

PVL Racing Ignition Installation Instructions

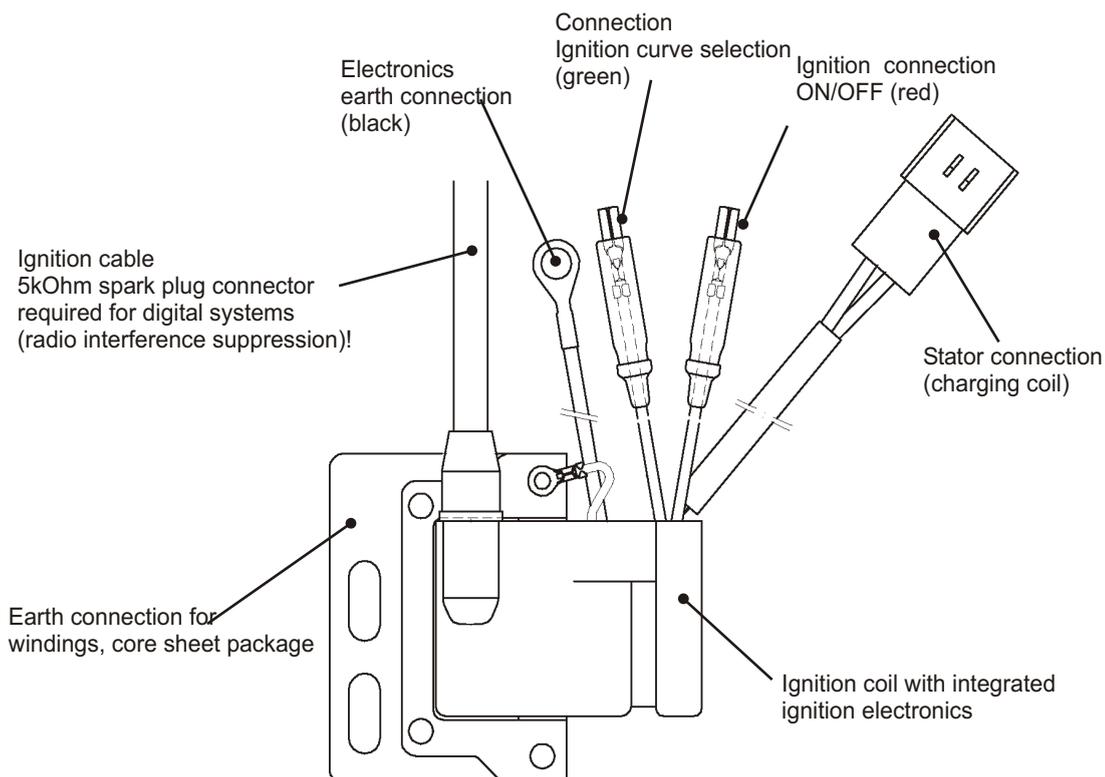
Fit the ignition coil together with the core sheet package to the chassis frame; additionally, silent blocks may be used to absorb vehicle vibrations and shocks. Establish a good earth connection between engine block and chassis by using an earth cable of at least 4mm².

Note: Silent blocks must be bridged with a separate earth cable!

Fit the stator via the three slots in the crankcase. Vehicles originally not fitted with PVL racing ignitions may require a purpose-made adapter plate (non-magnetic material, if possible non-heat-transmitting to protect stator against heat from the engine).

Place rotor on lateral pin of crankshaft. Remove any dirt beforehand, and remove grease from crankshaft stub and rotor inner cone. Ensure that the rotor has a close fit; if necessary lap in rotor onto lateral pins using abrasive paste. If no Woodruff key is used, please pay attention to the position of the crankshaft, rotor and stator – see “Ignition Timing”.

Connect all necessary ignition earth cables. Connect the stator connector to the ignition coil. Connect the ignition switch (red connector) and, for ignitions with two ignition curves, the ignition curve selector switch (green connector). In racing, cut-out switches are often used as ignition switches. The ignition is switched off when the red connecting cable is connected to earth. When not connected, the ignition is ready for operation. In ignitions with 2 ignition curves, the first ignition curve is activated when the green connecting cable is connected to earth. When the connecting cable is not connected, the second ignition curve is active. In PVL ignitions the change between the ignition curves may take place during operation. Fit the spark plug connector (digital ignition systems require a 5 kOhm interference-suppressed spark plug connector! Interference-suppressed spark plugs such as DENSO Iridium Power may be used as an alternative). Plug the ignition cable into the fitted spark plug.



