Ignition Coils

Components of an ignition coil

An ignition coil essentially consists of a primary winding, a secondary winding, the iron core and the housing with two-component epoxy resin insulation material.

Functionality

The feeding of current into the primary circuit causes energy to be stored in the magnetic network circuit. A rapid switch-off of the current source by the ignition transistor causes the magnetic field to suddenly collapse and a high induction voltage (up to 600 V) is generated in the primary winding. This is transformed to the secondary side and translated via the ratio of the number of secondary windings to the number of primary windings. This results in a high-voltage flashover at the spark plug, which ionizes the spark gap and causes a current flow until the stored energy is dissipated. The overturning spark ignites the fuel-air mixture.

Definition

Coil P50, P65, P65-T and PS-T are series ignition coils. The "P" stands for Production (series), the numbers indicate the maximum spark energy in millijoules (mJ). The letter "S" stands for pencil ignition coil. The "-T" stands for ignition output stages integrated into the ignition coil, called igniters.

The Coil C75 and C90i families are compact ignition coils which are designed purely for motor sports. For technical reasons they are not available with an integrated igniter.

The coil P50-M is modified as a large series coil for motor sports.

Motorsport ignition coils

The Single Fire Coils C75 and C90i were specially developed for high speed, direct injection and turbocharged high-performance engines. Accordingly, a special, high-quality core material, higher quality magnets and adapted windings are used. These properties combine high performance and good efficiency with small dimensions. The C stands for Compact Coil, the figures for guaranteed secondary/spark energy. The C75 has a weight advantage of 55 g over the C90i-pro.

Modifications according to customer requirements

Primary modifications relate to the length of the connecting cables and the connectors.

Possible changes on the secondary side are:

- P65-WS High voltage cable connection according to American standard
- P65-WG High voltage cable connection according to European standard
- P65-TWG High voltage cable connection according to European standard
- P65-E8 Extension length IC/SP 75-225 mm
- P65-E10 Extension length IC/SP 102-225 mm
- P65-TE8 Extension length IC/SP 80-225 mm
- P65-TE10 Extension length IC/SP 114-225 mm
- C75-E8 Extension length IC/SP 80-225 mm
- C90i-WG High voltage cable connection according to European standard
- C90i-E8 Extension length IC/SP 80-225 mm
- C90i-E10 Extension length IC/SP 114-225 mm