digitale ontsteking MGVxx
1 sensor

Abbreviated english manual

2024-06-15

SWF Ignition SystemS
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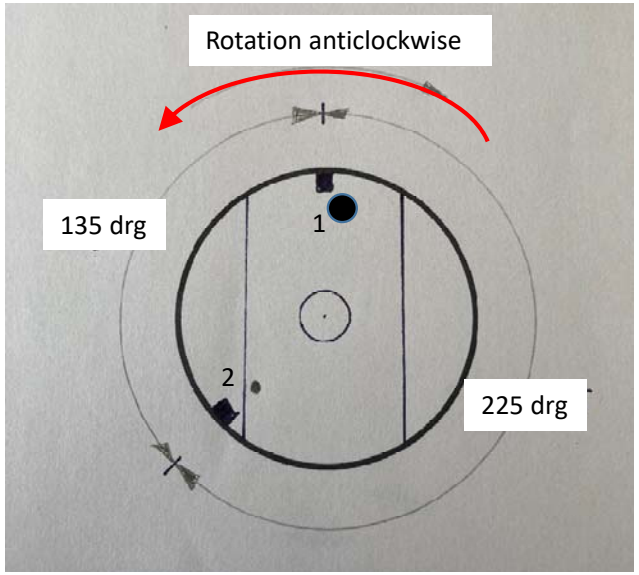
Description of digital ignition unit

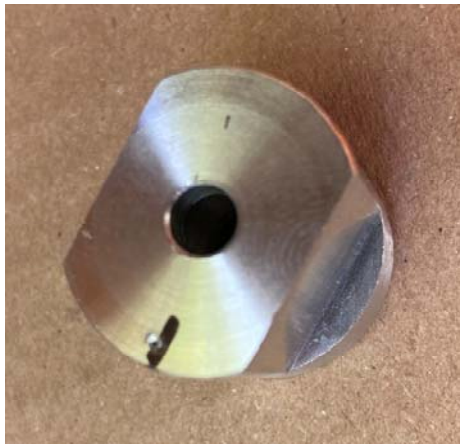
- The ignition uses 1 Hall-sensor and an rotating triggerhead with 2 magnets.. The magnets rotate at camshaft speed, the hall-sensor picks-up the changing magnetic field and triggers the processor.
- The processor measures the elapsed time and calculates rpm, the corresponding ignition advance and the correct cylinder to fire.
- Led-R signals if the Hall-sensor detects the magnetic field.
- Important: you should use R-type plugs, resistor type spark plugs

Firing interval and the 2 magnet triggerhead

- The MG has an uneven firing interval, this because of the 90 drg angle between cylinders and the four-stroke principle.
- So if we state that the left cylinder fires at 0 drg then the right will fire after 270 drg
- The left cyl will fire again 450 drg after the right cyl.
- 270/450 is called an uneven interval.
- At camshaft this relates to 135/225 drg (as the camshaft rotate once every two crankshaft revolutions)



magnet no 1 is the trigger for the right cylinder
magnet no 2 is the trigger for the left cylinder



