

Assembly and contactless service of GEMO D-02 ignition system.

**Dear User! Before commencing the assembly, please familiarise with the use manual.
This manual has been prepared to make the assembly of our system easy and safe.**

The GEMO D-02 electronic motorcycle ignition is intended for the following types of motorcycles:

- | | |
|---------------------------------|-------------------|
| 1. Jawa, ČZ 125 typ 355 Kývačka | 4. ČZ 125 typ 473 |
| 2. Jawa, ČZ 175 typ 356 Kývačka | 5. ČZ 175 typ 450 |
| 3. ČZ 125 typ 453 | 6. ČZ 175 typ 470 |

Before commencing the assembly, please check if the box contains all system elements:

1. Base along with stator coil and pulse generator
2. Magnet wheel
3. Extinguishing device, high voltage coil, module, regulator, and connectors, cubes, and assembly screws.

The correct assembly of the system guarantees its malfunction-free operation and makes the ignition system and charging system completely maintenance-free. To ensure the correct operation of the system, please follow the workflow chart shown below.

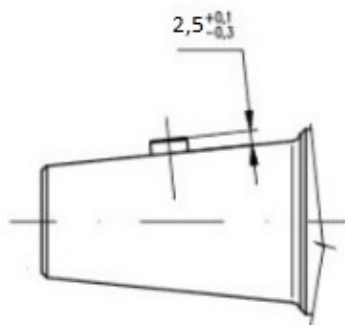
WORKFLOW CHART

I. Disassembly of old (original) ignition system

1. Place your motorcycle on central stand.
2. Disconnect the battery.
3. Disassemble seat from the motorcycle.
4. Remove the fuel line and disassemble fuel tank.
5. Remove spark plug boot and remove the ignition coil.
6. Disassemble right engine cover.
7. Disassemble original alternator (cam, stator, and rotor).
8. Disassemble "batter box-engine" wires.
9. Remove all 6V light bulbs from the motorcycle (it is necessary to replace them with 12V).

II. Assembly of the GEMO D-02 system (mechanical part)

1. Remove the positioning pin (wedge) from crankshaft and shorten it, so that its upper part will stand out of the shaft's outline by 2.5 mm (see figure).



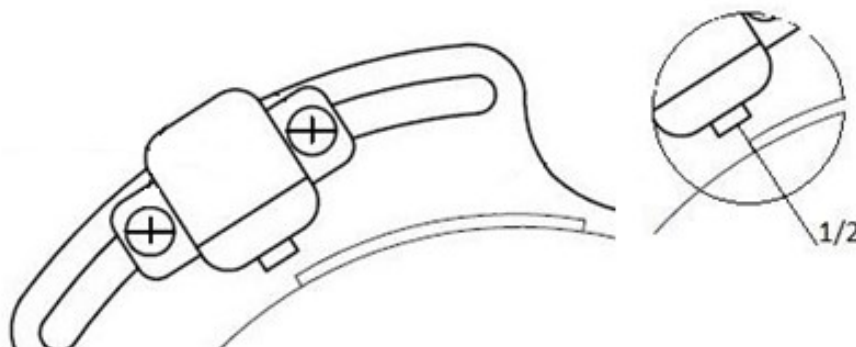
2. Remove impurities (flash rust, fat substance) located on the shaft's pin and place the positioning pin in the opening. To facilitate this, place the shaft in such a way that the technological opening for the pin will be located in upper position.
3. Drag stator wires through rubber choke in the engine and set the stator in engine in such a way that the impulse generator will be directed towards the upper left corner of the engine. While doing so, check whether the wires are correctly placed, i.e. if they are slightly bent and are not pinched by the stator's base.
4. Place stator in such a way that its opening will be located in the shaft's axle.
5. Mount the stator using two M6 screws attached to the kit.
6. Loosen two screws mounting the impulse generator and move it as far away from the stator as possible and retighten the screws.
7. Place the magnet wheel.

CAUTION: direct the groove in the hub of magnet wheel on the positioning pin in the pin of crankshaft!

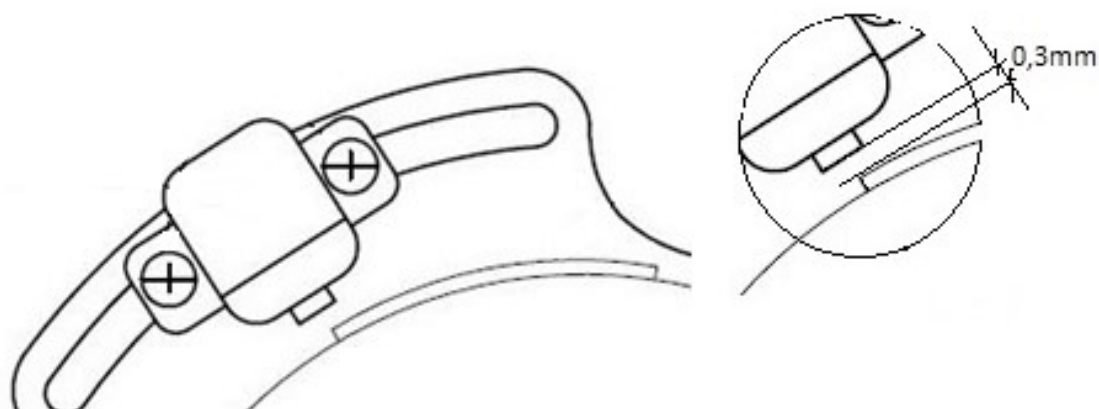
8. Check if the magnet wheel moves without rubbing against the stator's surface (by moving it left/right). If the wheel rubs against the stator, remove it, loosen screws attaching the stator and set it, so that the magnet wheel will not rub against coils.
9. After ensuring that the magnet wheel is correctly placed on the engine shaft, tighten the magneto using a long central M6 screw attached to the kit along with a washer and split washer.

