

STAGE 6®

R/T INNER-ROTOR IGNITION



Stage6 R/T Inner-Rotor Ignition – Piaggio/Minarelli
Art. no. S6-4514000/S6-4516600

02/2011 · INS45.002



4 051272 222962 >



S6R/T[®]

BREED OF SPEED ★★

Installation instructions for Stage6 Inner-Rotor Ignition (as demonstrated on a Piaggio LC engine)

Pictures 1 and 1.1 show the parts included in the scope of supply. A weight-disc is not included, but can be ordered under part number S6-4514002 (Piaggio) or S6-4516604 (Minarelli). To fit the ignition, you will need special tools not included in the package.

This is the installation for a Piaggio 50cc LC. The original ignition has already been removed. As a first step, you should check whether all the parts listed are included in the package and whether you have all necessary tools.

For the installation, you will need 3mm and 4mm hex keys, at least an 18mm ring spanner and, ideally, an 18mm socket with fitting ratchet. To block the crankshaft, we recommend using a blocking tool that will be employed from the variator side, a piston stop or an impact driver (to be ordered separately).

In order to set the ignition timing, you will need a micrometer; for a more precise setting we recommend using a TDC gauge.

The stator plate can be attached to the engine casing using the 3 M4 countersunk bolts provided (picture 2), the bolts should be secured with Loctite. Now install the stator as shown in picture 3. Please make sure that the cable is located in the gap of the stator plate. Turn the hex socket screws but do not tighten them fully, as the stator will have to be moved later on. The original key of the alternator will be kept for the inner rotor ignition to prevent the rotor from turning. Now slide the rotor onto the crankshaft and make sure that the groove of the rotor aligns with the key. After checking, fix the rotor in the correct position using the M12 nut as shown on picture 4 (block the crankshaft by using a vario or piston blocking tool or an impact screwdriver). Use the TDC gauge to locate the top dead centre. Now adjust the 0-point to the TDC-position of the pointer (picture 5). Now turn the crankshaft 3.2mm back against the rotation direction of the engine (1 turn of the gauge equals 1mm). The pointer now falls turning left and has to be set to the value 07 (0.2mm) (picture 6). As you can see, the rotor's mark has moved visibly closer to the ignition mark on the stator (picture 7). Now slightly loosen the stator, if necessary, and make the two marks align by turning the stator (not the rotor!!!) (pictures 8 and 8.1). It is essential that the rotor will not be turned. After checking the adjustments, fully tighten the screws of the stator and secure them using Loctite.

The ignition coil has to be fixed to a clean, corrosion free contact on the frame of the scooter; it is essential to ensure a clean contact surface. Using contact surfaces that are dirty, rusty or coated with paint can cause the ignition to work incorrectly. To avoid damages, the EEPROM should be fastened to the vehicle so that it is protected from fluids and vibrations. The black cable will also need a clean connection to the frame. The blue cable of the EEPROM will be connected with the blue cable of the ignition coil. The red cable is intended as kill-switch; when connected to earth, the ignition will be stopped. The control unit comes with 2 ignition curves. When the green cable will be connected to earth, the second ignition curve will be activated. By using a switch (available optionally), operation will be more comfortable without every time having to connect the lead to earth and then disconnect it again.



S6R/T[®]

BREED OF SPEED

Curve #1: green cable connected to earth – recommended for drag racing

Curve #2: green cable not connected to earth – recommended for circuit racing

The connection between stator and EEPROM should be realized via a plug connection; a polarized plug will be needed. For the wiring, see pictures **9**, **9.1** and **9.2**.

The individual earth lead (picture **10**) will be connected to the frame in a well earthed-position and the other end at a metallic spot on the engine, in order to establish an earth connection between engine and frame.

As a general rule when laying cables, you should always make sure that they are neither kinked nor can be damaged when the engine is running (heat, rotating mass...) All screws must be secured using Loctite. For participation in the Stage6 Racing Cup, rotating elements will have to be secured using a fitting cover (rotor).

For Minarelli engines, there are some differences in installation:

- A 5mm hex key will be necessary in addition to the other ones.
- The stator plate will be fixed with two M5 x 22mm screws.
- The groove for the stator cable faces 2 o'clock.
- The driving plate for the water pump has to be fixed with 2 M5 x 30mm screws.

Technical specifications:

- Digital ignition system
- Programmable ignition advance for effective ignition timing even up to 20,000 rpm
- Two ignition curves selectable during operation
- Inner rotor with low rotational inertia



S6R/T[®]

BREED OF SPEED

Control unit:

- Digital ignition with control unit
- Small, lightweight casing thanks to SMD-technology

High-tension coil:

- Ignition start already at less than 400 rpm
- Highly effective capacitive discharge (CDI)
- Constant discharging voltage

Stator-rotor unit:

- Lightweight inner rotor
- Low rotational inertia
- Outlined generator winding on the stator

Changes in ignition timing in consideration of stroke:

- **Stroke 39.2 – 39.3mm**
Con rod 80mm 3.20mm
Con rod 85mm 3.17mm
Con rod 90mm 3.13mm
- **Stroke 43.0mm**
Con rod 80mm 3.57mm
Con rod 85mm 3.53mm
Con rod 90mm 3.49mm
- **Stroke 44.0mm**
Con rod 80mm 3.68mm
Con rod 85mm 3.63mm
Con rod 90mm 3.59mm
- **Stroke 45.0mm**
Con rod 80mm 3.78mm
Con rod 85mm 3.73mm
Con rod 90mm 3.69mm



S6R/T[®]

BREED OF SPEED 

Abbildungen / Pictures



Abbildung / Picture 1



Abbildung / Picture 1.1



Abbildung / Picture 2



Abbildung / Picture 3



Abbildung / Picture 4



Abbildung / Picture 5



S6R/T[®]

BREED OF SPEED

Abbildungen / Pictures



Abbildung / Picture 6



Abbildung / Picture 7



Abbildung / Picture 8



Abbildung / Picture 8.1



Abb. / Picture 9



Abb. / Picture 9.1



Abb. / Picture 9.2



Abb. / Picture 10