Magnet no1 is marked with a black marker and a dimple in the aluminium

inhoud

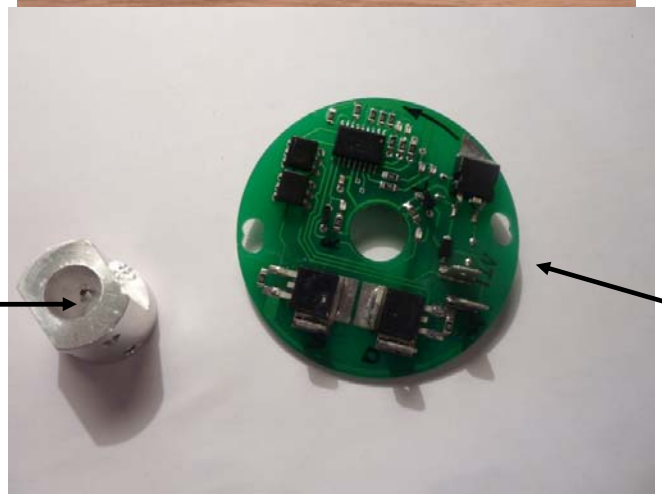
Aansluitkabels

Rood = voeding

Zwart = aarde

Roodzwart = rechter cylinder

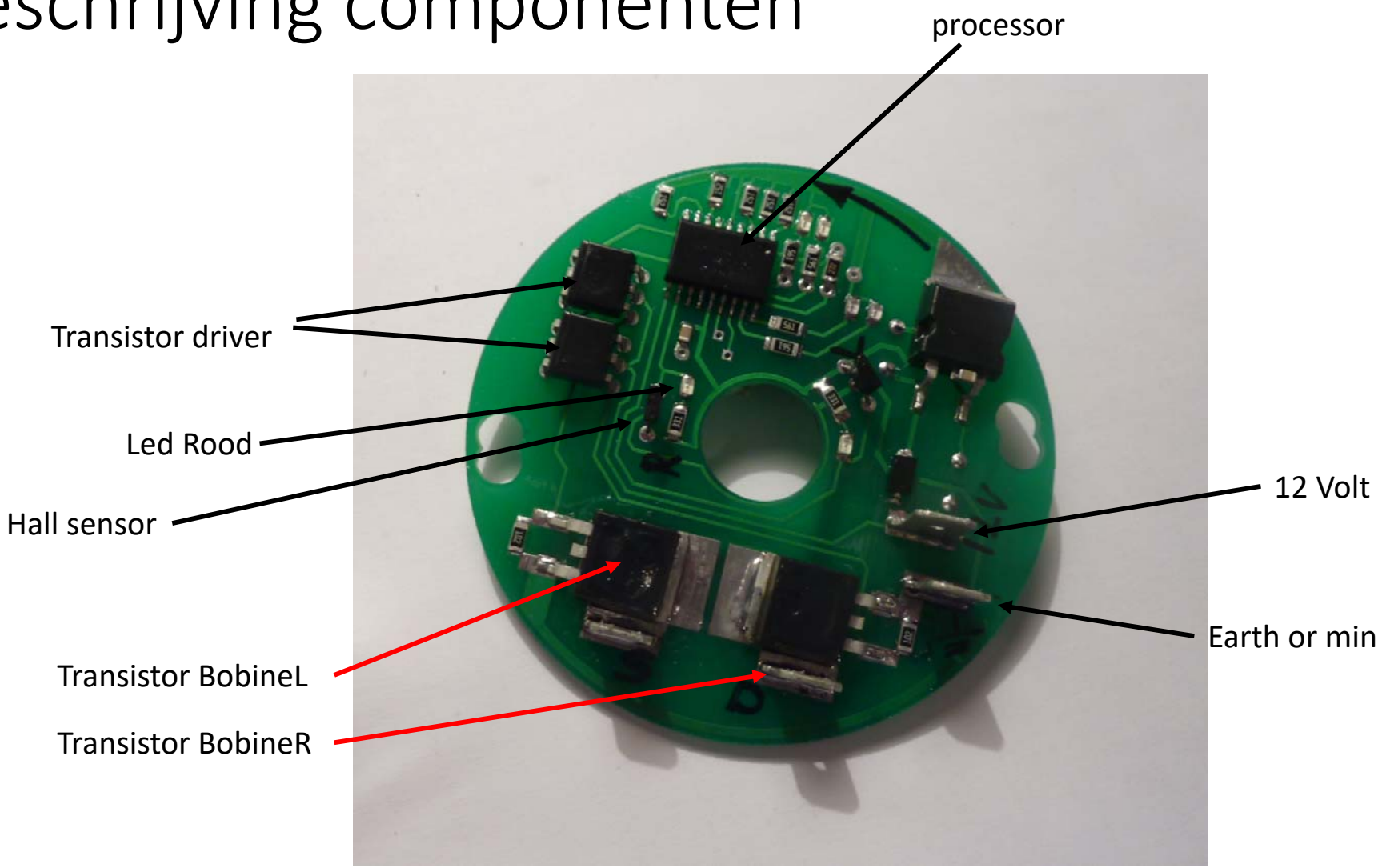
Groenzwart = linker cylinder



magneethouder

Digitale ontsteking

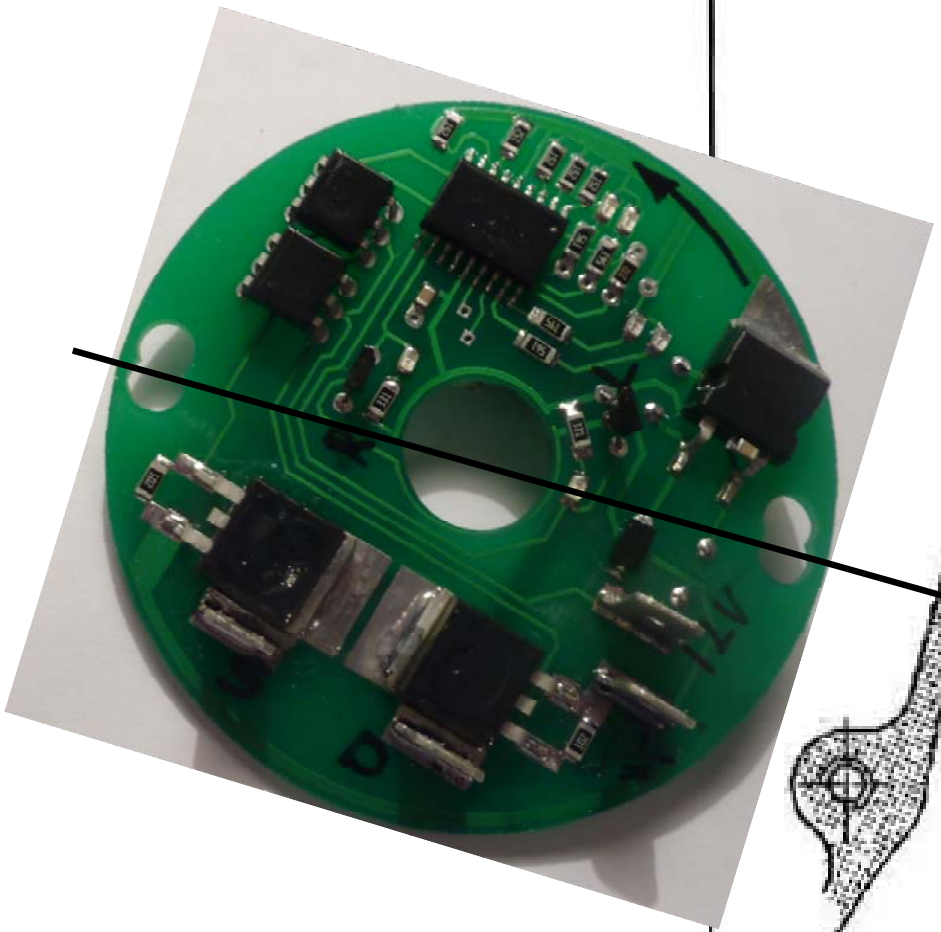
Beschrijving componenten

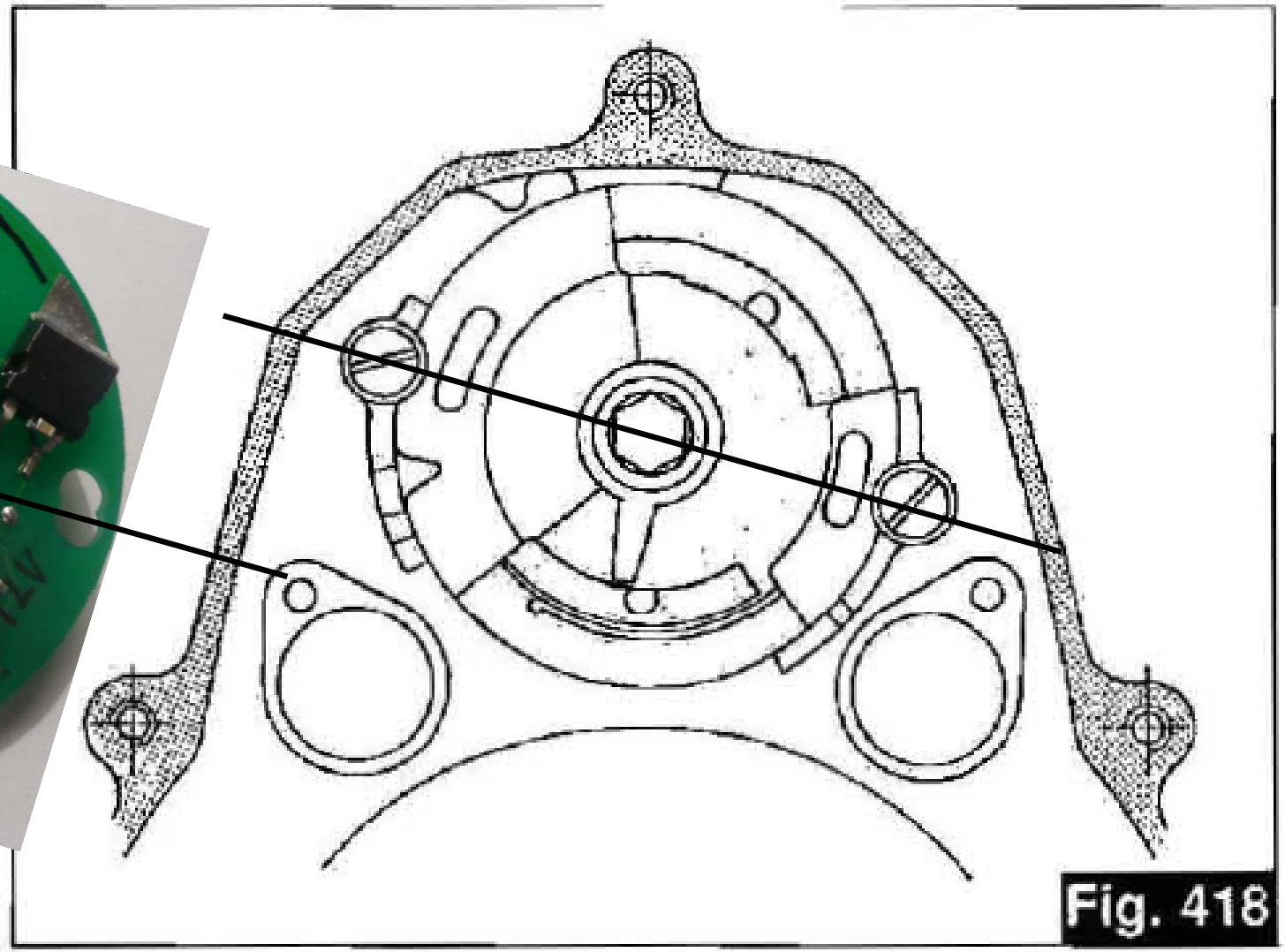


Monteren digitale ontsteking

- Remove the motoplat or the contactbreaker-set including advance mechanisme.
- Mount the PCB instead
- The PCB should fit just in this space
- Use the bolts the fasten the pcb.
- The orientation of the PCB is not that important, use the drawing on the next slide as guideline
