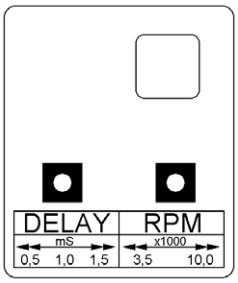
S410480392002 – ELECTRONIC UNIT NR-109 FIXED ADVANCE FOR SCOOTERS PIAGGIO-GILERA



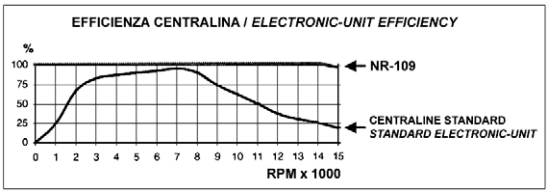
We thank you for choosing our company and stay at your disposal for any further information you may require.

In the conventional ignition for scooters, the current used by the electronic unit to provoke the ignition spark is generated, in the stator, by the feeding coil. This system is valid for the normal use on streets, but it looses its functionality in case the engine performance is increased, as the coil, with the increase of RPM gives less energy to the electronic unit, reducing in this way the voltage of the impulses directed to the ignition coil and from here to the spark plug. Consequently, temperatures, which are not fit for the life of the feeding coil, are generated around 10.000 rpm and moreover, the more the engine turns high, the more the ignition spark weakens, worsening the combustion. NR-109 is an electronic unit with **FIXED ADVANCE** that keeps the same spark intensity, from 0 to 15.000 RPM, improving in this way the combustion. It is fed by the battery (12V) and this prevents the breaking of the feeding coil of the stator.
The electronic unit **NR -109** is provided with programmable **SPEED LIMITER**, which can be activated by a switch.
In case this speed limiter is **DEACTIVATED**, the electronic unit **NR -109** becomes an electronic unit for race that allows to increase the real performance of your engine. If the speed limiter is **ACTIVATED**, the electronic unit **NR -109** reduces the supplied power by limiting the rpm as it detects the rotation speed of your engine. When this speed reaches the pre-set threshold (trimmer rpm), it connects an ignition lag (adjustable by the trimmer DELAY).
You can therefore set up the speed limiter regulation according to the desired maximum speed.
Original regulation: 5000 RPM–0.6 MS=16 lagging degrees / 0.5 MS-degrees=RPM x 0.003 - 1.0 MS-degrees=RPMx0.006 - 1.5 MS-degrees=RPMx0.009
The installation of a RACING electronic unit is an integral part of the tuning process of an engine; therefore it is advisable to check the type of spark plug that is used, as it depends on the characteristics of the propulsion system and on the changes that are made. Furthermore, the fitting in of an oil-can and of a shielded spark plug can make the ignition system more functioning. We want to underline that the electronic unit **NR 109 CANNOT IN ANY WAY DAMAGE YOUR ENGINE** as it is built by following strict quality procedures. We also remind you to be very careful if you make any changes to the electric installation as an incidental short circuit can put your electronic unit out of order.

P.S. The battery must be in good condition and partially charged (for the starting are necessary at least 8 V of the 12 V nominal) to assure a good functioning.

ASSEMBLY INSTRUCTIONS

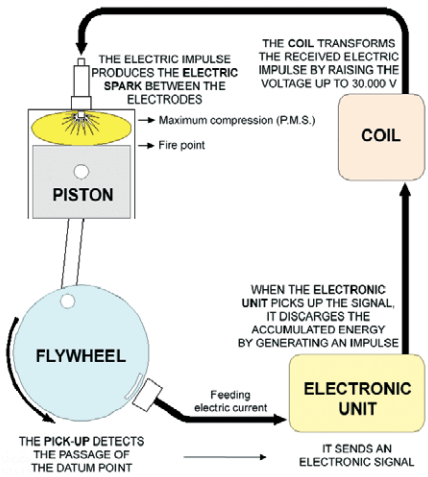
1. Fix frontally the coil to the frame, near the electronic unit.
2. Disassemble the electronic unit to be replaced and disconnect the fastons white-red-green and the spark plug cable.
3. Connect the electronic unit NR 109 with the fastons in the same order as the original (white-red-green) and connect the spark plug cable to the coil.
4. Connect the ORANGE cable of the electronic unit NR 109 with the yellow faston of the coil.
5. Fix the electronic unit NR 109 to the BLACK cable of the mass (with eyelet), connected to the frame.



6. Connect the RED cable of the electronic unit NR 109 to the POSITIVE pole of the under lock battery and the BLACK cable of the mass.
   This means, you need to get 12V power by connecting to those devices that are fed only when the ignition key is turned ON. For example, one of the easiest points to connect is the oil checker as it is placed near the engine. In this way the electronic unit is fed only when the general supply is started up. The other connections remain as the original.
7. Apply the switch in the desired position and connect it to the electronic unit NR 109 through the cable with GREEN connector.

ELECTRONIC UNIT WITH FIXED ADVANCE

To generate a movement, the engine uses the energy of an explosion. This is possible through the **electronic unit.** The feeding energy is produced by the flywheel and is accumulated by the **electronic unit** which emits an electric impulse that, converted at high-voltage by the feeding coil, produces the electric spark between the electrodes and starts the ignition of the air/petrol mixture compressed by the piston. In order to act at the right moment the electronic unit must identify when the piston reaches the maximum compression point. The **PICK-UP** provides to this: it is a particular device that, by detecting the passage of a datum point on the rotating flywheel, sends a signal to the electronic unit. This is a **CAPACITIVE DISCHARGE** electronic unit and is marked by the initials **C.D.I**. As explained, the ignition starts with a certain advance, that is, before the piston arrives to the maximum compression point in order to allow the flame face to use the most of the air/petrol mixture by reaching the explosion climax at the maximum compression. It is called electronic unit with **FIXED ADVANCE** as the pick-up, at each revolution, makes the electronic unit always start at the same point of the piston stroke. This type of **ELECTRONIC UNIT** allows to increase the performance of your engine, as it can generate an impulse of acceptable life time which contains a substantial quantity of energy, even at high rating, where the time to accumulate energy between an ignition and another decreases considerably (think that, at 12.000 r.p.m., the electronic unit manages 200 ignitions per second). To have a good electric spark the **COIL** must be of good quality, that is, it should bring the impulse tension at highest possible values.



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