Ignition Timing

For vehicles originally fitted with PVL racing ignitions the Woodruff key is put in the crankshaft stub which ensures that the rotor's position on the crankshaft is correct at all times. The stator is positioned in the crankcase according to the specifications supplied by the engine manufacturer, whilst static ignition timing as per the engine manufacturer is set by turning the stator.

For vehicles requiring retrofitting for PVL racing ignition systems you need to meet the following requirements:

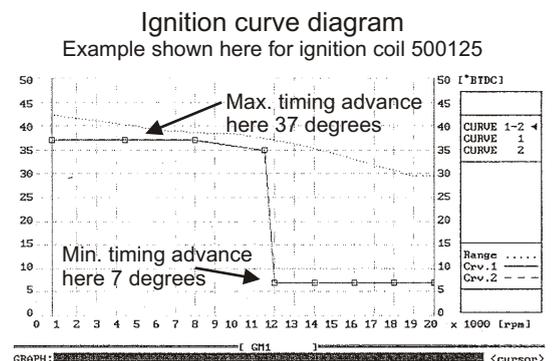
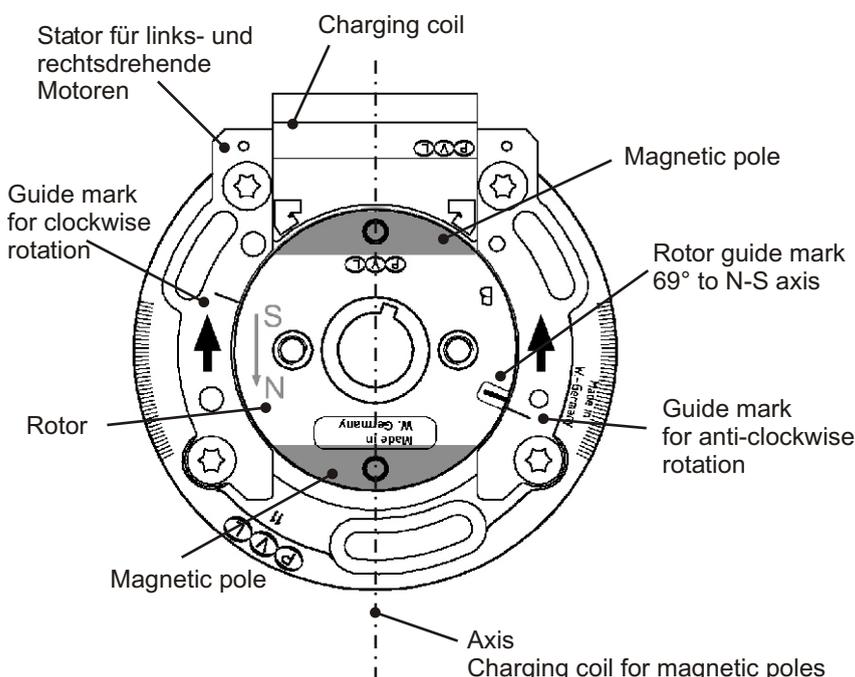
- Max. ignition advance in degrees of crank angle as per engine manufacturer instructions or tuning level.
- Max. timing advance as per ignition curve diagram

Align the stator with the rotor:

A Woodruff key is used in the crankshaft stub to lock the rotor in the correct position. Taking static ignition advance into consideration, the stator in the crankshaft must be fixed in such a way that the charging coil and the magnetic poles form an axis. **Static ignition advance = max. ignition advance - max. timing advance** Place the crankshaft on the static ignition advance and turn the stator until the charging coil and the magnetic poles form an axis. The guide marks on the stator and rotor are close together.

Align the rotor with the stator Since Woodruff keys are rarely used to fit the rotor, the rotor is aligned with the stator. Fit the stator in the crankcase. Plan a suitable cable duct from the crankcase. Fit the stator in such a way that the screws in the slots are roughly centred. This will allow you to fine tune the ignition timing without having to remove the rotor again. Turn the crankshaft to the static ignition advance and fix it in this position (piston stop). Insert the rotor and turn it on the crankshaft stub until the magnetic poles form an axis with the charging coil. The guide marks on the stator and rotor are close together. Screw down the rotor in this position. Loosen the crankshaft fixing device and check the setting.

Stators designed for clockwise as well as anti-clockwise engines (indicated by the second guide mark about 180° opposite), the guide mark on the rotor and, according to the direction of rotation, the guide mark on the stator are close together.



Example of timing angle determination

Max. ignition advance as per manufacturer e. g. 30° KW

Max. timing advance as per diagram 37°

=> static ignition advance 30°-37° = -7°

i. e. charging coil - magnetic pole axis at 7° KW after top dead centre