- Wiring is self explaning.

Tekening 3





Electric Connections

- In principe vrij eenvoudig
  - De “90 drg angle connectors all connect to the PCB.
  - Black is earth and should be attached to the nearest engine-bolt.
  - GreenBlack is for the left cylinder
  - RedBlack is for the right cylinder
    - These colors are the same for the guzzi-color-codes

    - Red black is right cylinder and connects to the “D” on the PCB
    - Red Green is left and connects to the “S” on teh PCB

Timing the unit

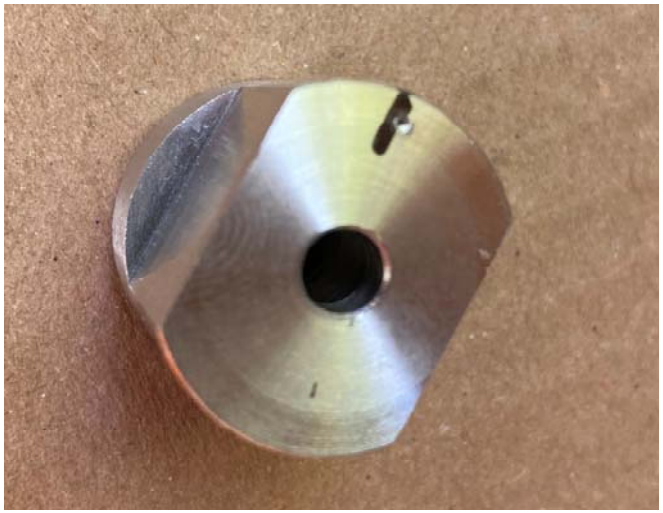
- Remove right cylinder valve cover
- Set the right cyl at “max advance” position.
  - Set flywheel at “D”, TDC, compression stroke, both pushrods free to rotate
  - Turn crankshaft anti-clockwise 8 teeth
  - Check markings on crankshaft, see manual.

  - Switch contact on. After some time a led will start to blinck.

  - Turn magnetholder anti-clockwise till LED-Red, (the red one) extinguishes with the correct magnet no 1. See next slide

1 sensor, 2 magnets

- The triggerhead has 2 magnets displaced at 135 and 225 drg's apart.
- As the triggerhead rotates anti-clockwise the unit is timed at the magnet with the dot-marking, see picture



The red-led will light each time a magnet passes the sensor. But only one magnet is correct for the right cylinder.