CAUTION: do not hit the magnet wheel's hub with a hammer.

10. Adjust the angle of advanced ignition timing and distance between the impulse generator and marker (strap) on the magnet wheel according to the following chart:
 - unscrew the ignition plug
 - loosen the impulse generator's adjustment screws, so it will be possible to freely move it
 - set the ignition point by turning the shaft (ab. 3.5/4mm before dead centre/closed valves)



- set the impulse generator (by moving it forward/backward), so that the end of ignition marker (strap on the magnet wheel) will be located at the centre of impulse generator (see figure below).
- set the impulse generator by moving it closer/further, so that the gap between it and the marker will be equal to 0.3mm (see figure below)



- tighten two screws attaching the impulse generator while avoiding changing the set distances
- 10. Tighten right engine cover.

III. Assembly of the GEMO D-02 system (electrical part)

1. Place a connection cube (6-pin cube) on the ends of green, red, and yellow (x2) wires
2. Place a connection cube (2-pin cube) on the ends of red and blue wires
3. Place a connection cube (single cube) on the end of green wire
4. Mount the voltage regulator, ignition module, and extinguishing device under the battery can on the motorcycle's frame.
5. Mount the high voltage coil along with its wire and spark plug boot under the fuel tank (by using the handle attached to the coil)
6. Connect the voltage regulator according to table (chart):

ENGINE	VOLTAGE REGULATOR
- yellow	- yellow
- yellow	- pink
- green	- green

VOLTAGE REGULATOR	BATTERY, KEY-SWITCH
- red	- "+" battery terminal and depending on the key-switch: pins 51 and 30 (key-switch with ammeter) or 2x 30 (normal key-switch)

VOLTAGE REGULATOR	INSTALLATION, KEY-SWITCH
- black	- pin 54 (key-switch with ammeter) or pin 15 (normal key-switch)

7. Connect the ignition module:

ENGINE	MODULE
- red	- red-black
- blue	- red-white
- green	- black

MODULE	EXTINGUISHING DEVICE, COIL
- white-black (grey)	- pin "87a" in the extinguishing device
- orange	- black pin in the high voltage coil

8. Connect the extinguishing device:

EXTINGUISHING DEVICE	INSTALLATION, MODULE
- pin 30	- ground (green)
- pin 86	- ground (green)
- pin 87a	- white-black (grey) from module connected earlier
- pin 85	- pin 54 or 15 see the key-switch chart)
- pin 87	do not connect

9. Connect the high voltage coil:

COIL	INSTALLATION, MODULE
- black pin	- orange (module)
- green pin	- ground (green)

CAUTION!

Polarisation of the electric system:

(+) positive battery pole is the control signal

(-) negative battery pole is the ground

Only such system polarisation will allow the system to operate!

10. Replace all electric receivers to 12V.

Respectively:

- front light bulb 12V 35/35W
- front parking light bulb 12V 35/35W
- meter/ammeter backlight light bulb 12V 2W
- battery 12V 7Ah
- STOP light bulb 12V 15W
- back parking light bulb 12V 10W
- fuse 8A
- horn 12V (or use a resistor that will reduce voltage).

11. Reassemble the previously disassembled motorcycle elements.

CAUTION!

When attaching the battery please remember about the fuse (8A) connected in series between the negative battery pole and motorcycle frame!

IV. Test of the GEMO D-02 system.

1. Turn on the ignition (the grounding relay must activate during the ignition and a characteristic sound i.e. "click" must be heard).
2. Connect the spark plug with high voltage coil spark plug boot and touch the engine's casing with the plug.
3. Check whether a spark occurs on the spark plug's electrodes by moving the foot starter lever.

CAUTION! Before starting your motorcycle, set a gap on spark plug's electrodes (0.6mm).

4. Tighten the spark plug and place the spark plug boot.
5. Start your motorcycle and check the operation of all electricity consumers and battery charging (charging voltage of min. 12.2 and max. 14.4V).

CAUTION!

**DURING FIRST ENGINE START PREVENT THE ENGINE FROM SUDDENLY REACHING HIGH RPM.
IT CAN DAMAGE THE IGNITION MODULE.
CAUTION!**

In emergency situations it is allowed to use the system without battery. For this purpose disconnect the black-white wire (pin 87a in the extinguishing device) and connect it in series with the switch/contacter shorted with the ground (-). Connecting the wire to the ground will cause the spark to disappear (engine will stop).