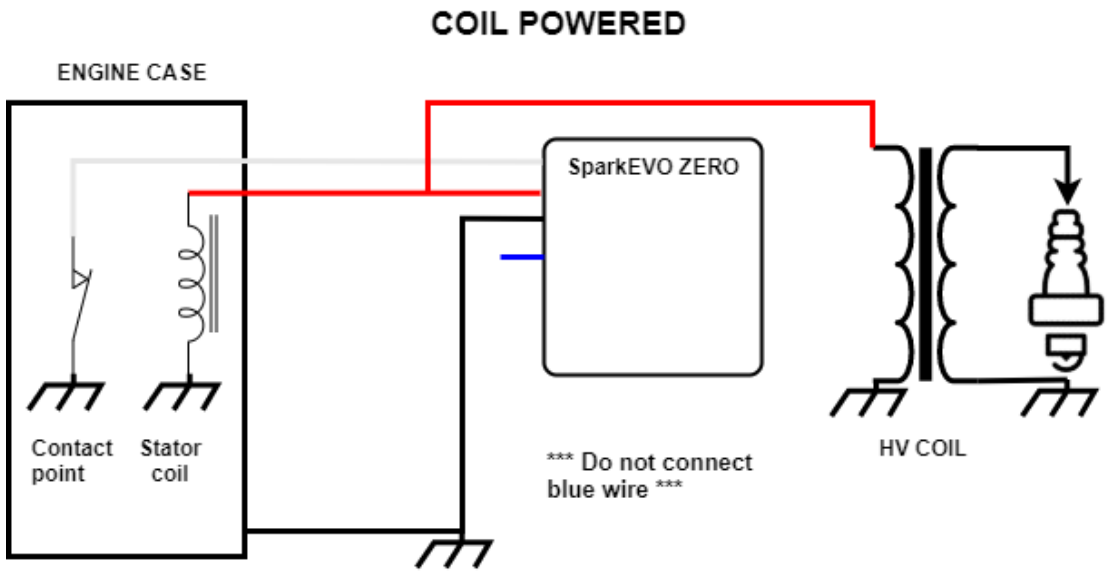

Figure 1: Connection diagram

NOTE: The spark usually is not produced at very low engine speed (<500 rpm).

4. 12V BATTERY POWERED SETUP

This configuration lets you power the unit using an external 12V battery. Follow the steps for a proper setup.

1. Disconnect contact points from condenser and low voltage stator coil
2. Remove the condenser
3. Take 1 wire out of engine, connected to contact points
4. Follow the table for connecting wires:

WIRE	COLOR - SPARKEVO
From contact points	WHITE
Chassis/ground and 12V minus battery	RED
To high voltage coil (12V 3ohm resistance)	BLACK
12V enable to 12V positive battery	BLUE

Following is the connection diagram.