Rotate the triggerhead untill the red led is on and the correct magnet no 1 is facing the hall-sensor. See next slide

Rotate clockwise till the red led is out

Finished, fix triggerhead with screw

More on timing the unit

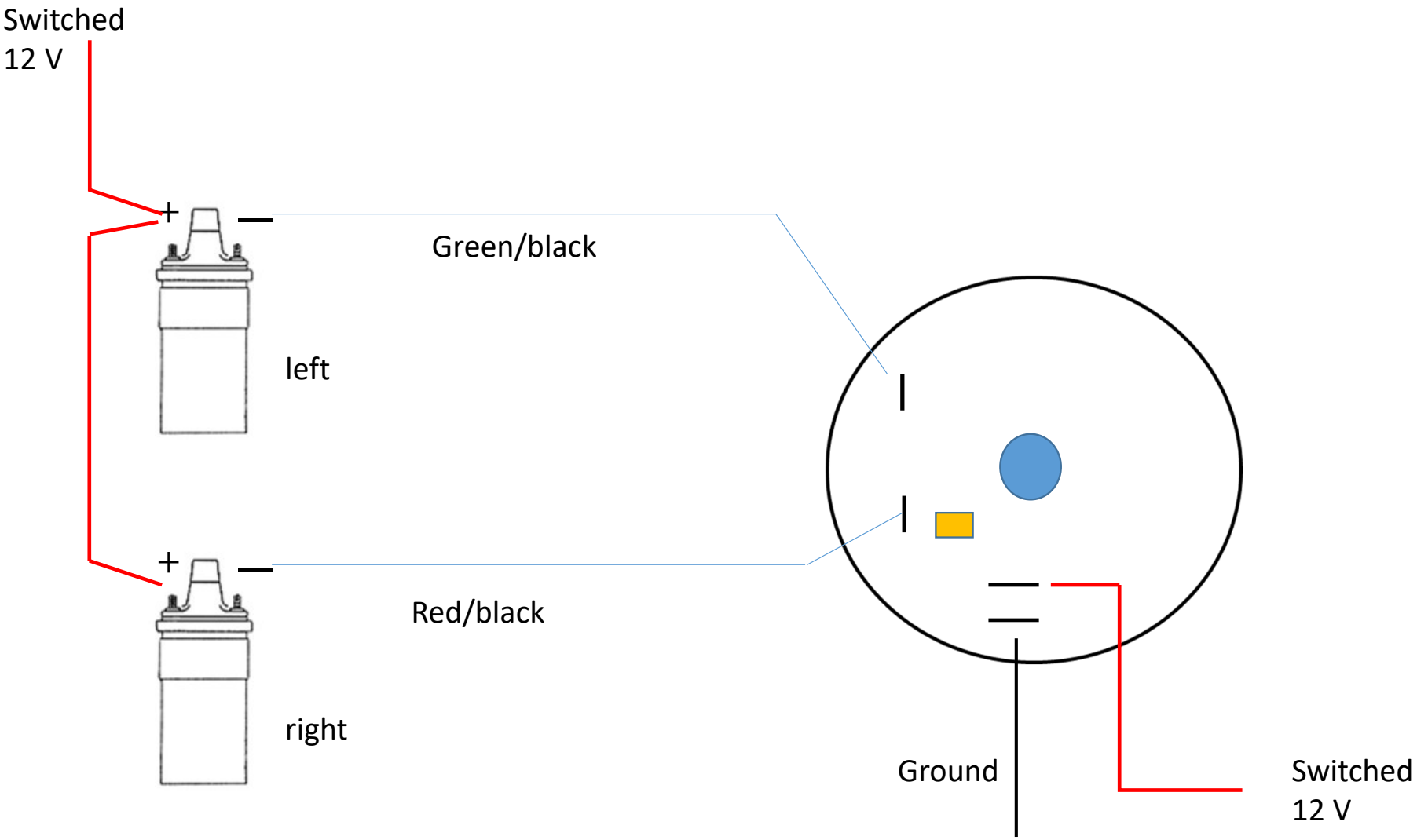
- I follow always this procedure to time the unit exactly:

- Turn the crankshaft some extra degrees anti-clockwise.
- Now turn the crankshaft slowly in clockwise direction. When the mark “max advance” right cylinder shows the ledR should go out
- If not set the timing again.
- One tooth is 4 drg.

Spark Plugs

- Use interference-free spark plugs of the R-type.
- The Vxx uses NGK BPR8ES.

- Succes.


Switched
12 V
+
–
Green/black
left
+
–
Red/black
right
Ground
Switched
12 V