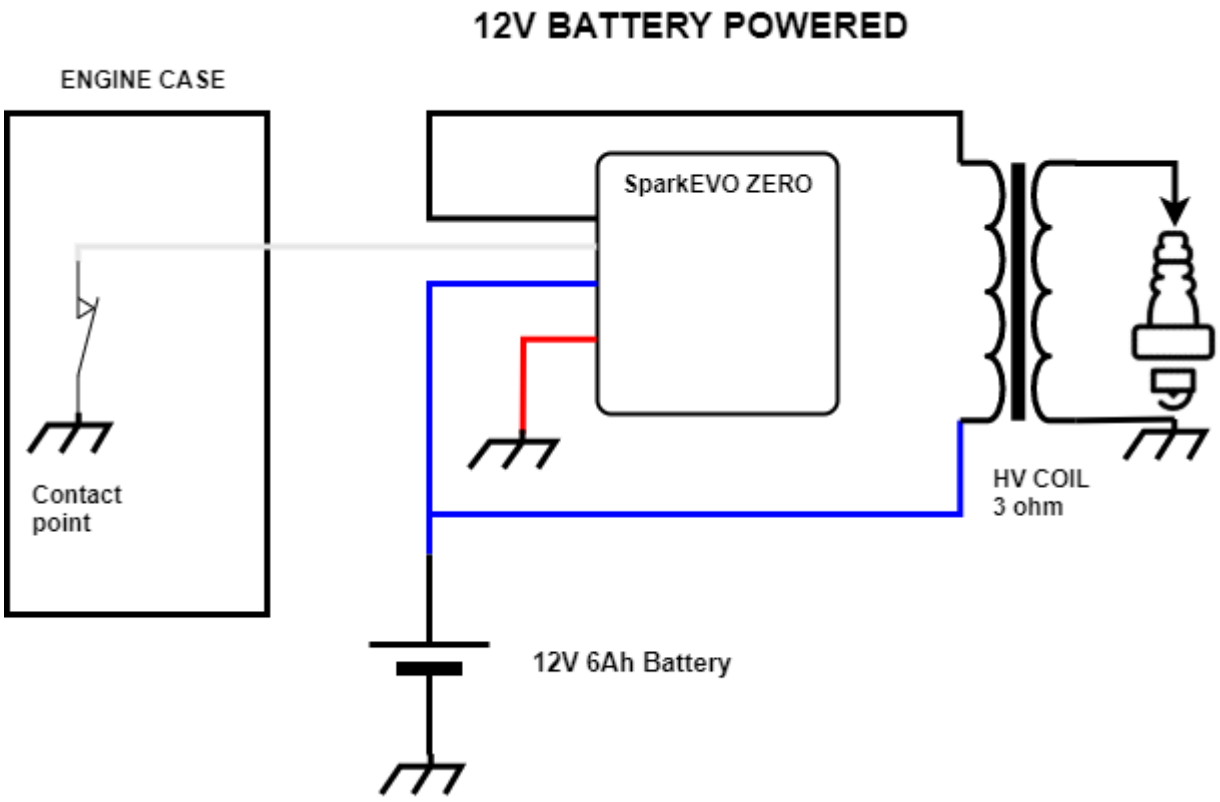

Figure 2: 12v application

NOTE: The spark usually is not produced at very low engine speed (<500 rpm).

5. TROUBLESHOOTING

Quick guide to troubleshoot the common issues.

1. If the engine is slow to rev up at high travel speeds, reduce the timing by moving the stator plate along the engine rotating direction, or reduce the gap between contact breaker points to 0.4mm.
2. If no spark is produced for engine speed >500 rpm, the following are the possible causes:
    - Low voltage coil damaged or not adequate to provide the nominal current
    - De-magnetized flywheel: the flywheel is too old or the reduced circumference thickness have exposed magnets, and thus it has lost the magnetic force
    - High voltage coil damaged
    - Poor grounding and general electrical connections

6. USAGE AND RETURNS POLICY

Our products are reserved exclusively for racing competitions within authorized environments. Any manumission of the device will invalidate the warranty. We are not responsible for damage on device, motor or persons caused by manumission of the device, or the integration in a setup not approved by us.

6.1 NEW UNUSED PRODUCT RETURNS

Your complete satisfaction is our priority and we can assist you before any purchasing to understand the compatibility with your target system. If an item purchased from SparkEVO is found to be incompatible with your setup within 2 months from the purchase date, you may return the new, unused part for a refund.

The product must be in the original, manufacturer's box. Shipping costs are covered by customer. Please contact us at info@sparkevo.racing to receive all the information for a safe return & refund procedure.

6.2 DEFECTIVE PRODUCT RETURNS

If the product appears to be defective within 6 months from the purchase date, the following actions are taken:

1. The SparkEVO team analyzes the issue, in place or remotely, to confirm the unit is actually defective and has not been hacked or used in unapproved setups
2. If the issue is confirmed, the customer can choose to take one of the following actions:
    - Accept a hardware or software fix, if applicable
    - Replace the unit with a working one, if available on stock
    - Ask for a refund equal to the value of the defective unit at the time of purchasing

In case of replacement or refund, the defective unit must first be sent back to the manufacturer. Shipping costs are covered by customer. Only after the unit is returned to the manufacturer and checked, it will be replaced or refunded.

Subsequent requests for technical support or replacement of the product after the warranty period will be evaluated by manufacturer and will require a payment if necessary.

7. REVISION SUMMARY

REVISION	DATE	CHANGES
1	9 April 2021	First release
2	5 July 2021	New 12V application
3	11 October 2021	Technical details update
4	29 December 2021	Added “notes” section and minor changes
5	14 January 2022	Added troubleshooting paragraph